The Development of a Criminological Intervention Model for the Rosslyn Industrial Environment in Tshwane, Gauteng, South Africa.

by

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DECLARATION

I, William Lyon Pretorius, Student number 4572297, hereby declare that this thesis on ‘THE DEVELOPMENT OF A CRIMINOLOGICAL INTERVENTION MODEL FOR THE ROSSLYN INDUSTRIAL ENVIRONMENT IN TSHWANE, GAUTENG, SOUTH AFRICA’, submitted in accordance with the requirements for the PhD degree in Criminology, at UNISA, is my own original work and has not previously been submitted to another institution of higher education. All sources cited or quoted in this research paper have been indicated and acknowledged in the comprehensive list of references.

SIGNED: ______________________       DATE: ______________________
ACKNOWLEDGEMENTS

This thesis would not have come to fruition without the love, support and dedication of these special people in my life to whom I would like to extend my heartfelt gratitude:

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ABSTRACT

The problem investigated in this research is the ongoing crime threat and the extreme risks which impact negatively on the sustainability of the Rosslyn Industry - the industrial hub of Tshwane in the Gauteng Provence of South Africa. Businesses in Rosslyn are desperate for a solution that will mitigate these crime threats and risks, and ensure the future sustainability of this important industrial community. An intervention model is urgently required to prevent this type of crime, not only as a short term solution but as a sustainable long term intervention.

This research study initiated the collaboration required for the successful implementation of a Crime Prevention Intervention Model (CPIM) in the Rosslyn industrial environment. The intended crime prevention model has been designed in such a way that it addresses the entire environment of crime that prevails in the Rosslyn area involving both the offender and the victim. This design is rooted in the ontology of Environmental Criminology and more specific on the applied epistemology of Crime Prevention Through Environmental Design (CPTED).

Participants in this project are representatives who are responsible for all security functions in both big businesses and small enterprises. And with their dedicated assistance the research findings disclosed the current crime status of the Rosslyn environment regarding the threat, risk, security vulnerabilities, controls and needs:

- Crime and its causal factors, in Rosslyn, are rife and no noteworthy action has been implemented to mitigate these threats.
- Collaboration between Rosslyn role players (neighbours, local government and law enforcement) is for all purposes non-existent.
- And to complicate matters even more, knowledge of how to effectively mitigate crime is limited and handicapped by the re-active physical security methods currently being used.
- The implication of these findings is that the status quo will eventually render business in Rosslyn unsustainable. Thus a CPIM in Rosslyn is inevitable.
What was crucial to this research and to the CTPED design is the detailed sourcing of accurate data addressing the experiences and the needs the respondents identified in the current Rosslyn crime situation concerning; status, the threat, risk, security, vulnerabilities and controls.

In order to achieve this level of data sourcing and assimilation, the essential features of the research method were based on a mixed approach where quantitative and qualitative methods were implemented in parallel. The diverse fields, sources and respondent mix required for a Rosslyn Industry CPIM also necessitated a MIT (Multi,-Inter,-Trans,-Disciplinary) approach. This MIT requirement is successfully facilitated through the applied criminological CPTED approach.

The CPIM is based on the combined outcomes of the following three research fields:

- **Field-one**: Environmental criminology theories are researched through an in-depth literature review to demonstrate the criminological grounding of crime prevention and to guide its application through the development of an applied CPTED SUITE.
- **Field-two**: Supply Chain Security (SCS) are researched through an in-depth literature review to establish its criminological relevance and applications. SCS requirements are identified and built into the Field-Three research process and tested for relevance and for incorporation in the CPTED SUITE.
- **Field-three**: Based on a mixed research process, using a custom designed Criminological Risk Analyses tool incorporating scheduled interviews and questionnaires, the crime and needs profile of the Rosslyn Industry are uncovered and analysed. The results are filtered through the CPTED SUITE to indicate the correct criminological approach for mitigating the identified problems and needs.

Even though this study takes an applied crime preventative approach, the criminological-philosophical mould of crime prevention is imperative for the effective application of the CPTED. Security and crime prevention training, planning and application, without this approach will remain underdeveloped and outdated.
Finally the underlying intention of this research is for this Crime Prevention Intervention Model (CPIM) to be adapted and implemented and to serve as a guide or a benchmark for security practitioners in any industrial environment that has the same crime threats and crime risk challenges.

Key Words

CPTED, Crime Prevention, Crime Prevention Intervention Model, Environmental Criminology, Mix Research, Multi-Inter-Trans-Disciplinary, Risk Analysis, Rosslyn, Security Applications, Supply Chain Security
# GLOSSARY

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
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<tbody>
<tr>
<td>AEO</td>
<td>Authorised Economical Operator</td>
</tr>
<tr>
<td>AIDC</td>
<td>Automotive Industry Development Centre.</td>
</tr>
<tr>
<td>AMEO</td>
<td>Automobile Manufacturers Employers Organisation.</td>
</tr>
<tr>
<td>BASC</td>
<td>Business Alliance for Secure Commerce.</td>
</tr>
<tr>
<td>BB</td>
<td>Big Business.</td>
</tr>
<tr>
<td>BIDS</td>
<td>Building Intruder Detection Systems</td>
</tr>
<tr>
<td>BPS</td>
<td>Best Practise Security.</td>
</tr>
<tr>
<td>CBP USA</td>
<td>Customs Border Police - United States of America.</td>
</tr>
<tr>
<td>CCBC</td>
<td>Capitol City Business Chamber.</td>
</tr>
<tr>
<td>CoT</td>
<td>City of Tshwane (Municipality).</td>
</tr>
<tr>
<td>CPF</td>
<td>Community Police Forum</td>
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<tr>
<td>CPIM</td>
<td>Crime Prevention Intervention Model.</td>
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<tr>
<td>CPTED</td>
<td>Crime Prevention Through Environmental Design.</td>
</tr>
<tr>
<td>CRA</td>
<td>Criminological Risk Analysis.</td>
</tr>
<tr>
<td>CSMP</td>
<td>Certified Security Management Professional.</td>
</tr>
<tr>
<td>C-TPAT</td>
<td>Custom Trade Partners Against Terrorism.</td>
</tr>
<tr>
<td>DBT</td>
<td>Design Base Threat. (A basic approach to assess a threat).</td>
</tr>
<tr>
<td>DOC</td>
<td>Design Out Crime.</td>
</tr>
<tr>
<td>ESCOM</td>
<td>Electricity Supply Commission</td>
</tr>
<tr>
<td>EU</td>
<td>European Union.</td>
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<tr>
<td>ICA</td>
<td>International CPTED Association.</td>
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LISC: Local Initiatives Support Corporation.

MIT: Multi, -Inter, -Trans, -disciplinary.

PIDS: Perimeter Intruder Detection Systems

PMC: Performance Management Controls.

S&M: Small and Medium (Businesses).

SAPS: South African Police Service.

SCS: Supply Chain Security.

SLA: Service Level Agreement.

TAPA: Transport Asset Protection Association.

TMPD: Tshwane Metro Police Department.


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1.1 PURPOSE OF THE RESEARCH

The purpose of this research is to design a practical tool for the prevention of crime. This crime prevention intervention model (CPIM) will be implemented as a benchmark for the Rosslyn industrial environment with the intention of eventually implementing it country wide, in all industrial areas.

1.2 BRIEF ORIENTATION

The design of this crime prevention intervention model (CPIM) will be based on the combined outcomes of the following three research fields:

- Field-one: Environmental criminology theories researched through an in-depth literature review to establish scientific grounds and applications.
- Field-two: Supply chain security (SCS) researched through an in-depth literature review to establish the criminological relevance and applications.
- Field-three: Based on a mixed research process, using scheduled interviews and questionnaires, an applicable comprehensive criminological risk and needs analysis tool will be designed and implemented in the Rosslyn Industry.

See Figure 1.1 for the graphical display of the research scope in context and Figure 1.2 for the diagrammatic format of the research approach and process.
1.3 THE RATIONALE

Industry, especially the manufacturing industry, and even more so, the export manufacturers, is the hub of a country’s economical resilience. Rosslyn, located to the north of Pretoria, the capital city of South Africa, is the manufacturing and industrial hub of the Metropolitan City of Tshwane (Rosslyn Hub, 2013:1). It is one of the largest manufacturing industrial areas in South Africa. It houses global manufacturing enterprises such as; BMW, NISSAN, RENAULT, TATA, UD Trucks, IVECO and a myriad of other local and global supplier and service provider companies such as: Tubecon, Bidvest Panelpina, AFRIT, SAB, Lion Match, Venture, NAMPAK, ZF-Lemförder, LTG, MAO, Feltex, UTI, DHL, Grinrod, SAB, Becan, Bumba - to name but a few. The mining industries adjacent to Rosslyn: Eland Platinum, Anglo Platinum and Fast Plats, also make use of Rosslyn industries. In fact this entire area employs more than 65000 people on a daily basis (Rosslyn Hub 2013:6).

In a recent government supported endeavour to make Rosslyn a worldwide accredited motor manufacturing city, the Automotive Industry Development Centre (AIDC), a semi government organisation and one of the largest landlords in Rosslyn, was tasked to attract new investors to Rosslyn - a venture that proved to be more and more difficult because of crime and service delivery experiences and negative perceptions. Such perceptions were increased by renowned individuals like George Bizos, a struggle veteran against apartheid laws and advocate for President Nelson Mandela, when asked if he thought South Africa was becoming more violent, said; “I don’t just think so, it’s a fact” (News24 2012:1; citing Burger from the Institute for Security Studies). Ironically the unsettling situation currently prevailing in the Rosslyn Industry, fuelled by the infamous neighbouring Marikana incident and the continuous labour unrest close to and in Rosslyn, substantiates the truth of these words.

For the past five years, businesses in Rosslyn have expressed concerns about the alleged increase in criminal activities, the socio ecological decline, the poor service delivery and the ensuing lawlessness which is threatening the sustainability of the Rosslyn industry. Even though discussion forums had been set up in Rosslyn to design a plan to protect and ensure business sustainability, the delegates who attended these forums were mostly not decision makers. Furthermore, the forums
lacked continuity because they were seldom attended by the same delegates. Thus no proper collaboration, actions and feedback were possible and is it therefore not surprising that valid concerns raised never amounted to anything.

A major problem identified was; no proper needs and risk analysis of the Rosslyn Industrial environment had ever been conducted. Thus businesses were never presented with reliable facts concerning the challenges that needed to be addressed before Rosslyn could be given worthy global recognition as a sustainable business option that would attract and retain investors.

In 2013 the researcher was appointed as the CCBC (Capital City Business Chamber) Director for Security (with the approval and the support of his employer; BMW). In his capacity as Director he facilitated collaborations between the CCBC, City of Tshwane (CoT) and various leading big businesses. Based on the outcomes of these collaborations it was evident that to address these challenges another approach was required. An approach that had both the status and the necessary recognition in the Rosslyn business community.

Consequently the CCBC and the CoT appointed a liaison committee representing diverse functional clusters. The purpose of this committee was to initiate and oversee the implementation of the CCBC sustainability initiative throughout the Rosslyn industry. Local government had to be not only fully committed, but also involved in this venture to ensure that it delivered positive results.

A comprehensive needs and risk analysis for the entire Rosslyn industry was the first priority on the list - a task fully supported by the CCBC, CoT and AIDC. It took approximately twelve months to complete this task that was far more daunting than at first envisaged.

When you consider, from a criminological perspective, the enormity of this task that involved the entire Rosslyn industry community, you realise it is indeed an achievement. The data that was collected contributed towards the custom designed criminological Crime Prevention Intervention Model (CPIM) that could be put to use in the industry as a tool for the prevention of crime, measuring service delivery and ensuring sustainability.
1.4 MULTIPLE RESEARCH FIELDS

This research covers all aspects of the security, crime prevention and risk environments within the diverse Rosslyn community. It includes industrial specific requirements or dynamics and social and ecological problems. These had to be approached from different angles, in this case three specific research fields, to compare the total reality. See Figure 1.1 for the graphic explanation of this research. Each required research field identified will be discussed in the sections that follow.

A Criminological assessment and interventions for the Rosslyn industrial environment in Tshwane, South Africa based on Multi-Inter-Trans-disciplinary principles

Figure 1.1: A graphical display of the research scope in context
The criminological research is lodged in the theoretical domain of environmental criminology (Chapter 2), which addresses the applied physical and sociological environment of criminology and in particular CPTED (an inherent MIT approach), which plays a pivotal role not only in influencing crime prevention but also in the environmental sustainability of Rosslyn industry (Chapter 3). This research will furthermore endeavour to strike a balance between the empirical understanding of criminological theory on the one hand and the application of crime prevention on the other hand, and how these are applied in practice (Chapters 4 and 5).

1.4.1 Research Field-One: The need for a criminological intervention.

The premise of Field-one is the multidimensional crime threat against Rosslyn industry. It incorporates the physical security and the socio ecology of the offender and of the victim. The question most often posed is twofold:

- What application can criminology provide to an applied crime preventative methodology?
- What processes can be put to use in designing a pro-active crime intervention model for Rosslyn Industry that addresses both the physical and the socio ecological factors?

In criminology a crime prevention approach often used is a detailed analysis of environmental criminology to analyse the environmental factors that provide opportunities for a crime to occur. But it is not enough, what is required is an applied criminology approach of which the CPTED is currently the only criminological crime prevention approach found, which according to Cozens (as cited in Wortley and Mazerolle, 2008:153) is a multidisciplinary approach, drawing on criminology, planning, and environmental psychology. The CPTED is well known for its pro-active methods used in the prevention of crime: identifying and modifying conditions that provide opportunities for criminality in both the physical and in the social environment. This approach is well aligned to the research objectives within the context of environmental criminology applications (Chapter 3).
According to Stout, Yates and Williams (2008:5-6) applied criminology focuses on the improvement of security delivery. In the Rosslyn industry the core of this solution lies in the understanding and insight into the dynamics of the offender/perpetrator/adversary, the value of the target/asset, the intended modus operandi or actions, the criminal ecological situation, the status and the interaction at play. It is just as important, from a societal perspective, to identify the needs and fears of the community and then to determine what must be changed or modified to prevent crime, improve services and convince the society in believing in the sustainability of the environment. These imply the necessity of an in depth understanding of the total perceived threat posed to Rosslyn, which can only be obtained through a detailed risk and needs analysis.

Initially, the methodology for such a risk and cross functional needs analysis was sought from applied and current security and criminology sources but these were not found suitable. A proper investigative tool was required, that would not only test the extrapolated criminological applications (Chapter 2 to 5) but also provide valid and reliable information.

A Criminological Risk Analysis (CRA) template, which covered the Multi-Inter-Transdisciplinary requirements was designed and tested. The needs and risk analysis essentially has two applications: The first, to educate and to inform the Rosslyn Industry of the identified needs and risks. The second, to provide the CPTED SUITE (design and application fully discussed in Chapter 5 and 7) with relevant and valid data to ascertain the best practise CPTED method applicable for designing a custom designed Crime Prevention Intervention Model (CPIM) for Rosslyn Industry with which to alleviate and/or manage the identified risks and needs.

Subsequently the extrapolated criminological crime preventative applications (Chapter 2 and 3) were used to construct the CPTED SUITE and Filter system in conjunction with a custom designed criminological risk analysis (Chapter 5.) The end result was a Crime Prevention Intervention Model (CPIM) implemented in Chapter 7.

However, the underlying goal of this research is to innovatively contribute to the criminology crime prevention academic debate, and to supply security practitioners
with crucial practical recommendations on all the required levels. This can only be achieved through a better understanding of the contemporary crime issues, primarily from the Rosslyn industry input. Only then can the security practitioners be given the necessary critical thinking skills to design and implement a CPIM. This research is anchored in the Stout, Yates and Williams (2008:3) statement: “In Criminology, knowledge is situated not just, or not even primarily, in the pure academic world, but in the applied domain.”

1.4.2 Research Field-Two: Rational for using supply chain security as the benchmark for industry security.

The export manufacturing industry must comply with the post 9/11 era where fear and insecurity in the field of safety and security still prevails to such an extent that it has become a worldwide phenomenon. The USA, after successfully being targeted by terrorist attacks, has declared that all imports are potential vehicles for acts of terrorism. This approach basically requires that all manufacturers that export to the USA must comply with the specific C-TPAT security requirements that are applicable to all supply chains.

Supply Chain Security (SCS), as a relative new innovation in the Republic of South Africa (RSA), has become a necessity not only to business trade environments but also to society. In fact, it is in every stakeholder’s best interest to be accredited as a safe-trade-partner, because having a safe-trade-partner status has many benefits when compliant to SCS standards. The alternative is being publicly rebuked and receiving heavy trade penalties that could make competitive trade impossible (US Customs and Border Protection, 2004:14).

The supplier and service providers have indirectly become the security responsibility of the exporting manufacturer. The USA customs and the border police impose quarantine and strict verification actions on the export manufacturer if the security compliance requirements of the C-TPAT standard are not met. This can result in all export material being delayed at the USA entry ports for an unspecified period. And such a delay could cause both financial losses and time losses for export manufacturers (CTPAT, 2013:2).
The rest of the world has followed suite and has developed security requirements relevant to each country. The European Standard: the Authorised Economic Operator (AEO); the Transport Asset Protection Association standard (TAPA); the Business Alliance for Secure Commerce standard (BASC) and the Singapore Secure Trade Partnership (STP) standard. Thus numerous ISO standards (International Organisation for Standardisation) have been developed for supply chains e.g., ISO 31000, ISO 28000, ISO 28002. Interestingly on 13 January 2013 a mutual agreement was signed between the AEO and C-TPAT, the two major supply chain standard organisations (SCSI: 2013:1), to make the C-TPAT standard all the more significant.

The relevance of SCS/C-TPAT to Criminology lies in the C-TPAT approach to crime prevention. Unlike the international standards route, such as ISO, which prescribes processes and checklists which are audited to the hilt, C-TPAT has followed the route of combating crime through pro-active, best practise measures based on an investigative, descriptive, explanatory, case-by-case approach, with the objective/outcome of detecting, preventing and defeating crime before it can occur. SCS methodology (Chapter 4) is clearly based on opportunity reduction and situational crime prevention activities that are custom designed for each different environment.

All these supply chain security standard requirements have one golden thread, namely; to be ‘pro-active’ against any possible terrorist and criminal acts. Early detection and stringent ongoing monitoring methodologies must be put to use in all aspects of the total supply chain. These requirements have become the set-criteria against which all export manufacturing businesses, dealing with the USA and Europe, will be audited.

Based on a preliminary research and actual experience, it was found that even though Rosslyn industries were competing and operating in an international exporting and manufacturing arena where specific criteria had to be met, they were generally ignorant of the C-TPAT related criteria and/or its requirements.

The argument for making use of the SCS/C-TPAT criteria in this research is firstly, the C-TPAT type requirements are unavoidable for all businesses linked to export
markets. Secondly, the SCS criteria, as part of a criminological approach, can be implemented in Rosslyn to provide an added benefit to the business environment and its sustainability.

Based on these findings this research will investigate SCS/C-TPAT and describe it in detail: what it entails, how its applications can be put to use in Research-Field Three, as part of the risk analysis, and in what way it will support and influence the design of a crime prevention intervention model (CPIM) for Rosslyn Industry. The CRA will also be used to test the knowledge and the requirements of the Rosslyn Industry based on the SCS (C-TPAT/AEO) requirements.

1.4.3 Research Field-Three: Needs and Risk Analysis of Rosslyn Industry

As part of the Gauteng crime and research statistics, published by the South African Police Service (SAPS) in September 2014, Rosslyn Industry clearly falls within a high crime threat area. Unfortunately the specific situations for Rosslyn are factually unknown and therefore many of the deliberations about the security and services needs have become hearsay. In Research Field-Three the Rosslyn specific crime profile and needs are uncovered.

This research has used a custom designed CRA data sourcing and/or risk and needs survey instrument, compiled in a convergence format, to address this challenge. It is comprised of a qualitative interview schedule and a quantitative questionnaire with which the researcher can probe, investigate and test the industry in Rosslyn to determine its:

a. Operational demographics.

b. Crime threat survey.

c. Security capacity.


e. Crime Prevention Methodology.

g. Risk plotting.

h. Priority factors required to ensure the sustainability of crime prevention.

The findings of these instruments will determine whether or not the Rosslyn business approach to crime prevention falls within the contemporary and applied criminology approaches, and if these criminology approaches can be incorporated in an effective crime intervention model in every industrial environment.

The data collected will contribute towards developing an applied CPIM for Rosslyn: a Multi Inter-Trans-Disciplinary (MIT) design that uses integrative criminological approaches in a supply chain security and a risk analysis (see Figure 1.2).

1.5 LACK OF RESEARCH

It soon became evident that stakeholders and process partners in the Rosslyn industrial area were not aware of any criminological crime prevention intervention model that encapsulated business/industry/corporate security requirements and SCS criteria. Instead a high level of ignorance prevailed regarding crime prevention, risks, threats, application and security awareness. The only reason for this unfortunate situation was that it had never been deemed necessary to research these aspects. It is only since these aspects have to be included in future planning that the lack of measuring instruments, as well as the lack of experience and knowledge have become apparent.

The data that was collected highlighted the following aspects that were lacking:

1. A criminological crime prevention approach for the applied environment of industry.

2. Education and skills transfer, from a criminological perspective, related to industry risks and security.
3. A multidisciplinary interpretation for physical security methods, approaches and standards within criminology. Instead mostly checklists or ‘cookbook type’ security surveys were found.

4. A risk analysis measurement instrument with which to measure the specific crime prevention status, its problems and its requirements.

5. A research instrument based on an environmental criminological perspective, with a strong MIT disciplinary approach, that could source the proper data answers, which addressed the needs and the risks issues.

6. A criminological security model which encapsulated supply chain security and the security requirements in the industrial environments. SCS/C-TPAT was in fact an unknown phenomenon

7. There was no clear applied criminological crime prevention model with a criminological base to work from, if confronted by a crime prevention challenge.

8. The utilisation and/or the correct application of CPTED. However, in the latest development of CPTED approaches, the so called CPTED exponents are more focussed on adding their own interpretations as a new variant, which more importantly required a new name, as opposed to bringing enhanced clarity and better applications to the CPTED theory.

1.6 RELEVANCE OF THE RESEARCH TOPIC TO SOCIETY AND TO CRIMINOLOGY

The relevance of criminology as a core crime prevention solution in applied security will be demonstrated in the potential of a criminological based crime prevention model designed to protect businesses, ensure the sustainability of the industry environment and where necessary ensure compliance to international supply chain criteria required for exporting - in this instance for the Rosslyn industrial environment.
1.7 CONTRIBUTIONS TO THE FIELD OF STUDY

The outcome of this research will make a unique contribution to the disciplinary domain of Criminology.

1. Crime prevention in the industry and its applications were traced through environmental criminology and more specifically through CPTED.

2. An MIT approach was used to encapsulate all possible approaches to mitigate the problem at hand without compromising the criminological philosophical stance.

3. A unique MIT CPTED SUITE was designed from where all the CPTED applications could easily be found, understood and utilised.

4. A unique Criminological Risk Analysis (CRA) data sourcing instrument was designed and lodged in the CPTED SUITE for a complete CPIM application.

5. Supply Chain Security (SCS) requirements were incorporated in the CPTED SUITE approach, also a unique application.

6. A unique Crime Prevention Intervention Model (CPIM) has been designed and implemented for Rosslyn, which would serve as an industry benchmark.

7. This research has been designed to be referenced /used /duplicated by security practitioners from the industrial environment, to enable them to establish, develop, implement and maintain an applicable effective crime prevention/security system.

1.7.1 Specific benefits of this research

This research was completed and made available to all stakeholders in Rosslyn, especially to the security practitioners and the responsible managers who are involved with, or interested in managing security operations effectively in the Rosslyn Industrial area.
a. The purpose of this research seeks to bring order to the task of not only protecting people; physical assets; and intellectual property but also of maintaining the sustainability of economic opportunities in Rosslyn.

b. It endeavours to provide Rosslyn as a whole, and the individual business operators in particular, with criminological intervention principles to establish, to design, to implement and to maintain crime prevention programmes. And as such it intends to relate these principles and practises to its users.

c. It is a data-rich research, based on academic frameworks, applied paradigms and an extensive universum analysis derived from factors of reliability and validity with comprehensive explanations where necessary. It is not a text book in which easy quick fix solution can be found for security practitioners and responsible parties in Rosslyn who may not have any background at all of security methodologies and or criminological approaches. This research fills these gaps by:

1.7.1.1 Creating an awareness of new theories and knowledge

i. The general benefits of this research project will add to the minimal existing body of knowledge in this field.

ii. Various uniquely designed and applied criminological products will empower responsible security practitioners to investigate crime risks or threats knowing they have adequate crime prevention applications and the skills to solve problems.

iii. Industrial security practitioners will understand how to formulate and to implement a criminological risk analysis (CRA) for the applicable area, thereby achieving the required crime prevention status supported by valid and reliable intelligence.

iv. The various Security Associations will benefit as they will have access to a data base of listed problems and solutions that are specific to the industry they represent.
v. Security researchers, both locally and globally, will benefit as they will be able to identify areas of concern that emanate from this research for future study.

vi. Criminology will become even more relevant as an applied physical security approach when encapsulating the required standards for SCS.

vii. Applied criminology, conceptualised in CPTED, demonstrates the relevance of environmental criminology theories used in practise as a specific multidisciplinary crime prevention problem-solving tool.

1.7.1.2 Improving the performance of management in business

i. It will serve to create a platform/benchmark from which top management can assess whether heads of security are effectively delivering/processing the relevant skills with which to manage security as required.

ii. Security clients will benefit as they will be able to assess whether the security providers and their work forces have been trained in-line with best practise.

iii. The proposed security model will provide businesses with a value added security capacity, which will in turn provide compliance to international requirements and an early warning status regarding impending threats, risks and vulnerabilities.

iv. The model will provide justifiable recommendations to industry concerning the approach to crime and the fear of crime within environmental criminology so as to eventually design crime out.

v. It will create an industry benchmark that can be used by security exponents.

vi. It will provide CID (City Improvement District) initiatives, more specifically for industrial areas, with a model that can be used for a needs assessment and a risk analysis. The outcomes or findings can be incorporated in the design of a crime prevention plan.
1.7.1.3 Enhancing the performance of security practitioners

The whole exercise is not only to contribute to the criminology crime prevention academic debate and practice, but also to supply security practitioners with crucial practical recommendations:

i. Security practitioners will be introduced to relevant applicable criminological crime preventative methods and approaches.

ii. They will be provided with a practical, yet uncomplicated crime prevention model with user friendly instructions as well as the necessary critical thinking and other transferable skills with which to actively be able to prevent crime in the area.

iii. They will be able to investigate best practice crime prevention approaches, as encountered in applied criminology, that provide not only the skills and the knowledge to implement and to control intervention activities but also to describe and to prevent crimes in the Rosslyn industry.

iv. Security managers will also benefit because they will be able to apply most of the best practice information offered by the research to enable them to perform their jobs in a value added manner.

1.7.1.4 Providing essential training benefits

i. There will be a spill-over effect whereby the security providers will have better trained, more confident and more competent security officers protecting the assets of their clients.

ii. The various Security Associations will also benefit as they will have access to a data base of problems and solutions for the challenges they are faced with in their respective industries.

iii. Security Training Agencies will benefit as they will have the opportunity to assess and to adjust their curriculums and their methods of delivery and focus on presenting standardised training in the industry.
iv. Security and training regulatory authorities will have access to a benchmarking resource against which they can assess the performance of the training providers in their jurisdictions.

1.8 PERSONAL EXPERIENCE IN THE FIELD

The researcher, a security and counter terrorism exponent of more than thirty years, is the CSO (Chief Security Officer) of a South African based German motor exporting manufacturer where he successfully designed and implemented a security strategy based on crime prevention and counter terrorism methodologies.

In addition to this the researcher has also designed and implemented best practise security systems for the major electricity and rail freight providers in South Africa. He is also the founder member of the Rosslyn CPTED Forum and serves as the Director for Safety and Security for the Capital City Business Chamber. He is the chairman of the Rosslyn security steering committee - an EXCO Committee comprised of the Local Municipality Directors and the applicable business representatives /delegates.

1.9 PURPOSE STATEMENT

The primary purpose of this study is to design a crime prevention intervention model for the Rosslyn Industry. Realistically this study will not solve the total international/national problem, but it could influence, crime prevention approaches, security training decisions and be of interest to policy makers, especially when considering the costs involved and the compliance requirements in safe guarding a national asset.

1.10 THE RESEARCH QUESTION

The three central research questions derived from the three multidisciplinary research fields in this study are (also see Figure 1.1):
1. Which applied criminological theories; methodologies and approaches to prevent crime will effectively address the identified crime risk in the industry sector of Rosslyn?

2. What SCS security application can be used to create, support and enhance best practise crime prevention and security in the industrial environment of Rosslyn?

3. What are the industry’s risks, needs and requirements for crime prevention, business sustainability and longevity in Rosslyn?

In order to explore these central research questions the following questions will form the framework of the research:

1.10.1 Regarding the needs and requirements (Internal and External) of Rosslyn Industries

a. Who are the role players and what is the geography, the demographics and the services that are provided?

b. What are the risks, threats and vulnerabilities that have been identified?

c. What is the current security capacity in the industry environment?

d. What are the levels of crime and the history thereof, in the Rosslyn industry?

e. What is the modus operandi of the offenders?

f. What are the opportunities and situational reasons behind crime in this industrial environment?

g. What are the needs and requirements for the industry to become crime preventative?

h. What type of crime prevention methodologies, criteria, management processes and measures are in place?
1. What are the perceptions of business about crime prevention and security?

2. What are the configuration/capacity, knowledge and training levels of security managers?

3. What is the role of Law Enforcement and Local Government in the Rosslyn industry?

4. What is the status of SCS in this industry?

1.10.2 Regarding Crime Prevention and/or Combating of Crime

a. Do the criminological opportunity theories provide the foundation on which a crime prevention model can be built for the Rosslyn industrial environment?

b. Can the criminological applied environment provide this research with a criminological risk analysis instrument that can be put to use?

c. Can SCS and the Crime Prevention Model be incorporated as a generic crime prevention theory?

d. How can a CPIM be implemented in the challenging Rosslyn Industry?

1.10.3 Regarding Supply Chain Security

a. What is the impact/role of SCS on the crime prevention environment?

b. What is required of corporate security to become SCS complaint?

c. How can SCS support internal and external crime prevention requirements in Rosslyn?

d. Can the SCS requirements be tested in the Rosslyn industry and be incorporated in the research instrument?
1.11 PRIMARY GOALS, SECONDARY GOALS AND OBJECTIVES

The Fields in this research have been clearly demarcated in the previous sections. The questions posed and the sources from which the answers must be derived have also been identified. The ‘why’ of this research will be stated in the following goals that have been earmarked for this research?

1.11.1 The primary goal

To design a crime prevention intervention model (CPIM) for Rosslyn Industry.

1.11.2 The secondary goals of this study

a. To show that criminological opportunity theories are the foundation for crime prevention designs.

b. To design and put to use a criminological risk analysis model for a large industrial area.

c. To implement the CPIM in the Rosslyn Industry.

d. To investigate how crime prevention and security is perceived by top management.

e. To uncover the culture regarding crime prevention.

f. To investigate what the needs of businesses are regarding both internal and external security.

g. To show what Security must do to add value to business.

h. To identify best practise applications for crime prevention in Rosslyn

i. To uncover supply chain security as a criminological security standard.

j. To integrate supply chain security criteria and criminology methodologies.
k. To educate and to transfer skills in crime preventative approaches and methodologies.

1.12 RESEARCH DESIGN

1.12.1 Research design: the reason and selection process

The term 'research design' refers to: “the options available to researchers to utilise certain 'formulas' suitable for their specific research goal” (Delport and Fouche, 2005:268). This research does not apply a 'pure' research method in the social science context, but rather a pluralistic or mixed epistemological approach in which both the phenomenological and the empirical analytical approaches are utilised.

According to Hathaway (1995:535-562), a review of the literature reveals various distinctions between the paradigms underlying generic quantitative and qualitative approaches. All these traditions generally share common assumptions about ontology, epistemology and methodology. However, the researcher's role is different in the paradigms of qualitative and quantitative design. Either the researcher is a detached outsider in empirical analytical research, or the researcher is part of the phenomenological study of interpretive research. In this study both are used.

Working in the empirical-analytical paradigm (quantitative), the investigator pre-selects categories, known as variables, and states the relationships between the variables as a hypothesis to guide the research (Hathaway, 1995:535-562).

The exploratory and descriptive research approaches, used in this study, will incorporate semi-structured interviews as a qualitative data collection tool (Fouche, 2002: 19). This method will allow the researcher to explore, to describe and to explain the interactive contexts and the dynamics underlying security methods. Interviews with selected respondents to obtain specific and/or supplemental information are not readily available through quantitative measures. The potential gap of losing the possible richness of information, when using only quantitative measurements, can thus be counteracted (Creswell, 2009:13-14).
Kvale (1996:70) states that the strength of the phenomenological approach is threefold, namely:

- It allows the researcher an insider perspective of a respondent.
- It allows for subjective knowledge and experience to become known.
- It shows the context in which the research interacts.

From the abovementioned strengths the phenomenological approach is custom made for the elicitation of information concerning the nature, the scope, the activities and the needs of all role players in protected and in confidential environments. This combination of explorative, descriptive, explanatory, evaluative and action research essentially elicits information from a limited number of individuals who it is assumed have the information which is sought after. It also focuses on those who are able and willing to communicate and who are presumed to be representative, or in charge of a larger group (Hofstee, 2006:22).

This situation is rationalised, as Johnson, Onwuegbuzie and Turner (2007:113) explains; “The mixed methods research is generally speaking, an approach used to find knowledge (theory and practise) that allows for the consideration of multiple viewpoints, perspectives, positions and standpoints by including the standpoints of both qualitative and quantitative research.”

This research will aim to disclose all the information, to the point of saturation, concerning the Rosslyn Industrial environment (graphically demonstrated in Figure 1.2) that is required for a crime prevention situation, which will define the set goal namely; to design a crime prevention intervention model (CPIM) for the Rosslyn Industry. In a phenomenological research design it is important to incorporate knowledge as described in documentations and other positivistic/quantitative observances, and measures that can enhance and support the experiences obtained from the sample grouping and encourage an even deeper understanding and knowledge of the research problems stated.
Figure 1.2  Research design and process: A Multi-Inter-Trans-disciplinary approach
1.12.2 The Research Paradigm demonstrating social science validity

Paradigm issues are crucial; no enquirer ought to go about the business of enquiry without being clear about what the paradigm informs, and how it guides his approach (Nagy and Leavy, 2004:36). It is important for the researcher to indicate that the status of the collected data, be it qualitative or quantitative, will capture or mirror the ‘reality’ of the phenomena of crime in the Rosslyn industry and show how objective he expects it to be. In other words the collected data will demonstrate that the quantitative and qualitative components are equally explanatory. For a *bona fide* Criminology study this validity is of paramount importance as it shows the social research process is respected and is followed.

However, no single method can apprehend all the incisive variations in actual human experience. This necessitates venturing into a wide range of interconnected interpretive methods to seek better ways of making the worlds of experience that are studied more understandable (Denzin and Lincoln, 2003:31-36). This is exactly why this research encapsulates the qualitative and quantitative approaches, and literally mixes the findings to apprehend all the incisive variations of crime and crime prevention in the actual human experience within the Rosslyn industry. The key issue is whether, in a mixed methods project such as this research, the end product is more than the sum of the individual quantitative and qualitative parts (Bryman, 2007:2).

Bryman (2007:12) cautions that when a mixed methods project is set up in such a way that either the quantitative or the qualitative component provides the main point of orientation, it will be difficult to bring the findings together because the overall design is not conceptualised in a sufficiently integrated way. Therefore, the intention of the analysis of this mixed research is to analyse these components in conjunction with each other and not to research them separately or even to present them separately. Caution will especially be taken not to use the quantitative components as background to support the qualitative data. For this reason the mix and the integration is done from the start, using these ontologies as mutually inclusive pragmatic probes shedding light on each other as a whole.
Onwuegbuzie and Leech (2005:375-387) stated that pragmatism has emerged as a major orientation in combining quantitative and qualitative research and that, epistemological and ontological issues have been significantly marginalised. Mixed methods researchers typically then exhibit a clear pragmatism in their work and do not dwell on epistemological and ontological issues (Bryman, 2007:17). The successful integration of the quantitative/qualitative findings in research can only be deducted if these findings are substantially enhanced by virtue of the fact of the mixed approach (Bryman, 2007:20). A most recent message from Davis, von Randow and Cotterell (2012) reads; “Criminologists do not apply research methods in the ‘pure’ sense but as how they can be used in the applied field of criminology.”

The key words that comes to mind for the qualitative viewpoint are ‘explorative’ and ‘interpretive’; the why behind the action, the explanation of actions (Rubin and Babbie, 2001:126). The key word that comes to mind for the quantitative approach is ‘explanatory’. Bless and Higson-Smith (1995:46) expands on this by stating that the determination between variables constitutes the backbone of explanatory research. These two methods will be converged for this research.

The following section will explain the reasons and methods that will be used.

1.13 THE PREFERRED MIX PARADIGM EXPLANATION

1.13.1 The rationale for a mixed approach

This research is not only a clear example of a human sciences investigation; it also deals with security and legal categories which are rigid and usually indicative of a structured system and a process approach. This requires explicit control within a specific defined range, less philosophical and in pace with physical sciences (de Vos, Strydom, Fouche and Delport, 2005:357). Then there is the sourcing of subjective evidence from participants in close proximity (Creswell, 2013:21). However, the research remains within the same ontology, but it clearly makes use of different epistemological sources. The reason for using this approach is evident, namely the search for the total saturation of all relevant information concerning the research topic. Neuman and Wiegand (2000:124-125) calls this method the ‘triangulation of
measures’, where researchers take multiple measures of the same phenomenon. It is about measuring something in more than one way so that the overall strength of a study is greater than either qualitative or quantitative research (Creswell 2009:4).

1.13.2 The qualitative approach

In this research the qualitative researcher will make use of the underpinning knowledge, gained through experience, of the respondent to reproduce all the subjective experiences and emotions the respondent is aware of (Ladikos and Kruger, 2006:157). “In this sense all qualitative researchers are philosophers guided by abstract principles, which combine beliefs about ontology, epistemology and methodology” (Denzin and Lincoln, 2003:31-36).

According to Moustakas (1994:22; 27; 61), phenomenological research turns to the experience (of participants) in order to obtain comprehensive descriptions of such experiences. Moustakas further states that these descriptions then provide the basis for a reflective structural analysis to portray the essences of the experiences. “What appears in consciousness is an absolute reality, while what appears to the world is a product of learning. That what appears to be appearing is actually appearing; one sees what or who one sees.”

What Moustakas (1994:21) states, is precisely what is applicable to this research. He goes further and identifies the following universal qualities or common bonds of phenomenology which are part of the human science research models:

a. Phenomenology recognises the value of qualitative designs, methodologies and studies of human experiences that are not approachable through quantitative approaches.

b. Phenomenology focuses on the wholeness of experiences rather than solely on its objectives or its parts.

c. Phenomenology searches for meanings and the essences of experience rather than measurements and explanations.
d. Phenomenology obtains descriptions of experience through first person accounts in both informal and formal conversations and interviews.

e. Phenomenology regards the data of experiences as imperative in understanding human behaviour and as evidence for scientific investigations.

f. Phenomenology formulates questions and problems that reflect the interest, involvement, and personal commitment of the researcher.

g. Phenomenology has as research product the description of the essence of the human experience from the subject’s life world.

The abovementioned paradigm illustration of Moustakas (1994:21) confirms that the qualitative research design is considered appropriate for this study since it allows the researcher to gain insight into the perceptions of security managers and other top management responsible for security in the Rosslyn industry. The researcher will enter the subjects’ ‘real life world’ in order to understand the phenomenon in its naturally occurring state (Fouche, 2005:267-273). The study attempts to understand the meanings and intentions that underlie the everyday actions of the subject.

1.1.3 The quantitative approach

The structured approach of this research is reflected in a risk analysis questionnaire pertaining to the Rosslyn industry. It is based on gathering statistical data to enable a better understanding of the trends and patterns of criminals, crime and crime prevention measures in the Rosslyn environment.

The underlying support to fully understanding the phenomenon of crime in the Rosslyn industry is through the collaboration of human experience (phenomenology) and the historic truth/facts describing human actions, plans and choices (quantitative) relating to the human experience. However, the quantitative methods used in this research are not to explain human experiences within phenomenology, instead these are used to expand on the epistemology pool, within a shared/related ontology from where human experiences are also grouped, extrapolated, supported and enriched with empirical confirmation from this parallel epistemology source.
1.13.4 The reasons for the mixed approach.

a. According to Creswell and Clark (2011:61) it is important for the researcher to design his own mixed methods studies using at least one good reason taken from the list of reasons for a mixed method. The researcher identified the following four reasons applicable to this research:

i. Triangulation or greater validity of findings: Collaborating the information received from the people responsible for security.

ii. Offset: Identifying the weaknesses and the strengths of the respondents and/or data and to focus on the strengths of both methods.

iii. Completeness: Ensuring a comprehensive account of the research topic. ‘More meat on the bones’, a complete understanding of the topic is necessary.

iv. Different research questions and explanations.

b. The quantitative approach is more direct and requires nominal responses, which are applicable in this research, because the sample size is vast and time is of the essence. The qualitative approach is different in that it discloses details and the experiences which will shed more light on the correct interpretation. This mixed design provides a solid basis from which to immediately probe the quantitative data received for explanations, until saturation has been reached, which will enhance the validity and credibility of the instrument and the research findings. According to Creswell and Clark (2011:61), with this approach you can obtain different but complementary data on the same topic.

1.13.5 The level of interaction between the two mixed methods and the timing of the mixed strands.

The two methods have equal priority. They both play an equally important role in addressing the research problem. The mixing (drawing of conclusions or inferences) will take place during the interpretation, as the final step of the research process,
after the researcher has collected and analysed both sets of data (Creswell and Clark, 2011: 66-67).

1.13.6 The Mixed Design

This mixed research will be based on the convergent parallel design as graphically displayed in Figure 1.3.

![Figure 1.3: The Convergent Parallel Design](image)

According to Creswell and Clark (2011:70-71) the convergent parallel design occurs when the researcher uses concurrent timing to implement the independent qualitative and quantitative strands, during the same phase of the research process. This is done to prioritise the methods equally and to keep the strands independent during analysis and then mixing the results during the overall interpretation. This design is beneficial when limited time is available to the researcher. And it is especially suitable for team research (Creswell and Clark, 2011:77).

This research enables the researcher to double check the sourced data for correctness, and to return to the source for a better explanation or to triangulate where needed. Creswell and Clark (2011:71) also mention the explanatory sequential design, where quantitative data is sourced and analysed firstly as a priority, and secondly with a further qualitative phase for better explanation and clarification purposes. The researcher, for the purpose of this study, has combined the convergent parallel design with the explanatory sequential design (see Figure 1.4),
for if, and when, the quantitative results need to be explained and/or the qualitative results are incomplete or unclear.

Figure 1.4: Combination of the Convergent Parallel Design and Explanatory Sequential Design

1.13.7 Multi-Inter-Trans-disciplinary research

This research covers different environments within a diverse society, including industrial specific requirements or dynamics, social and ecological problems. All of these must be approached from different angles to compare unique realities. And being a new solution each is necessary to support and to feed the derived crime prevention intervention model for Rosslyn.

“This clearly necessitates solutions informed by multiple backgrounds that singular disciplines seem unable to provide, and possibly, are even incapable of providing. A Multi- Inter- and Trans-disciplinary (MIT) research project speaks to the recognition of this necessity” (Stock and Burton, 2011:1090).
This research involves people from Human Resources, Production, Logistical Management, Occupational Health, Risk Control, Law Enforcement, Commercial and Retail dealers, etc. The MIT approach is designed to bring together not only people but also the ideas derived from “different disciplines to jointly frame a problem, agree on a methodological approach, and to analyze data” (Hammer and Söderqvist, 2001:1-5). According to Stock and Burton (2011:1096) ‘inter-disciplinary research’ is a term often used when conducting studies using a multidisciplinary approach. It requires a more collaborative approach to problem formulation and methodological development than a multidisciplinary research.

Subsequently this research clearly leans towards the Multi-Inter-Trans-Disciplinary (MIT) approach as it spans the socio economical disciplines, the security environment, the psychological domain and other interactive ecologies. It shares information from interdisciplinary domains such as security, criminology, business and sociological deductions and methods which are integrated to understand the multi-disciplinary problems which face Rosslyn Industry. According to Wickson, Carew and Russel (2006:38) issues concerning the linked nature of human and biophysical systems are important when addressing the complex problems that involve an interface of human and natural systems. The importance of being able to cross disciplinary boundaries to focus on integrated complex problem-solving is the basic principle across all MIT approaches (Stock and Burton, 2011:1094). This research, however, has criminology and crime prevention as dominating disciplines which will control the integration of knowledge. Thus from a MIT approach it is classified as a ‘unidirectional interdisciplinary project’ (Jakobsen, Hel and McLaughlin, 2004:15-31).

However, the researcher found criminology to be inherently a MIT derived science, because it originated, and is continuously evolving from ‘broad reality’ ontology. Based on this it is understandable that criminology requires, and even depends on a comprehensive MIT approach for sourcing relevant information to make valid criminological deductions about the nature of reality - reality being multiple - as seen through many views (Creswell, 2013:21). This explains the need for a comprehensive risk analysis in Rosslyn.
Nearly 50 years ago Jeffery (1977:45-46) demonstrated, through his CPTED (Crime Prevention through Environmental Design) approach, that criminology is in fact an interdisciplinary approach. The CPTED approach is extensively used in this research (Chapter 3). And the manner in which it is presented could evolve into a full Trans-Disciplinary Crime Prevention approach.

The multidisciplinary approach in this research is conceptualised in three fields, namely:

- a needs and risk analysis of the Rosslyn industry;
- the field of applied criminology and crime prevention theories where required expert opinions on the issues at hand are provided; and the
- C-TPAT criteria for supply chain security.

There is, however, a limitation to integration in disciplinary domains as explained by Mobjörk (2010:866-873), “The interdisciplinary and trans-disciplinary principle only implies the level of integration and co-operation to further create new knowledge otherwise not possible.” The MIT approach is incorporated in Chapter’s 3 to 5 that covers Crime Prevention through Environmental Design (CPTED) and especially the CPTED SUITE filter system. The inherent ‘power’ of CPTED lies in both its ability and its design to be a natural MIT channel and an MIT approach. This is discussed in detail under application in Chapter 5.

1.14 RESEARCH METHODOLOGY

1.14.1 Sampling

The reader is sensitised that in referring to Rosslyn it contextualise the geographic area, the industrial make up, the socio ecology within, the town and the business area. This research and sampling are embedded in Rosslyn and everything has to do with and within the Rosslyn area.

All the respondents work in the Rosslyn Industry. They are either owners and/or managers specifically responsible for safety, risk and security, and/or top...
management who are administratively responsible for the security function. A close as possible to 100% participation of all possible respondents was earmarked for this research in Rosslyn. At the start of the research Rosslyn was estimated to contain approximately 150 Small and Medium (S&M) businesses and about 25 Big Businesses (BB).

The selected participants were sourced based on their insight and knowledge of the security programmes and requirements, and their understanding of the businesses needs within their organisations. This entailed from CEO’s, CFO’s, CSO’s and other formally appointed officials. If necessary the research team could also contact referrals as original respondents within the same environments until saturation of information had been reached.

In order to trace additional participants as sources, or as a second level validation for the information received, the research team used snowball sampling. Snowballing is a method of expanding the sample by asking one informant or participant to recommend others as well. Groenewald (2004:5) calls those through whom entry is gained, gatekeepers (a person of authority to authorise access) and those persons who volunteer assistance, key actors or key insiders. This approach was frequently used in close neighbouring businesses or office parks where grounds and/or buildings were shared.

The modus operandi was straightforward; a unit of analysis was tapped for data until the topic was saturated, or until the interviewees (subjects or informants) introduced no new perspectives on the topic (Groenewald, 2004:11).

It must be noted that no respondent in person is ever divulged in person or in position or in association. All quotes must be seen in the context of a phenomenological psychological construct.

1.14.2 Unit of analysis

A unit of analysis is defined as the person or an object from which the social researcher collects data (Fouche, 2002:107). The unit of analysis in this research was comprised of knowledgeable officials (directly and indirectly) who understood the
current needs of business, the services issues and who were also responsible for establishing, developing, implementing and maintaining security as per internal standards and/or C-TPAT standards in the Rosslyn industry. It was relatively easy to find such a person from the (S&M) Small and Medium business communities. In BB (Big Business) it was more complicated than anticipated as different people were knowledgeable in different aspects, which at times implied that up to four people were interviewed from the same business. They could not be interviewed simultaneously as their knowledge and insight differed, so additional appointments had to be made thus extending the time frame.

1.15 DATA GATHERING PROCEDURES

In the Rosslyn area Business forums are held at regular intervals where Rosslyn businesses, and people residing in Rosslyn, meet at regular intervals to discuss diverse matters. However, during 2009 to 2014 it became the norm to lodge formal complaints with the business chamber and the municipality representatives about the crime situation and the lack of services in Rosslyn. This crime threat and/or the fear of crime and its impact thereof on business sustainability have never been assessed.

According to Prinsloo (2006:1) it is a common phenomenon that crime has a different impact that on the life of each member of society. And more often than not the public levels of fear are unrealistic as the chances of falling victim to a crime are not proportionate to that of the public fear of crime. It is this unknown factor – the unknown need and expectancy that must be uncovered before a crime prevention model and the necessary actions can be implemented. If these comply with the expectations and the element of fear can be eliminated then the sustainability of the industry will be ensured.

Three full time contracted field workers were employed and trained by the researcher to assist under the direct supervision of the researcher. They primarily covered the S&M (small to medium) enterprises over a period of four months, administering the Criminological Risk Analysis (questionnaire and scheduled interview) comprising of qualitative and quantitative observations (Addendum B). These were then inspected by the researcher and signed off, once satisfactorily completed according to the
required standard. This data was then captured on statistical computer software as per bracketed theme or heading. After capturing all the data collected from the small to medium enterprises, these businesses were plotted on a geographical map per corresponding CRA instrument number. The researcher first analysed the small medium data before he personally engaged with all the Big Businesses. He took three months to complete the research with Big Business.

1.15.1 Interviews and interview duration

The BB interviews were conducted by the researcher. In an attempt to target 100% of the population of the Rosslyn industry, the large number of S&M businesses required the assistance of three post graduate students to assist with the interviews. The assistants received hands on coaching and continuous support from the researcher during the interview process especially with the introductions and when respondents proved to be difficult. The interviews were done in either English or Afrikaans. The same structured and semi structured questions were similarly posed to all the respondents. The data collectors only focused on the called for data and refrained from adding their own impressions or interpretations.

The questions were introduced in both a combined semi structured (Qualitative strand) and in a structured (Quantitative strand) method as part of the same data gathering instrument and process. If saturation can be achieved it always leans, from a qualitative point of view, towards being open-ended. According to Fortune and Reid (1999:93), it is acceptable that this mixed approach can influence the scope, sequence and content of both the qualitative and quantitative interviews. However, this is permissible when not dramatically steered out of context.

The respondents who had agreed to participate were all the managers and/or business owners identified as sufficiently knowledgeable about various security duties especially pertaining to the business. Many BB arranged for formal boardroom meetings where top management debated the answers. The semi-structured interview schedule or risk analysis lasted between 45 to 90 minutes. It allowed for sufficient time to obtain the required information. The time spent on the interviews, however, depended on the amount of information provided by the respondents and
also on the personal interest they had in the topic. This did lead to in-depth discussions, which sometimes lasted for many hours even though according to Taylor and Bogdon (Maree, 1995:88) two hours were regarded as being sufficient time in which to do an interview.

1.15.2 Focus group interview

Husserl (1913:86), the father of phenomenological research, states that focus group interviews can also be phenomenological when providing a sort of bracketing of the discussion of topics. A focus group yields some phenomenon for careful inspection as it is removed from the world in which it occurs, and then it is examined. This unmasks, defines and determines the phenomenon’s basic elements and essential structure. Bradbury-Jones, Sambrook and Irvine (2009:1) state that focus groups are harmonious with phenomenological research, and this is actually beneficial because it stimulates discussion and opens up new perspectives. The use of focus groups can actually provide a greater understanding of the phenomenon under study.

Focus groups proved to be a very important confirmation tool in this research. These focus groups were used not only to assess the saturation of information but also as a controlling instrument regarding certain aspects, which did not seem to make sense, or where a lack of information created gaps that made interpretation difficult. The problems encountered were addressed by focussing on the specific topic and the responses received from the respondents that shared the same occupational status, seniority and geographic location. This method is supported by Halcomb, Gholizadeh, DiGiacomo, Phillips, and Davidson (2007:1) who argue that the focus group method is a technique of group interviewing that generates data through the opinions expressed by the participants.

According to Groenewald (2004:5), there are a variety of methods that can be used in a phenomenological research that includes interviews and focus group meetings; “The operative word in phenomenological research is ‘described’”. In this research, focus groups were also used to describe the phenomenon as accurately as possible, and also to explain their understanding of the psychological phenomena from the perspectives of the respondents involved. For Small and Medium businesses focus
groups made up between 2 and 4 respondents, formally and informally, when more clarity was needed. Big Business focus groups varied from large groups of professionals, some specific area bound respondents and even management boards. The BB focus groups were represented by the security specialists of specific big businesses. As part of the initial pilot phase, between 2010 and 2013, the researcher held regularly meetings with these focus groups. The security role players residing in Rosslyn industry and the respondents appointed by service providers to Rosslyn industry also formed part of these focus groups. These focus groups are also very important, from the CPTED SUITE application perspective (Chapter 7), as they will be the future community representatives or forum/committee that will have to implement the Rosslyn criminological CPIM for this project to be successful.

The fieldworkers and researcher gathered an enormous amount of data and experience while physically walking the streets of Rosslyn for more than three months, meeting with the respondents and experiencing the environment first hand. At the end of the field project even the field workers were interviewed as a focus group. The input they gave from what they had experienced in the environment and from what they had learnt from the respondents made the interpretation of the data that had been gathered even more reliable and therefore valid.

1.16 THE PILOT STUDY

The purpose of the pilot study was to ascertain whether the required data and information could be obtained from the respondents. This was relatively easy to ascertain and the results were positive. This was also done to determine whether the methodology, sampling instruments and analysis were adequate and appropriate (Bless and Higson-Smith, 2000:5). According to Holliday (2002:5), the pilot study would not only shed light on this, it would also serve as an early warning for problems that needed to be pro-actively solved.

The researcher, from experience, was concerned that qualitative research being more flexible and open-ended could have a severe impact on the time frame and on the costs involved, especially if a large universum such as Rosslyn was targeted for
100% coverage. The pilot study soon exposed many other challenges for the scope of this research, which required immediate action:

1. The vast variety of different levels of businesses and respondents.
2. The Rosslyn area’s geographic outlay.
3. The unreliable Rosslyn community data base.
4. The introduction and permissions required to enter and get to the right respondent.
5. The availability of the respondents.
6. The marketing of the research concept and its benefits to the respondents.
7. The time required to reach 100% of all potential respondents.
8. The cost of doing the research.

All these factors proved that special measures were required to complete the research successfully. It has also become clear that the researcher, in person, required far more time and resources than at first anticipated. The time, required for the mixed analysis of the data sourced, alone ran into hundreds of hours more than anticipated and the research could not afford to continue for more than a year as the interest and the patience of the respondents would be lost. It was during the pilot phase that the researcher finally realised he could not do it on his own and subsequently sourced the support of three post graduate police science students from the Tshwane University of Technology to assist with the many S&M businesses.

1.17 THE LITERATURE REVIEW

According to Mouton (2001:87) a literature review is conducted to find out what research has already been done, and where the current research is located. The researcher uses this information as a reference guide. The literature review is important when establishing credibility as it demonstrates that the researcher not only
has insight and understanding of the topic being investigated, but is also familiar with the current most up to date information on the topic.

A Literature review can, according to Leedy (1997:71), also provide new ideas. It can also show gaps that still need to be researched (Marshall and Rossman, 2011:29). It is essential to learn from, and to build on previous research findings, while at the same time provide a safeguard against duplicating previous research (Mouton 2001:87; Newman 1997:89). It is with the additional knowledge derived through the literature review that this research will unpack the key concepts and theories from a criminological and supply chain security point of view, and discuss the conceptual framework of the required crime prevention intervention model (CPIM) for the Rosslyn industry (Badenhorst, 2007:43).

The researcher has a specific interest in applied criminological research. Thus the target of his literature review was publications relevant to this research that could contribute towards establishing a crime prevention model for the Rosslyn industry. After many years of researching and making use of CPTED derived applications, the researcher decided to investigate specific CPTED applications in the most recent available literature that would support the design of this crime prevention intervention model and contribute towards a criminological crime analysis instrument on which to base the data sourcing of the planned research.

A comprehensive literature study was also undertaken on issues pertaining to C-TPAT (Customs Trade Partners against Terrorism), SCS (Supply Chain Security) standards and Criminological Crime prevention theories. However, secondary literature on the topic of crime prevention for an industrial area and the related C-TPAT/AOG supply chain security was scarce, and that which was available had invariably been duplicated.

No specific existing formal research delivered evidence of a crime prevention model for an industrial area, and neither has any general information been found on supply chain and/or on criminology’s influence regarding such a model. This is one of the main reasons why the phenomenological method is the method of choice for this research. Data had to be sourced from the people, working in every level in the
workplace, concerning their experiences of the day- to-day running of security within the Rosslyn industry environment.

1.18 MIXED APPROACH DATA ANALYSIS

1.18.1 General analysis

According to early pragmatists the scientific notion that social science enquiry was able to access the truth about the real world solely by virtue of a single scientific method, is wrong and must be rejected (Mertens, 2010:35-38). These pragmatic viewpoints demonstrate the importance of common sense, practical thinking, workability and custom made methods to deliver the truth of research on a phenomenon. This entails any kind of joint action, mixed and multiple methods to achieve its purpose. Only factual results count: Is it true and is it valid? And does it work? This is believed to be the only goal of a methodological process - a common goal of advancing understanding. (Mertens, 2010:35-38).

Newman (1997:101) further supports this viewpoint by arguing that skepticism is an important norm of science and the researcher is not obliged to accept anything at face value. This concept was kept in mind during the selection and the subsequent interpretation of the data. Data from all the sources, as stated in the sample delineation, was analysed to distinguish what is relevant. According to Denzin and Lincoln, (1994:33) the researcher must act as an interpreter of the collected data for the phenomenon researched to be understood. “The multiple methods and measures provide a broader perspective and deeper understanding of different levels of the ecological systems and the interactions among different levels than could be achieved by a single-method base” (Mertens, 2010:295).

1.18.2 The empirical phenomenological data analysis method

The preferred qualitative process is the empirical phenomenological method. In this research it is used for qualitative research and according to Van Vuuren and Ladikos (1985:2-18), it follows the following five steps: (see Figure 1.5).
a. Reduced transcriptions of each interview;

b. Summarising the main points of the interview;

c. Illustrating condensation of the interviewee’s experience;

d. Describing the psychological structure of the case, and correlating the ‘essential’ psychological structure of all the interviews.

In using this method, the researcher can analyse the collected data, based on the experiences of security experts on their premises, and reproduce it in this research. The researcher synthesized the five step data analysis method *vide* Figure 1.5.
**Figure 1.5: Empirical phenomenology and methods**

### 1.18.2.1 The methodology implementation

This data analysis method is supported by eight steps (see Figure 1.5) that enable the second constructor to make valid interpretations of information received from the first constructor (Ladikos, 2006:161-163).

1) The first step requires the formulation of appropriate questions to put to the subjects to prompt them to sharing their specific experiences.

2) Step two commences where appointments are made with the subjects and interviews are conducted. Dictation and recordings must be used where applicable.

3) Step three entails the transcription of the recordings and dictated interviews.

4) During step four, transcriptions are read and notes are made of general themes. The researcher analyses the data collected from subjects about their environment and their real life experiences and gives input where applicable. These are then included in the notes.

5) Step five involves the re-reading of the transcriptions. Central themes and/or categories are identified and suitable headings are noted - this process is also known as open coding.

6) In step six, the relevant themes, once identified, are grouped together, explained and discussed under the central themes with the aid of the empirical-phenomenological method.

7) During step seven, the best interviews are identified.

8) Step eight entails the academic writing of the chapter. During this step the transcriptions and recordings of the interviews and the recent literature reviews
are continuously consulted to prevent the context and the original meaning from being misunderstood.

These steps were followed, to ensure suitable data had been collected for an in-depth qualitative analysis of the data. It must be noted that even though reference is made to these steps as if they follow a specific sequence, it rarely happens, for example, in step seven the best interviews are to be identified, yet these are more often than not already identified during the transcription and coding in steps 4 and 5.

In this mixed research the collected quantitative data was first extrapolated, analysed and interpreted or demonstrated in a graphic format. Thereafter the interview schedules, notes, recordings and reports were filtered through the empirical phenomenological method. The mixing (drawing of conclusions or inferences) took place during the interpretation of each specific phenomenon as the final step of the research process (Chapter 6). This was an excellent method and it is doubtful whether anything more can be known and better demonstrated as presented in Chapter 6.

1.18.3 The structured questionnaire and interview schedule

The mixed interview schedule and the questionnaire are in the form of a Criminological Risk Analysis (CRA) as discussed in detail in Chapter 5, which incorporates a needs survey which consists of 148 quantitative questions and 41 qualitative open probes with 22 supportive sub-probes (Addendum B).

The aim was to focus the distribution of the CRA data source instrument amongst the subject matter experts, or the responsible entities, that are deemed to be the closest to the security crime threats identified and the services required. The CRA was physically conducted by a dedicated research team for the small to medium businesses. The researcher personally did the large influential enterprises. The expected response rate aimed at was always as close to 100% as possible.
1.19 VALIDITY AND RELIABILITY OF DATA

According to Lani (2008:03), validity means accurate or error free conclusion(s) deduced from the collected data. In this study the researcher demonstrates that his focus is on a clearly demarcated phenomenon and that a similar observation will be possible if the same variables existed at the same time and in the same place.

Reliability is used to evaluate the stability of observations made by the multiple use of the same instrument (Miles and Huberman, cited in Ladikos and Kruger, 2006:158). In this research this was achieved as a combined effort through the mixed data sourcing approach as combined in the CRA. The fact that the sample size for this research aimed at targeting 100% of all the potential respondents in Rosslyn, is a huge factor in ensuring the validity of the data that was sourced. From a quantitative perspective this approach covered all known potential threats to the internal validity of the survey. And for the qualitative data this strategy checked the accuracy of the findings through the continuous triangulating of data sources, member checking and detailed descriptions, to name but a few (Creswell, 2009:219).

The validity issue for this mixed research strategy is invariably integrated in terms of the same ontology, whereas the same sample selection, same sample size and the same mixed sourcing instrument (CRA) was used for the qualitative and quantitative sourcing. This process timeously identified any contradictory results, bias in data collection, inadequate procedures or the use of conflicting research questions (Creswell, 2009:220). The researcher found that the manner, in which this mixed research was concluded, was in fact an internal criterion validity verifier for both the research strands that had been utilised to ensure its validity, reliability and its transparency.

1.20 ETHICS

Mouton (1996: 10) states that the purpose of ethics is to provide guidelines on what constitutes appropriate moral behaviour in the sphere of science. This research is based on the ethics as discussed by Moustakas (1994:109) to ensure the appropriate ethics were applied when drawing up contracts, obtaining consent, ensuring
confidentiality, agreeing to place, time and commitments and in obtaining, recording and publishing the collected data.

Based on Bailey’s (1996:11) recommendations a specific informative consent agreement was introduced by the research instrument (Addendum B). The consent form provided the participants with the following information:

1. They would be participating in research project.
2. The purpose of the research.
3. The procedures of the research.
4. The risks and benefits of the research.
5. Participation in the project was voluntary.
6. The subject’s or the informants could end their participation in the research project at any given time.
7. The identities of the respondents and any other personal information would be kept strictly confidential.

1.21 AN OVERVIEW OF THE CHAPTERS

This research as a matter of urgency focuses on the transfer of relevant skills to crime prevention practitioners.

It focuses on three main fields;

1. Criminological grounding and crime prevention application.
2. Supply Chain Security criteria and crime prevention.
3. Criminological Risk and Needs Analysis of Rosslyn
CHAPTER 1 introduces the research paradigm and demonstrates the rationale, the methodology and the research design used in this research project to design and implement an applied crime prevention intervention model for the Rosslyn industry.

CHAPTER 2 explores and unpacks criminology as the preferred paradigm.

CHAPTER 3 explores and unpacks CPTED to demonstrate its multi crime prevention applications and its relevance to Rosslyn.

CHAPTER 4 Explores SCS and unpacks it to demonstrate its relation to CPTED and the rationale for its incorporation in the criminological approach.

CHAPTER 5 Extrapolates the applied criminological crime preventative applications/methodologies and approaches derived from the previous chapters to construct an assimilated crime prevention design, namely; the applied ‘Crime Prevention Intervention Model’ (CPIM). A methodology for a risk analysis for the Rosslyn industry is introduced.

CHAPTER 6 is about the identification of these risks and needs and the implementation of a Crime Prevention Intervention Model in Rosslyn Industry through the CRA to disclose the Rosslyn crime preventative problems, needs and status, as well as the general needs of the community.

CHAPTER 7 will demonstrate the CPIM in context and in relation to the CRA results. The developed crime prevention plan for Rosslyn Industry will be demonstrated through its initial implementation phases and the way forward will be clear.
CHAPTER 8 wraps up the research goals and the findings of the research which will be supported by the essential elements recommended where applicable. A synopsis is presented of the value added of this research and recommendations are made for future research studies.
CHAPTER 2
CRIMINOLOGY THEORIES SUPPORTING ENVIRONMENTAL CRIME PREVENTION

2.1 INTRODUCTION

The threat against Rosslyn industry is multi-dimensional. If it implies the physical security and the socio ecology of the victim, how can Criminology provide an applied methodology and/or guidance in the design of a crime prevention intervention model for Rosslyn Industry? This section addresses Field-1 namely; the criminological grounding of this research as indicated in Figure 2.1:

A Criminological assessment and interventions for the Rosslyn industrial environment in Tshwane, South Africa based on Multi-Inter-Trans-disciplinary principles

![Figure 2.1: A graphical display of the research scope in context](image-url)
2.1 INTRODUCTION

According to Cozens (2007a:187), crime and fear of crime can seriously undermine the broader aims of industrial sustainability when perceptions, be it true or not, of insecurity are instilled in the minds of residents concerning the local environment. In the case of Rosslyn, factual knowledge about the phenomena of crime is just as much an unknown factor as the reasons for crime, the levels of the fear of crime and the perceptions of crime. Prinsloo (2006:17) describes it best by stating that from a subjective point of view, “probability or the likelihood of falling victim to crime is not an objective factor but rather a reflection of a person’s state of mind which is influenced by ‘empirical’ events and ‘knowledge of reality’”.

Notwithstanding the current ‘unknown’ state of affairs, the requirements and demands for an effective crime prevention capacity in the Rosslyn industrial environment is a reality and is demanded by businesses for many reasons. The general public unawareness of the crime profile, threat, status of security, vulnerabilities and risks posed to/in Rosslyn creates an even higher level of uncertainty and unpreparedness. This is an issue that will be researched and analysed via a comprehensive Criminological Risk Analysis (CRA) discussed in Chapter 6.

Despite the uncertainties and the perceived high crime risk in Rosslyn Industry, the Automotive Industry Development Centre (AIDC) already has a future plan in place (in conjunction with government) that could uplift the Rosslyn industrial area to the status of an international ‘Motor City’. However, AIDC realised that this goal can only be achieved within a sustainable environment perceived to be a safe investment for business because crime and service delivery are under control.

The goal of this research is: To design an applied Crime-Prevention-Intervention-Model (CPIM), grounded in applicable sciences (Criminology), which also encapsulates SCS requirements and understands the needs of Rosslyn Industry. Such a model is required to design crime out and achieve the intended goal of sustainability in the Rosslyn Industry. In keeping with its pro-active philosophy, this research focuses on crime prevention theories in general and its applied strategies in
particular, with special interest in potential offenders, potential victims, potential crime sites and potential targets. The strategy of this research is to target the following:

1. The reduction/intervention of the opportunity for crime to occur at a particular time and in a particular place, in this instance in Rosslyn.

2. Applied crime prevention applications regarding the total S&M business and BB environment of Rosslyn. According to Stout et al. (2008: 5-6), applied criminology focuses on improving the security service delivery.

This chapter will investigate best practise crime prevention approaches as encountered in applied criminology, which will provide skills and knowledge to implement and to control intervention activities to prevent crimes in the Rosslyn industry. It will ultimately provide justifiable recommendations to the industry on how to approach its crime and its fear of crime within environmental criminology so that crime can eventually be designed out of Rosslyn.

2.2 THE GOAL: DESIGNING A CRIME PREVENTION INTERVENTION MODEL

The applied best practise crime prevention measurements within the environmental criminology theory have to be identified before a crime prevention intervention model (CPIM) for the Rosslyn Industry can be designed and implemented.

This chapter will demonstrate the criminological grounding for this research project by providing evidence, as derived from relevant criminological theories and contemporary schools, of the applied crime prevention methodologies, processes and mind set. The intended goals will provide the answers to the following questions:

1. Which criminological theories, methodologies and approaches to prevent crime can effectively describe the industry sector of Rosslyn?

2. Which criminological approach can provide the foundation on which an applied crime prevention intervention model can be built for the Rosslyn industrial environment?
3. Which applied crime prevention criminological methodologies can be used in the risk analysis for Rosslyn? (see Field-3 of this research)

2.2.1 Applied Criminology: a requirement for Research Field-One

Stout, Yates and Williams (2008:2) argue that three basic questions must be answered before applied criminology can be stated as being effective. If criminology cannot provide answers to these questions it is not easy to see criminology being an applied solution:

1. What is to be done about offenders?

2. What is to be done about crime?

3. What is to be done on behalf of the victims of crime?

Research Field-One aims to innovatively contribute crucial practical recommendations, grounded in science, not only to the criminology crime prevention academic debate, but also to supply security practitioners, or people responsible for security. These recommendations will be available in a user-friendly format, ready for operational application, and will answer the straightforward questions as posed by Stout et al. (2008:2).

In solving a crime problem a simple criminological application will be achieved if there is a better understanding of the necessary critical thinking and transferable skills applicable in the contemporary crime prevention methodologies.

In this regard, to reiterate a previous statement, it must be understood that “Criminology is a reality science, and that in Criminology, knowledge is situated not just, or not even primarily, in the pure academic world, but rather in the applied domain” (Stout et al 2008:3). Applied criminology (Chapter 1), focuses on the improvement of the security service delivery (Stout, et-al., 2008:5-6), in this case within the Rosslyn Industry as the applied domain.
Thus applied criminology strategies for crime prevention, as deducted by the researcher, are the canvas on or from which crime prevention approaches are designed and from where crime prevention solutions are tailor made for specific crime problems. However, applied criminology theories and strategies need to be fully understood, before a crime intervention model for Rosslyn, grounded in criminology, can be pursued. This is the focus of this chapter.

The concept of crime prevention must also be defined and placed within the context of this research before criminology theories, referring to crime prevention, are uncovered.

2.3 CRIME PREVENTION DEFINED

All theories of crime are also theories of crime prevention; they differ only in the scale of change necessary to achieve that end (Pease, 1997:660).

Crime prevention refers to the range of strategies that are implemented by any type of entity to target the various social and environmental factors that increase the risk of crime, disorder and victimisation (Australian Institute of Criminology, 2003; cited in Hastings, 2008:1-14). Many variances and different approaches to crime prevention exists in terms of the focus of the intervention; the types of activities delivered, the theory behind how these activities are designed to bring about the desired results and the mechanisms that are applied. Therefore, various crime prevention models have been developed to categorise the broad range of activities that resides within the definition of crime prevention (Brantingham and Faust, 1976; Crawford, 1998; Sutton, Cherney and White, 2008; Tonry and Farrington, 1995).

For a crime prevention exponent it is very important to understand the different approaches to crime prevention as there are fundamental implications and requirements, which must be considered in determining the proper arrangements necessary to support specific crime prevention interventions (Weatherburn, 2004:1).

It is therefore important that crime prevention as a concept must be clearly distinguished as its meaning within environmental criminology can have mutually
excluding and/or contradictory interpretations if not specified (Cozens, 2011:153-172; Wortley and Mazarolle, 2008:4).

According to the National Crime Prevention Strategy (South Africa, 1996:5) crime prevention involves a more intense long term process than crime control. It focuses on the prevention of crime at an early stage. In terms of tackling crime it seeks to disclose two factors which will be addressed in the risk analysis for Rosslyn:

- Those who create a risk of offending
- Those who create a risk of victimisation

According to Burger (2007:13) a workable definition of crime is contained in the White Paper on Safety and Security (South Africa, 1998:14) which defines crime prevention as:

> All activities which reduce, deter or prevent the occurrence of specific crimes, firstly by altering the environment in which they occur, secondly by changing the conditions which are thought to cause them and thirdly by providing a strong deterrent in the form of an effective Justice System.

Here, Burger touches on the implied methods and processes of criminology that are applied to prevent crime.

Roelofse (2007:100-103) stated that any diverse crime prevention model will not succeed unless there is support from all the components of the system.

Based on these definitions this research has interpreted crime prevention as follows:

1. Any action to design the reduction of crime.
2. The pro-active initiative of crime prevention.
3. The problem orientated strategy of determining the scope and the nature of a crime problem.
4. The capacity to formulate an appropriate response.
5. Intervening in the causes of crime.


7. Necessary for sustainability development.

8. It is a ‘joint’ action; it is not carried out in isolation.

These aspects, derived from the domain of ‘crime prevention’, also fall within the domain of environmental criminology.

**2.4 ENVIRONMENTAL CRIMINOLOGY**

This chapter explores applied best practise crime prevention measurements within the environmental criminology theory. These measurements will contribute to the design of a criminological crime prevention intervention model (CPIM) for combating crime in the Rosslyn industry. The intended outcome of this model is to ensure the sustainability of the environment while advancing the applicable criminological theory. It is therefore important to understand the sequence of development in the theoretical constructs supporting the environmental criminological theory.

Environmental criminology as the chosen paradigm within the criminological ontology poses the following ontological question: What is the form and the nature of applied environmental criminology reality and, therefore, what is there that should be known about it? How things really are and really work? (Nagy and Leavy, 2004:21).

The epistemological question based on the ontology is to answer/describe, the nature of the relationship between the applied criminological crime preventative processes and the would-be knower, and what can be known (Nagy and Leavy, 2004:21). The following epistemological sources of the environmental criminological ontology and their relationships will be demonstrated in this chapter:

a. Situational Criminology.

b. Rational Choice Theory.
c. Routine Activity Theory.
d. Broken Window Theory.
e. Target Selection Theory.
f. Crime Pattern Theory.
g. Strategic Analysis of crime.
h. CPTED (see Chapter 3).

The enquiry paradigm of this criminological based research will come to a conclusion in Chapter 5, where the methodological question or proposal will demonstrate how the enquirers, or would be knower’s go about finding out whatever they believe should be known (Nagy and Leavy, 2004:22).

2.4.1 Historical overview selected

Mapping the distribution and the demography of crime has a relatively extended history. Since the 19th century there has been an ongoing study of dangerous places. The early ideas from the 18th century were known as the ecology of crime and were concerned with both where criminals lived and where criminal activities occurred. The first widely published studies of crime and the crime environment were done by Chicago sociologists Park, Shaw, Burgess and McKay. These researchers found that the lack of community control or social disorganisation generated crime (Atlas, 2008:53).

In the early 20th century ecological crime studies flourished. Urban socialists mapped the locations of offences and received a lot of attention in the 1960s and 1970s with the focus on victimisation. Several researchers began to highlight these dangerous places where criminality is perceived to have thrived. The focus shifted more to the offence rather than to the offender. According Cozens (2009:2), significant research by Jeffery (in 1971); Newman (in 1973); Brantingham and Brantingham (in 1975 to 1981), popularised the idea that urban design could influence criminality. Further
studies focused on the geography of crime and the fear of crime. The academic discipline of environmental criminology gradually evolved in the late 20th century. Hotspots and the spatial distribution of offences and offenders received increasing attention that resulted in the planners finally giving the situation the attention it deserved (Cozens, 2009:2).

According to Cozens (2009:2) environmental criminology is underpinned by three related crime opportunity theories: Rational Choice Theory; Routine Activity Theory and Crime Pattern Theory. These provide an alternative perspective from which to consider the issues of permeability, urban configurations, mixed-use developments and higher densities, to promote dialogue and informed and consequently more appropriate decision making. It is clear that environmental criminology is a dynamic perspective that continuously develops with time and new challenges. According to Cozens, (2009:2) environmental criminology concentrates on the spatial location of crime and the fear of crime and how the individual’s behaviour is influenced by place-based factors.

Important, also from a sequence of events perception, is that the environmental approach encapsulates situational crime prevention techniques and broader urban planning initiatives in its aim to modify the physical environment to reduce the opportunities for crime to occur (Crawford, 1998; Hughes, 2007; Sutton, Cherney and White, 2008).

Based on these aspects this research also endeavours to represent the intellectual foundations of environmental criminology as a major benefactor to crime prevention, and also takes a deeper look at environmental criminology.

2.4.2 The MIT nature of Environmental Criminology

Environmental criminology is defined as “the study of crime, criminality, and victimisation because they relate, firstly, to particular places and secondly, to the way in which individuals and organisations shape their activities by placed-based or spatial factors” (Bottoms and Wiles, 1997: 305). Wortley and Mazarolle (2008:1) argued that “Environmental criminology is a family of theories that share a common
interest in criminal events and the immediate circumstances in which they occur”. Brantingham and Brantingham (1998:32) and Rossmo (1999:111) describe environmental criminology as the descendants and siblings of human ecology, behaviour ecology, ecological psychology, environmental psychology, human geography, behavioural geography and cognitive sciences, which takes the influences of the physical environment wherein the victim and offender move, dwell and work into account when planning for the prevention or controlling of crime.

The focus of environmental criminology goes beyond mere relations between the physical environment and crime. It is linked to offender-based dynamics (perceptions based on costs and benefits associated with the target, the victim and the surroundings, and behaviours shaping the relationship between offender locations and target or victim locations) and resident-based dynamics and human functioning (social, personal and organisational dynamics) (Prinsloo, 2006:16).

Brantingham and Brantingham (1991:2) further define that in environmental criminology, “criminal events must be understood as confluences of offenders, victims or criminal targets, and laws in specific settings at particular times and places.” Garland (2000:215) points out that the most fundamental aspect of environmental criminology is; the disciplines' focus away from theories of social deprivation and lean towards explanations phrased in terms of social controls and its deficits. Schneider and Kitchen (2007:32-33), state that environmental criminology does not focus on the character of the offender, but on the geographical characteristics of the crime event. These authors also argue that while environmental criminology is related to, and influenced by the place based theories, the academic and analytical frame works of environmental criminology are derived largely from Geography, Urban Planning, Mathematics and Human Ecology. Environmental crime prevention theories, also referred to as pattern theories, focus on uncovering patterns of criminal behaviour and events of victimisation.

It is thus evident that environmental criminologists look for patterns in crime and then try to explain them in terms of environmental influencing factors, in particular; time, space and physical properties, and how these factors can influence the decisions.
making process and/or behaviour of the criminal offender. Rules are developed from this information that enable predictions to be made about potential crime problems, that ultimately lead to the development of strategies that might be applied to prevent crime. The aim is to understand crime patterns. Keep in mind; crime is the object of interest and the focus is on the current dynamics of crime: Where did it happen? When did it happen? Who was involved? What did they do? Why did they do it and how did they go about it? The environmental criminology perspective is thus to prevent crime, not to rehabilitate offenders (Wortley and Mazarolle, 2008:1-3).

Brantingham and Brantingham (1998:53) argue that environmental criminology should be more explicitly considered within planning. They state that “most planning proceeds with little knowledge of crime patterns, crime attractors, crime generators, the importance of edges, paths and nodes or the site specific conditions that facilitate or even encourage crime”. Cozens (2009:2) argues that by adopting a more informed and evidence-based understanding of crime and the fear of crime, planning should be able to positively influence the level of crime and the fear of crime.

And according to Schneider and Kitchen (2007:233); “If planning is about making places better for people, then it has to address those elements that makes places problematic for people, and crime and the fear of crime are high up this list”. Cozens (2009:4) cite and supports Brantingham and Brantingham by agreeing that it is inappropriate not to consider the theories and evidence obtained from environmental criminology before applying initiatives to design crime out. He compares it to a doctor who prescribes medicine/treatment before diagnosing or understanding the specific illness of a patient. In so doing it is highly likely that the initiative would fail.

This research is therefore not just about uncovering and providing the appropriate applied activities to mitigate crime in Rosslyn, it is also about educating the applicable security exponents in the theories and the evidence derived from environmental criminology.

In the next section the theoretical make-up of environmental criminology is discussed, with an in-depth look at situational criminology as the first theory.
2.5 SITUATIONAL CRIMINOLOGY

The overarching situational crime prevention theory was essentially developed by Ronald Clarke, a psychologist and criminologist (Schneider and Kitchen, 2007:27).

Environmental criminology provides the broad-scale spatial and temporal crime and victimisation context within which situational crime prevention places its intervention strategies into practice as an end product (Schneider and Kitchen, 2007:33). They also argue that the essential element of situational crime prevention is the notion of opportunity, countered by specific strategies intended to reduce, modify or redirect the roles that temptation plays as a part of opportunity.

Situational Crime Prevention concentrates on the analysis of the ‘circumstances’ giving rise to specific types of crime. It seeks to reduce crime by manipulating settings in which crime takes place, rather than focusing on the detection or sanction of those committing the crime. It does not seek to remove criminal tendency by improving conditions in society, but merely seeks to make criminality less attractive to the offender (Clarke, 1997:3).

Situational Crime Prevention is about moving away from responding to crime and rather focusing on specific ways to modify the physical and social environment. More direct, to remove opportunities for specific crimes (Clark, 1997:4). The basic starting point for employing SCP strategies is to “view the world from the point of view of a potential offender” (Sutton, Cherney and White, 2008:51). Homel (1996:106-107) mentions improving physical activities such as street-scaping, building designs, improved lighting in public spaces, locks, alarms, traffic calming and green belts. Social modification can entail neighbourhood watch, private security, anti-racist/fascist organisations and police liaison.

According to Clarke (1997:6) Situational Crime Prevention consists of the following four components:

1. A theoretical foundation drawing upon routine activities and rational decisions.
2. A standard methodology based on the action research programme (researchers and practitioner work together to analyse, try solutions, evaluate results, repeat cycles...).

3. A set of opportunity-reducing techniques or target hardening, and

4. A body of evaluated practises including studies of displacement.

Cusson (1993:295) is of the opinion that although situational crime prevention includes theories, he regards it as a conceptual toolbox of theories, containing useful ideas such as limited rationality, opportunities, routine activities, choice structuring properties and so forth. Cusson is supported by Felson and Clarke, who are quick to point out that the abovementioned theories are as yet incomplete and thus for all purposes not formal theories, they can be better described as approaches within situational criminology (Felson and Clarke, 1998:4).

Sorreson stated in Atlas (2008:45) that theories of crime, such as environmental and situational criminology, focus specifically on analysing the environmental factors that provide opportunities for crime to occur. For this reason Sorensen further postulates that most theories of crime can also be classified as ‘crime opportunity’ theories. The opportunity theory holds that criminal behaviour most often reflects the offenders’ exploitation of perceived opportunities; and as such; the opportunity theory can generally be understood in terms of the number of targets available for crime (Fattah, 1993:248). Opportunity theory is also defined as; “the interaction of victims and offenders in relation to targets, which are viewed by offenders as ‘opportunities’ when they are ‘attractive because of a high payoff and little risk’” (Jeffery and Zahm, 1993:335).

Within the context of crime and its prevention, the perception that human behaviour can be affected by the immediate physical environment, asserts that specific settings can create opportunities for an illegal act to occur by transforming thought or inclinations into a criminal act. “The theory of crime settings rests on a single principle: that an easy and a tempting opportunity entices people into criminal action” (Felson and Clarke, 1998:1-2). This theoretical tenet is expressed in the ‘opportunity
theories of crime’ that inform situational crime prevention, including Routine Activity Theory, Rational Choice Theory and Crime Pattern Theory.

The ‘informed’ situational crime prevention theory is aimed at eliminating opportunities for crime. It includes opportunity-reducing measures that are:

...directed at highly specific forms of crime that involve the management, design or manipulation of the immediate environment in as systematic and permanent way as possible so as to increase the effort and risks of crime and reduce the rewards as perceived by a wide range of offenders (Clarke, 1992:3-4).

In many instances situational crime prevention must be seen as the ‘scientific arm’ of routine precautions (from locks, alarms, avoiding places, etc.) that have been developed to make them more effective.

In this chapter these related criminology theories, underlying situational crime prevention, will be briefly uncovered with the main focus on Rational Choice Theory, Routine Activity Theory and Crime Pattern Theory. Felson and Clarke (1998:8) generated the following eleven principles of opportunity and crime, which are encompassed in these theories:

1. Opportunities play a role in causing all crime. Not just property crime, but fraud, drug dealing, violent and sexual offences.
2. Crime opportunities are highly specific. For instance a bank robbery is reliant on a different set of opportunities from mugging.
3. Crime opportunities are concentrated in time and space. Crime patterns vary by time and location even within high crime areas, reflecting different levels of opportunity.
4. Crime opportunities depend on everyday movements of activity. Offenders and targets move according to patterns of work, leisure, etc.
5. One crime produces opportunities for another. Burglary can facilitate credit card fraud and buying and selling stolen goods, for instance.

6. Some products offer more tempting crime opportunities. Otherwise known as VIVA, this reflects the value, inertia, visibility and access of crime targets.

7. Social and technological changes produce new crime opportunities. New products go through four stages: innovation, growth, mass marketing and saturation, making them highly desirable crime targets in the middle stages.

8. Crime can be prevented by reducing opportunities. Under four main methods: increasing the perceived efforts; increasing the perceived risks; reducing the anticipated rewards; and removing the excuses of crime.

9. Reducing opportunities do not usually displace crime. Evaluations of SCP initiatives have shown little evidence of the displacement of crime.

10. Focussed opportunity reduction can produce wider declines in crime.

11. SCP initiatives in one location or time can lead to a ‘diffusion of benefits’ to a nearby location or time as offenders overestimate the scope of the initiatives.

Poyner (2006:xv) stated that in the opportunity model the environment plays the opposite role in that; if it is vulnerable it attracts a criminal attack, but if it is well-designed criminal attacks do not occur as the criminal is never tempted. He is of the opinion that if this mechanism is continually reinforced, an area will gain a reputation or the image of being a safe neighbourhood, rarely attracting crime, as it presents few easy targets and little reward. It is thus, not seen as an opportunity worth pursuing. On the other hand a badly designed environment will gradually suffer more crime as the opportunity presents itself more often.

The focus of the next section is the crime prevention theories as Felson and Clarke (1998:4) describe as approaches within situational criminology, namely; Rational Choice Theory, Routine Activity Theory, Broken Window Theory, Target Selection
Theory, Crime Pattern Theory and Strategic Analysis of Crime as well as CPTED discussed in Chapter 4.

2.5.1 Rational Choice Theory

The Rational Choice Theory was designed by Cornish and Clarke in 1985. Then under the leadership of Ron Clarke (Young, 1994:69-124) the Rational Choice Theoretical model was fused with the practical crime prevention initiatives of Situational Crime Prevention, to assist in thinking about situational crime prevention and routine activity. This they did by adopting a utilitarian belief that man is a reasoning actor who; weighs means and ends, costs and benefits, and makes rational choices based on these deductions (Clarke, 1997:9). Needs factors that impact on man’s decisions and choices made by man are; money, status, sex and excitement, whereas, constraints or empowerments are general limitations, while the ability and the availability of relevant information also has an impact. In researching these factors Rational Choice can inform on motives, methods and target choices (Clarke, 1997:10)

Gul (2009:36) states that such offenders deem themselves to be individuals who must maximise their goals for the purposes of self-interest. In this context the Rational Choice Theory explains such ‘individuals’ as being

- Rational actors.
- Calculative.
- Their behaviour is based on rational calculations.
- To them weight cost versus benefit
- Maximising of pleasure.

And controlling such individuals is only possible through:

- Pain and punishment.
- Law enforcement with zero tolerance.
The opportunity factor in the Rational Choice Theory will be shown throughout this chapter as being the main ingredient of Situational Crime Prevention. Fattah (1993:239) supports this notion by stating that the rational choice perspective views crime as a by-product of opportunity, and that the opportunity structure is determined by the criminal's contacts in the physical environment. Environmental research can therefore be interpreted by using both rational choice and opportunity theory, as 'rational' implies the evaluation of opportunity. The concept of opportunity is central to the rational choice perspective (Fattah, 1993:248).

Atlas (2008:45;54) brings in the security term 'risk' and he argues that rational choice as a theory states that criminal behaviour occurs when an offender decides to risk breaking the law after considering:

- Personal factors, such as the need for money, thrills, entertainment, revenge, etc.
- Situational factors such as potential police response, availability of target, lighting, surveillance, access to target, skill and tools to commit the crime.

Before the crime is committed the consequences of the security risk taken are weighed up against the risk of apprehension, prosecution, the seriousness of the expected punishment, and the potential value gained from the crime. According to Atlas (2008:45) the decision to commit crime is influenced by the choice of:

- Location, where the crime occurs.
- The characteristics of the target.
- The means and the techniques available for the completion of the crime.

From the above mentioned factors it is, clear that crimes are most likely to occur when potential criminals come into contact with a suitable target where the chances of being detected are low, or the criminal, if detected, will be able to get away without being identified or apprehended. This deduction is also critical to situational crime prevention, as this crime prevention approach is essentially about influencing the decision making process of the offender, through increasing the perceived risks of
getting caught or through increasing the effort that may be required to commit a crime or to devalue the value of the target in relation to the cost of the effort.

Central to this Rational Choice Theory paradigm is the incorporation of the Routine Activity Theory discussed in the next section. This theory argues that the crime setting is “the central organising feature of crime and its absence and that criminal acts always have ‘a likely offender; a suitable target and the absence of a capable guardian against the offense” (Felson and Boba, 2010:28).

2.5.2 Routine Activity Theory

The Routine Activity Theory asserts that everyone takes routine precautions to prevent crime in the course of their everyday lives by locking doors, installing burglar alarms, and avoiding what are perceived to be dangerous places or people. Similarly, commercial organisations routinely safeguard themselves, their employees, and their clients against crime (Clarke, 1997:3). Cohen and Felson (1979:588;593) argue that “daily life systematically brings together or disperses offender and victim, parent and child, person and property, and so on, so that criminal activity is a natural by-product of legitimate activity.”

Routine Activity Theory focuses on the characteristics of crime rather than the characteristics of the offender. It states that crime is normal and depends on the available opportunities related to the nature of everyday patterns of social interaction. (Cohen and Felson, 1979: 66-74; Felson and Boba, 2010: 28).

Opportunities for crime are increasing, specifically as changes in society disperse peoples’ activities away from households and families, thereby increasing crime rates. In the course of routine, or normal, or patterned recreational activities, or work activities, suitable targets become more discernable to offenders, thus increasing the likelihood of committing offences. In support of this Schneider and Kitchen (2007:29) argue that routine activity theory is directly related to situational crime prevention and is derived largely from geography, demography and human ecology theories. If a target is not protected enough and the value/reward is worth the risk, crime will happen. Crime just needs an opportunity, and a space to happen. Indeed,
Brantingham and Brantingham (1993:10) argue; “all people, including those who commit crime, develop an awareness of space from which crime targets are usually picked”.

Routine Activity Theory, developed by Cohen and Felson in 1979, is furthermore regarded as the forerunner of Rational Choice Theory. (Cohen and Felson, 1997:44, 588,593) They were the first to articulate ‘Routine Activity Theory’, a theory which explains the circumstances required for criminal acts to occur: Three factors need to converge (in a given time and space) for a criminal act to happen:

a. A presence of a potential or a motivated offender, or anyone who for any reason might commit a crime.

b. A motivated offender, and criminal behaviour is purposive in the sense the offender calculates the advantages and disadvantages (gains or loss/risk) of a specific criminal act.

c. Four key variables (VIVA) summarised by Felson and Clarke (1998: 5) which motivate the offender and influence the risk of a property crime occurring:

   V=: Value of the object to the offender is high.

   I=: Inertia, it is easy to carry the object away.

   V=: Visibility of the object and/or offender is not a risk.

   A=: Access to and egress from the object can be obtained without hindrance.

Most criminal acts require the convergence of a motivated offender and a potential victim at a particular time and place. The types of crime that are committed are opportunistic, as offenders take advantage of certain opportunities they believe they can exploit within a human or physical environment. They look for both an available and a suitable target, which may be an object worth stealing, a physical structure that can be vandalised or a person who can be victimised. Places that are particularly vulnerable to crime are those that are insufficiently protected. Thus they make sure there is no authoritative figure to prevent the crime from happening. Crime just needs
an opportunity, and a space to happen. Indeed, Brantingham and Brantingham (1993: 10) argue; “all people, including those who commit crime, develop an awareness of space from which crime targets are usually picked”.

The challenge here is to use the theory in reducing the opportunity for a criminal act to occur, or to defer the offender from committing the crime. The basic assumption is that opportunity for crime increases in a time or place where the time for detection is minimised and this depicts the offender behaviour. According to Felson (1987:120-1) “Routine activities patterns provide choices to individuals, including criminals, and set the stage for subsequent events determining the success of the offenders in carrying out the crime, or of the potential victim in avoiding victimization, however unwittingly.” The Routine Activity Theory patterns must thus be adapted to control the behaviour of the offender by:

1. Designing the physical environment to encourage the reduction of opportunities for crime.
2. Changing the behaviour of potential victims through better vigilance and accountability.

### 2.5.3 Broken Window Theory

Wilson and Kelling (1982:29-38) first introduced the Broken Window theory in 1982. They argued that if a window in a building appeared to be broken to passersby, then the building was sending a message of being neglected and uncared for. This perception became the incentive for increasing the opportunity for vandalism or theft. Gabor (1990:54) supported this assumption by stating that “it seems that the opportunity itself motivated the offence”.

Atlas (2008:65–68) shed light and some applied knowledge on the ‘broken window’ theory by explaining its necessity as follows:

- Management and maintenance: The so called ‘broken-window’ theory states that if deterioration becomes evident then it is natural that vandalism and crime will follow suit. Lightning, neatness, walkways and fences show
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someone cares and is vigilant. Maintenance is thus a criminal deterrent. Correct management of parking and access and egress environments are similarly deterrents of crime.

- Legitimate activity support: If areas are left open it attracts vagrants, loiterers, criminals, vandals, etc. It is thus important to fill open areas with legitimate dwellers. The placement of benches, smoking areas and other amenities should be designed as part of the functional architectural design. Compatibilities must always be considered in asking what will attract or discourage criminals.

However, it should not be taken for granted that law enforcement and society at large would crack down on disorderly behaviour and minor activities that usually go unaddressed and escalate to become serious crime. Decline and lawlessness are mirrored in behaviour such as; urination in public areas, drunkenness, drug use, graffiti, breaking ‘small’ traffic rules and misusing dilapidated buildings.

2.5.4 Target Selection Theory

According to Schneider and Kitchen (2007:34) the defensible space theory and situational crime prevention have been criticised because of their advocacy of target-hardening approaches. Target hardening is primarily an intuitive strategy and is probably the oldest crime prevention technique. It aims to impede access to the target (persons or property) by strengthening defences, whether these consist of toughened walls, doors, windows, or installed electronic alarms or shielding devices. The intent is to make targets more resistant and more time-consuming to overcome, and thus entailing more risk, effort and energy for would-be attackers. This is all about how criminals select their targets and how criminal choices are influenced by the perceived vulnerability of these targeted projects.

Atlas (2008:55) states that studies on professional and occasional criminals have suggested that they choose their targets with a rational decision making process. Criminals continuously observe and make a study of potential targets. According to Atlas (2008:55) a potential offender asks himself the following:
a. How easy will it be to commit the deed?

b. How visible, attractive, or vulnerable do the targets appear?

c. What are the chances of being seen?

d. If seen will the people in the area do something about it?

e. Is there a quick, direct route for leaving the site after the crime has been committed?

Thus the physical features of a site (target) will influence the choices of offenders. The chances of a positive detection can be altered by physically reshaping the space a crime may be planned. A criminal's choice is clearly influenced by the criminal's perception of the target and personal vulnerability thus the more suitable and accessible the target, the more likely the crime will occur (Atlas, 2008:55).

2.5.5 Crime Pattern Theory

Brantingham and Brantingham (1993:269) developed a ‘crime pattern theory’ that accumulates theory and research from many diverse areas, all of which focus on the place of the criminal event in some manner or another. The authors Schneider and Kitchen (2007:29) support this by arguing that crimes are not purely random events but follow patterns that are largely predictable on the basis of the daily, mundane activities of both the offenders and the victims.

The theory of Brantingham and Brantingham's (1993:269) addresses the question of why offenders select some targets and avoids others. They argue that the target selection of offenders “depends on mental templates used to shape searches for targets or victims and to predefine the characteristics of a suitable target or suitable place for finding targets”. For example, individual offenders create templates which are used to identify ‘good’ or ‘bad’ targets. These templates are used by both; the potential offenders and all the people in society, for legitimate purposes such as choosing where to eat, live and shop because “daily functioning within the infinitely complex cue-emitting environment involves the development of cognitive images and
cognitive maps and the use of these images”. (Brantingham and Brantingham, 1993:287)

Atlas (2008:55) adds to this by stating that once the patterns of opportunities are created, patterns of crime will soon follow. But they are not random and neither are they uniform and these are the focus of a crime analyst: the opportunities and the patterns within the context of each unique environment.

Brantingham and Brantingham (Wortley and Mazarolle 2008:78-91) shed some more light on the different complex crime patterns that shape criminal activities, in the so called eight rules of the crime pattern theory.

a. Individual crime patterns or repeated activities become regulated and habitual, within which a decision to commit crime will become a template for crime.

b. Networks of individuals: People as a collective group create a social network which in turn can become influenced by crime, which will then emerge as actual patterns of crime.

c. Aggregation of individuals: Individuals from a specific place or group, researched separately, provide interesting patterns when observed as a collective. Average or typical patterns can be determined by combining the patterns of such individuals.

d. Decision rules: Varying levels of motivation/knowledge/experience are triggers to alter future actions (to do or not to do crime) which reinforce crime templates and patterns of offending. Then a pattern of reinforcement or change after a crime is attempted.

e. Spatial and temporal decision rules: Individuals have a range of routine daily activities (at school, at home, shopping centre). The location for a crime pattern is more likely to be near this normal activity awareness space.

f. Target and victim locations: Victimisation follows the mobility or stationary, patterns of the victim when the victim’s activity space and the offender’s activity space intersect. Targets and offenders need to meet in space and time.
g. Urban backcloth: Crime occurs within the context created by the urban form, for example; roads, land use, economic forces, socio economic status of residents and workers. It is not as static, as day and night changes the same place creating high and low periods. All these factors are located at activity points presenting opportunities to willing individuals. The urban backcloth can become a crime generator and/or crime attractor.

h. Hot spots and crime displacement: Hot spots are predicted at specific locations by taking into account the convergence of the eight key elements discussed. Displacement from hotspots is dictated by target attractor or generator factors.

Crime is not randomly committed in time and space. It is clustered. However, the shape of the cluster and its patterns are dynamic and if all eight pattern rules are considered and reduction interventions that produce levels of displacement can be designed (Wortley and Mazarolle, 2008:91). Without crime patterns, as derived from the eight pattern rules, crime mapping and hot spot analysis will be impossible.

2.5.6 Strategic analysis of crime

Cusson is identified by Brantingham and Brantingham (1998:41) as one of the key persons in relation to the strategic analysis approach to crime. Cusson (1993:295) regards it as a way of thinking about crime in strategic terms; crime being a calculating behaviour in the context of conflict. Cusson discerns three elements in a criminal event

- The search.
- The pre-criminal situation.
- Criminal tactics.

The process wherein an offender is looking for a suitable pre-criminal situation is called a search. The pre-criminal situation might be found without much effort, or can be created if no such opportunity exists in the potential target. Criminal tactics employed by the criminal are defined by Cusson (1993:296) as: “the consequence of
choices and actions made by the offender during the criminal event, including his use of available means to reach his ends in the pre-criminal situation”. These three concepts are interrelated and in strategic terms form a predatory crime pattern. According to Cusson (1993:298) the abovementioned concepts, which are used at microscopic levels are also to a certain degree applicable in the study of crime trends.

2.6 CONCLUSION

Environmental criminology is not widely known to planners or to most security practitioners (Cozens, 2009:7). Brantingham and Brantingham (1998:53) claim; “pro-active crime prevention calls for the active movement of environmental criminologists into the development of more directed models for use in urban (and industry) planning and then into a knowledge transfer role.”

The goal of this chapter was to explore and to unpack criminology as an applied instrument, and to demonstrate why it is an applied science. The ‘mindset’ is: crime prevention and applied criminology strategies are the canvas on, or from which, crime prevention approaches are designed and from where crime prevention solutions are tailor-made for specific crime problems.

These applicable criminology theories and strategies need to be fully understood, before a crime intervention model for Rosslyn, contextualised in criminology, can be pursued. Thus the task in this chapter was to investigate best practise crime prevention approaches, as encountered in applied criminology, which would provide security practitioners with the necessary skills and knowledge to implement and to control intervention activities so as to prevent crimes in the Rosslyn industry. The intention was to take the reader through opportunity criminological theories and to show the applications of each within the concept of crime prevention. The epistemological relationships within environmental criminology are:

1. Situational Criminology.

2. Rational Choice Theory.
This chapter has uncovered environmental criminology and seven of the eight identified epistemological relationships. The eighth and final epistemological relationship, namely; the environmental approach of Crime Prevention Through Environmental Design (CPTED) will be unpacked in the next chapter. It will provide the final information required about the role of environmental criminology in crime prevention that is necessary to construct a crime prevention intervention model (CPIM) for Rosslyn.
“The proper design and effective use of the build environment can lead to a reduction in the fear of crime and to an improvement in the quality of life”

– Dr. C. Ray Jeffrey

Criminologist from Florida State University, who introduced CPTED as a discipline in 1971.

### 3.1 INTRODUCTION TO THE CPTED

Wortley and Mazerolle (2011:8) agree that the birth of the modern environmental perspective in criminology can be dated quite precisely to 1971/72 when in the space of a year C Ray Jeffrey’s and Oscar Newman’s texts [on CPTED] were published.

“CPTED is essentially an evolving and ‘living’ body of knowledge ‘both informing its practise on the ground and in turn learning from it’” (Queensland Government, 2007:3). At the heart of this research is the mission to find that specific criminological theory and to apply its methodology in a crime prevention model that would be best practise for the Rosslyn industry and to ensure sustainability within the industry community.

What is evident from the previous criminological theoretical assumptions is that one theory alone will not suffice. A multifunctional and multidisciplinary theory is required, one which encapsulates all the environmental criminology theories demonstrated in Chapter 2, and provides applied criminological approaches for industry related crime prevention requirements. In the researcher’s opinion, CPTED meets these
requirements. The following section will demonstrate the key principles on which CPTED is based; the precise triads which this research is searching for, and on which an applied crime prevention model for the industry can be built.

Throughout this chapter the evolutionary process comprised of the different growth stages or generations of CPTED, as it developed over the past 50 years and still is developing, will be explained. City of Sydney (2004:4) in the introduction to its CPTED Guide for the City of Sydney Council Workers stated that CPTED is a situational crime prevention approach, which can reduce the fear of crime by manipulating the physical build environment.

Maynard (City of Sydney, 2004:4) argued that “criminal behaviour is heightened by isolation, concealment and anonymity and that an unlawful act is likely to be committed where few witnesses are present and where the chance of being identified is minimal.” Laufer and Adler (2013:429), citing Clarke (1995) and Crowe (1991) added that: “While CPTED generally involves changing the environment to reduce the opportunity for crime, it is aimed at other outcomes including reducing the fear of crime, increasing the aesthetic quality of an environment, and increasing the quality of life for law abiding citizens, especially by reducing the propensity of the physical environment to support criminal behaviour.” Laufer and Adler (2013:429), citing Clarke (1995:2) and Taylor and Harrell (1996:1) furthermore stated that: “CPTED focuses on the settings in which crimes occur and on techniques for reducing vulnerability of the settings, because its central premise is that crime can be facilitated or inhibited by features of the physical environment.”

3.1.1 The challenge in defining CPTED

In general there is a limited understanding of CPTED’s holistic applications in the applied environment like the Rosslyn industry. And it is this limited understanding that encourages opportunists to introduce modified versions of the original model and restricting its successful application in the industry. This research will show that CPTED is already the complete package/framework which does not require ‘new’ add-ons or modifications. Instead the continuous applied expansion of the notion of crime prevention as part of its make-up must be encouraged, the add-ins.
CPTED is clearly a preventative approach, and as such, it is conceptually and practically different from the reactive law enforcement models of reducing crime in the criminal justice system that make use of the police, courts and correctional services. Originally CPTED applications only concentrated on changing the physical environment to reduce criminal opportunities; however, it has since evolved and aims to achieve more outcomes such as improving the aesthetic appearance of a neighbourhood or the quality of life of citizens (Clarke 1995 and Crowe, 1991 as cited in Parliament of Victoria. 2013:17).

Initially CPTED was made popular and became well known because of its unique concept which focuses solely on the build, external or physical environment, and its practical tangible crime prevention method. However, it did not take into account the motivations or the psychology of the offender and of the victim. This identified a flaw in the approach that became a key criticism of some academics, including Robinson (1999:3), who argued that:

Most of the theoretical CPTED literature drifts away from the basic premise that crime prevention involves both the psychobiological aspects of human nature and the role of the external physical environment in human behaviour...The idea that CPTED only applies to the external physical environment is limited. To be more effective, CPTED should be applied both to external and internal environments and to the environments of the place and the offender respectively.

Laufer and Adler (2013:456) concur that CPTED should include both the internal environment of the offender and the external environment of the place, which is interdisciplinary in nature. Interestingly it was originally designed as such. The CPTED thought process will be discussed in this chapter.

3.1.2 Adhering to original concepts

Jeffery (1977:45), the originator of the CPTED approach, advocated a model of behaviour in which variable physical environments and the behaviour of individual members of the general public have reciprocal influences on one another. He then
developed a behavioural model aimed at predicting the effects of modifying both the external environment and the psyche environment of individual offenders. Jeffery (1977:45-46) proposed that an interdisciplinary approach was needed in the area of crime prevention that was linked to the realisation that no one discipline (or theory) could do it alone. He subsequently utilised as an interdisciplinary approach based on disciplines encapsulating criminal law, sociology, psychology, administration of justice, criminology and penology. Jeffery went even further and also drew applications from system analysis, decision theory, environmentalism, behaviourism, and crime control models. He encouraged crime prevention strategies aimed at changes to the physical environment and increased citizen involvement and proactive policing. Jeffery contended that the way to prevent crime was to design the ‘total environment’ to reduce opportunities for crime. Jeffery ardently advocated that CPTED is an environmental approach to behaviour.

It must be noted that in his endeavour to develop a CPTED model, aimed at modifying both the external environment and the internal environment of the offender, Jeffery included both the external environment of the physical environment and the internal ’psyche’ environment of the offender. However, most recent crime prevention programmes, based particularly upon notions of social control and social surveillance (defensible space), ignore crucial differences, such as; genetic and brain differences between individual offenders, which Jeffery deems core to the CPTED approach (Jeffery, 1996:5-9).

The basic assumption of the CPTED approach is that the response of the individual organism to the physical environment is a product of the brain. The brain in turn is a product of genetics and the environment. The environment never influences behaviour directly, it only influences through the brain. Any model of crime prevention must include both the brain and the physical environment (Jeffery and Zahm, 1993:330; Jeffery, 1996:4).

There are two critical elements to crime prevention through environmental design: the place where the crime occurs and the person who commits the crime. Thus, Jeffery (1990:418) asserts that we can successfully prevent crime by altering the organism and/or the external environment because the criminal behaviour and the...
environment are intertwined. This, according to Jeffery, defines the scope of the external and internal environment of CPTED.

### 3.1.3 The practical evolution of CPTED

However, the reality is that Jeffery’s CPTED model has unfortunately and/or for practical reasons developed into a more general notion of physical crime prevention as mentioned in Maynard’s introduction (City of Sydney, 2004:4). The theoretical development of Jeffery’s ideas has been ignored by the exponents of crime prevention, partly because his later research focused on the biological aspects of human behaviour and their implications for crime prevention. This must also be put into the general context of Criminology because the criminology field dismissed biological factors in the 90’s as being irrelevant for understanding human behaviour. Biology is also ignored in most Criminology textbooks (Laufer and Adler, 2013:455).

Therefore, Jeffery (1977:45) stated that criminology has developed in total isolation from psychology, biology, urban planning and architecture because criminologists have been blind to the potential beneficial interaction with these fields. Jeffery hoped that this unfortunate notion will emerge as a guiding beacon, or rather a warning light, for academic criminologists and crime prevention policy-makers to steer away from. If not, crime prevention through environmental design programmes (as proposed by Jeffery) will continue to show short-lived results, owing to their narrow focus on external environmental factors only.

Unfortunately this uncertainty of being ‘true- half- or not- CPTED’ has become a bone of contention that still prevails in the industry. Jeffery and Zahm (1993:330,331) are of the opinion that the term ‘crime prevention’ will be a more suitable concept, more accurate, and more descriptive than Crime Prevention Through Environmental Design. Robinson (1996:18-19) agrees with this term as it could change the current perceptions of CPTED that only applies to defensible space and target hardening to include modifying buildings and other external environments to reduce crime risks and threats. Thus CPTED is continuously 'redefined' to suite any given project.
3.1.4 CPTED as a disciplinary approach

The researcher observed that these defensible spaces and situational crime prevention approaches are both rooted in the theoretical traditions of social control, rational choice, opportunity and routine activity theories which became even more celebrated than Jeffery’s CPTED model (Laufer and Adler, 2013:457). But, as this research demonstrated in Chapter 2, these approaches are effectively environmental criminology approaches seeding to and from the CPTED model. As the science of criminology is not a popularity contest it must rather be seen from the perspective that Jeffery’s original CPTED model has shown its capacity to evolve: It can accommodate a more general notion of physical crime prevention. Thus implying a multidisciplinary construct rather than acclaining that ‘new’ approaches are the new crime prevention solution for all.

Disciplines and their ensuing institutionalisation have powerful effects on what can be asked and investigated, and what can be known and be made known. The younger the discipline, the more transparent its definition becomes, and the older it is, the more it is taken for granted. Disciplines reflect a division of labour; subdivisions in science; research and a separation of issues; subjects; material and culture (science and humanities); arts v/s humanities; the social sciences; medical; technical; brain and body, etc. This reflects an interdisciplinary subject field that will challenge predominant knowledge structures by advocating a mixture of alternative methods and research strategies, which will blend and mix sociological and biological approaches and question clear-cut boundaries between social and biology aspects. The applied importance of such a transversal-multi-, inter and trans- disciplinarily approach lies in its openness towards all other disciplines and inter disciplines and the further development of knowledge platforms. “I would like to keep the term “inter-disciplinarity” as part of the toolbox that makes it possible to specify different modes of working transversally across disciplines independent of epistemological stance” (Buikema, Griffin and Lykke, 2011: 140-168).

In view of this, research on crime prevention has a long tradition of posing new questions about old issues and in challenging established norms and presuppositions. The classic questions remain: Who or what is the universalised
object of research? What kind of assumptions about crime prevention are at play in the field? Is the method biased in some way towards establishing a generic CPTED or stereotype biological approach?

This research questions the underlying norms within CPTED to prevent it from falling into a fatalistic disciplinary enhancement trap. It questions whether it is dependent on biology, or dependent on utilising disciplines which will result in providing the applied truth - the truth which underwrites practical variables such as cost, time and need? The answer to this question lies in determining in the role biology could and should play in this discipline, and then in finding the reasons for its absence in the knowledge production in this respective disciplinary approach.

The answers to these questions made it clear that in CPTED the presence of biology has not been acknowledged at all. In fact such an unbending disciplinary enhancement of CPTED is a trap that must be removed by broadening perspectives, incorporating multi-inter-trans disciplinary disciplines and eliminating bias where possible (Buikema, Griffin and Lykke, 2011: 140-168).

The truth is CPTED has over time evolved into a fully fledged MIT-disciplinary approach incorporating all the criminological approaches mentioned in Chapter 2, and the recent CPTED derivatives mentioned in this chapter. In fact, true to a MIT trans-border approach; it can research any concept that may uncover and resolve a crime prevention related problem, making it a custom made application for this research.

Professor Paul Ekblom of the Designing Out Crime Research Centre at Central Saint Martin’s College of Art and Design (University of Arts London) argues that there needs to be an in depth developed suite of CPTED definitions, as such an approach would allow the application of CPTED to become richer, more subtle, updated, practical, relevant and theoretically sharp (Ekblom 2011:7). Ekblom requests this to include the core components such as natural surveillance, target hardening and the multi-disciplinary sources such as planning, design, risk management and criminology (Ekblom 2011:8). The quintessence of this research is to establish a criminological approach which will demonstrate that criminology is a sound applied
Chapter 3: CRIME PREVENTION THROUGH ENVIRONMENTAL DESIGN (CPTED)

discipline with the capacity to advance the multidisciplinary approach of CPTED, which can operate in a Multi - Inter -Trans disciplinary way to mitigate any crime prevention requirement in any environment, in this instance the Rosslyn industry.

Bachman and Schutt (2014:31) support this approach in their argument that “social scientists, such as criminologists, who connect their work to theories in their discipline, can generate better ideas of what to look for in a study and develop conclusions with more implications for other research.” They further stated that building and evaluating a theory, such as in this environmental criminological research and more specific CPTED is one of the most important objectives of a social science, like Criminology, because these theories/theoretical constructs describe what is important to look at, to understand, explain, predict, and to do something about crime (Bachman and Schutt, 2014:31). “Furthermore, as we shall see, just as theory guides research, research findings also influence the development of theory” (Bachman and Schutt, 2014:33). Thus CPTED as a multidisciplinary construct with applied Multi-, Inter- and Trans- disciplinary applications or designs that focuses on the internal and external environment, can successfully be used in the process of designing crime out on all levels.

This portrays an extensive and comprehensive scope for any crime prevention mandate, namely to apply a multi-, inter- and trans- disciplinary approach to pro-actively mitigate criminal occurrences, be it physical, psychological, social, or biological, etc. However, before being able to design such a crime prevention plan for the Rosslyn environment, the most relevant definitions and applications of CPTED will be defined in this chapter. It will introduce and demonstrate all of its most prevalent guises and/or approaches and applied relevancies from which to construct a Crime Prevention Intervention Model (CPIM) for Rosslyn and to influence the development of the CPTED theory. These guises, approaches, applications and all of the most prevalent sub-sections will be analysed and discussed. A standard template (Table 3.1) a ‘SUITE’ for CPTED, allowing for direct comparison, will be used throughout to summarise core CPTED approaches both individually and collectively, through which CPTED can be approached and from where CPTED can steer the ‘correct/proper’ applied action to mitigate crime.
### Table 3.1: Standard CPTED application template

<table>
<thead>
<tr>
<th>PRINCIPLE</th>
<th>What is this specific CPTED approach about?</th>
</tr>
</thead>
<tbody>
<tr>
<td>DESCRIPTION</td>
<td>What does it do or say, what describe it?</td>
</tr>
<tr>
<td>APPLICATION</td>
<td>Application tools of this approach, actions?</td>
</tr>
<tr>
<td>OUTCOME</td>
<td>What can/must be achieved with this approach?</td>
</tr>
<tr>
<td>LIMITATIONS</td>
<td>What about this approach is arguable/debatable/contestable?</td>
</tr>
</tbody>
</table>

#### 3.2 A HISTORICAL OVERVIEW OF CPTED

##### 3.2.1 The model of C. R. Jeffery

Jeffery (1977:45) advocated a model of behaviour in which variable physical environments and the behaviour of individual members of the general public have reciprocal influences on one another. After which Jeffery (1977:45) developed a behavioural model aimed at predicting the effects of modifying both the external environment and the psyche environment of individual offenders. Jeffery (1977:45-46) proposed that an interdisciplinary approach was needed in the area of crime prevention that was linked to the realisation that no one discipline (or theory) could do it alone. He thus developed an interdisciplinary approach, based on disciplines encapsulating criminal law, sociology, psychology, administration of justice, criminology and penology. Jeffery went even further and also drew applications from system analysis, decision theory, environmentalism, behaviourism, and crime control models. He encouraged crime prevention strategies aimed at changes to the physical environment. He also increased citizen involvement and pro-active policing. He contended that the way to prevent crime was to design the ‘total environment’ in order to reduce opportunities for crime - clearly advocating that CPTED is an environmental approach to behaviour.

It must be noted that in his endeavour to develop a CPTED model aimed at modifying both the external environment and the internal environment of the offender, Jeffery included both the external environment of the physical environment and the
internal ‘psyche’ environment of the offender. However, most recent crime prevention
programmes, based particularly upon notions of social control and social surveillance
(defensible space), ignore crucial differences such as genetic and brain differences
between individual offenders, which he deemed core to the CPTED approach
(Jeffery, 1996:5; 9). In the CPTED approach the assumption is that the environment
never influences behaviour directly, only the brain or the mindset influences
behaviour. Any model of crime prevention must therefore include both the brain
(mindset) and the physical environment (Jeffery and Zahm, 1993:330; Jeffery,
1996:4). There are thus two critical elements to crime prevention through
environmental design: the place where the crime occurs and the person who
commits the crime. Jeffery (1990:418) asserts that crime can successfully be
prevented if the organism and/or the external environment can be altered because
criminal behaviour and the environment are intertwined. This, according to Jeffery,
defines the scope of the external and internal environment of CPTED.

Unfortunately the theoretical development of Jeffery’s ideas has generally been
ignored by the exponents of crime prevention, partly because in his later research he
focused on the biological aspects of human behaviour and their implications for crime
prevention. According Jeffery (1975:11) criminology developed in total isolation from
psychology, biology, urban planning and architecture because criminologists were
blind to the potential beneficial interaction with these fields. Even Laufer and Adler
(2013:455) stated that in the 90’s biology was deemed unimportant for understanding
human behaviour in the criminology field.

It was hoped that this unfortunate notion will emerge as a guiding beacon or rather a
warning light for academic criminologists and crime prevention policy-makers, to
steer away from. Otherwise, crime prevention through environmental design
programmes, will continue to show short-lived results owing to their narrow focus on
only external environmental factors. In view of this Jeffery and Zahm (1993:330,331)
are of the opinion that the term ‘crime prevention’ would be a more suitable concept
and that it is more accurate and descriptive than CPTED. Robinson (1996:18-19)
agrees with this view based on a person’s reluctance to use the term CPTED for
anything other than defensible space, target hardening as well as the modification of buildings and other external environments to reduce crime risks and threats.

This research uncovered many such notions that CPTED was perhaps something else and may even need a name change. It has also become clear in this research that defensible space and situational crime prevention approaches are both rooted in the theoretical traditions of social control and rational choice, however, it became more celebrated than Jeffery’s CPTED model. But, from the perspective of the researcher it does not matter at all. It demonstrates that Jeffery’s original CPTED model is evolving into accommodating a more general notion of physical crime prevention. Thus the CPTED (Criminological) MIT approach does address all such fields where needed.

However, this research has already shown that biology is just one of the factors that are important to the CPTED MIT approach, but in the context of this research not seen as to be applicable within practicality constraints. CPTED is endeavoured, as applied in the crime prevention model designed for Rosslyn, to be valid and as reliable as is expected without devaluing Jeffery’s requirements, whilst in this case omitting biology or the brain from the applied crime prevention perspective. However, this omitting action must be stated as the task is to recognise and promote CPTED for what it initially was designed for namely; a full MIT problem-solving discipline.

Table 3.2: CPTED application as per Jeffery

<table>
<thead>
<tr>
<th>PRINCIPLES</th>
<th>A model for modifying criminal behaviour in any environment</th>
</tr>
</thead>
<tbody>
<tr>
<td>DESCRIPTION</td>
<td>People and the internal and external environment influence each other</td>
</tr>
<tr>
<td>APPLICATION</td>
<td>Understand the person and his environment, understand the influences these have on each other</td>
</tr>
<tr>
<td>OUTCOME</td>
<td>Manipulate and facilitate the known internal and external environmental factors to design out crime</td>
</tr>
<tr>
<td>LIMITATIONS</td>
<td>Model not fully understood and implemented as designed, focus on build design over accentuated</td>
</tr>
</tbody>
</table>

Chapter 3: CRIME PREVENTION THROUGH ENVIRONMENTAL DESIGN (CPTED)
3.2.2 The partial implementation of CPTED, the defensible space approach of Newman

According to Robinson (1996:8) CPTED in government, architecture, academia and corporate businesses is not meaningfully related to Jeffery's model, but rather more to Newman’s and Crowe’s interpretation of Jeffery’s model. The reason being Jeffery’s CPTED model is more imbedded in theory and does not include detailed methods for crime prevention, whereas Newman's and later Crowe’s interpretations do.

Newman’s basic approach was named the ‘Defensible Space’ methodology which tried to identify, isolate and restructure the physical characteristics, which in the midst of social disintegration and fear create a safe living environment (Newman, 1973:1; O’Block, Donnermeyer and Doeren, 1991:300). According to Laufer and Adler (2013:440) citing the LEAA (Law Enforcement Assistance Administration of 1974:12-13), Newman's notion of environmental design is based on “the development of coordinated design standards for architecture, land use, street layout and street lighting which improve security.” The LEAA goes further stating that Newman's goal is basically “to create environments which reduce the opportunities for crime while encouraging people to use public space in ways that contribute to their safety and enhance their sense of community.”

Throughout the 1970 until 1979, Newman's “Crime prevention guidelines for public housing” continued to be well-received and projects based on it continued to be funded by governmental entities (LEAA, 1976:2-8). This strategy was mainly aimed at assigning different types of residents to the types of buildings they would best be able to control. Buildings and corridors were sub-divided to increase surveillance through design while the residents experienced a sense of ownership. Newman's defensible space approach was first implemented at two public housing projects in New York City at Clason Point and Markham Gardens. The design changes in these areas incorporated play areas, improving the appearance of the projects and installing better lighting, introducing fencing to divide areas into semi-private spaces and erecting barriers to channel pedestrian traffic (Murray, 1994:352).
Clarke (1995a:9) stated that Newman advocated reducing the size and the height of blocks in public housing, and reducing the number of dwellings sharing a single entrance, and making public areas visible from dwellings as well as enhancing lighting, the hiring of concierges and porters, and the installation of entry phones, fences and barriers. Clarke recognised that Newman's notion of environmental design was more complex than simply redesigning space. It also included redesigning residential environments so that residents could use the areas to become willing and able to defend their ‘territory’. In this sense there was an indication of the importance of human interaction with space, design and maintenance as implied by Jeffery earlier.

Newman (1973:1) himself stated that the physical mechanisms they have isolated in residential areas, as contributions towards creating a defensible space, in actual fact enable inhabitants to accept responsibility for ensuring their own residential areas are not only safe but also well maintained. Newman further postulated that ideas related to crime prevention are more likely to be well received when they include or revolve around provisions that allow citizens to play a meaningful role. This is partly the same reason why community-oriented policing is so widely practiced in law enforcement today, as it focuses on developing a partnership between the police and the community. In this instance citizens are encouraged to play an active role in problem-solving.

According to Newman (Atlas, 2008:56-58), CPTED has two distinct, main components lodged in defensible space.

a. Defensible space should allow people to see and be seen continuously. Ultimately, this diminishes residents fear because they know that a potential offender can easily be observed, identified, and consequently, apprehended.

b. People must be willing to intervene or report crime when it occurs. By increasing the sense of security in settings where people live and work, encourages people to take control of the areas and assume a role of ownership. When people feel safe in their neighbourhood they are more likely to interact
with one another and intervene when crime occurs. These remain central to most implementations of CPTED.

Newman’s works on defensible space were quickly supported by the USA government mainly because they wanted to involve the citizens, and his works were not only practical and easy to understand they also encouraged citizen participation. This concept of ‘Defensible Space’ changed the nature of the crime prevention and environmental design field. Within two years of its publication even more substantial federal funding in the USA was made available to demonstrate and study defensible space concepts (Robinson, 1996:8). CPTED became a tangible crime prevention tool that was widely accepted as a successful and logical application against crime prevention.

According to Atlas (2008:57-58), Oscar Newman also pioneered the study of CPTED in residential areas and showed how the architecture contributed to making it possible for the residents to use a range of mechanisms to control the environment and prevent the residents from becoming victims of crime. In this instance Newman focused on increasing surveillance, natural barriers, decreasing the perceptions of vulnerability and increasing areas of influence. Atlas (2008:28) also stated that Newman divided these environmental controlled defensible space areas into four specific levels.

a. Public - general area, like public streets.

b. Semi-public - pavements and areas up to private property borders.

c. Semi-private - within property borders up to the front door.

d. Private - inside the house.

The CPTED exponents, Lee Rainwater and Roger Walker (two architects), Oscar Newman and Roger Montgomery as well as members of the St. Louis Police Academy came up with the well published and employed categories or levels of physical mechanisms for achieving defensible space (Saville and Cleveland, 2003:4-
The five elements of CPTED:

a. Surveillance – the immediate area of visual awareness for residents and their guests.

b. Territoriality – the perceived zones or territories of influence through occupation, definition, ownership status are emphasised.

c. Image - the occupants and area were not stigmatised or labelled as perceived to be vulnerable; they promoted a positive image and routinely maintained the build environment to ensure that the physical environment continued to function effectively and transmit positive signals to all users.

d. Milieu, location and environmental land use were conducive to safety, and there were access and escape routes.

e. The researcher added ‘target hardening’ as it was implied.

Cozens (2007a:188) later argued that CPTED in general has built extensively on the four key strategies of territoriality, natural surveillance, activity support and access control in order to maximise the self policing potential of the community. Saville and Cleveland (2003:4-8), however, showed that it is interesting to note that, with each of Newman’s four elements, there are important factors which cannot be mitigated by build design only. The ‘four- elements’ limitations are:

a. Surveillance: The Rationality model by itself is not crime preventative where surveillance is the only obstacle.

b. Territoriality: The physical environment alone has little to do with the full exemption from criminal or anti-social behaviours.

c. Image: There are areas where many windows are broken and where dilapidated conditions exist, and yet few crimes occur.
d. Milieu (Environmental land use): Clearly there are many things that will motivate an offender, and at some level many of these factors are social, not physical.

This partial CPTED approach of Newman, as discussed in this section, eventually is seen and experienced for what it is: a simplistic or limited quick fix, watered down approach to complex problems, not taking into account the transitional state of society, for example; human behaviour and mechanical change management issues, which continuously impact on the previously mentioned four categories of physical mechanisms. The implication is that it becomes outdated or irrelevant very quickly and then a transition is needed (Vold and Bernard, 1986:145; Robinson, 1996:19). However, it became the starting point for most crime prevention initiatives in the USA from which CPTED partially evolved and later became the most well-known environmental crime prevention approach.

The greatest challenge that surfaced from it was that in this era it was not change friendly. In a dynamic human environment, it became evident that on its own it depended on social ecology never changing in time. And the reason for all the problems that were being experienced was because it was but a part of the original design. Ironically, according to Robinson (1996:19), Newman represented his defensible space methodology as a CPTED methodology for which, he even accredited Jeffery as the originator of the term CPTED, while he only stood for a part of what Jeffery actually meant by CPTED.

Later models of CPTED were developed, based on the Newman Model, of which Crowe’s interpretation became even more popular. CPTED (as will be shown later in this research) is later popularly understood to refer strictly to the Newman/Crowe type models, with the Jeffery model being treated more as a multi-disciplinary crime prevention approach to crime prevention, which incorporates biology and psychology (Robinson, 1996:19-30).

This research will show that in recent times the CPTED approach has come full circle and the Jeffery approach, in its entirety, is the more acceptable and the more pragmatic crime preventative methodology of modern times. What has also
transpired is that a programme is not sustainable if it makes use of only a selective part of the CPTED approach.

Despite Newman's (1973:1) own assertions that this concept of defensible space was applicable beyond public housing units to the residential settings of most income groups such as the neighbourhoods, the validity of his concept has been seriously challenged. Murray (1994:352-353) called evidence of crime reduction through defensible space 'ambiguous' and even wrote that 'it did not reduce crime'. In addition, in a test performed by Greenberg and Rohe (1984:45: 58) two models were taken into account: defensible space model versus opportunity theory model, to determine the effects of the physical design of buildings, sites and neighbourhoods on crime. And far more support was generated for the opportunity model of crime than for the defensible space model. They found that the physical characteristics differentiating high- and low-crime neighbourhoods reflected differential levels of opportunity and access. This observation cannot be anticipated and be managed by latent territorial control alone by residents, as is expected in the defensible space model (Jeffery and Zahm, 1993: 333).

Coleman (Clarke 1995a:9) is more direct in his criticism arguing that Newman's notion of environmental design is limited to modifications of the external physical environment in order to produce changes in the external social environment, while completely neglecting the internal physical environment of the organism.

Despite these problems with Newman's argument, many crime prevention projects, as mentioned above, still supported by the USA government, make use of Newman's 'quick fix' concepts of environmental design rather than Jeffery's complete methodology (Jeffery and Zahm, 1993:332).

It is only until recently that the problem of creating a defensible space was simultaneously approached from the physical and psychological concept, which not only refers to changes in the physical environment but also to changes in the social environment (Bannister, 1991:32; Gardner, 1995:1).

Schneider and Kitchen (2007:101) have the last word and they argue that the focus of CPTED is much larger than the public housing projects that gave birth to...
defensible space, “because it extends across all”. However, Schneider and Kitchen (2007:24) confirmed that CPTED still, as it is known and practiced today, is unfortunately a closer adaptation of Newman’s defensible space than of Jeffrey’s original concept, even though it tries to blend elements of both worlds at that time.

Table 3.3: CPTED application as per the Newman era

<table>
<thead>
<tr>
<th>PRINCIPLES</th>
<th>Defence of physical space in order to maximise the self-policing potential of the community.</th>
</tr>
</thead>
<tbody>
<tr>
<td>DESCRIPTION</td>
<td>Identify, isolate and restructure physical build characteristics</td>
</tr>
<tr>
<td>APPLICATION</td>
<td>Design-in or modify build environments for security through:</td>
</tr>
<tr>
<td></td>
<td>1. Natural surveillance</td>
</tr>
<tr>
<td></td>
<td>2. Territoriality</td>
</tr>
<tr>
<td></td>
<td>3. Image</td>
</tr>
<tr>
<td></td>
<td>4. Milieu</td>
</tr>
<tr>
<td>OUTCOME</td>
<td>Safe and secure territory, supported through natural human behaviour and movement</td>
</tr>
<tr>
<td>LIMITATION</td>
<td>Not change friendly, quick fix solution for physical environment alone, social environment excluded</td>
</tr>
</tbody>
</table>

3.2.3 A partial approach with extended target hardening by Tim Crowe

Crowe (Atlas 2008:59) redefined the ideas of Newman when he established a system to categorise CPTED solutions. Crowe organised a multidisciplinary CPTED methodology to also match the functions and needs of the crime area (Atlas 2008:59), See Figure 3.1.
Crowe (1991:3-4) suggests that CPTED involves the design of physical space in the context of the needs of the legitimate users of the space, the normal and expected (or intended crime prevention strategy) use of the space and also the predictable behaviour of both the legitimate users and the offenders. This approach endeavours to make a CPTED strategy practical and realistic within a change environment. But closer inspection still shows that opportunity and socio ecology triggers are still not part of the Crowe model, it is still a defensive fortress approach.

According to Atlas (2008:60), Crowe suggests that there are four basic classifications to CPTED measures:

b. Mechanical: Target hardening for e.g., locks, windows, gates, hardware, technology, CCTV. The focus must be on support of strategy and people, not as stand-alone.
c. Organisational or Human Measures: Teach to defend the self and the group of persons via neighbourhood watches, patrols, capable guardians, etc., people with the ability to observe, report and intervene.

d. Natural Measures: Layered approach to target protection, using natural and or manmade structures.

e. Natural Territorial Reinforcement/Boundary Definition: Establishing a sense of ownership in property owners or building occupants to increase vigilance and positive identification.

Crowe designed the 3-D’s concept (Atlas, 2008:71), known as three primary functions of environmental security space design. This implies the design and the utilisation of environmental human space to make movement predictable. To achieve this Crowe moved CPTED away from the traditional target hardening methodology to a mindset that must also incorporate natural opportunities to enhance mechanical hardening, for e.g. surveillance and access control through natural resources. The so-called 3-Ds are basically guides and/or the right guiding questions to ensure the correct implementation:

a. Designation: What is the purpose or intention of the space? Is it for the use of security personnel, access control, surveillance, etc.?

b. Definition: What is the social, cultural, legal and psychological ways the space is defined for? Is ownership, rules, borders, etc., clear?

c. Design: Is the space defined to support the prescribed or intended behaviour? Is the physical design supporting the intended purposes?

Almost every business makes use of some CPTED strategy, whether it be trimming the hedges near windows and doors to increase visibility, or installing cameras to deter offenders from committing offences. Awareness of such change factors are rooted in common sense understandings about preventing crime (Crowe, 1991:105;
Murray, 1994:349). More such specific and widespread examples of corporate CPTED activity mentioned by Crowe (1991:3-4) are as follows:

a. New store configurations that reportedly have increased sales, as much as 33%, and decreased security problems by 50% when following CPTED principles.

b. The American Society for Industrial Security (ASIS), a world leader in the accreditation of standards in the security profession, features a CPTED session in its security department where CPTED concepts for commercial, convenience and fast food stores were covered at length (Crowe, 1991:3-4).

c. According to Crowe (1991:3-4) CPTED strategies are suggested for numerous commercial establishments, as well as downtown streets and pedestrian areas, office and industrial systems, hallways and restrooms, malls and shopping centres, convenience stores and branch banks.

The researcher found that CPTED strategies are currently being followed all over the world, with or without knowledge of its origin or intend. Much of it can be seen as common sense, however, without a foundation, following the CPTED ‘map’ as designed by Jeffery, Newman and Crowe, proper crime prevention can be a long and arduous journey. This research has pointed out that Jeffery is the originator of the philosophical CPTED thinking that has been utilised by Newman and Crowe who in turn extended the practical and or target hardening application of CPTED. All played an important role in understanding the concept of ‘designing out crime’, as a primary crime preventative aim, and utilising the environment to best effect.

Atlas (2008:57-78) argued that the Newman and Crowe design and utilisation of CPTED is seen as the First-generation exponents of CPTED. This was the era where, in an effort to prevent crime, the focus of CPTED was on hardening the physical space, where human behaviour tried to be controlled.
Table 3.4: CPTED application as per Crowe

<table>
<thead>
<tr>
<th>PRINCIPLES</th>
<th>Hardening of physical space to control and predict the behaviour of the offender and general users, to match their function and needs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>DESCRIPTION</td>
<td>Locks, trim hedges, CCTV, 'logic', capable guardian, layered approach or zoning</td>
</tr>
<tr>
<td>APPLICATION</td>
<td>Four CPTED measures:</td>
</tr>
<tr>
<td></td>
<td>1. Mechanical target hardening</td>
</tr>
<tr>
<td></td>
<td>2. Organisation of human measures</td>
</tr>
<tr>
<td></td>
<td>3. Natural layered measures or zoning</td>
</tr>
<tr>
<td></td>
<td>4. Territorial reinforcement</td>
</tr>
<tr>
<td></td>
<td>Questions as measures:</td>
</tr>
<tr>
<td></td>
<td>1. Designation: Purpose of space?</td>
</tr>
<tr>
<td></td>
<td>2. Definition: Designed in what way for what reason?</td>
</tr>
<tr>
<td></td>
<td>3. Design: Can design support required behaviour?</td>
</tr>
<tr>
<td>OUTCOME</td>
<td>Defensive fortress, integration of layered and zoned physical measures</td>
</tr>
<tr>
<td>LIMITATION</td>
<td>Opportunity and socio ecology triggers not incorporated</td>
</tr>
</tbody>
</table>

3.3 LATER LIMITATIONS AND APPLICATIONS OF FIRST-GENERATION CPTED

According to Atlas (2008:80), ever since Jacobs had outlined the basis for territorial control and 'eyes on the street', very little about the CPTED theory changed in the past 30 years. However, the research has identified added applications and added limitations within First-generation CPTED, not mentioned above, which to be valid, have to be resolved in an in-depth analysis of the CPTED phenomenon.
3.3.1 Later limitations of First-Generation CPTED

At this stage of the research review it was obvious that the government, business and communities using First-generation CPTED activities still neglected half of the model developed by Jeffery, namely; the internal psychological environment of the offender. As a result, the CPTED model mostly used, was based on the assumption that all offenders were the same, rather than being unique. The development of CPTED suggested that CPTED programmes should also take into account how individuals might react differently to environmental design changes, but this did not happen.

As a result CPTED studies in general were not proving to be very effective, some scholars even began to question whether the causes of crime were beyond the control of CPTED (Clarke, 1995a:4). The reason being; CPTED has generally been confined to projects involving buildings and facilities (Clarke, 1992:6). When attempting to implement CPTED in other types of physical environments it proved to be troublesome and the returns, in terms of crime prevention were meagre. Another reason for failing was because some scholars attempted to extend the defensible space concept to inappropriate areas such as schools and commercial sites where ‘territorial’ behaviour is much less natural than in the residential context (Clarke 1995b:97). “In retrospect it seems to have been a mistake to apply defensible space and territorial concepts in environments where a broader conception of CPTED would have been more appropriate” (Murray, 1994:354).

The Santa Clarita Sheriff's Business Alliance publication explains that there are four primary obstacles to the adoption of CPTED:

a. The lack of knowledge of CPTED that environmental designers, land managers, and individual community members have. For this reason, allocating substantial resources to community educational programmes is often required.

b. Resistance to change. Many specifically resist the type of co-operative planning that is required to use CPTED. Beyond that, sceptics reject the research and historic precedents that support the validity of CPTED concepts.
c. The perception that CPTED claims to be a universal remedy for crime that will be used to displace other more traditional approaches rather than a small, but important, complementary tool in deterring offender behaviour.

d. Many existing build areas were not designed with CPTED in mind, and modification would be expensive, politically difficult, or require significant changes in some areas of the existing build environment.

According to Cozens, Saville and Hiller (2005:341-342), in common with all crime prevention strategies there are limitations to this approach despite the evidential support presented for CPTED

- Firstly, ‘irrational’ offenders (e.g., those under the influence of alcohol or drugs) are potentially less likely to be deterred by CPTED strategies, but similarly, they might be less likely to respond predictably to any crime prevention initiatives.

- Secondly, negative socio-economic and demographic dynamics can also reduce the efficiency of CPTED strategies, or enhance the efficiency of CPTED if these dynamics are positive.

- Thirdly, displacement has become a major criticism levelled at CPTED.

- Fourthly, the ecological threshold can lead to abrupt changes in the ecosystem, with no point of return, to accommodate the original CPTED design.

- Finally, when CPTED is applied without sufficient community participation, and it becomes overly reliant on target hardening, it can result in a ‘fortress mentality’, where citizens and neighbourhoods (e.g., gated communities) withdraw behind walls, fences, and fortified homes. This effectively works against concepts designed to support social interaction and promotes activity and ‘eyes on the street’. And also raises the question as to how many studies are potentially limiting their crime reduction effectiveness by not incorporating social interaction.
Schneider and Kitchen (2007:26) add the following critical observations regarding CPTED to these limitations:

a. Because the environment is so vast and variable, generalisations about relationships between crime and place are empirically difficult to support.

b. While it is clear that some CPTED applications work sometimes, in some locations relative to some specific crimes, there are no guarantees - no one fix for all.

c. The CPTED name in itself is misleading inasmuch as environmental design cannot really prevent crime but rather only mitigate or shape its occurrence.

d. The transmission of CPTED has been spotty at best, and planners and urban designers generally have been slow to incorporate CPTED practice into their professional focus on the build environment.

e. CPTED is a useful theoretical construct; however, it is too narrow in its primary focus on the physical place in which crimes do occur. The correct way to concentrate on a crime situation or place should also encapsulate both the physical and other important dimensions, for e.g. the management of places and or the usage of crime opportunity structures in places.

As mentioned already, critique of CPTED is that crime is merely displaced to another place and time. Schneider and Kitchen (2007:34) argue that the aim of target hardening is to decrease opportunity so much that offenders will be deflected from the target. Where offenders go next is another matter entirely. But the question of whether offenders, who are displaced, will involuntarily prey on other targets has been considered. Schneider and Kitchen (2007:34) suggest that offenders are not programmed to switch from one target to the next when disillusioned. The authors argue that some place-based crime prevention strategies may produce a ‘diffusion of benefits’, such that beneficial crime prevention effects even spill over onto adjacent areas. Schneider and Kitchen (2007:34) even go so far as to argue that the term ‘deflection’ should replace displacement since it is less negative and it more
accurately reflects the notion that crime can be changed, and not merely moved around, through prevention.

However, another perspective, according to Guerette (2009:1) and Atlas (2008:69), is that crime displacements are not as damaging as previously thought. They advocate the fact that the following five diverse formats of crime displacement can provide positive outcomes if used correctly:

a. Spatial or Place displacement: A problem is moved from one location to another.

b. Temporal or Time displacement: A problem is moved from one time to another.

c. Target displacement: Chance target at same time and place.

d. Method displacement: New method, from armed robbery to strong-arm robbery.

e. Offence displacement: One form or type (robbery) to another form or type (burglary).

Guerette (2009:1) defines negative displacement as ‘malign’ displacement and where it is beneficial as ‘benign’ displacement. Atlas (2008:70) states that if displacement is controlled, it can even become a CPTED practitioner’s, strongest tool. Displacement disrupts the flow and location of criminal enterprises - offenders are never able to root their businesses and criminal activities. The continual enforced movement, caused by displacement pressures, weakens the sustainability of the criminal behaviour.

At the International Security Management and Crime Prevention Institute, Kruger (2001:139) mentioned that another problem relates to the attitude of many criminals. It appears that criminals sometimes act as if they are certain they will not get caught, or they do not care if they do get caught. This may be because they believe that people will not intervene and assist victims, or that they have nothing to lose, or they are of the opinion that the chances of being successfully prosecuted are slim. The implications are that, in certain situations, certain types of crime are committed in
areas that, from a CPTED point of view, should be discouraging criminal activity. One of the major problems is that many criminals are not afraid to use violence when committing a crime. This means that some criminals do not seem to be concerned about being caught in the act of committing a crime - they will merely use a knife or handgun to assist in escaping. In these cases, CPTED interventions are of little value, since criminals act with impunity because of the threat they pose when using violence.

3.3.2 Later operational applications of First-Generation CPTED

According to Colquhoun (2004:12), CPTED inherently seeks to reduce opportunities for crime. However, it is centred upon highly specific categories of crime using specific products, technology and procedures to reduce opportunities for crime such as the following

a. Target hardening - The most obvious approach to security which includes the use of stronger locks and other security hardware.

b. Target removal - The most common form of this is where cash is substituted by other forms of payment to reduce the risk of theft or robbery, for example; where the risk of a wage snatch disappears when employees are paid per cheque or an EFT transfer.

c. Removing the means to crime – for example, gun control and in the case of pubs which suffer from violence, the use of plastic containers for drinks rather than glasses.

d. Reducing the pay-off - An uncertain category which includes marking valuable property in the hope that this will discourage theft.

e. Formal surveillance - The use of police or security personnel to patrol or guard and do neighbourhood watch.

f. Natural surveillance - Where users of an environment can, during their normal patterns of activity, keep watch on any potential crime target.
g. Surveillance by employees - This includes the use of people; such as doormen in apartment buildings, caretakers on housing estates, shop assistants and car park attendants. The staff employed on public transport probably plays a major role in preventing potential crime.

h. Environment management - One successful example is the management of football supporters. Rival supporters are carefully segregated and escorted to prevent fighting. Transport is carefully scheduled to take visiting supporters away from the area as soon as possible after the match to reduce violence and vandalism. Another example is the control of child density to reduce vandalism on housing estates through housing allocation policies.

According to Kruger (2001:125-127) the role of CPTED is instrumental in realising crime prevention. It is accepted that without the quick visible changes to the build environment, which CPTED produced, the high level of interest of various role players would not have been so visible. From a Neighborhood-Watch up to city planning and community design, all utilise CPTED methodologies. CPTED has shown that different strategies contribute to a holistic approach, each making their own impact, but also reinforcing each other. In the same way that crime has no single method, neither is there a single strategy to prevent crime. This, however, pointed out that CPTED also has to change with time and demands when it comes to social and environmental changes. Kruger (2001:125-127) also argued that the difficulty lies in maintaining the level of interest CPTED has generated, as perceptions of crime are no longer the drivers for local action that they were previously.

Kruger (2001:125-127) further argues that the solution lies in the creation of ecologically sustainable communities, which concentrate on building healthy lifestyles and preventing social ills, like crime, before they happen. Furthermore it is argued that the role of CPTED has changed from ‘physical determinism’ and the many doubts if it working, to CPTED principles based on the premise that the design of the build environment influences human behaviours, whether by more of a psychological influence or a social influence.
### Table 3.5: Later CPTED applications and limitations

<table>
<thead>
<tr>
<th><strong>PRINCIPLES</strong></th>
<th>First-generation CPTED applications must recognise opportunity conditions for crime and displacement factors.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DESCRIPTION</strong></td>
<td>CPTED is instrumental in applying relevant opportunity counters and in understanding the impact on crime and its limitations on human behaviour.</td>
</tr>
<tr>
<td><strong>APPLICATION</strong></td>
<td>1. Target Hardening</td>
</tr>
<tr>
<td></td>
<td>2. Target removal</td>
</tr>
<tr>
<td></td>
<td>3. Removing means to crime</td>
</tr>
<tr>
<td></td>
<td>4. Reducing the pay –off</td>
</tr>
<tr>
<td></td>
<td>5. Formal surveillance</td>
</tr>
<tr>
<td></td>
<td>6. Natural surveillance</td>
</tr>
<tr>
<td></td>
<td>7. Employee surveillance</td>
</tr>
<tr>
<td></td>
<td>8. Environment management</td>
</tr>
<tr>
<td><strong>OUTCOME</strong></td>
<td>Demonstrate that CPTED needs to grasp the influencing factors on psychological and physical determinism, and not just create fortresses.</td>
</tr>
<tr>
<td><strong>LIMITATION</strong></td>
<td>1. Irrational offenders</td>
</tr>
<tr>
<td></td>
<td>2. Non care offenders</td>
</tr>
<tr>
<td></td>
<td>3. Negative socio economic demographics and dynamics.</td>
</tr>
<tr>
<td></td>
<td>4. Displacement of crime</td>
</tr>
<tr>
<td></td>
<td>5. Natural eco-system</td>
</tr>
<tr>
<td></td>
<td>6. Shift in socio and capital resources</td>
</tr>
<tr>
<td></td>
<td>7. Imagery which creates withdrawal</td>
</tr>
<tr>
<td></td>
<td>8. Assumptions that all individuals/offenders are the same</td>
</tr>
<tr>
<td></td>
<td>9. Focus on buildings and facilities</td>
</tr>
<tr>
<td></td>
<td>10. Lack of CPTED knowledge</td>
</tr>
</tbody>
</table>
LIMITATION

11. Resistance to change, not co-operating
12. Over expectancy of CPTED as a universal remedy
13. Expensive to modify existing build areas
14. Environment too vast to generalise
15. No guarantees
16. Cannot ‘prevent’ can only mitigate
17. Does not manage crime opportunity structures

At this stage a clear shift in thinking and in the application of CPTED has started to filter through the so-called the First-generation CPTED, moving to another growth period in the ever evolving capacity of CPTED. For the purpose of clarity it must be stated that the development journey of CPTED is not as much time bound as it is driven through non time specific push and pull experiences, and the added factors of human and ecology changes in behaviour - some learn quicker than others.

3.4 MAIN CONCERNS AND REQUIREMENTS FOR THE RELEVANCE OF CPTED

The literature review has pointed out that CPTED is under serious scrutiny, and that certain core or essential answers need to be provided to the following questions about the relevance of the CPTED approach as an efficient and effective crime prevention methodology and crime prevention process.

3.4.1 Does First-Generation CPTED cover crime prevention sufficiently?

CPTED studies and programmes are as deeply rooted in, for example; national governments and businesses, as in laws, and ordinances aimed at crime prevention through environmental design, like the Safe Neighbourhoods Act (USA), which even regulates changes aimed at reducing robberies at convenience stores (Crowe, 1991:4; Jeffery, 1990:415-6).
CPTED exists in government, architecture, academia, and corporate business. But little, if any consideration is given to the internal, physical environment of the offender which encompasses human behaviour. Instead, attention is given only to the external physical environment of the place in which the humans show behaviour. This has led over emphasising architectural design to create a crime preventative environment and on the understatement of the dynamic human interaction that is in constant change (Robinson, 1996:29). In academia particularly, CPTED has been developed only with regard to the external environment, which usually is not even treated as physical, but instead as some set of abstract social factors. When the internal environment of the offender or victim is taken into account, it is typically treated as non-physical or ‘mental’ and discarded. This became a serious limitation in the current body of CPTED literature (Robinson, 1996:12).

3.4.2 Is the First-generation CPTED a useful approach?

Crowe (2000:220) argues that “CPTED is a self-evident concept that has been used successfully for many centuries”. This argument is supported by Cozens et al. (2005:343-344) who confirm that over the last 30 years research and assessment have confirmed the extensive utilisation of CPTED. According to Crowe (1991:27, 28) virtually all law enforcement agencies, of any decent size, contain a crime prevention unit based on CPTED. These units often consult with businesses and builders in the design stages of various projects in order to assist with design strategies that will ultimately promote crime prevention and improve the quality of the build environment. The outcomes of such CPTED supported units include; the frequent renovation or replacement of old buildings, the improvement of streets, walkways, courtyards, parks and parking areas. These are done, not only to serve people during daytime working hours, but also to promote hotel dining and entertainment activities during evenings, weekends and holidays. The interrelated objectives of increasing aesthetics and preventing crime are routinely promoted as critical aspects of these public projects; “City governments are finding out that it is a lot cheaper to design crime prevention into the way things are done rather than hiring extra police, or paying for extra protection that can make the community look like a fortress instead of a pleasant place to live” (Crowe, 1991:27-28).
It is evident that nobody can deny that for many entities CPTED has played and is still playing an enormous role as an important tool in the crime prevention toolbox. However, it has also been observed that courts in America are increasingly holding landlords and others who do not keep abreast with changes liable for failing to take sufficient security precautions to prevent criminal attack on their invitees, tenants and guests (Atlas, 2008:76). The sustainability of First-generation CPTED has in essence become suspect.

3.4.3 Is CPTED a sustainable approach?

During this research the researcher encountered many discussions on the validity of CPTED, where CPTED is seen as an important role player. However, a lot of doubt exists concerning the reliability of it being of a sustainable nature in a community or industry. According to Cozens (2007b:189), CPTED sustainability will not achieve its full potential unless it explicitly includes measures to address ubiquitous problems of crime and the fear of crime within the community. Furthermore Cozens (2002:129-137) states there is a link between CPTED and the social sustainability of a community. CPTED also represents a useful tool for assisting in the creation of more efficient and sustainable urban design procedures (Cozens, 2007a:188). For this reason a sustainable community must therefore, be one that is defined as being safe, and perceives itself as safe and is considered by others as safe.

For this to happen the standardisation of design, the implementation and maintenance of CPTED concepts, in the early planning processes, could avoid the repetition of some of the recent ‘unsustainable’ design failures, such as; architectural designs that have not taken into account that the world does change over time and/or overlooking the dynamic human behaviour and conditions like poverty, homelessness and fear of crime or high levels of crime, when making decisions to implement CPTED programmes (Cozens, 2002:129-137).

The implementation of a CPTED policy that upholds the standardisation of CPTED concepts will contribute towards urban planners having a common and clear awareness of the reduction of threats to personal wellbeing and the natural environment in the development stages of urban projects. Achieving this ideal implies
a sustainable urban environment is only achievable through a sustainable CPTED approach (Cozens, 2002:129-137).

Table 3.6: CPTED application derived from main concerns and requirements

<table>
<thead>
<tr>
<th>PRINCIPLES</th>
<th>CPTED must be a holistic and sustainable approach</th>
</tr>
</thead>
<tbody>
<tr>
<td>DESCRIPTION</td>
<td>CPTED First-generation delivered many good projects, but it became stale and one dimensional with time and change</td>
</tr>
<tr>
<td>APPLICATION</td>
<td>1. New technology keeps CPTED functional</td>
</tr>
<tr>
<td></td>
<td>2. Technology’s capacity and application must be custom designed</td>
</tr>
<tr>
<td></td>
<td>3. CPTED must be part of early designs, not as a later add on</td>
</tr>
<tr>
<td></td>
<td>4. Must take in account dynamic human behaviour</td>
</tr>
<tr>
<td></td>
<td>5. Must take in account socio ecology conditions</td>
</tr>
<tr>
<td></td>
<td>6. Need standardised designs and CPTED concepts</td>
</tr>
<tr>
<td>OUTCOME</td>
<td>1. Sustainable communities and industry</td>
</tr>
<tr>
<td></td>
<td>2. Sustainable crime prevention</td>
</tr>
<tr>
<td>LIMITATION</td>
<td>When ignoring the link between sustainability and crime and the fear of crime, communities/industry will not grow</td>
</tr>
</tbody>
</table>

3.5 AN AFRICAN PERSPECTIVE ON CPTED

According to Schneider and Kitchen (2007:77), Africa exhibits many of the characteristics that internationally would be seen as associated with high levels of crime. Key elements mentioned here are:

1. Income inequality - criminal activities, such as the loss of any kind of property, can have a devastating impact on many very poor people. Circumstances often tempt some to participate in committing crimes in an attempt to overcome the problems of poverty.
2. A youthful population, including many young people not enrolled in educational courses and not employed; is a major issue, because across the world experience has shown that teenage and young adult males are among the groups with the highest offence rates.

3. Rapid rates of urbanisation, which means that many urban areas have unstable populations and thus lack some of the social structures which help to create norms for acceptable behaviour.

4. Poorly resourced criminal justice systems, where the likelihood of detection and punishment for crime is small and the prospect for the rehabilitation of criminals is poor.

5. The proliferation of firearms, exacerbated in many areas by the continuation of armed conflict.

The Safer Cities Programme was launched in 1996 by the United Nations (UN-Habitat, 2005:27) at the request of African mayors who wanted to address urban violence by developing a prevention strategy at city level. The recommended programme supports the implementation of the UN Habitat Agenda, which acknowledges the responsibility of local authorities in crime prevention. This resolution aims to support the following types of activities:

1. Strengthening the capacity of local authorities to address urban safety issues and reduce delinquency and insecurity.

2. Promoting crime prevention issues, usually implemented on a multiple partner basis.

3. Encouraging city networks in order to exchange experiences.

4. Preparing and implementing capacity-building programmes, and bringing in qualified and experienced partners form elsewhere to help.

5. Targeting three main action areas in particular:
• groups at risk,
• developing situational crime prevention approaches, and
• reforming the criminal justice system.

The researcher realised that CPTED has to come up with a new, more inclusive strategy and approach to combat crime if it is to be recognised in the African milieu. As much as its successes are hailed in the area of physical design, there are also clear implications from the African mayors for the inclusion of social ecological awareness; the involvement of local authorities and communities, the collaboration between multiple and diverse role players, the justice system application, networking, population growth implications, and lack of social structures, to name but a few (UN-Habitat, 2005:27).

According to Kruger (2001:189-198) South Africa is a late entrant to the debate on implementing CPTED to reduce crime. Before 1997, CPTED did not consciously form part of the fight against crime in South Africa. However, according to Kruger (2001:189-198), it can be argued that, for many decades, South Africa has applied environmental design on a grand scale to control the movement and lifestyles of a large sector of society with the intention of ‘protecting’ a minority group, rather than ensuring the safety and security of all citizens. And given the particular South African context, the following is important when considering CPTED initiatives:

• They should form part of community based crime prevention strategies;
• They should have a developmental approach; and
• They should address the problems of the poor.

According Kruger (2001:189-198), the Council for Scientific and Industrial Research (CSIR), has developed CPTED guidelines to change some of the inherent problems of South African cities where interventions are required at a macro level. The following critical CPTED aspects were identified and need to be addressed at a strategic level in order to improve the performance of cities and address crime in the long term:
1. Adequate and equitable infrastructure delivery needs to be ensured;

2. 24-hour land use should be encouraged;

3. Vacant land should be reduced and managed;

4. Pedestrian use of infrastructure should be supported; and

5. Urban renewal initiatives should be implemented.

The absence of recent CPTED literature, especially regarding South Africa, is not conducive to the interest and application of CPTED in the South African milieu. Much of it is done and implemented as a matter of procedure and logic and because a vast number of people experience the serious threat crime has in all of its facets in South Africa. However, the lack of academic research, in this instance in South Africa, is clearly problematic as Africa will most definitely have its own challenges and requirements which will unfortunately have to be learnt by trial and error in the absence of valid and reliable information.

Table 3.7: CPTED application as per Africa

<table>
<thead>
<tr>
<th>PRINCIPLES</th>
<th>Africa has a community based dimension, South Africa has first and third world challenges all in one.</th>
</tr>
</thead>
<tbody>
<tr>
<td>DESCRIPTION</td>
<td>Africa has unique socio ecological challenges and community cultures which CPTED must acknowledge</td>
</tr>
<tr>
<td>APPLICATION</td>
<td>1. Strengthen the capacity of local authorities</td>
</tr>
<tr>
<td></td>
<td>2. Address poverty as part of a development approach,</td>
</tr>
<tr>
<td></td>
<td>3. Promote crime prevention through multiple parties</td>
</tr>
<tr>
<td></td>
<td>4. Exchange ideas and experiences between networks</td>
</tr>
</tbody>
</table>
5. Design and implement capacity programmes
6. Bring in qualified and experienced partners/consultants
7. Adequate and equitable infrastructure delivery ensured
8. 24-Hour land usages encouraged with pedestrian use
9. Reduce vacant land and renew urban initiatives
10. Target three main areas:
    a. Groups at risk
    b. Development of situational crime prevention approaches
    c. Reform the criminal justice system to work for you

**APPLICATION**

**OUTCOME**
CPTED is applicable for African conditions

**LIMITATION**
1. Income inequality
2. Unemployment
3. Rapid urbanisation
4. Large youth element uneducated
5. Weak criminal justice system

3.6 THE EVOLVEMENT OF CPTED TO SECOND-GENERATION AND BEYOND

First-generation CPTED promoted a fortified lifestyle where surveillance, territoriality, and access control would design crime out of the spaces of communities and urbanity.

(UNICRI 2011:6).

First-generation CPTED’s key concepts are demonstrated as territoriality, surveillance (informal and formal), access control, image/maintenance, activity programme support and target hardening (Cozens, Saville and Hiller, 2005:330).
First-generation CPTED, according to researchers, practitioners and policy makers, has arguably responded to criticisms, as previously mentioned in this chapter, to craft a more robust and rigorous approach now referred to as Second-generation CPTED (Saville and Cleveland, 1997:3-5).

According to Saville (2010:386-402) Second-generation CPTED approaches are those that include consideration of social ecology and psychology in the design of the build environment and consequently prioritise community consultation.

Saville (1998:8) has taken the idea of the Second-generation of CPTED further. He argues that the mix of environmental criminology, environmental crime prevention and situational crime prevention that characterises newer forms of Crime Prevention Through Environmental Design, offers a more “comprehensive, ecological approach for reducing crime niches”. Such an approach goes beyond Newman’s ‘physical determinism’ and although it begins with environmental modifications to set the stage for reduced opportunities for crime niches; it also depends on additional social changes to maintain the impact of these modifications (Saville, 1998:8; Cozens, Hillier and Prescott, 2001:136-164).

Saville (2010:386-402) further argues that such consultation has increasingly been recognised as likely to affect the success or failure of CPTED interventions. But it is the intensity and integrative nature of such engagement that distinguishes a second-generation approach. The active participation of communities and other segments of civil society is an essential part of effective crime prevention. Communities, in particular, should play an important part in identifying crime prevention priorities; in implementation and evaluation; and in helping to identify a sustainable resource base (Plaster, 2002:15-24).

Second-generation CPTED extends beyond mere physical design to include social factors, using risk assessments, socio-economic and demographic profiling as well as active community participation (Cozens, Saville and Hiller, 2005:329). It also seeks to engender positive social activities and diversity to encourage neighbours to take ownership of space and take advantage of natural surveillance (Cozens, Saville and Hiller, 2005:332; Plaster, 2002:15-24).
Second-generation CPTED will be investigated to determine if it covers the limitations and criticisms of First-generation CPTED, as previously mentioned. And to identify what new applications it brings to the table to make it the ‘complete’ crime prevention theory as originally envisaged by Jeffery. Atlas (2008:80-81) argues that in 1998 Saville and Cleveland created the more modern outlook of the Second-generation CPTED: A shift towards a new style of prevention theory, one in which safe places emerge from neighbours planning for themselves in collaboration with [crime] prevention experts, police and security. The application of CPTED Second-generation is neatly encapsulated in the comments of John Maynard, Senior Project Co-ordinator for the City of Sydney, when he presented evidence to the Committee: “Second-generation CPTED is not just about crime per se, it is also about a sense of neighbourliness” (Parliament of Victoria, 2013:19).

The European Forum for Urban Security (2013:7) states that “security policies should be designed and constructed around the individual and collective needs of citizens, and not according to public institutions. To do this, participation is a crosscutting principle of action, enabling civil society to be involved in all stages of design, implementation and evaluation of policy-making.”

Table 3.8: CPTED application as per Second-generation CPTED

<table>
<thead>
<tr>
<th>PRINCIPLES</th>
<th>First-generation CPTED to evolve</th>
<th>Second-generation CPTED in reaction to First-generation criticism.</th>
</tr>
</thead>
<tbody>
<tr>
<td>DESCRIPTION</td>
<td>Fortified lifestyle of build environment</td>
<td>Include:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1. social ecology</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. psychology</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3. community consultation</td>
</tr>
<tr>
<td>APPLICATION</td>
<td>1. Territoriality, 2. Surveillance 3. Access control,</td>
<td>Community must play part in:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1. ID of crime prevention opportunities</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. Implementation</td>
</tr>
</tbody>
</table>
### APPLICATION

1. **Image/maintenance,**
   - **Application**: Image/maintenance, activity programme support, target hardening.
   - **Evaluation**: ID sustainable resource base, social factors, risk assessments, profiling, demographics.

### OUTCOME

1. **Short term solution, public institution as core role player.**
   - Focus on levels of recorded crime.

### LIMITATION

1. **Not sustainable, not individual/community runs.**

## 3.6.1 New Technologies

Schneider and Kitchen (2007:188–189) explained that going from the application of new technologies to place-based crime prevention, needs to be measured against the continuous changing environment.

a. The extend ways in which technological change is associated with the evolution of security design, especially in terms of access control, target hardening strategies and the adaptive, co-evolutionary reactions of offenders.

b. The growing use of technology to mark and survey territories, two fundamental and intimately connected place-based strategies that embody trends towards the increasing reliance on added-on tools to prevent crime, as distinction from basic design approaches.
c. The explosion in environmental tracking, modelling, data collection and data mining technology, with extraordinary implications for crime and terrorism preventions as well as for the infringement of basic civil liberties.

d. The development of new product designs based on nanotechnologies, ranging from apparel to street furniture, that have crime prevention applications, but that are also freighted with issues relating to the evolution of distal warning and reaction systems, and the substitution of mechanical guardianship for human guardianship.

According to Clarke, Kemper and Wyckoff (2001) there are two reasons why crime prevention fails; Firstly the unexpected use of new technology. Secondly, crime problems come from the failure of people and organisations to prevent common crimes - where methods are well known and practical (Clarke et al. 2001). There are a number of reasons for the failure to prevent crimes, like ignorance, lack of resources, unwillingness to expand resources and maybe even because that it is more profitable (or cheaper) to allow the crime than to prevent it (Sampson, Eck and Dunham 2010: 37-51).

Table 3.9: CPTED application as per technology availability

<table>
<thead>
<tr>
<th>PRINCIPLES</th>
<th>CPTED utilise crime prevention technology extensively</th>
</tr>
</thead>
</table>
| DESCRIPTION | 1. Locks, CCTV, access control, lighting, fencing, railings, landscaping, reactive measures  
                     2. GIS, survey tools and PSIM technology  
                     3. Tracking and tracing  
                     4. Biometrics |
| APPLICATION | 1. Layered approach  
                      2. Specific target protection  
                      3. Opportunity deflection  
                      4. Early warning |
Chapter 3: CRIME PREVENTION THROUGH ENVIRONMENTAL DESIGN (CPTED)

### 3.6.2 Situational crime prevention matrix

Atlas (2008:73) shows that in 1992 Clarke (Figure 3.2 below) contributed towards practical situational crime prevention by developing techniques of situational crime prevention with five situational crime prevention approaches, that can be generally applied to almost any situation. Clarke focused his approach on the event of the crime, instead of on the perpetrator, in an effort to decrease the amount of opportunities for crime by using specific actions directed at specific crimes. An approach found to be less complicated than to seek to at first reform the offenders themselves. It is likely that with time and new technologies becoming available to researchers, the list will keep on expanding. The latest classification of the twenty-five techniques of situational prevention aims to reduce opportunities and is categorized under five areas. The five approaches (Figure 3.2) are as follows:

- ‘How to’- Increase the Effort.
- ‘How to’- Increase the Risks
- ‘How to’- Reduce the Rewards
- ‘How to’- Reduce Provocation
- ‘How to’- Remove Excuses

<table>
<thead>
<tr>
<th>Table 3.10: CPTED application as per crime prevention matrix</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRINCIPLES</td>
</tr>
<tr>
<td>DESCRIPTION</td>
</tr>
</tbody>
</table>
### APPLICATION
1. Increase the Effort.
2. Increase the Risks
3. Reduce the Rewards
4. Reduce Provocation
5. Remove Excuses

### OUTCOME
Cost effective application to almost any situation, which can manipulate opportunity

### LIMITATION
Not simple, requires experienced practitioners.
# Criminal Justice System

## Chapter 3: CRIME PREVENTION THROUGH ENVIRONMENTAL DESIGN (CPTED)

### Figure 3.2: CPTED Matrix by R. V. Clarke

<table>
<thead>
<tr>
<th>INCREASE THE EFFORT</th>
<th>INCREASE THE RISKS</th>
<th>REDUCE THE REWARDS</th>
<th>REDUCE PROVOCATION</th>
<th>REMOVE EXCUSES</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Physical Security</td>
<td>• Visibility</td>
<td>• Off-Street parking</td>
<td>• Efficient queues and polite service</td>
<td>• Clear agreements</td>
</tr>
<tr>
<td>• One way surveillance</td>
<td>• In contact with support</td>
<td>• Gender-neutral</td>
<td></td>
<td>• Harassment codes</td>
</tr>
<tr>
<td>• Tamper-proof</td>
<td>• Organised monitor</td>
<td>• Unmarked valuables</td>
<td></td>
<td>• Clear Instructions</td>
</tr>
<tr>
<td><strong>2. Control access to facilities</strong></td>
<td><strong>7. Assist natural surveillance</strong></td>
<td><strong>12. Remove target</strong></td>
<td><strong>17. Avoid disputes</strong></td>
<td><strong>22. Specific instructions</strong></td>
</tr>
<tr>
<td>• Entry comms</td>
<td>• Improved street lighting</td>
<td>• Removable assets</td>
<td>• Separate enclosures for rival entities</td>
<td>• ‘No parking’</td>
</tr>
<tr>
<td>• Electronic access</td>
<td>• Defensible space design</td>
<td>• Gender refuges</td>
<td>• Reduce crowding</td>
<td>• ‘Private property’</td>
</tr>
<tr>
<td>• Screening</td>
<td>• Support whistleblowers</td>
<td></td>
<td>• Fixed prices</td>
<td>• ‘No fire’</td>
</tr>
<tr>
<td>• Positive ID</td>
<td></td>
<td></td>
<td></td>
<td><strong>23. Alert conscience</strong></td>
</tr>
<tr>
<td><strong>3. Screen Exits</strong></td>
<td><strong>8. Reduce anonymity</strong></td>
<td><strong>13. Identify assets</strong></td>
<td><strong>18. Reduce emotional arousal</strong></td>
<td></td>
</tr>
<tr>
<td>• Exit Ticket</td>
<td>• Require + IDs</td>
<td>• Property marking</td>
<td>• Controls on violent pornography</td>
<td></td>
</tr>
<tr>
<td>• Export documents</td>
<td>• Introduction letters</td>
<td>• Vehicle licensing</td>
<td>• Enforce good behaviour</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Uniform</td>
<td>• Parts marking</td>
<td>• Prohibit racial slurs</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Vehicles marked</td>
<td>• Corporate branding</td>
<td></td>
<td><strong>23. Alert conscience</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Display boards</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Signatures for declarations</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Shoplifting is stealing</td>
<td></td>
</tr>
<tr>
<td><strong>INCREASE THE EFFORT</strong></td>
<td><strong>INCREASE THE RISKS</strong></td>
<td><strong>REDUCE THE REWARDS</strong></td>
<td><strong>REDUCE PROVOCATION</strong></td>
<td><strong>REMOVE EXCUSES</strong></td>
</tr>
<tr>
<td>------------------------</td>
<td>-----------------------</td>
<td>------------------------</td>
<td>------------------------</td>
<td>---------------------</td>
</tr>
<tr>
<td>• Closures</td>
<td>• CCTV for double-deck and review</td>
<td>• Monitor 2nd hand and dealer shops</td>
<td>• ‘Idiots drink and drive’</td>
<td>• Easy check-out</td>
</tr>
<tr>
<td>• Separation</td>
<td>• Support personnel</td>
<td>• Controls and patterns</td>
<td>• ‘It’s OK to say no’</td>
<td>• Public toilets</td>
</tr>
<tr>
<td>• Dispersion</td>
<td>• Reward vigilance</td>
<td>• License vendors</td>
<td>• Disperse troublemakers at work place</td>
<td>• Litter bins</td>
</tr>
<tr>
<td>• Disabling</td>
<td>• Camera lights ‘on’</td>
<td>• Permanent tags</td>
<td>• Rapid repair of vandalism</td>
<td>• Breathalysers</td>
</tr>
<tr>
<td>• Restrict</td>
<td>• Burglar alarms</td>
<td>• Immediate repairs</td>
<td>• Censor details of modus operandi</td>
<td>• Server intervention</td>
</tr>
<tr>
<td></td>
<td>• Security guards</td>
<td>• Self-destruct/activate</td>
<td></td>
<td>• Alcohol-free events</td>
</tr>
<tr>
<td></td>
<td>• Movement / Monitor</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
3.6.3 Collaboration and co-operation

In support of the deductions made by the researcher, Atlas (2008:80-81), states that the expansion of CPTED focus, must include the social factors of the offender and the environment of the victim. It integrates a wide range of social crime prevention strategies in a holistic way, but it does so in specific social and cultural situations. Furthermore, Atlas argues that prevention must expand into the private areas of community life if it is to become a true collaboration between socio ecology and crime prevention. People must actually care about the people and the place where they work, play and live. They must take that care across the borders of the shared public places.

At the 2001 CPTED conference at The International Security Management and Crime Prevention Institute (Kruger. 2001:117) the following basic guidelines and principles of co-operative crime prevention were provided:

a. A combination of culprit-centered and a victim-centered approach giving consideration to target hardening measures as much as to the goal of reducing fear in the population.

b. The inclusion of all actors of crime prevention in a communicative procedure: local political decision makers; urban planning authorities; the police force and representatives of the civil society such as community organisations; social workers; NGOs and the local residents.

c. Formation of links which express the interdependence of administrative systems with the real life world of all citizens.

d. The establishment of institutionalised public communication forums that take account of different forms of deliberation: ‘instrumental’ and ‘communicative’; pragmatic and common sense.

e. Supplementing the democratic will-formation of bargaining and voting by arguing.
f. The introduction of public deliberation into political institutions and thereby institutionalising public deliberation in the field of crime prevention.

### 3.6.3.1 The C’s in Collaboration

To achieve the abovementioned collaboration the Second-generation CPTED employs four new strategies – the four C’s as developed by Saville and Cleveland (Atlas 2008:80-81):

- Social Cohesion.
- Connectivity.
- Community Culture.
- Capacity Threshold.

### 3.6.3.2 Social cohesion

Kruger (2001:119) mentions that the interface between CPTED (which focuses on the physical environment) and the social development (which seeks to build social capital and community connectedness) is a very important and far reaching development.

Saville and Cleveland (2008:81) state that social cohesion forms the core of the Second-generation CPTED, while territoriality it is the core of First-generation CPTED. This covers areas from emotional intelligence to the literacy of conflict training, such as showing how to have respectful disagreements without resorting to violence. Cohesion strategies therefore enhance relationships between residents.

According to Saville and Cleveland (2008:80-81), neighbourhood watches are a CPTED activity, but as a First-generation application it rarely becomes a permanent solution. However, social cohesion mixed within the Second-generation CPTED make-up, creates a dynamic force not previously incorporated in First-generation CPTED thinking. The new CPTED solution becomes much more human behavioural sensitive and allows for changes in situations, environments and behaviour over
time. Social cohesion can be defined as aspects of ‘social glue and positive esteem’ that is evidenced by:

- Participation in local events and organisations.
- Friendship networks in community.
- Positive relations between friendship networks.

### 3.6.3.3 Connectivity

The ‘connectivity’ concept implies that political, formal and media connections are needed by communities to break out of their isolation as far as social functioning is concerned (Saville and Cleveland, 2008:80-81). Connectivity requires that the tools and the know-how that communities can use to achieve this, should be taught so that they are able to contact the correct entities for specific problems.

According to these authors some characteristics of connectivity include:

i. The existence of networks with outside agencies, for example, shared websites.
ii. Grant-writers or access to grant-writing services.
iii. Formal activities with outside groups, organisations, or neighbourhoods.
iv. Adequate transport facilities (ride sharing, bicycle paths, public transit) linking to outside areas.

### 3.6.3.4 Community culture

Community culture brings people together in a common purpose (Adams and Goldbard, 2001:107-108; Saville and Cleveland, 2008:83). This is how local residents begin to share a sense of place and why they bother to exert territorial control in the first place. The authors postulated the following characteristics defining culture within a community:
i. Presence and effectiveness of gender and minority equality strategies.

ii. Gender based programmes, for example, violence against women.

iii. Extent of social and cultural diversity within a neighbourhood.

iv. Prevalence of special places, festivals and events.

v. Extent of community traditions and cultural activities, for example art fairs, sports role models.

vi. A unique sense of pride or distinctiveness based on the attributes or characteristics of the residents, occupants or users of the space involved.

3.6.3.5 **Threshold capacity**

Second-generation CPTED also focuses on social ecology. Stabilisers that prevent areas to tip in to crime, the ‘tipping point’ must be identified and mitigated (Saville and Cleveland (2008:83). Some characteristics of capacity include:

i. Human-scale, land use density and maximum intensity of use.

ii. Balance of social stabilisers, for example; community gardens, street entertainment, and street food vendors for downtown lunches.

iii. Minimal congestion versus maximum intensity of use.

iv. Plenty access to social and economic resources.

v. Crime generators below critical threshold, for example; the number of abandoned homes per neighbourhood, and the number of bars in an area.

The Four C’s as demonstrated by Saville and Cleveland (2008:81), require expansion in the CPTED methodology as generally implemented. It is, however, not the only changes that are required to make CPTED a relevant and interchangeable criminological crime prevention theory that will withstand the test of time. The researcher assumes that only when the Four C’s of the Second-generation CPTED
are integrated in all the environmental criminological approaches, as demonstrated in Chapter 2, can sustainable security emerge from the shared methods and standards that bring people together for a common purpose.

Table 3.11: CPTED application as per collaboration and co-operation

<table>
<thead>
<tr>
<th>PRINCIPLES</th>
<th>CPTED relies on collaboration and co-operative crime prevention</th>
</tr>
</thead>
<tbody>
<tr>
<td>DESCRIPTION</td>
<td>CPTED is not a ‘one’ solution, it is a combination of factors and must expand into all areas of community to ensure collaboration between socio ecology and crime prevention</td>
</tr>
</tbody>
</table>
| APPLICATION | 1. Social cohesion (Friendships, participation…)  
2. Connectivity (Formal networks, political, media…)  
3. Community culture (Common purpose, strategies…)  
4. Capacity threshold (Use versus capacity/resources…)  
5. Culpit centred approach  
6. Victim centred approach  
7. Combination with target hardening  
8. All potential role players must be involved  
9. Interdependence between administration and citizens  
10. Public forums, pragmatic and common sense  
11. Rigorous debate |
| OUTCOME | 1. Crime prevention for the people by the people.  
2. Crime Prevention that is human behavioural sensitive and does over time allow for changes in situations, environments and behaviour |
| LIMITATION | 1. Weak control and leadership can be disputed, although difficult in multi cultural environments  
2. Don’t always look over borders of shared places |
3.6.4 Expansion on the 3 D’s

The expansion of Crowes 3-D Concept according to Atlas (2008: 71-72) is:

a. Deterrence: Do the 3-Ds when implemented successfully deter criminal activity?

b. Detect: Do the 3-Ds detect, assess, and report possible criminal activity?

c. Delay: Do the 3-Ds successfully delay criminal activity long enough for response to act?

d. Response: Are the 3-Ds supported by the correct response capacity?

e. Report: Are the 3-Ds supported by correct documentation and records?

f. Discriminate: Are the 3-D staff and equipment able to make the right call?

g. Neutralise: Are the 3-Ds supported by an investigative, arrest and prosecuting capacity?

Table 3.12: CPTED application as per operational extension on the 3D target hardening methodology

<table>
<thead>
<tr>
<th>PRINCIPLES</th>
<th>Primary target hardening functions of environmental security space design.</th>
</tr>
</thead>
<tbody>
<tr>
<td>DESCRIPTION</td>
<td>The design and utilisation of environmental human space to make movement predictable by the use of natural opportunities to enhance target hardening.</td>
</tr>
</tbody>
</table>
| APPLICATION                    | 1. Designation: Purpose of space?  
2. Definition: Designed in what way for what reason?  
3. Design: Can design support required behaviour? |
3.6.5 Problem-solving CPTED techniques and the search for a CPTED risk analysis platform

Zahm (2007:11) states that the crime problem-solving process, used in CPTED, is a series of steps designed to answer the following four questions:

a. What is the problem?

b. Why here?

c. What can be done to solve the problem?

d. How well are we doing?

Crime Prevention through CPTED principles is an approach to a problem that asks; what is it about the location that places people at risk, or that results in opportunities for crime? Or simply: Why here? (Zahm, 2007:3). Solving a problem within CPTED thus requires a detailed understanding of the crime, the offender and the place.
In conjunction with the Zahm (2007:3) approach, the researcher searched for a CPTED derived risk analysis template, which would uncover and provide the security, crime and crime prevention status in Rosslyn. The main emphasis of the required risk analysis platform should be on identifying external and internal security threats and needs, identified as problems. These are required to inform the design of problem-solving methods and thus enabling the security practitioner to provide a plan to lessen and to combat such risks. This research primarily searched for a risk analysis platform that will, in a simple clear way, uncover the threats, risks and problems and all of its variables within the industry of Rosslyn and demonstrate what is needed.

A most appropriate potential option the researcher came across was a CPTED problem-solving platform (called SARA, see Figure 3.2) which was founded and used by the USA Department of Justice, Office of Community Oriented Policing Services, as designed by Diane Zahm. However, this SARA platform clearly accepts that the crime problems and community needs are already known. Therefore, it can be introduced as problem-solving tool that can help to address crime or disorder problems and provide a framework for developing broad partnerships that are necessary if CPTED and community policing initiatives are to succeed. The basic framework for any action to assess and to solve crime problems properly, according to SARA, is demonstrated in the four stages of a CPTED problem-orientated platform and consists of the following four steps (Atlas, 2008; COPS, 2007; Fleissner and Heinzelmann, 1996; Zahm, 2007):

a. Scanning: Identify known problems and consequences, confirming the problem exists, shows priorities and from this develops goals to mitigate the problem. Recognises that the persistent crime and liveability problem exists. According to Atlas (2008:511) it also implies a survey encapsulating a crime analysis, demographic data, land use information, conducting site inspections, observations and the security report.

b. Analysis: Identify and understand the causal factors and the events thereof. Develop a hypothesis and problem statement.
c. **Response:** Implement an action plan in collaboration with all levels of management and other role players involved. State the objectives and carry out the response plan.

d. **Assessment:** Assess the effectiveness of the response plan against the objectives that have been set. Provide alternatives where necessary and implement with continuous assessment to achieve successful outcomes.

Figure 3.2: **SARA, CPTED Problem-solving Steps**

Before the four stages of a CPTED problem-orientated project are attempted it must be realised that the SARA process is of a very advanced technical and scientific nature (Zahm, 2007:3).

Haelterman (2013:16) cited Ekblom who recently developed the SARA-acronym further into what he refers to as the 5 I's namely:

a. **Intelligence** (gathering info/analysing info/consequences diagnose causes)

b. **Intervention** (a full range of possible interventions to block, disrupt, weaken these causes and manipulate the risk and protective factors)
c. Implementation (converts potential interventions into practical methods effective locally, and to monitor actions taken)

d. Involvement (mobilise all stakeholders to play a part in interventions)

e. Impact and process evaluation (assessment, feedback and adjustment)

The Ekblom addition (Haelterman, 2013:16), according to the researcher is a welcoming occurrence as it revolves around intelligence gathering, which is important for a risk and needs analysis. Even though this is a recent addition in the SARA model it is still deemed, from a problem-solving point of view, a comprehensive and complicated ‘methodology. It does not encapsulate a focused risk analysis template necessary to disclose the problems in the Rosslyn environment and is it therefore not simple, and simple in this context is one of the most important attributes necessary for it to be used by the personnel responsible for operational security - it must talk the language of risk controllers and/or security practitioners.

For the sustainability of an Industrial environment, like Rosslyn, the specific risks, threats and vulnerabilities, and the probability of occurrence, are just as important to know and to understand, especially from an industry perspective. The reason being businesses want to know exactly what the patterns and trends of crime are, what is the impact on their appetite for risk, what the cost will be and also what is in it for them, before they will participate. Businesses are adverse to surprises, they don’t like comprehensive and complicated processes that takes up time and resources. Fortunately a simple security friendly crime prevention cum security risk analysis product by ISMI (International Security Management Institute 2013) exists in template form from which a proper security and crime related risk analysis can be completed and on which the SARA approach can ad specific problem-solving initiatives if needed. This ISMI risk analysis is discussed in depth in Chapter 5.

However, even though the risk analysis model of ISMI is relatively simple in relation to the SARA methodology it is not lost to the researcher that Zahm (2007:11) emphasises; a CPTED project is not for the inexperienced or unqualified. It is not uncommon to search for specialist guidance in all the fields encountered for e.g. at
the university departments of sociology, psychology, criminal justice, security, etc. It is clear that problem orientated security is expected to be on a high level of execution, feeding from a respectable knowledge base. According to Zahm (2007:i) Security managers must

- Understand basic problem-orientated security/policing principles and methods
- Be able to look at the problems in depth
- Be willing to consider new ways of doing police business

Table 3.13: CPTED application as per problem orientated techniques, crime assessment and the risk analysis

<table>
<thead>
<tr>
<th>PRINCIPLES</th>
<th>Problem-solving platform for Crime Prevention</th>
</tr>
</thead>
<tbody>
<tr>
<td>DESCRIPTION</td>
<td>A problem statement must be grounded in valid and reliable measurement tools/techniques, with the primary aim; the removal and/or reduction for crime opportunities by changing various aspects in the opportunity environment (be it physical or socio-ecological), before a well justified solution can be recommended.</td>
</tr>
<tr>
<td>APPLICATION</td>
<td>SARA : CPTED</td>
</tr>
<tr>
<td>A. Scanning:</td>
<td></td>
</tr>
<tr>
<td>1. Identifying recurring problems of concern to the public and the police.</td>
<td></td>
</tr>
<tr>
<td>2. Identifying the consequences of the problem for the community and the police.</td>
<td></td>
</tr>
<tr>
<td>3. Prioritising these problems.</td>
<td></td>
</tr>
<tr>
<td>4. Developing broad goals.</td>
<td></td>
</tr>
<tr>
<td>5. Confirming that the problems exist.</td>
<td></td>
</tr>
<tr>
<td>6. Determining how frequently the problem occurs and how long it has been taking place.</td>
<td></td>
</tr>
<tr>
<td>7. Selecting problems for closer examination.</td>
<td></td>
</tr>
<tr>
<td>APPLICATION</td>
<td>B. Analysis:</td>
</tr>
<tr>
<td>-------------</td>
<td>--------------</td>
</tr>
<tr>
<td></td>
<td>1. Identifying and understanding the events and conditions that precede and accompany the problem.</td>
</tr>
<tr>
<td></td>
<td>2. Identifying relevant data to be collected.</td>
</tr>
<tr>
<td></td>
<td>3. Researching what is known about the problem type.</td>
</tr>
<tr>
<td></td>
<td>4. Taking inventory of how the problem is currently addressed and the strengths and limitations of the current response.</td>
</tr>
<tr>
<td></td>
<td>5. Narrowing the scope of the problem as specifically as possible.</td>
</tr>
<tr>
<td></td>
<td>6. Identifying a variety of resources that may be of assistance in developing a deeper understanding of the problem.</td>
</tr>
<tr>
<td></td>
<td>7. Developing a working hypothesis about why the problem is occurring.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>C. Response:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Brainstorming for new interventions.</td>
</tr>
<tr>
<td>2. Searching for what other communities with similar problems have done.</td>
</tr>
<tr>
<td>3. Choosing among the alternative interventions.</td>
</tr>
<tr>
<td>4. Outlining a response plan and identifying responsible parties.</td>
</tr>
<tr>
<td>5. Stating the specific objectives for the response plan.</td>
</tr>
<tr>
<td>6. Carrying out the planned activities.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>D. Assessment:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Determining whether the plan was implemented (a process evaluation).</td>
</tr>
<tr>
<td>2. Collecting pre– and post–response qualitative and quantitative data.</td>
</tr>
<tr>
<td>3. Determining whether broad goals and specific objectives were attained.</td>
</tr>
<tr>
<td>4. Identifying any new strategies needed to augment the original plan.</td>
</tr>
<tr>
<td>5. Conducting ongoing assessment to ensure continued effectiveness.</td>
</tr>
</tbody>
</table>
### APPLICATION

<table>
<thead>
<tr>
<th></th>
<th>E. The 5 I’s</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Intelligence (gathering info/analysing info/consequences/ diagnose causes)</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Intervention (full range of possible interventions to block, disrupt, weaken these causes and manipulate the risk and protective factors)</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Implementation (converts potential interventions into practical methods effective locally and to monitor actions taken)</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>Involvement (mobilise all stakeholders to play a part in interventions)</td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>Impact and process evaluation (assessment, feedback and adjustment)</td>
<td></td>
</tr>
</tbody>
</table>

### OUTCOME

Full picture, from problem identification to solution implementation, based on valid and reliable methodology.

### LIMITATION

Untrained and inexperienced security professionals cannot use risk analysis techniques, causing problem identification to be shallow, skewed and/or even missed.

### 3.6.6 Relationship between environment and behaviour

CPTED as define by Crowe (Saville and Cleveland, 2008:80), is all about “reducing the opportunity and fear of crime”. However, according to Scott (Saville and Cleveland, 2008:80), “where neighbourhood problems have been reduced or eliminated, the most effective answer included both motive reduction and opportunity reduction”. Before any standard or theory can be implemented the unanswered ‘why’ in crime should be dealt with. According to Saville and Cleveland (2008:80) the root of the problem of criminal behaviour can never be thoroughly understood if the subtleties of the relationship between environment and behaviour are not clear. What is clear is that; one size does not fit all.
CPTED clearly draws on the multidisciplinary theoretical background from the social and physical sciences that serve as the basis for CPTED’s environment alterations. Newman’s work in defensible space and Crowe’s First-generation work, has paved the way for the next generation that incorporates elements of behavioural psychology and the sociology of human behaviour with the architectural alterations needed to create a safe environment Saville and Cleveland (2008:80).

Table 3.14: CPTED application as per relationship between environment and behaviour as application

<table>
<thead>
<tr>
<th>PRINCIPLES</th>
<th>To reduce opportunity and fear of crime</th>
</tr>
</thead>
<tbody>
<tr>
<td>DESCRIPTION</td>
<td>Motive reduction and opportunity reduction is core to crime prevention</td>
</tr>
<tr>
<td>APPLICATION</td>
<td>Understand ‘why’ crime happens before it is engaged</td>
</tr>
<tr>
<td>OUTCOME</td>
<td>Multidisciplinary approach (Behaviour, socio and physical sciences are the basis for environmental alterations)</td>
</tr>
<tr>
<td>LIMITATION</td>
<td>Need knowledgeable and experienced exponents</td>
</tr>
</tbody>
</table>

3.6.7 CPTED’s role in creating a sustainable community

“Security is an integral part of sustainability, and it is generally essential if people are to achieve their full potential” (Black, 2004: 8). Du Plessis (1999: 33) argues that “no city can call itself sustainable if the citizens’ of that city fear for their personal safety and the safety of their livelihood.” Napier, Du Plessis, Liebermann, Kruger, Shaw, Louw and Oppler (1998:1-35) significantly indicate that studies have repeatedly found that safety and security are often the first priority of the urban poor in both developed and developing countries.

According to the Canadian Centre of Science and Education (2011:161) evidence suggests that the impact and extent of CPTED is recently seen in terms of synergies between urban sustainability and CPTED. Cozens (2002: 129-137) supports this by stating that a further synthesis between CPTED and urban sustainability approaches may lead to “sustainable urban environmentalism regarding design, implementation
and maintenance of a safer urban landscape and liveable communities”. CPTED, it is argued, can provide potential benefits of public health by means of risk assessments and delivering safer communities which tend to support active citizens and able communities and encourage public health (Cozens, 2007b:234)

Cozens (2007a:232) also mentioned that consideration should be given to the economic aspects, when in pursuit of sustainable development, as the financial costs of crime (due to emotional, psychological fear of crime) can be high, and therefore also beneficial if mitigated.

Dewberry (2003:51–62) argues that there are various synergies between sustainability and crime prevention, see Table 3.15.

Table 3.15: Synergies between sustainability and crime prevention

<table>
<thead>
<tr>
<th>CRIME PREVENTION</th>
<th>SUSTAINABILITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shared responsibility for crime</td>
<td>Shared responsibility for sustainability</td>
</tr>
<tr>
<td>Offender to acknowledge responsibility</td>
<td>Polluters to acknowledge responsibility</td>
</tr>
<tr>
<td>Crime events promote social exclusion</td>
<td>Inequity in the security of communities</td>
</tr>
<tr>
<td>Reducing effects of crime through investment in evidence and effectiveness</td>
<td>Reducing environmental impacts through investment in evidence and effectiveness</td>
</tr>
<tr>
<td>Reducing the impact of crime through developing products and systems which are more resistant to criminal activity</td>
<td>Promoting sustainability by developing products and systems which are more environmentally and socially responsible</td>
</tr>
</tbody>
</table>
Chapter 3: CRIME PREVENTION THROUGH ENVIRONMENTAL DESIGN (CPTED)

CRIME PREVENTION | SUSTAINABILITY
---|---
The need for government strategies, partnerships, evidence based action and accountability. | The need for government strategies, partnerships, best practise and environmental social responsibility
Promoting quality of life issues | Understanding quality of life issues
Enhancing understanding of the ecology of crime and environmental criminology | Enhancing understanding of the ecology of the environment
Use of the build environment to reduce opportunities for crime and to promote liveability | Use of the build environment to reduce waste and promote liveability and sustainability

Analysts tend to focus on the levels of recorded crime, ignoring the crucial and arguable more important dimensions of citizens’ fear of crime and the perceptions of their local environment (Cozens, 2007a:187). “Second-generation CPTED promotes sustainable development where creating livable, civilized, balanced communities in well-maintained urban settings, empowering citizens, and fostering community engagement, would eliminate the reason d’etre of urban crimes” (UNICRI. 2011:16).

“We must bear in mind that ‘if planning is about making places better for people, then it has to address those elements that makes places problematic, for crime and fear of crime are high up in this list” (Schneider and Kitchen, 2007:233). Security and the perception of safety are important factors in achieving sustainable development, which in recent years has decreased. Brantingham and Brantingham (1998:53) stated that “most planning proceeds with little knowledge of crime patterns, crime attractors and crime generators.”
Crowe (2000:46) argued; “the proper design and effective use of the build environment can lead to a reduction in the fear of crime and the incidence of crime, and to an improvement of the quality of life and community sustainability.”

The Canadian Centre of Science and Education states that there are three different aspects of sustainable development, which exist in relation to crime prevention approaches, namely:

- Physical,
- Social
- Environmental.

The crime design strategies that must be followed are; Place-Based Crime Prevention Methods, where society awareness is present in that humans and culture are components of the environment, whereas environment is inevitably linked with human health and environmental well-being in order to diminish the adverse effects of criminalities on human well-being (Jackson, 2003:195). According to the National Institute for Justice (1997:4) there are three main components for place-based specific crime prevention:

a. Physical design (target hardening, controlling access, increasing opportunities for surveillance, targeting crime hotspots and improving image)

b. Management changes which include revamping security (also policing) altering property ownership and or management, and expanding the role of residents.

c. Time management, increased use of different times of day and night regarding business uses and leisure activities.

Armitage and Gamman (2009:298) highlighted the fact that security is the route towards sustainability. Saville (2010:402) further concludes that reducing crime and enhancing community involvement are effective and sustainable aspects for developing and redeveloping the urban environment for years to come.
According to Schneider and Kitchen (2002:115) place-based crime prevention theories and strategies should be based on

a. Continued refinement of place-based crime prevention theories based on empirical evidence.

b. Increasing the incorporation of place-based crime prevention planning principles into development codes and planning law.

c. Increased local emphasis.

d. Increasing the use of technology such as GIS crime mapping, GPS, and 3-D modelling as crime prevention tools.

e. Melding of major place-based crime prevention approaches into new theory and approaches, including new urbanism type theory.

In summary, in the development process crime and the fear of crime must be considered as effective indicators in achieving sustainability for communities.

**Table 3.16: CPTED application as per creating a sustainable community**

<table>
<thead>
<tr>
<th>PRINCIPLES</th>
<th>CPTED drives sustainability</th>
</tr>
</thead>
<tbody>
<tr>
<td>DESCRIPTION</td>
<td>CPTED must promote sustainable development by creating livable, civilised, balanced communities in well-maintained work and urban settings through the empowerment of citizens and the fostering of community engagement.</td>
</tr>
<tr>
<td></td>
<td>Three different aspects of sustainable development exist in relation to crime prevention approaches, namely:</td>
</tr>
<tr>
<td></td>
<td>1. Physical,</td>
</tr>
<tr>
<td></td>
<td>2. Social, and</td>
</tr>
<tr>
<td></td>
<td>3. Environmental.</td>
</tr>
<tr>
<td>APPLICATION</td>
<td>Place-Based Crime Prevention Method to ensure the sustainability and liveability of an area.</td>
</tr>
<tr>
<td>-------------</td>
<td>------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Physical</td>
<td>1. Physical target hardening CPTED based</td>
</tr>
<tr>
<td></td>
<td>2. Use technology to map patterns and trends</td>
</tr>
<tr>
<td></td>
<td>3. Evidence and effectiveness of systems</td>
</tr>
<tr>
<td></td>
<td>4. Use build environment to reduce waste</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>APPLICATION</th>
<th>Social</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1. Awareness among society must be present</td>
</tr>
<tr>
<td></td>
<td>2. Human culture linked with environment</td>
</tr>
<tr>
<td></td>
<td>3. Altering role of ownership/management</td>
</tr>
<tr>
<td></td>
<td>4. Involvement of residents</td>
</tr>
<tr>
<td></td>
<td>5. Shared responsibility</td>
</tr>
<tr>
<td></td>
<td>6. Must make offender acknowledge responsibility</td>
</tr>
<tr>
<td></td>
<td>7. Equality for all</td>
</tr>
<tr>
<td></td>
<td>8. Quality of life</td>
</tr>
<tr>
<td></td>
<td>9. Products must be socially responsible</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Environmental</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1. Spread time, keep area busy</td>
</tr>
<tr>
<td></td>
<td>2. Base plan on empirical evidence</td>
</tr>
<tr>
<td></td>
<td>3. Incorporate plans in local city codes</td>
</tr>
<tr>
<td></td>
<td>4. Increase local emphasis</td>
</tr>
<tr>
<td></td>
<td>5. Products must be environmentally responsible</td>
</tr>
<tr>
<td></td>
<td>6. Research similar approaches and theories</td>
</tr>
<tr>
<td></td>
<td>7. Need formal sector strategies, partnerships, best practise</td>
</tr>
<tr>
<td></td>
<td>8. Need formal sector environmental social responsibility.</td>
</tr>
</tbody>
</table>
### OUTCOME
A sustainable community and CPTED environment through reduced crime and community involvement.

### LIMITATION
Analysts tend to focus on the levels of recorded crime, ignoring the crucial and arguable more important dimensions of citizens’ fear of crime and the perceptions of their local environment.

#### 3.6.8 Designing out crime (DOC)

DOC (also ‘design out crime’ or ‘design against crime’), as a crime-prevention approach, was formally named in 1999 with the establishment of the Design Against Crime (DAC) research centre at Central St Martin’s, London (Gamman and Pascoe, 2004:1). According to the DOC Website, DOC evolved “*out of an academic trend towards trans-disciplinary crime research, incorporating criminology and design methodologies.*” The research of design-related solutions to crime prevention had previously been lost and therefore it had to go through narrow theories and resources that focused exclusively on criminals. The broad adopted DOC trans-disciplinary research/approach allows for ‘innovation’ in Situational Crime Prevention by means of:

- Exploring and developing design solutions to deter potential criminals
- Improving the quality of life for law-abiding users of public spaces

Crowe (2000:37) argued that DOC is a place-based crime prevention approach, which emphasizes techniques that exploit the opportunities in the environment; “*both to naturally and routinely facilitate access control and surveillance, and to reinforce positive behavior in the use of the environment.*” Crowe further states that these strategies are not independent of one another. They act in concert to use physical attributes with clear separation between public, public-private and private space, to define ownership, e.g. fences, pavement treatments, signs, landscaping and artwork, in addition to promoting opportunities for surveillance. DOC asserts that “*the proper*
design and effective use of the build environment can lead to a reduction in the fear and incidence of crime, and an improvement in the quality of life” (Crowe, 2000:46).

According to Cozens (2005:ii) DOC is an increasingly popular crime prevention approach. Already there is a large body of research which supports DOC as a pragmatic and effective crime prevention approach. An extensive literature review of DOC (done by the Australian Office of Crime Prevention) has highlighted the importance of social dynamics and the ever-changing nature of space and place (Cozens, 2005:3). Cozens (2007:188) mentions that DOC is basically just another name for CPTED which still builds on the four key CPTED strategies of territoriality, natural surveillance, activity support and access control. The only difference is that the focus is on maximising the self-policing potential of the community.

However, from the perspective of maximising the self policing potential of the community, DOC has five key goals (Cozens, 2005:6-7):

a. To lodge DOC principles within all relevant State and local planning policies, practices and major projects to reduce opportunities for crime and the fear of crime.

b. To increase the knowledge, awareness and understanding of DOC through the provision of training, education and marketing.

c. To apply an across Government, multi-agency, social and community development approach when implementing DOC policies and practices.

d. To legislate and amend policy frameworks to ensure that product designers consider the ‘crime potential’ of their products. Government will use emerging technologies to reduce opportunities for crime.

e. To ensure that the build and landscaped environment is well maintained and managed and that procedures are in place to rapidly repair vandalism and graffiti and reduce the incidence of long-term vacancy and dereliction.
According to Cozens (2009:3-10) DOC must test the following factors and from these provide solutions which are measured and maintained, by utilising the DOC approach:

a. The evidence on permeability

b. The evidence on mixed-use developments

c. The evidence on high density living

d. Features associated with quality environments

e. Interdisciplinary schemas

There is often an assumption that DOC always works and has no limitations or shortcomings (Cozens, 2009:7). However, Cozens reminds us that there is little knowledge or appreciation of the circumstances and contexts where DOC might work less effectively, for example; defensible space can become undefended, offensive and indefensible space. According to Cozens (2011b:485.) research has repeatedly demonstrated how the social dynamics of an area can affect the effectiveness of defensible space. Cozens (citing Merry, 1981) argues that a space, which is capable of being defended by residents, represents defensible space but can become undefended by residents as a consequence of fear of crime. Cozens (citing Atlas, 1991:63-66) has identified offensive space where it becomes defended and exploited by those who would seek to use it for their own illegal purposes, for example; drug dens or criminal gatherings and lastly space that is indefensible whereby residents cannot defend it, for example; because of urban riots.

Table 3.17: CPTED application as per DOC

<table>
<thead>
<tr>
<th>PRINCIPLES</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>To design out crime</td>
<td>Academically a trend towards trans-disciplinary crime research incorporating criminology and design methodologies to naturally and</td>
</tr>
<tr>
<td>or design against</td>
<td>routinely facilitate access control and surveillance, and to reinforce positive behaviour in the use of the environment.</td>
</tr>
<tr>
<td>crime</td>
<td></td>
</tr>
</tbody>
</table>
## APPLICATION

<table>
<thead>
<tr>
<th></th>
<th>The DOC approach</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Embed DOC principles within all relevant local planning policies, practises and major projects to reduce opportunities for crime and the fear of crime.</td>
</tr>
<tr>
<td>2.</td>
<td>Increase the knowledge, awareness and understanding of DOC through the provision of training, education and marketing.</td>
</tr>
<tr>
<td>3.</td>
<td>Apply a multi-agency, social and community development approach when implementing DOC policies and practises.</td>
</tr>
<tr>
<td>4.</td>
<td>Legislate and amend policy frameworks to ensure that product designers consider the 'crime potential' of their products and locals must use emerging technologies to reduce opportunities for crime.</td>
</tr>
<tr>
<td>5.</td>
<td>Ensure that the build and landscaped environment is well maintained and managed and that procedures are in place to rapidly repair vandalism and graffiti and reduce the incidence of long-term vacancy and dereliction.</td>
</tr>
</tbody>
</table>

### Test these factors through the DOC approach:

1. The evidence on permeability
2. The evidence on mixed-use developments
3. The evidence on high density living
4. Features associated with quality environments
5. Interdisciplinary schemas

## OUTCOME

A pragmatic and effective crime prevention approach in an ever changing area of space and place with maximising the self policing potential of a community.

## LIMITATION

1. There is often an assumption that DOC always works and has no limitations / shortcomings.
2. There is little knowledge or appreciation of the circumstances and contexts where DOC might work less effectively.
3.6.9 The SafeGrowth model

Greg Saville, in his SafeGrowth approach, addresses core issues of how communities will plan, build and accommodate inevitable growth which will also enhance liveability, the economy and the environment (Saville, 2010:386-402). Occupying the back seat of the urban growth process is not new for crime prevention, but SafeGrowth places it in the hearts and minds of the neighbourhood as a holistic and integrated neighbourhood planning process and it transfers the idea of CPTED the best (Saville and Miller, 2010:1; Saville, 2009:386).

According to Saville and Miller (2010:1) and Saville and Cleveland (2008:86), SafeGrowth builds on strategies, security provision and on lessons from programmes such as First and Second-generation CPTED and Situational Crime Prevention. While these programmes are excellent strategies in themselves, none in itself provide an integrated and holistic way to develop, plan and administer public safety in rapid developing cities and neighbourhoods like SafeGrowth does (Saville, 2009:388; Saville and Cleveland, 2008:86). SafeGrowth provides a step-by-step method that neighbourhoods can use to create their own plan of action for spurring on the safe revitalisation of a community or a target area. Through systematic diagnoses, coordination and planning, SafeGrowth provides community groups the opportunity to develop sustainable neighbourhood capacity while creating solutions to local public safety concerns - a model for the ‘non’ expert in which communities must primarily look after themselves (Saville, 2009:387; Saville and Cleveland, 2008:86). The SafeGrowth diagnosis and planning allows community developers, planners and law enforcement to integrate services purposefully and improve safety in neighbourhoods that are plagued by crime (LISC, 2007:1).

An effective SafeGrowth plan offers an alternative to the yearly crime summaries as a measure of neighbourhood safety, or to the annual police reports as a measure of police performance (Saville and Miller, 2010:2). It instead provides a step-by-step research and planning process to form community safety plans and procedures.
SafeGrowth sites prove that strong partnerships lead to established programmes – the basic goal of SafeGrowth (LISC, 2007:2).

Introducing the SafeGrowth model requires a detailed scan of the available resources and the political climate of a target area. Programmes and resources that already exist in a community should be brought to the table from the start. Many sites found that hiring a principle co-ordinator to convene key player discussion or meetings and to assist with community scans has been valuable when identifying the strengths and weaknesses in the community. This process is referred to as community asset mapping (Kretzman and McKnight, 1993:1-11).

The SafeGrowth model, according to the researcher, exemplifies the importance of interdisciplinary teams in the review process and the requirement of a crime risk assessment (City of Saskatoon, 2010:8).

3.6.10 The phases of SafeGrowth

Based on the information derived from the observations made by Saville, (2009:391); LISC, (2007:2-20); Saville and Miller, (2010:1-5) SafeGrowth has six implementation phases:

PHASE ONE: Establishing a community voice

a. Convening and training leaders

b. Leadership team, advisory board steering committee or task force.

c. Representation from law enforcement, local government, business, town planners, non profit organisations

d. Keep it small, 8 – 10 people

e. A municipality development panel

f. Crime prevention analysts or access
PHASE TWO: Creating a neighbourhood profile

Understanding assets and liabilities

a. Crime statistics, crime maps, police input and perceptions from surveys/interviews completed by residents of the community are utilised as part of the mapping process.

b. Use multiple sources for building a neighbourhood profile including consultants, academic researchers, police crime analysts and crime prevention specialists.

Additional methods that could be used include:

a. Focus groups and round table discussions

b. Safety audits with local residents and business owners

c. CPTED surveys administered by the Leadership Team

d. Crime mapping with geographic information systems

e. Police calls for service and crime report summaries

PHASE THREE: Forming local priorities

Diagnosing problems and crafting strategies

a. Success in SafeGrowth and nearly all neighbourhood planning processes rely on the accurate diagnosis of local problems.

b. Crime is complex and it is beyond the capacity of a single agency or group to bring about change.

c. If long-term sustainability is the goal, the tools to resist crime must eventually reside within the neighbourhood.

Re-establishing local controls

The SafeGrowth Plan must consider whether it is necessary to re-establish local control in high crime ‘hot spots’. If these residents cannot enjoy an evening out for a
walk or ride on public transit without fear, they are being robbed of their right to live in peace. Public services, like transit, will be underutilised and therefore cost ineffective. Local businesses often suffer from a loss of potential income in these situations as well. In such crime hotspots, it is crucial that the leadership team includes recommendations to re-establish local control as part of the SafeGrowth Plan (LISC, 2007:12-13). These take many forms and include:

a. Requests for enhanced emergency response and targeted police intervention
b. Zero tolerance enforcement and saturation patrol
c. Non-vehicle, highly visible uniform patrol
d. Target hardening and situational crime prevention

It is important to remember that each strategy has a place and will be effective only when the diagnosis is complete. Traditional security may be necessary in one situation but not in another. The action plan must call for a specific response based on the diagnosis. For example; hardening vulnerable targets by installing fencing or instituting ‘lock it or leave it’ campaigns, can be effective when part of a tailored SafeGrowth plan incorporates measurable results.

**Problem-solving tools:** Crime is complex and it is beyond the capacity of a single agency or group to bring about change. Therefore, if long-term sustainability is the goal, the tools to resist crime must eventually reside within the neighbourhood (LISC 2007:13). A few examples of problem-solving tools include:

e. First-generation CPTED
b. Problem-oriented policing
c. Problem based learning for police officers
d. Conflict resolution programmes
It is important to acknowledge that problem-solving skills belong in the neighbourhood. They are part of the repertoire of the leadership team members, and they should be made readily available to the community. At minimum, a few people skilled in these methods should be available to teach these skills to the community. Such people include members trained in the SafeGrowth methodologies as well as neighbourhood police officers, social workers, community volunteers or business association members also trained in the SafeGrowth methodologies.

**Capacity building:** Leadership Team members may provide input on pipeline development projects using their knowledge of CPTED, thus initiating a transfer of knowledge to developers who are active in the area. Similarly, team members may conduct workshops with property owners and landlords, in a given area, to discuss how CPTED principles might shape property management decision-making (LISC, 2007:13).

**PHASE FOUR: Encouraging community engagement**

**Ratification by community members**

An important step to encourage buy-in and ensuring that SafeGrowth plans reflect community needs is; bringing the plan to the community for further input and ratification. One model in this process, endorsed by SafeGrowth experts, is the SpeakOut: a model for community engagement that “goes out to the people rather than asking them to come to it” (LISC, 2007:15).

**PHASES**

**FIVE AND SIX: Implementing and adapting a SafeGrowth plan that is responsive to community needs**

**Ongoing assessment** means sharing the plan with various business and community leaders, who in turn can advocate the plan to the city council or other governing boards (LISC, 2007:15). This has two effects.
First, the Leadership Team should have representation from the relevant city departments; therefore department heads can take steps to co-ordinate actions.

Second, the city departments and community agencies on the Leadership Teams can consolidate various recommendations from the plan into individual budgeting processes to maximize resources for the community.

Since each SafeGrowth plan must have specific and measurable targets a Leadership Team must review the results annually to assess its effectiveness. It is essential to celebrate the SafeGrowth plan accomplishments and to share the credit with all its partners (LISC, 2007:15-16).

**Table 3.18: CPTED application as per SafeGrowth**

<table>
<thead>
<tr>
<th>PRINCIPLES</th>
<th>An integrated consultative CPTED community</th>
</tr>
</thead>
<tbody>
<tr>
<td>DESCRIPTION</td>
<td>Integrated community groups must with holistic intensity plan, build and accommodate inevitable growth which will also enhance liveability, the economy and the environment.</td>
</tr>
<tr>
<td>APPLICATION</td>
<td>Basic phased CPTED plan for Non Experts, for people from the community.</td>
</tr>
</tbody>
</table>

**PHASE ONE: Establish a Community Voice**

1. Build membership from locals and influential forums.
2. A core team (8-10) team specialists in their own fields.
3. Strong collaboration characteristics.

**PHASE TWO: Creating a Neighbourhood Profile**

1. Crime statistics
2. Maps and crime mapping
3. Police records/inputs
4. CPTED surveys, safety audits,
5. Interviews with community/residents, focus groups,
6. Build profile with specialists and analysts
### APPLICATION

<table>
<thead>
<tr>
<th>PHASE THREE: Forming Local Priorities</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Diagnose local problems with knowledgeable analysis</td>
</tr>
<tr>
<td>2. The neighbourhood must choose option and tools</td>
</tr>
<tr>
<td>3. Local council and resources to be part of plan</td>
</tr>
<tr>
<td>4. Educate all role players and stakeholders</td>
</tr>
</tbody>
</table>

### PHASE FOUR: Encouraging Community Engagement

| 1. Close consultation with the community |
| 2. Constant feedback |
| 3. Physical contact |

### PHASE FIVE: Implement plan

| 1. Share plan with higher formal entities |
| 2. Show clear budget control |
| 3. Show clear project management |

### PHASE SIX: Responsive to Community Needs

| 1. Represent community |
| 2. Ongoing assessment of process versus goal and feedback |
| 3. Continuously review targets and celebrate accomplishments |

### OUTCOME

Sustainable crime prevention projects supported, owned and managed by the community.

### LIMITATION

If community structures and capacity are not knowledgeable and recognised, such a community venture will struggle to get support. A very well organised leadership, with time, is needed at all times.

### 3.6.11 Third-generation CPTED

Third-generation CPTED, the relatively recent version of CPTED, has been presented as a “quartet of places, people, technology and networks” (UNICRI, 2011:23). It draws upon both the build environment and the design aspects of
traditional CPTED approaches as well as the community engagement features of CPTED, but arguably goes beyond both these models to address the global concerns of urban life in the 21st century (Parliament of Victoria, 2013:19).

Third-generation CPTED promotes green energy and the application of novel technologies where the perception of safety and the standard of living is enhanced, and where cities can thrive in a symbiotic and synergetic relationship with natural ecology (UNICRI, 2011:26). According to Saville (2010:386-402), CPTED principles have been implemented, via an asset-oriented approach, that integrate multiple social drivers (needs and goals) within solutions to crime problems. These solutions have been developed and implemented with, and by communities rather than for them.

In comparison with One and Two, Third-generation CPTED clearly downplays the ‘security centric’ aspects of the CPTED approach. Third-generation CPTED has a far more holistic focus. Security and safety is one aspect amongst a number of other drivers, equally important but not more important “...not everybody necessarily needs to know that it is security focused in its approach” (Parliament of Victoria, 2013:20).

The challenges that urbanity faces today are not limited to concerns about being able to sustain a safe and secure mode of operation. Cities also need to take into account the larger ecosystem in which they live: the planet Earth, with its depleting resources and fragile ecosystem. Hence, the cities of today and in the near future need to not only be sustainable, but also green: designed and maintained in a way that allows them to thrive in a symbiotic and synergetic relationship with the global, natural ecology.

This section considers the similarities between the Second-generation CPTED approach and design for social innovation and sustainability. It explores the possibility of a Third-generation CPTED which ‘reframes’ crime problems drawing upon ‘design thinking’ to deliver an integrated address to multiple social drivers that realise CPTED outcomes without being CPTED led.
Third-generation CPTED inspires, “a green, sustainable, technologically enhanced approach to enhancing the living standards of urbanites and improving the image of the city as user-friendly, safe, and secure” (Harvard Education. Online 2011: Slide 15).

The context of a green and sustainable environmental design should consider the following as per an index of Third-generation challenges (UNICRI, 2011:6-16):

a. Addressing the energy crisis
b. Addressing urban pollution
c. Recycling, minimising urban waste, and waste management
d. Reprogramming the physical space and material-based consumption: online services and cyber functionality
e. Addressing urban poverty
f. Mediating conflicting interests in urban settings
g. Supporting informed, efficient urban management using situated technologies
h. The literally green city
i. Promoting interactive architectures and individuated spatial responses
j. Urban safety and security

Third-generation CPTED recommendations:

Urban-scale green, sustainable and technologically enhanced design strategies for fostering the perception of safety and security in cities through the following initiatives:

a. Urban-scale green, sustainable and technologically enhanced design strategies for fostering the perception of safety and security in cities
b. Urban surveillance, the use of harvested energy as a power source for street lighting

c. Natural urban surveillance. integrating ‘green-scapes’ into urban streetscapes to create a more pedestrian-friendly urban fabric

d. Cybernetic urban surveillance, a thousand Little Sisters instead of one Big Brother

e. Enhancing a citizen’s sense of belonging, interfaces for accessing real-time information, conflict mediation and productive discussion

f. Clarifying the dynamics of the city in real-time, enhancing the image of a city as transparent, well-maintained, safe and secure

g. Capitalising on the potential of online social networks to create a sense of belonging, to foster a culture of collaboration, and to transform the ‘me-mentality’ of individual urbanites to the ‘us-mentality’ of members of an urban, digitally enhanced multitude.

h. Technologically enhanced urban navigation contributes to the legibility of the city’s fabric, easing spatial perception and enhancing the image of the city as user-friendly, safe and secure

i. Establishing online platforms for municipalities worldwide so as to share their experiences with Third-generation CPTED and the criteria used to evaluate the results

( Harvard Education. Online 2011: Slide 15 citing UNICRI, 2011)
Table 3.19: CPTED application as per Third-generation CPTED

<table>
<thead>
<tr>
<th>PRINCIPLES</th>
<th>A green energy and novel technology CPTED approach</th>
</tr>
</thead>
<tbody>
<tr>
<td>DESCRIPTION</td>
<td>Make use of green thinking and green designs to incorporate in the CPTED approach, without it being CPTED led, and creating future sustainability in the process.</td>
</tr>
<tr>
<td>APPLICATION</td>
<td>Use green design to foster socio ecology and crime prevention</td>
</tr>
<tr>
<td></td>
<td>1. Energy from green technology</td>
</tr>
<tr>
<td></td>
<td>2. Surveillance from horde cell phones, rather than CCTV systems</td>
</tr>
<tr>
<td></td>
<td>3. Social community network for interacting and real time information</td>
</tr>
<tr>
<td></td>
<td>4. Real time awareness and transparency of all incidents</td>
</tr>
<tr>
<td></td>
<td>5. Navigation systems to guide</td>
</tr>
<tr>
<td></td>
<td>6. From ‘me’ to ‘you’, belonging to an ‘active’ group.</td>
</tr>
<tr>
<td></td>
<td>7. Enhance image as user friendly, safe and secure</td>
</tr>
<tr>
<td></td>
<td>8. Search online for similar mind-set initiatives/platforms</td>
</tr>
<tr>
<td></td>
<td>9. Search for criteria to evaluate results and new benchmarks</td>
</tr>
<tr>
<td>OUTCOME</td>
<td>Enhanced living standards, a user-friendly safe and secure environment.</td>
</tr>
<tr>
<td>LIMITATION</td>
<td>Very high level, first world and expensive. Technology taken for granted.</td>
</tr>
</tbody>
</table>

3.7 CPTED DEFINED TRIADS STATED BY CPTED EXPONENTS

CPTED has been widely used and as a result thereof has received various directives that have caused some confusion regarding the benefits of CPTED. The abovementioned breakdown of CPTED has highlighted the following core CPTED principles that can be referred to when promoting CPTED and/or when being approached by crime prevention practitioners:
3.7.1 CPTED facilitates and inhibits crime

CPTED’s central premise claims that crime can be facilitated or inhibited by features of the physical environment (Clarke, 1995a:2).

3.7.2 CPTED changes environments and reduces opportunities for crime.

CPTED, an environmental criminology approach, generally involves changing the environment to reduce the opportunity for crime (Clarke, 1995a:8; Crowe, 1991:1, 28-29, 40; Atlas, 2008:53).

3.7.3 CPTED is a cost benefit

City governments are realising that it is a lot cheaper to design crime prevention into the way things are done rather than hiring extra police, or paying for extra protection that can make the community look like a fortress instead of a pleasant place to live (Crowe, 1991:27-28).

Getting it right first time saves future connection costs or managing badly designed developments. Safe, popular places with high pedestrian counts are better for business and are reflected in a higher turnover, employment, profit, rentals, capital values and rates, according to the Ministry of Justice for New Zealand (New Zealand, 2005:7).

3.7.4 CPTED reduces fear of crime and increases quality of life.

CPTED is aimed at other outcomes including reducing fear of crime, increasing the aesthetic quality of an environment, and increasing the quality of life for law-abiding citizens, especially by “reducing the propensity of the physical environment to support crime and criminal behaviour” (Clarke, 1995a:8; Crowe, 1991:1, 28-29, 40; Atlas, 2008:53; Cozens, 2007a:187).

3.7.5 CPTED identifies and fixes opportunities of crime

Crime Prevention Through Environmental Design (CPTED) is aimed at identifying conditions in the physical and social environment that provide opportunities for, or
precipitate criminal acts, and then altering these conditions so that no crimes occur (Brantingham and Faust, 1976:289-292).

3.7.6 CPTED creates improved quality of life in efficient and sustainable communities

A sustainable community would be one in which people live without fear of crime, or persecution on account of race, gender, sexuality or beliefs (Schneider and Kitchen, 2002:27). CPTED represents a useful tool in assisting in the creation of more efficient and more sustainable urban design protocols (Cozens, 2007b:188). Sustainability has become a term, this research has identified as a non negotiable requirement for any crime prevention strategy. According to Cozens (2007b:189;192) sustainability will not achieve its full potential unless it “explicitly includes measures to address ubiquitous problems of crime and the fear of crime within the community”, as crime and the fear of crime have the potential to erode and reduce the existing levels of sustainability within a community. Cozens et al. (2005:343), define a sustainable community in this context as one that is “safe, perceives itself to be safe and is considered by others to be safe.”

3.7.7 CPTED is a criminological crime prevention approach for all crimes and all situations

CPTED is a multifunctional approach, closely associated with defensible space, situational crime prevention and environmental criminology (Schneider and Kitchen, 2002:36,91). It is a multi-disciplinary approach drawing on criminology, planning, and environmental psychology and is concerned with identifying and modifying conditions of the physical and social environment that provide opportunities for criminality with the objective of pro-actively preventing crime to eventually design out crime (Wortley and Mazerolle, 2008:153).
3.7.8 CPTED is a crime opportunity theory with the goal of reducing crime opportunities

According to Crowe (2000:46) CPTED is arguably one of the most persistent crime opportunity theories. It was developed in 1971 by Jeffery and promoted by Newman as from 1973. The goal of CPTED is to reduce opportunities for crime that may be inherent in the design of structures or in the design of neighbourhoods’ (Crowe, 2000:46).

3.7.9 CPTED is common sense

Crowe (2000:220) argues; “CPTED is a self-evident concept that has been used successfully for many centuries. Research and assessment over the past 30 years have confirmed the utility of what many people think is just good, common sense.”

3.7.10 The ‘applied’ capacity of CPTED - a handy tool

International Security Management and Crime Prevention Institute (2001:119) commended CPTED as a handy tool with which to engage residents in community crime prevention and also in addressing the causes of crime as well as in reducing fears about one’s personal safety and property within a locality. The institute approaches CPTED as a partnership that takes a risk management approach towards crime prevention, namely that crime prevention is the anticipation, recognition, and appraisal of a crime risk, and the initiation of some action to remove or reduce it.

3.7.11 CPTED is a multifunctional approach: the interaction of theory and practise

To place the multifunctional criminological approach of CPTED in an applied context, Schneider and Kitchen (2007:1–2) believe that it is important to see the field of CPTED as being essentially about the interaction of theory and practise. The challenge is to manage the environment on micro and macro levels and then in real time to control the opportunity to commit crime.
3.8 THE INCORRECT INTERPRETATIONS OF CPTED AND THE ENSUING CHALLENGES

CPTED has to overcome many challenges before it can fulfil its intended role in combating crime. Listed below are some of these challenges that are a result of incorrect interpretations that reside in perceptions based on ignorance and not on actualities.

3.8.1 Displacement:

“However, despite such findings, advocates of CPTED argue that ‘for many if not most offences, displacement is less than total’ and that in some cases it may lead to the committal of a less serious crime than the one initially planned” (Sutton, Cherney and White, 2008:57).

3.8.2 Cost and expense:

The benefits of pro-active mitigation and design will not be immediately experienced but will over time become apparent. Reactive measures are the easiest way out, but still at a very high cost. However, the causal problem will still be there. The core issues for crime are still there (City of Gosnells, 2001:3). CPTED in effect has become an industry and a profitable one at that, according to Anthony Lake, International Chair, International CPTED Association, Public Hearing, Melbourne, 27 August 2012 as cited in Parliament of Victoria (2013:51-52).

3.8.3 Lack of knowledge:

According to Stoks (2013, 53-54)) “The problem with CPTED when there is only a little bit of knowledge, and I’ve seen this with the police and with urban planners, urban designers, is that they can inadvertently make public places less safe, undermine public amenity and give CPTED a bad name because they think they have some CPTED expertise”.
3.8.4 One size fits all:

The need to tailor CPTED and design approaches to different people or communities indicates how important context is when applying any of these strategies (Parliament of Victoria, 2013:310).

3.8.5 Conflicting priorities and agendas:

“Always when you design something, crime prevention requirements come up against other requirements”, for e.g., lighting uses too much power, security design is not aesthetically pleasing, etc. (Ekblom, 2012, at public hearing cited in Parliament of Victoria, 2013:57).

3.8.6 CPTED used as a checklist and a ‘cookbook recipe’:

CPTED is not a checklist or recipe from a cook book, CPTED is a process rather than a set of hard and fast rules (Victoria Parliament, 2013:57 cited the following well respected CPTED exponents in reiterating this fact continuously, namely; Adam Thorpe, Professor Paul Ekblom, Dr Paul Cozens, Professor Kees Dorst and Dr Frank Stoks.

3.8.7 CPTED approaches may ignore or be isolated from other crime prevention approaches:

Most exponents are in agreement that only a broad raft of crime prevention strategies that include a mix of social, environmental and community approaches can be effective in not only preventing or reducing crime and antisocial behaviour but also in promoting positive, sustainable and liveable communities (Randolph and Judd, 2000:2; Cozens, 2001:1-5; New Zealand Ministry of Justice, 2005: 5 and Queensland Government, 2007:12).

3.8.8 Conflicting principles and application:

“CPTED principles do not, or at least should not, be applied according to a rigid template. What works in one place or community may not necessarily work in
another. Additionally, there can be tensions between what would be best for crime prevention and what would be best for other concerns of sustainable development” (Office of the Deputy Prime Minister, 2004:8). The following examples are mentioned by the Victoria Parliament (2013:60-64):

a. Turning inward to a fortress mentality versus looking outwards to open public spaces.

b. Security versus privacy.

c. Uniformity versus creativity.

d. Inclusivity versus exclusivity

### 3.9 CONCLUSION

The goal of this chapter was to find that specific criminological approach, or compilation of criminological theories and methodologies of which the approaches and applications could be used as a best practise crime prevention intervention model (CPIM) to ensure sustainability in the Rosslyn industrial community.

To achieve this goal the researcher had to investigate, comprehensively explore and understand CPTED: its origins, influences, developments, multi-disciplinary approaches, designs and applications so as to demonstrate its multi-dimensional capacity, and its multi-dimensional criminological approach to resolve crime, to mitigate fear of crime and to ensure the sustainability of an environment.

The purpose of this chapter was to introduce CPTED and to follow its progressive development in sequence through each of the five core evolutionary phases, explaining the applications in each phase. The core phases are:

1. CPTED First-generation.

2. CPTED Second-generation.

3. DOC.
4. SafeGrowth.

5. CPTED Third-generation.

This investigation proved that CPTED is not a quick fix ‘Toolbox or Cookbook’ solution to prevent crime. Instead it is a total crime prevention approach, which consists of a comprehensive arsenal of best practice approaches, processes and applications, which can be integrated with any security system and adapted to change in any environment, if necessary. It can be a pro-active early warning ‘crime prevention application’ in the hands of the knowledgeable and experienced practitioner, or just a target hardening ‘tool’ as a short term solution for any level exponent. In many ways CPTED can also be seen as a problem-solving tool if correctly understood.

CPTED is the applied science for security and crime prevention practitioners, who should have a thorough understanding of the CPTED approach, concepts and applications, for the purpose of designing a crime prevention model in all the fields where crime will be encountered. In this sense the research is just as much about education as it is about the design of a CPIM for Rosslyn industry.

In this chapter CPTED has shown that it truly draws from a multidisciplinary base of filtered knowledge to create its own applicable framework for mitigating any perceived criminal threat by including fields of every type and every theory: architecture, urban design and planning, sociology, psychology, anthropology, geography, human ecology, criminology and criminal justice (Atlas, 2008:53). The strength of CPTED is that if utilised as a ‘package-deal’ it basically can address any security problem and requirement, but it also has the weakness of being overly comprehensive and complex in the many different approaches, all claiming to be that ‘real’ CPTED solution.

All the relevant CPTED applications have been identified and bracketed in the same specific categories of principles, descriptions, applications, outcomes and limitations. These applications will be extrapolated into a single CPTED structure (Chapter 5) from where the applications can easily be defined and used for focussed application
where-ever and when-ever. “Coming together is a beginning; keeping together is progress; working together is success” Henry Ford.

Once the crime, security and socio ecology analysis is completed, the only aspect which may still be lacking, in order to make the CPTED process work in the crime, security and socio ecology environment of the Rosslyn industry, is the mindset. The same mindset that Gregory Saville and Elizabeth Miller referred to at the 2010 ICA CPTED Conference, when asked how they overcame the numerous CPTED related obstacles, they answered: “We just did it” (Saville and Miller, 2010).
CHAPTER 4
SUPPLY CHAIN SECURITY

C-TPAT type requirements are unavoidable for all businesses linked to export markets. SCS criteria will be demonstrated in this chapter as a criminological approach that can be implemented in Rosslyn as part of a general CPTED process.

This chapter will investigate SCS/C-TPAT and describe it in detail; what it entails, why it is beneficial to Rosslyn Industry and how its applications can be put to use as demonstrated in Research-Field Three (Figure 4.1) of this research, and in what way it will support and influence the design of a crime prevention intervention model (CPIM) for the Rosslyn Industry.

A Criminological assessment and interventions for the Rosslyn industrial environment in Tshwane, South Africa based on Multi-Inter-Trans-disciplinary principles

Figure 4.1: A graphical display of the research scope in context
Ekwall (2012:1) defines the supply chain as; “The network of organisations that are involved, through upstream and downstream relationships, in the different processes and activities that produce value in the form of products and services in the hands of the ultimate customer.”

### 4.1 THE REASON FOR GLOBAL SUPPLY CHAIN SECURITY CRITERIA

Post 9/11 saw the world becoming more and more security conscious. In fact the USA developed a security standard called; C-TPAT (Customs Trade Partners against Terrorism) to counteract any potential terrorist attacks. It is structured according to the U.S. Customs and Border Protection Supply Chain Security Best Practise Catalogue (CTPAT 2013:2), and is managed by the USA Customs and Border Police. Today every manufacturer that exports goods to the USA has to comply with this security standard before their goods are allowed into the country. In this research SCS refers mostly to C-TPAT, as it is the main entity Rosslyn Industry is currently in contact with. However, when C-TPAT (USA) is referred to the reader should understand that AEO (EU) is also inferred.

According to Globe Newswire (2013:1) both the AEO and C-TPAT programmes are voluntary supply chain security initiatives led by the EU and the U.S. customs organisations that are focused on improving the security of private companies’ supply chains with respect to terrorism. These programmes recognise that customs can provide the highest level of security, only through close co-operation with the ultimate owners of the supply chain: importers, carriers, brokers, warehouse operators and manufacturers. Through this initiative, customs invites businesses to ensure the integrity of their security practices and communicate their security guidelines to their business partners within the supply chain.

### 4.2 THE REQUIREMENTS AND THE IMPLICATIONS

The USA customs and the border police impose quarantine and strict verification actions on the export manufacturer if the security compliance requirements of the C-TPAT standard are not met. This can result in all export material being delayed at the
USA entry ports for an unspecified time, and such a delay could cause an export manufacturer financial losses and also the loss of time. The suppliers and service providers have become the indirect security responsibility of the exporting manufacturer (CTPAT 2014:20-21). The requirements of supply chains, especially those for export manufacturing, have become more and more regulated and structured by standards for security (US Customs and Border Protection, 2004:14).

All of these ‘standards’ demand specific security standards channelled through supply chains to prevent crime and terrorist activities. Supply Chain Security (SCS) has become a necessity to business trade environments and society as it is in every stakeholder’s interest to be accredited as a safe-trade-partner. A safe-trade-partner status has many benefits when compliant to SCS standards. The alternative is to be admonished through serious trade penalties that make competitive trade impossible (US Customs and Border Protection, 2004:14).

4.3 MEMBER STATUS

Over the past decade, most of these programmes have been strengthened following further incidents and changing threat patterns that provoked government and industry interventions. To give an example, recent interceptions of improvised explosive devices originating from Yemen have triggered U.S. and E.U. governments to further enhance air cargo security regulations and introduce additional safeguards to protect civil aviation (Haelterman, 2013:7). As a result of this interception the Presidency of the European Council and the European Commission set up a high level working group to look at ways of strengthening air cargo security (Council of the European Union, 2010). This has led to revised legislation, Commission Implementing Regulation EU: 2011, regarding cargo and mail being carried into the European Union from third world countries, and to discussions as to whether or not to make use of the customs’ system of advance information analysis on all cargo movements entering, transiting, and exiting the European Union (Haelterman, 2013:7).

C-TPAT was initiated soon after 9/11 with seven importer partners. By the end of 2013 this initiative had more than 10,650 critical players in the global supply chain, all certified members in over twelve business sectors of the supply chain industry (C-
TPAT, 2014:1). However, this is not the only security standard available, many other countries realised the importance of such a standard and developed their own according to their own requirements: The European Standard ‘AEO’ (Authorised Economic Operator); the Transport Asset Protection Association standard ‘TAPA’; the Business Alliance for Secure Commerce standard ‘BASC’; and the Singapore Secure Trade Partnership ‘STP’ standards. Thus numerous ISO standards have been developed for supply chains e.g., ISO 31000, ISO 28000, ISO 28002, apart from C-TPAT. Then, in January 2013 AEO and C-TPAT joined forces and a mutual agreement was signed between the two major supply chain standard organisations (SCSI. 2013:1).

However, the SCS membership is still ‘voluntary’. Thus it must be measured against reality, as in life insurance that is also voluntary, so is business not sustainable without SCS membership. This SCS initiative is on record that it makes the ethical awareness of supply chains transparent over the whole trade spectrum, which even includes child labour and human trafficking in the vendor chains (Haindl, 2014:1).

4.4 **CRIME AS DEFINED IN SCS**

According to Hintsa (2011) cited by Haelterman,( 2013:5), supply chain related crime types can be divided into broad categories for example; economic crime; including theft, human trafficking, customs law violations, parallel trade, environmental crime, etc. Hintsa (2011) mentioned that initially crime can also purposely facilitate other types of crime including terrorism, sabotage, vandalism, etc.

Cargo theft has been identified as a major concern to industry, with the declared value of the loss being only a small part of its total consequential impact (Burges, 2012:392). According to Burges (2012:46-48), “the costs associated with replacing the load, loss of market share, increased insurance premiums and – in some industries – product recalls and loss of brand trust must all be factored in when analyzing how cargo theft impacts a company’s bottom line”. For the U.S., the total estimated cargo related theft loss value in 2011 amounted to approximately $130,000,000 (CargoNet, 2012:4). According the European Union the theft of high
value/high risk products, moving in supply chains in Europe, cost businesses in excess of € 8.2 billion a year (TAPA, 2012:2).

Ekwall (2010:11) demonstrates that the perpetrators in the supply chain environment use specific methods to attack transport in different parts of the transport chain. The insecure parking, together with the near end location is the most risky parts of a transport chain for the business. Ekwall (2010:11) cites Sherman (1995), stating that crime will, in the future, be six times more predictable by location than by perpetrator due to the predictability of the system. It is easy to understand that the predictable traffic movement of goods will attract criminals. A location repeatedly used, provides desirable goods and is the preferred target of the perpetrators. The perpetrators can, from a system point of view, change location and method, the actual target (type of goods) has a lesser changing trend. The trend is that perpetrators change their modus operandi in order to steal the same type of products from transport. The failure of countermeasures may be found in the different supply chain stakeholder’s limitation to only see the risk within their own responsibility and thereby not applying a holistic approach (Ekwall, 2010:12).

When it comes to potential terrorist threats to supply chains there are two broad categories of transport security risks that have been deduced within this overview of intervention scenarios (Haelterman, 2013:8).

1. Infrastructure risks; where the terrorist has the objective to damage or to destroy transport elements in order to disrupt the supply chain;
2. Supply chain risks; where the objective is to misuse the supply chain as a means to create damage or fatalities.

According to Haelterman (2013:8) the transport supply chain can either be misused as a means of transport. e.g., as a means to conceal and transport various explosives, incendiary devices or nuclear devices to a location where they are unloaded or detonated, or as a weapon, e.g., releasing or detonating dangerous goods, preferably in densely populated areas. Haelterman (2013:8) also states that
what is most important here is that each of these crime types – including their subtypes - will require a tailored response.

4.5 SCS AND ROSSLYN

The argument for utilising the SCS criteria in this research is; the C-TPAT/AEO type requirements are becoming more and more unavoidable for all businesses linked to export markets. Rosslyn stake holders are and will progressively realise the importance of abiding by the authority regulations.

This was confirmed in a letter received from the ‘UK HM Revenue and Customs’ dated 15 June 2012 which stated; “SARS (South African Revenue Services) colleagues understand that developing a programme along the lines of the EU AEO requirements could offer huge benefits to both their businesses and the customs organisation.”

The Rosslyn business requirements for SCS by will be discussed in Chapter 6 as per the research conducted in the CRA (Criminological Risk Analysis) for Rosslyn Industry.

4.6 EXPECTED C-TPAT SECURITY CRITERIA

Generic SCS criteria

According to C-TPAT (2005:3-7) Supply Chain Security is expected to be in compliance with the regulations stipulated by the following:

1. Business partner requirement: selection criteria and security capacity
2. Container inspection: delivery verification and safety
3. Physical access controls: tracking and tracing of all, procedures and standards to keep clean
4. Security training and threat awareness: physical and ecological
5. Information technology: information protection, data protection

6. Personnel security: vetting and termination procedures

7. Procedural security: ISO, document processing and review

**Expected Best Practise viewpoint**

Furthermore C-TPAT (2009:3) explains that Supply Chain Security is all about innovative solutions developed by the C-TPAT (also AEO type members) and have to comply with the minimum security criteria. Best practises are generally defined as supply chain security measures that:

1. Exceed the minimum requirements

2. Incorporate senior management

3. Have written and verifiable processes that govern their use

4. Employ a system of checks and balances

5. Have measures in place to ensure continuity

**Future intentions**

The CBP (Customs Border Police) has made it clear that once the goals, objectives and strategies contained in the C-TPAT programme have been implemented it will become the domestic and international supply chain security platform all other programmes will be judged by in future. (C-TPAT 2004:37).

### 4.7 SUPPLY CHAIN SECURITY APPLICATION

The implementation of the SCS application is complex because it is an internal process which must be duplicated externally where applicable. The C-TPAT (2004:18-35) guide provides comprehensive strategies and goals to this effect which have been contextualised within a simple process (see Table 4.1).
# Table 4.1: The SCS goals, objectives and processes

<table>
<thead>
<tr>
<th></th>
<th>THE SCS GOALS, OBJECTIVES AND PROCESS (C-TPAT 2004:18-35)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Analyse security profile</td>
</tr>
<tr>
<td>2</td>
<td>Validate information, ensure integrity</td>
</tr>
<tr>
<td>4</td>
<td>Engage and leverage all within the supply chain</td>
</tr>
<tr>
<td>5</td>
<td>Develop communications platform</td>
</tr>
<tr>
<td>6</td>
<td>Provide training</td>
</tr>
<tr>
<td>7</td>
<td>Share best practices</td>
</tr>
<tr>
<td>8</td>
<td>Design minimum standards</td>
</tr>
<tr>
<td>9</td>
<td>Provide benefits</td>
</tr>
<tr>
<td>10</td>
<td>Get community involved</td>
</tr>
<tr>
<td>11</td>
<td>Get local municipality involved</td>
</tr>
<tr>
<td>12</td>
<td>Get law enforcement involved</td>
</tr>
<tr>
<td>13</td>
<td>Collaborate with partners</td>
</tr>
<tr>
<td>14</td>
<td>Enhance plan, best practise</td>
</tr>
<tr>
<td>15</td>
<td>Ensure enough and right human capital</td>
</tr>
<tr>
<td>16</td>
<td>Enhance information networks</td>
</tr>
<tr>
<td>17</td>
<td>Continuous performance measures and analysis</td>
</tr>
<tr>
<td>18</td>
<td>Measure practises</td>
</tr>
</tbody>
</table>
### 4.8 POSSIBLE IMPLEMENTATION PROBLEMS

Table 4.2 provides examples of possible implementation problems reported by end-users, all Regulated Agents listed on the official site of the Dutch Government to the four major Express Integrators and TAPA. All reported that after the implementation of the respective measures the problems had successfully been resolved (Haelterman, 2013:12).

#### Table 4.2: Implementation problems of SCS

<table>
<thead>
<tr>
<th>PROBLEM AREA</th>
<th>EXAMPLES OF REPORTED PROBLEMS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Integrity checks</strong></td>
<td>1. Limited ability to check previous employment or criminal history due to privacy legislation and lack of access to the necessary information sources</td>
</tr>
<tr>
<td></td>
<td>2. Limited ability to verify information cross borders</td>
</tr>
<tr>
<td><strong>Required level of knowledge, expertise and guidance</strong></td>
<td>1. Expertise required to check the identity of persons delivering known freight; to verify cargo documentation and to screen consignments for prohibited articles</td>
</tr>
<tr>
<td><strong>Practicability</strong></td>
<td>1. Difficulties encountered with organising security awareness training for all relevant categories of staff and with limiting the use of soft-sided trailers during peak season</td>
</tr>
<tr>
<td></td>
<td>2. Inability to seal multiple stop, pick-up and delivery vehicles</td>
</tr>
<tr>
<td><strong>Financial/economic cost</strong></td>
<td>1. Cost of screening equipment; staff vetting; providing full CCTV-coverage and protecting windows or other openings in warehouse walls and roofs</td>
</tr>
<tr>
<td><strong>Ethical/social cost</strong></td>
<td>1. Privacy issues related to staff vetting, controlling access to facilities and conducting identity checks</td>
</tr>
</tbody>
</table>
### PROBLEM AREA | EXAMPLES OF REPORTED PROBLEMS
--- | ---
Reverse effects | 1. Escalation of violence when using overt or covert escorts to secure transport movements
Stakeholder / user belief | 1. Limited belief in the effectiveness of certain documentation requirements

Haelterman (Haelterman, 2009 as cited in Haelterman, 2013:12) argued that one can choose to avoid the risk, or to reduce it, or to spread it by means of introducing situational controls to tolerate, transfer, avoid or to tackle the risk, which forms the core of this research section in relation to the previous chapters.

Haelterman (2013:18) identified six core stages or processes to follow, to solve SCS problems:

1. An identification and a definition of the problem and its relevant stakeholders;
2. An analysis of the situational conditions that permit or facilitate the commission of the crime(s) under study;
3. An inventory of potential counter measures that are thought to be effective to mitigate the problem;
4. An ex-ante consideration of these measures;
5. Their actual implementation and
6. An ex-post evaluation.

### 4.9 SUPPLY CHAIN SECURITY: A CRIMINOLOGICAL PERSPECTIVE

The relevance of SCS/C-TPAT to Criminology lies in the C-TPAT approach to crime prevention.
Hintsa, Ahokas, Männistö, and Sahlstedt (2010:63) state that “opportunities of situational crime prevention theories are not widely exploited in SCS initiatives and they should be explored further in the future to reduce crime in supply chains”.

Ekwall (2012:2) argued that an intervention was required that would bring theories from criminology into the scientific field of logistics and supply chain risk management. In his interdisciplinary research he demonstrated the need for criminology to strengthen the interdisciplinary field of logistics.

Sarnecki 2003; Sherman, Gartin and Buerger (1989) and Sampson, Eck and Dunham (2010), stated that criminology distinguishes the presence of three elements of a crime that is important to Supply Chain Security, namely:

1. Motivated perpetrator
2. Target (goods and equipment)
3. Location (the place where perpetrator and object meets)

According to Haelterman (2013:2), SCS follows prescriptive, detailed and a variety of approaches within situational measures as defined by Criminology, “one of the most important crime prevention frameworks [for SCS] is situational crime prevention”.

Stock (1997:515-539) postulated that information on crimes against supply chains has been developed from theories of criminology, for applicable use, to strengthen the scientific field of logistics.

Ekwall (2010:5;12) argues that the routine activity perspective provides an excellent theoretical foundation regarding criminal threats against logistics. In this context Ekwall cited Clarke and Cornish (2003:41-96) who in their part, reiterate that the most important thing to remember with crime opportunities is, that an opportunity alone does not explain why a crime occurs because a crime needs a motivated perpetrator and an opportunity to occur. That is why a more inclusive criminological approach to supply chain security is needed.
According to Haelterman (2013:10), as part of a Security Research Project, between 2006 and 2009, two targeted studies were conducted on behalf of the Directorate-General Transport and Energy of the European Commission regarding mitigating supply chain crimes; one was designed to protect civil aviation against unlawful interferences and the other was specifically designed for theft prevention. All the measures of these two studies could be classified and approached using the criminological situational crime prevention approach according to the classification of opportunity-reducing techniques as discussed by the authors, Clarke and Cornish (2003:41-96) and as illustrated in Figure 3.2 and adopted for SCS in Table 4.3. The same exercise was consequently performed on other supply chain security programmes, displaying a similar preference of policy makers for situational crime prevention. The modifying of the settings, and the opportunity structures in which crime occurs seemingly becomes the main focus. (Haelterman, 2013:11),

Table 4.3: Situational crime prevention as designed for SCS

<table>
<thead>
<tr>
<th>SITUATIONAL STRATEGY</th>
<th>EXAMPLES TAKEN FROM THE TAPA FSR AND THE EU 2005 AIR CARGO SECURITY PROGRAM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increase the effort</td>
<td>1. Arrange access control to premises and designated areas in order to ensure that air cargo is secured from unauthorised interference</td>
</tr>
<tr>
<td></td>
<td>2. Lock and seal vehicles</td>
</tr>
<tr>
<td></td>
<td>3. Provide a restricted-access, caged/vault area for assets remaining on site for more than two hours</td>
</tr>
<tr>
<td></td>
<td>4. Protect ground floor warehouse windows by anti-ram posts or other physical barriers</td>
</tr>
<tr>
<td></td>
<td>5. Utilise hard sided instead of soft sided trailers</td>
</tr>
<tr>
<td>SITUATIONAL STRATEGY</td>
<td>EXAMPLES TAKEN FROM THE TAPA FSR AND THE EU 2005 AIR CARGO SECURITY PROGRAM</td>
</tr>
<tr>
<td>-----------------------</td>
<td>--------------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| Increase the risk     | 1. Perform identity checks on persons delivering known freight  
                        | 2. Arrange CCTV external coverage of shipping and receiving yard, including entry/exit points, to cover the movement of vehicles and individuals  
                        | 3. Have motion detection alarms in place inside the warehouse and make sure these are activated when the entire facility is vacated  
                        | 4. Request staff to report any irregularities immediately to management or to the authorities |
| Increase the effort / increase the risk | 1. Arrange for staff vetting/pre-employment screening  
                                           | 2. Screen consignments for prohibited articles  
                                           | 3. Provide security controlled access points (e.g. guards, card access or CCTV with intercom) |
| Increase the risk / remove excuses | 1. Provide awareness training to all relevant categories of staff  
                                         | 2. Provide robbery response training detailing safe and secure actions to be taken during the event a driver being threatened  
                                         | 3. Provide security awareness training to drivers on mitigating risks |
| Reduce rewards         | 1. Avoid pre-loading or post-delivery storage of assets in trailers |
| Remove excuses         | 1. Declare in writing that air cargo consignments do not contain any prohibited articles unless properly declared  
                                         | 2. Allow no subcontracting without prior agreement in writing  
                                         | 3. Communicate Security policies to all employees |

Opportunity and situational criminology is further promoted by Ekwall (2012:12) in that the offender threats differ between the network configurations according to the elements of crime. Different types of goods/products are shipped in the different
configurations, depending on the demands of their respective supply chain’s requirements, while the transport movements are in general very predictable. The practical consequence of this is that the routine activities perspective is a valid theory for antagonistic threats, which result in the potential perpetrators, in their pursuit of the right (desirable) object, adjusting to the movement (routine) of the victim (transport elements like facilities and cargo carriers). The theft opportunity depends on the perpetrator’s ability to use the routines of the target in combination with the lack of security at a certain location.

In Table 4.4 the deducted applications are tabulated as derived from this chapter. These must be incorporated in the proposed CPIM and tested by the CRA.

Table 4.4: SCS application as crime prevention approach

<table>
<thead>
<tr>
<th>PRINCIPLES</th>
<th>Protecting logistical supply chains pro-actively</th>
</tr>
</thead>
<tbody>
<tr>
<td>DESCRIPTION</td>
<td>Utilising situational crime prevention techniques as specific security criteria, tailor made per location</td>
</tr>
<tr>
<td>APPLICATION</td>
<td>1. Deter via tailor made access and egress measurements</td>
</tr>
<tr>
<td></td>
<td>2. Target hardening based on sound risk analysis</td>
</tr>
<tr>
<td></td>
<td>a. Increase the effort</td>
</tr>
<tr>
<td></td>
<td>b. Increase the risk</td>
</tr>
<tr>
<td></td>
<td>c. Reduce rewards</td>
</tr>
<tr>
<td></td>
<td>d. Remove excuses</td>
</tr>
<tr>
<td></td>
<td>3. Exceed the minimum requirements as best practise through continuous innovative change management</td>
</tr>
<tr>
<td></td>
<td>4. Incorporate senior management, get buy in of all stakeholders,</td>
</tr>
<tr>
<td></td>
<td>5. Keep track of all processes through written and verifiable compliance and ensure continuity of status</td>
</tr>
<tr>
<td></td>
<td>6. Self policing and self assessment</td>
</tr>
<tr>
<td></td>
<td>7. Share information with members</td>
</tr>
</tbody>
</table>
## APPLICATION

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>8.</td>
<td>Partner with community, local enforcement + services</td>
</tr>
<tr>
<td>9.</td>
<td>Effective communications platform</td>
</tr>
<tr>
<td>10.</td>
<td>Train and empower role players continuously</td>
</tr>
<tr>
<td>11.</td>
<td>Get the right people for the task, specialists</td>
</tr>
<tr>
<td>12.</td>
<td>Measure and test security guidelines pro-actively</td>
</tr>
<tr>
<td>13.</td>
<td>Support and enhance security plans</td>
</tr>
</tbody>
</table>

## OUTCOME

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Secure business partners</td>
</tr>
<tr>
<td>2.</td>
<td>Delivery verification and safety</td>
</tr>
<tr>
<td>3.</td>
<td>Tracking and tracing of all material with verified procedures and standards</td>
</tr>
<tr>
<td>4.</td>
<td>All role players trained and aware of threats, physical and ecological</td>
</tr>
<tr>
<td>5.</td>
<td>Information and data protected through supply chain</td>
</tr>
<tr>
<td>6.</td>
<td>Personnel vetted, new and terminated</td>
</tr>
<tr>
<td>7.</td>
<td>Procedures ensured through standards and reviews</td>
</tr>
<tr>
<td>8.</td>
<td>Extensive network and collaboration</td>
</tr>
</tbody>
</table>

## LIMITATION

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Availability of relevant historical information</td>
</tr>
<tr>
<td>2.</td>
<td>Low level of knowledge and expertise</td>
</tr>
<tr>
<td>3.</td>
<td>Practicality of requirements</td>
</tr>
<tr>
<td>4.</td>
<td>Cost for pro-active measurements</td>
</tr>
<tr>
<td>5.</td>
<td>Ethical/Socio restraints on identity checks</td>
</tr>
<tr>
<td>6.</td>
<td>Escalating of violence because of measures</td>
</tr>
<tr>
<td>7.</td>
<td>Limited support and belief in record keeping processes</td>
</tr>
</tbody>
</table>

### 4.10 CONCLUSION

In this chapter the goal was to demonstrate the SCS requirements, explain its importance in Rosslyn, and to uphold it against criminology in general and CPTED in...
particular, as a possible home for the SCS in approach, methodology and sustainability. To achieve these goals it was necessary to explore and to unpack SCS, to demonstrate its relation to Criminology and the importance as well as the relevance of incorporating it in the CPIM for Rosslyn.

SCS is found to be an applied crime prevention methodology, designed by security and or risk control practitioners for that specific market. This application clearly resides within the multidisciplinary CPTED approach (Chapter 3). In this Chapter it proves to be part of the already defined CPTED or a field addition to CPTED. The CPIM for Rosslyn will incorporate the unique mitigation measures as per the SCS criteria in Table 4.4.

The specific outcome was achieved, namely: to incorporate SCS in the CPIM of Rosslyn as part of CPTED or as a stand-alone component. The literature research in Criminology and Supply Chain Security (Chapters 2-4) supports Felson and Clarke (1998), in that opportunity creates and/or provokes crime to happen. Opportunity for crime and its applied mitigation is best described in the environmental criminological realm. The golden thread that currently weaves through this research is that crime prevention implies a multi association between methods, approaches and stakeholders, in other words, crime prevention is in essence a Multi- Inter- Trans disciplinary phenomenon.

In this context, SCS (Supply Chain Security) is nothing more than an environmental criminological application and more specific another CPTED variant.
CHAPTER 5
THE EXTRAPOLATION AND DESIGN OF AN APPLIED CRIMINOLOGICAL INTERVENTION APPROACH AND THE DESIGN OF A RISK ANALYSIS TOOL

5.1 INTRODUCTION

This chapter will extrapolate all the applied crime prevention measures uncovered and discussed in Chapter 2 (Environmental Criminology), Chapter 3 (CPTED) and Chapter 4 (SCS) and from this action a CPIM (Crime Prevention Intervention Model) model will be designed, which will encapsulate all criminological CPTED derived approaches, theories and methodologies.

This research requires a risk analysis methodology, which is not just a data gathering checklist/cookbook, but is applicable over multidisciplinary fields and crime connected environments. In this chapter such a risk analysis will be rationalised and introduced.

At the end of this chapter the conclusion will summarise the outcomes of the Field-one and Field-two research goals mentioned in Chapter One.

5.2 APPLIED CPTED METHODOLOGY

Specific applied crime intervention methodologies were deduced from Chapter 2 (Environmental Criminology), Chapter 3 (CPTED) and Chapter 4 (SCS), which encapsulated Criminology, CPTED and SCS. These deductions were placed in applied tables per intervention topic discussed in Chapters 3 and 4.

In this chapter the applied criminological interventions uncovered in these chapters are extrapolated and structured under three interlinked and mutually inclusive CPTED SUITE filters (see Figure 5.1), namely:
1. CPTED SUITE Basic: The basic core security driven requirements: small projects

2. CPTED SUITE Central: Medium to large crime prevention projects centrally controlled: internal networks, and

3. CPTED SUITE Advanced: Community controlled: large external networks

Each CPTED SUITE filter is supported and informed by its unique principles, descriptors, applications, outcomes and limitations known as CPTED SUITE fundamentals. CPTED is a Multi-Inter-Trans-disciplinary approach which must be adhered to, encouraged and enabled to always search for the best solution for a problem posed in its environment. In this instance a ‘CPTED SUITE Median’ will demonstrate where the CPTED Levels are focused, or to which CPTED SUITE filter level it leans towards more or less. This measure will be indicated through a Bell-Curve format to show if it leans towards the Basic, Central or Advance approach. The goal is to ascertain where the focus is so that the correct CPTED Gist application can be assessed.

The CPTED SUITE application can be used for any type of crime prevention problem no matter the size. Obviously for the more comprehensive application, as in Rosslyn Industry, the CPTED SUITE approach will imply the Advanced Level as it requires a holistic and encapsulating approach, starting with advanced community involvement. Whilst for an identified small business problem, CPTED SUITE Basic will most possibly suffice by attending target hardening issues. However, the CPTED SUITE filters are mutually inclusive, which means a crime prevention exponent can find its problem fits across all three the CPTED SUITE filters, for both big and small projects. The CPTED SUITE must introduce the exponent to the correct CPTED options.
This method is designed to provide guidance, to security practitioners, in the discriminative analysis of the crime intervention process. It guides the practitioner to the correct crime prevention methods and approaches applicable without complexity. This process provides crucial practical recommendations. CPTED SUITE processes not only enhance critical thinking, these are also a skills transfer tool in the applied field of CPTED. Where more details for each CPTED SUITE filter is required the practitioner can revert to Chapters 2 to 4.
5.2.1 CPTED SUITE: The principle fundamental

![Figure 5.2: The Principle Fundamental of the CPTED SUITE](image)

Users of this model can make use of the principle fundamentals to determine which level of CPTED SUITE filter (Basic or Central or Advanced), or combination of these CPTED SUITE filters they can put to use. Keep in mind the principle fundamentals of each CPTED SUITE first need to be consulted to determine if they meet the specific intervention requirements, to mitigate a specific problem, or threat, or crime – as preferably identified through a criminological security analysis. The logic choice will show what filter level of the CPTED SUITE, or combination thereof, needs to be investigated for the right CPTED problem-solving approach. The applied principle fundamental descriptions of all three the CPTED SUITE levels, are mentioned next, as extrapolated from the literature research in the previous chapter.

It is important to note that the CPTED SUITE application is worth nothing if the problem it must mitigate is not known. The CPIM requires a comprehensive understanding of the risks, threats and needs of an environment under threat. The success of a CPTED SUITE is dependent on a proper Criminological Risk Analysis (CRA). For the purpose of this research, in the Rosslyn Industry, a comprehensive
risk and needs CRA is completed (Chapter 6) to uncover the principle problems which will be filtered through the CPTED SUITE to mitigate the problems identified. This aspect is discussed in this chapter.

Table 5.1: The Principle Fundamental of the CPTED SUITE

<table>
<thead>
<tr>
<th>LEVEL</th>
<th>CPTED SUITE PRINCIPLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>BASIC</td>
<td>1. A model for modifying criminal behaviour in a specific controlled environment</td>
</tr>
<tr>
<td></td>
<td>2. Defence of physical space in order to maximise the self policing potential of the community.</td>
</tr>
<tr>
<td></td>
<td>3. Hardening of physical space to control human behaviour</td>
</tr>
<tr>
<td>CENTRAL</td>
<td>1. A holistic and sustainable approach in own space</td>
</tr>
<tr>
<td></td>
<td>2. Extensive crime prevention technology</td>
</tr>
<tr>
<td></td>
<td>3. Multi Crime Prevention approaches</td>
</tr>
<tr>
<td></td>
<td>4. Collaboration and co-operative crime prevention</td>
</tr>
<tr>
<td></td>
<td>5. Problem-solving platform for Crime Prevention</td>
</tr>
<tr>
<td></td>
<td>6. Reduce opportunity and fear of crime</td>
</tr>
<tr>
<td></td>
<td>7. Protecting predictable supply chains pro-actively</td>
</tr>
<tr>
<td>ADVANCED</td>
<td>1. A community based dimension</td>
</tr>
<tr>
<td></td>
<td>2. Drives community sustainability</td>
</tr>
<tr>
<td></td>
<td>3. Design pro-actively against crime</td>
</tr>
<tr>
<td></td>
<td>4. Integrated consultative community</td>
</tr>
<tr>
<td></td>
<td>5. Green energy and novel technology</td>
</tr>
</tbody>
</table>
5.2.2  CPTED SUITE: The description fundamental

![Table of CPTED SUITE](image)

**Figure 5.3:** The Description Fundamental of the CPTED SUITE

After the most relevant CPTED SUITE principle, or combination thereof, has been selected, the entity or individual with the crime problem will be taken to the next step in the CPTED SUITE process, namely the descriptive fundamental phase. Here the practitioner will be shown the required mind set or gist what the preferred approach requires in a descriptive format. The question the practitioner must ask is “which descriptive fundamental describe my problem/requirement the best?”
### Table 5.2: The Description Fundamental of the CPTED SUITE

<table>
<thead>
<tr>
<th>LEVEL</th>
<th>CPTED SUITE DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>BASIC</td>
<td>1. Identify, isolate and restructure physical build characteristics</td>
</tr>
<tr>
<td></td>
<td>2. Fortified lifestyle of the build environment</td>
</tr>
<tr>
<td></td>
<td>3. Practical and situational crime prevention</td>
</tr>
<tr>
<td>CENTRAL</td>
<td>1. Not a ‘one’ solution, combination of factors</td>
</tr>
<tr>
<td></td>
<td>2. Collaboration of socio ecology and crime prevention</td>
</tr>
<tr>
<td></td>
<td>3. Design and utilisation of space for human behaviour</td>
</tr>
<tr>
<td></td>
<td>4. Increase predictability of movement</td>
</tr>
<tr>
<td></td>
<td>5. Use natural opportunities to enhance target hardening.</td>
</tr>
<tr>
<td></td>
<td>6. Valid and reliable risk analysis</td>
</tr>
<tr>
<td></td>
<td>7. Removal/reduction of crime opportunities</td>
</tr>
<tr>
<td></td>
<td>8. Security criteria tailor-made per location, per threat</td>
</tr>
<tr>
<td>ADVANCED</td>
<td>1. Community consultation/leadership needed for:</td>
</tr>
<tr>
<td></td>
<td>a. physical,</td>
</tr>
<tr>
<td></td>
<td>b. social, and</td>
</tr>
<tr>
<td></td>
<td>c. environmental crime prevention.</td>
</tr>
<tr>
<td></td>
<td>3. To promote future sustainable development</td>
</tr>
<tr>
<td></td>
<td>4. Create livable, civilised and balanced communities</td>
</tr>
<tr>
<td></td>
<td>5. Well-maintained work and urban capacity</td>
</tr>
<tr>
<td></td>
<td>6. To empower citizens</td>
</tr>
<tr>
<td></td>
<td>7. Fostering community engagement.</td>
</tr>
<tr>
<td></td>
<td>8. Trans-disciplinary crime prevention</td>
</tr>
<tr>
<td></td>
<td>9. Integrated community groupings</td>
</tr>
<tr>
<td></td>
<td>10. Holistic intensity</td>
</tr>
<tr>
<td></td>
<td>11. Protect the economy and the environment</td>
</tr>
<tr>
<td></td>
<td>12. Utilise green thinking and green designs</td>
</tr>
</tbody>
</table>
5.2.3 CPTED SUITE: The application fundamental

![Figure 5.4: The Application Fundamental of the CPTED SUITE](image)

The CPTED SUITE’s fundamental criterion per CPTED SUITE level is there to provide the practitioner with applicable methods and choices to implement comprehensive applicable intervention measures. This fundamental level of the CPTED SUITE will guide the establishment, the design, the implementation and the maintenance of the intervention measures as well as the management thereof.
<table>
<thead>
<tr>
<th>LEVEL</th>
<th>CPTED SUITE APPLICATION</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>BASIC</strong></td>
<td>Design-in or modify environments for crime prevention by considering the following ‘CPTED Basic’ processes:</td>
</tr>
<tr>
<td></td>
<td>1. Natural, employee and formal surveillance</td>
</tr>
<tr>
<td></td>
<td>2. Territorial realisation</td>
</tr>
<tr>
<td></td>
<td>3. Image statement</td>
</tr>
<tr>
<td></td>
<td>4. Milieu characteristics</td>
</tr>
<tr>
<td></td>
<td>5. Mechanical target hardening</td>
</tr>
<tr>
<td></td>
<td>6. Organisation of human measures</td>
</tr>
<tr>
<td></td>
<td>7. Natural layered measures or zoning</td>
</tr>
<tr>
<td></td>
<td>8. Territorial reinforcement</td>
</tr>
<tr>
<td></td>
<td>9. Designation: Purpose of space</td>
</tr>
<tr>
<td></td>
<td>10. Definition: Designed in what way and for what reason</td>
</tr>
<tr>
<td></td>
<td>11. Design: Can design support the required behaviour?</td>
</tr>
<tr>
<td></td>
<td>12. Target removal</td>
</tr>
<tr>
<td></td>
<td>13. Removing means to crime</td>
</tr>
<tr>
<td></td>
<td>14. Reducing the pay –off</td>
</tr>
<tr>
<td></td>
<td>15. Increase of environment management</td>
</tr>
<tr>
<td><strong>CENTRAL</strong></td>
<td>Design-in or modify environments for crime prevention by considering the following ‘CPTED Central’ processes:</td>
</tr>
<tr>
<td></td>
<td>1. Problems with early designs, and later add-ons</td>
</tr>
<tr>
<td></td>
<td>2. Inclusion of dynamic human behaviour</td>
</tr>
<tr>
<td></td>
<td>3. Take into account socio ecology conditions</td>
</tr>
<tr>
<td></td>
<td>4. Limited involvement of the community in solutions</td>
</tr>
<tr>
<td></td>
<td>5. Provide specialist security management</td>
</tr>
<tr>
<td></td>
<td>6. Provide specialist security analysis</td>
</tr>
</tbody>
</table>
7. Ensure optimum cost awareness
8. Technology as force multiplier
9. Manage social cohesion
10. Manage connectivity
11. Community culture
12. Manage capacity threshold
13. Manage culprit-centred approach
14. Manage victim-centred approach
15. Integrate security with target hardening
16. Involve all potential role players
17. Interdependence between administration and citizens
18. Pragmatic and common sense public forums
19. Rigorous debate
20. Understand the ‘why’ crime happens before it is engaged
21. An investigative, arrest and prosecuting capacity?
22. Understand minimum requirements
23. Best practise through continuous innovative change management
24. Incorporate senior management, get buy in of all stakeholders
25. Keep track of all processes through written and verifiable compliance and ensure continuity of status
26. Self policing and self assessment
27. Share information with members
28. Effective communications platform
29. Train and empower role players continuously
30. Get the right people for the task - specialists
31. Measure and test security guidelines pro-actively
32. Support and enhance security plans
### Central

Strategy for security plans based on:

1. Layered approach
2. Specific target protection
3. Opportunity deflection
4. Early warning
5. SARA
6. 5I’s
7. CRA
8. PMC
9. 3D’s + D Extension
10. Neutralise by investigating, arrest and prosecute

Situational activities to mitigate crime opportunity:

1. Increase the effort.
2. Increase the risks
3. Reduce the rewards
4. Reduce provocation
5. Remove excuses

### Advanced

Design-in or modify environments for crime prevention by considering to follow ‘advanced’ processes:

1. Be part of a development approach, address the poor...
2. A phased CPTED plan for non experts, for people from the community.
3. Promote crime prevention through multiple parties
4. Exchange ideas and experiences between networks
5. Adequate and equitable infrastructure delivery
6. Embed crime prevention principles within all relevant local planning policies, practises and major projects to reduce opportunities for crime and the fear of crime.
7. Apply a multi-agency, social and community development approach when implementing crime prevention policies and practices.
8. Legislate and amend policy frameworks to ensure that product designers consider the ‘crime potential’ of their products.
9. Ensure local enforcement; understand emerging technologies to reduce opportunities for crime.
10. Development of situational crime prevention approaches
11. Reform the criminal justice system to work for you
12. Establish a community voice
31. Creating a neighbourhood profile
14. Forming local priorities
15. Encouraging community engagement
16. Responsive to community needs
17. Use green design to foster socio ecology and crime prevention

Actions to support the advanced approach:
1. Strengthen local authorities capacity
2. Design and implement capacity programmes
3. Bring in qualified and experienced partners/consultants
4. Increase the knowledge, awareness and understanding of crime prevention through the provision of training, education and marketing.
5. Ensure that the build and landscaped environment is well maintained and managed
6. Ensure procedures are in place to rapidly repair vandalism and graffiti
7. Reduce the incidence of long-term vacancy and dereliction.
8. Identify and evaluate target groups at risk
9. Test permeability evidence
10. Test mixed-use development evidence
11. Test high density living evidence
12. Features associated with quality environments
13. Interdisciplinary schemas
14. Build membership from locals and influential forums.
15. A core team (8-10) team specialists in their own fields.
16. Strong collaboration characteristics.
17. Keep, manage and interpret crime statistics
18. Maps and crime mapping to plot and pattern
19. Police records insight
20. CPTED surveys and safety audits
21. Interviews with community/residents, focus groups
22. Build profile with specialists and analysts
23. Diagnosis of local problems with knowledgeable analyst
24. The neighbourhood must choose option and tools
25. Local council and resources to be part of plan
26. Educate all role players and stakeholders
<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>27.</td>
<td>Close consultation with the community</td>
</tr>
<tr>
<td>28.</td>
<td>Constant feedback</td>
</tr>
<tr>
<td>29.</td>
<td>Physical contact</td>
</tr>
<tr>
<td>30.</td>
<td>Share plan with higher formal entities</td>
</tr>
<tr>
<td>31.</td>
<td>Show clear budget control</td>
</tr>
<tr>
<td>32.</td>
<td>Show clear project management</td>
</tr>
<tr>
<td>33.</td>
<td>Represent community</td>
</tr>
<tr>
<td>34.</td>
<td>Ongoing assessment of process versus goal and feedback</td>
</tr>
<tr>
<td>35.</td>
<td>Continuous review of targets and celebrate accomplishment</td>
</tr>
<tr>
<td>36.</td>
<td>Energy from green technology</td>
</tr>
<tr>
<td>37.</td>
<td>Surveillance from horde cell phones, rather than CCTV systems</td>
</tr>
<tr>
<td>38.</td>
<td>Social community network for interacting and real time information</td>
</tr>
<tr>
<td>39.</td>
<td>Real time awareness and transparency of all incidents</td>
</tr>
<tr>
<td>40.</td>
<td>Navigation systems to guide</td>
</tr>
<tr>
<td>41.</td>
<td>From ‘me’ to ‘you’, belonging to an ‘active’ group.</td>
</tr>
<tr>
<td>42.</td>
<td>Enhance image as user-friendly, safe and secure</td>
</tr>
<tr>
<td>43.</td>
<td>Search online for similar mind-set initiatives/platforms</td>
</tr>
<tr>
<td>44.</td>
<td>Search for criteria to evaluate results and new benchmarks</td>
</tr>
<tr>
<td>45.</td>
<td>Deter via tailor made access and egress measurements</td>
</tr>
<tr>
<td>46.</td>
<td>Target hardening based on sound risk analysis</td>
</tr>
</tbody>
</table>
5.2.4 CPTED SUITE: The outcome fundamental

The application of the fundamental ‘Outcome’, guides the practitioner in identifying and focussing on the required outcome.

Table 5.4: The Outcome Fundamental of the CPTED SUITE

<table>
<thead>
<tr>
<th>LEVEL</th>
<th>CPTED SUITE OUTCOME</th>
</tr>
</thead>
<tbody>
<tr>
<td>BASIC</td>
<td>1. Safe and secure territory, supported through natural human behaviour and movement</td>
</tr>
<tr>
<td></td>
<td>2. Defensive fortress, integration of strict physical measures</td>
</tr>
<tr>
<td></td>
<td>3. Short term solution, public institution as core role player</td>
</tr>
<tr>
<td></td>
<td>4. Focus on recorded crime.</td>
</tr>
</tbody>
</table>
Manipulate and facilitate the known internal and external environmental factors to design out crime

1. Demonstrate that CPTED needs to be fully implemented influencing psychological and physical determinism, not just creating fortresses.
2. Sustainable community and industry
3. Sustainable crime prevention
4. CPTED promotes sustainable development, active community participation and ownership of space.
5. Reduction in fear of crime
6. Reduction in the incidence of crime
7. Integrated and measurable security status
8. Correct applicable capacity systems
9. Cost effective application to almost any situation, which can manipulate opportunity
10. Full picture, from problem identification to solution, based on valid and reliable methodology.
11. Multidisciplinary approach (behaviour, socio and physical sciences - the basis for environmental alterations)
12. A sustainable community and CPTED environment through reduced crime and community involvement.
13. For supply chains
   a. Secure business partners
   b. Delivery verification and safety
   c. Tracking and tracing of all material with verified procedures and standards
   d. All role players trained and aware of threats, physical and ecological
<table>
<thead>
<tr>
<th>CENTRAL</th>
<th>ADVANCED</th>
</tr>
</thead>
<tbody>
<tr>
<td>e. Information and data protected through supply chain</td>
<td></td>
</tr>
<tr>
<td>f. Personnel vetted, new and terminated</td>
<td></td>
</tr>
<tr>
<td>g. Procedures ensured through standards and reviews</td>
<td></td>
</tr>
<tr>
<td>h. Extensive network and collaboration</td>
<td></td>
</tr>
<tr>
<td>1. Crime prevention for the people, by the people.</td>
<td></td>
</tr>
<tr>
<td>2. Crime Prevention that is human behavioural sensitive and does allow for changes in situations, environments and behaviour over time</td>
<td></td>
</tr>
<tr>
<td>3. A pragmatic and effective crime prevention approach in an ever changing area of space and place with maximising self policing potential of community.</td>
<td></td>
</tr>
<tr>
<td>4. Sustainable crime prevention projects supported owned and managed by the community.</td>
<td></td>
</tr>
<tr>
<td>5. Enhanced living standards, a user-friendly safe and secure environment.</td>
<td></td>
</tr>
</tbody>
</table>

### 5.2.5 CPTED SUITE: The limitation fundamental

![CPTED SUITE Limitation Fundamental](image)

**Figure 5.6:** The Limitation Fundamental of the CPTED SUITE
As with all approaches there will be challenges and limitations. The CPTED SUITE limitation fundamentals make the practitioner aware of the pitfalls and the challenges in the preferred CPTED SUITE’s level.

Table 5.5: The Limitation Fundamental of the CPTED SUITE

<table>
<thead>
<tr>
<th>LEVEL</th>
<th>CPTED SUITE LIMITATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>BASIC</td>
<td></td>
</tr>
<tr>
<td>1.</td>
<td>CPTED used in this fashion is purely for space control and relevant target hardening.</td>
</tr>
<tr>
<td>2.</td>
<td>Not change friendly, quick fix solution for physical environment alone, social environment excluded</td>
</tr>
<tr>
<td>3.</td>
<td>Opportunity and socio ecology triggers not incorporated</td>
</tr>
<tr>
<td>4.</td>
<td>Irrational offenders will not be controlled</td>
</tr>
<tr>
<td>5.</td>
<td>Non care offenders will not be controlled</td>
</tr>
<tr>
<td>6.</td>
<td>May just displace crime</td>
</tr>
<tr>
<td>7.</td>
<td>Natural eco-system not appreciated</td>
</tr>
<tr>
<td>8.</td>
<td>Shift in socio and capital resources left out</td>
</tr>
<tr>
<td>9.</td>
<td>Imagery which creates withdrawal</td>
</tr>
<tr>
<td>10.</td>
<td>Assumptions that all individuals / offenders are the same</td>
</tr>
<tr>
<td>11.</td>
<td>Focus on buildings and facilities</td>
</tr>
<tr>
<td>12.</td>
<td>Lack of CPTED knowledge may do damage</td>
</tr>
<tr>
<td>13.</td>
<td>Resistance to change, not co-operating enough</td>
</tr>
<tr>
<td>14.</td>
<td>Over expectancy of CPTED as universal remedy</td>
</tr>
<tr>
<td>15.</td>
<td>Expensive to modify existing build areas</td>
</tr>
<tr>
<td>16.</td>
<td>Environment too vast to generalise</td>
</tr>
<tr>
<td>17.</td>
<td>No guarantees, no future perception</td>
</tr>
<tr>
<td>BASIC</td>
<td>CENTRAL</td>
</tr>
<tr>
<td>----------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------</td>
</tr>
<tr>
<td>18. Cannot prevent, only reactive mitigation</td>
<td>1. When ignoring the link between sustainability and crime and the fear of crime, communities/industry will not grow</td>
</tr>
<tr>
<td>19. Does not manage crime opportunity structures</td>
<td>2. Complex, to be managed requires experienced practitioners with knowledge.</td>
</tr>
<tr>
<td>20. Not sustainable, not individual or community run</td>
<td>3. Outdated technology will fail if not maintained</td>
</tr>
<tr>
<td>21. Opportunity and socio ecology triggers not incorporated</td>
<td>4. Technology must accommodate changes in threat and vulnerabilities</td>
</tr>
<tr>
<td></td>
<td>5. Untrained and inexperienced security professionals can’t use risk analysis techniques, causing problem identification to be shallow, skewed and/or even missed.</td>
</tr>
<tr>
<td></td>
<td>6. Analysts tend to focus on levels of recorded crime, largely ignoring the crucial and arguable more important dimensions, of citizens’ fear of crime and perceptions of their local environment</td>
</tr>
<tr>
<td></td>
<td>7. Availability of relevant historical information</td>
</tr>
<tr>
<td></td>
<td>8. Practicality of requirements not clear, theory important</td>
</tr>
<tr>
<td></td>
<td>9. Cost for pro-active measurements</td>
</tr>
<tr>
<td></td>
<td>10. Ethical/Socio restraints on identity checks</td>
</tr>
<tr>
<td></td>
<td>11. Escalation of violence because of measures</td>
</tr>
<tr>
<td></td>
<td>12. Limited support and belief in record keeping processes</td>
</tr>
<tr>
<td>ADVANCED</td>
<td>1. Income inequality</td>
</tr>
<tr>
<td>2. Unemployment</td>
<td></td>
</tr>
<tr>
<td>3. Rapid urbanisation</td>
<td></td>
</tr>
<tr>
<td>4. Large uneducated youth element</td>
<td></td>
</tr>
<tr>
<td>5. Weak criminal justice system</td>
<td></td>
</tr>
<tr>
<td>6. Weak control and leadership can be disputed, difficult in multi cultural environments</td>
<td></td>
</tr>
<tr>
<td>7. Don’t always look over borders of shared places</td>
<td></td>
</tr>
<tr>
<td>8. There is often an assumption that DOC always works and has no limitations/shortcomings.</td>
<td></td>
</tr>
<tr>
<td>9. There is little knowledge or appreciation of the circumstances and contexts where DOC might work less effectively</td>
<td></td>
</tr>
<tr>
<td>10. If community structures and capacity are not knowledgeable and recognised such a community venture will struggle to get support. A very well organised leadership, with time, is needed at all times</td>
<td></td>
</tr>
</tbody>
</table>

5.3 RISK ANALYSIS TOOL FOR ROSSLYN INDUSTRY

As briefly mentioned, the practitioner must know the status of the problem and have identified the priority factors that needs to be solved, before the CPTED SUITE can be approached for plotting and guiding in the mitigation of crime threats, incidents and risks. Only then can the CPTED SUITES problem-solving techniques effectively be implemented.
The only way to know what problems there are is to implement a comprehensive analysis of all the risks and needs on all the relevant topics in the specific area that requires a crime intervention action. Based on the perspective of the researcher this is the most fundamental requirement before any criminological intervention can be contemplated. But from experience this fundamental requirement is very seldom done. If it is done it is usually completed in isolation and/or within a very complex enterprise type paradigm, not designed for the security environment.

Before any Risk Analysis is attempted it is necessary to have conceptualised the reasons for a risk analysis, and to have indentified the unknown factors that have to be addressed.

Applicable to this research was the discussions between some of the stakeholders. The researcher, with the contributions of stakeholders in Rosslyn, was able to draw up the following list of the requirements and of the unknowns in Rosslyn which had to be identified, measured and addressed (See Table 5.6). The CRA, for the Rosslyn CPTED SUITE comprises of the following list uncover as depicted in Table 5.6.
### Chapter 5: The Extrapolation and Design of an Applied Criminological Intervention Approach and the Design of a Risk Analysis Tool

#### Table 5.6: Pre-research list of unknown data required

<table>
<thead>
<tr>
<th>DEMOGRAPHICS NEEDED ABOUT......</th>
<th>CRIME + THREAT SURVEY TO BE DONE ON.......</th>
<th>SECURITY INTERVENTIONS AND VULNERABILITIES</th>
<th>RISK ANALYSIS TO UNCOVER.......</th>
<th>CRIME PREVENTION METHODOLOGIES NEEDED TO....</th>
<th>SUPPLY CHAIN SECURITY NEEDS AND VALUE STATUS TO BE UNCOVERED....</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Address</td>
<td>• Crime history</td>
<td>• Collaboration</td>
<td>• Offender</td>
<td>• Effort</td>
<td>• C-TPAT</td>
</tr>
<tr>
<td>• Personal</td>
<td>• Tendency</td>
<td>• Awareness</td>
<td>• Target</td>
<td>• Risk</td>
<td>• Exporters</td>
</tr>
<tr>
<td>• Work</td>
<td>• Types</td>
<td>• SAPS role</td>
<td>• Actions taken</td>
<td>• Opportunity</td>
<td>• Services</td>
</tr>
<tr>
<td>• Employee</td>
<td>• Stats</td>
<td>• Area Security</td>
<td>• Probability</td>
<td>• Provocation</td>
<td>• Need help…</td>
</tr>
<tr>
<td>• Location</td>
<td>• Targets</td>
<td>• Satisfaction</td>
<td>• Impact</td>
<td>• Excuses</td>
<td>• Rosslyn need</td>
</tr>
<tr>
<td>• Owner?</td>
<td>• Value</td>
<td>• Methods</td>
<td>• Seriousness</td>
<td>• Broken areas</td>
<td></td>
</tr>
<tr>
<td>• Rosslyn</td>
<td>• Ease of crime</td>
<td>• Standards</td>
<td>• Controls</td>
<td>• Crime success</td>
<td></td>
</tr>
<tr>
<td>• Transport</td>
<td>• Opportunity</td>
<td>• Knowledge</td>
<td>• Custodian</td>
<td>• Reasons</td>
<td></td>
</tr>
<tr>
<td>• Work pattern</td>
<td>• Target</td>
<td>• Responsibility</td>
<td>• Services</td>
<td>• Patterns</td>
<td></td>
</tr>
<tr>
<td>• Gripe areas</td>
<td>• Losses</td>
<td>• Quality</td>
<td></td>
<td>• Trends</td>
<td></td>
</tr>
<tr>
<td>• Situations</td>
<td>• Insurance</td>
<td>• Deter</td>
<td></td>
<td>• Solutions</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Impression</td>
<td>• Detect</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• SAPS</td>
<td>• Delay</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Reporting</td>
<td>• Systems</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Recommend</td>
<td>• Recommend</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Thus an appropriate risk analysis is required to understand the problems and their causes, and to find the potential interventions. In this case one that incorporates criminological principles, which asks why; looks at offenders, targets, methodologies and the ecology as well as the psychological aspects; which is not just a checklist but also a capturer of experiences. From the preliminary list, (Table 5.6) it was clear that a comprehensive analysis scope was required to uncover the needs and risks in Rosslyn.

This research has as secondary goal: The upliftment of the skills of security practitioners. It is therefore of paramount importance that a criminological risk analysis (CRA) template for crime intervention purposes is designed or enhanced for this type of CPTED research, which can also to be presented to the security practitioners as a skills expansion. A criminological ‘friendly’ risk analysis, which is current and uncomplicated, was found in practise at the UK International Security Management Institute (ISMI), and with their permission it has been adapted, renamed and used for this research.

The Criminological Risk Analysis (CRA) serves as a flexible driven process and a data sourcing instrument, which can source and interpret qualitative and quantitative needs and data at the same time from, or for, a Single or Uni- Multi- Inter- Trans-disciplinary project or environment. This CRA is the proposed skills transfer model for security practitioners in this research. This CRA will be discussed and explained in the next section.

5.3.1 A criminological risk analysis (CRA)

Earlier in Chapter 2, Brantingham and Brantingham (1998:53), Schneider and Kitchen (2007:233) and Cozens (2009:4) stated that currently most planning to prevent crime proceeds with little knowledge of the current situation in the victim area. They stressed that the continuous failure to consider the crime prevention theories and evidence, before applying design out crime initiatives, was completely inappropriate. It was also highly unlikely that it would be effective. A Criminological Risk Analysis (CRA) is clearly inferred.
Broder (2006:4) identified the following specific benefits of a security risk analysis:

- To highlight areas/assets in which greater (or lesser) security is required.
- To help assemble some of the facts needed for the development and justification of cost-effective interventions.
- Implement a risk analysis process which is cyclic and iterative.
- Identify the kind of risks that may affect business.
- Determine the impact and probability of the risk occurrence.

According to Broder (2006:102-104), only once the risks have been analysed and prioritised can they attempt to be mitigated. Mitigation actions, according to Broder, can be achieved through a variety of strategies, including:

- The application of security measures.
- Redesign of the environment to make crime more risky to the perpetrator.
- Finding a less risky way to undertake a business activity.
- Removing the opportunities and inherent business vulnerabilities.
- Insurance.

Atlas (2008:511) mentions that several accepted methodologies for risk and analysis and vulnerability assessments do exist for many approaches and complexities. However, from the earlier observations made by Brantingham and Brantingham, Schneider and Kitchen, and Cozens, the researcher found that largely ‘crime and risk data’ was pursued. No appropriate and uncomplicated risk analysis, supporting the Multi Inter-Trans-disciplinary criminological environment was found, which addressed security related and socio ecological related factors together with a design base threat (DBT) approach targeting offender, targets and modus operandi, which were used in an uncomplicated process driven approach to define and calculate probabilities, impact, vulnerabilities and controls, which will guide, when required, proper crime prevention intervention decision making.
The risk assessment methodologies referred to by Atlas (2008:511-522) are rather checklists or template type surveys for specific sites, buildings and space. The complexities of such risk assessments, especially in the resilience environment, is known by the researcher, as being extreme loads of document driven processes, akin to an audit process, not focussed on the criminological requirements. The criminological risk analysis (CRA) required for Rosslyn needs, is not just a checklist-type of information gatherer, it must also disclose the fears, needs, recommendations and all the relevant personal experiences crime victims encountered in the community, either singular or cumulative.

As previously mentioned, the researcher did find a framework risk analysis in the teachings of the International Security Management Institute (ISMI) (ISMI, 2013:26). The ISMI risk analysis provides the following guidelines, slightly adapted and added to for a Criminological Risk Analysis (CRA):

a. It should be the output of a collaborative effort across the enterprise/community.

b. It is an iterative process and should be reviewed at regular intervals.

c. Not only will there be changing threat circumstances that could change the risk analysis, but changes within the industrial business area may have a major impact on the current exposure and security of assets.

d. Wide stakeholder engagement in constructing the security risk analysis should foster its widespread use across the area.

e. The risk analysis methodology should not be complicated because it will risk being discarded or not undertaken correctly.

f. All the stakeholders must be engaged in the security risk analysis process.

g. All stakeholders must become engaged in the selection of security countermeasure solutions.

h. A Criminological Risk Analysis is a collaborate effort.
5.3.2 The criminological risk analysis (CRA) approach for Rosslyn

In preparing a security risk analysis for an industry, a baseline understanding of the process and process requirements are required. The following are definitions of the key terms within the Criminological Risk Analysis (CRA) (ISMI, 2013:8):

a. Threat – a source of potential harm.

b. Probability – the likelihood that a threat will occur.

c. Impact – the damage (direct and indirect) that would occur if the threat materialises.

d. Vulnerability – a weakness or a flaw in a security system or any business process that could conceivably be exploited by a threat.

e. Risk – the potential for loss, taking into account likelihood, impact and vulnerabilities.

The core of a CPIM can only be founded in a risk analysis, which must source all possible information from the targeted operational environment, to inform and to educate the planners and decision makers before they can go about establishing, designing, implementing and maintaining any mitigating plan for a specific environment. This sourcing and staged process for this CRA is depicted in Figure 5.7:
Figure 5.7: The ISMI Risk Analysis Process

Figure 5.7 depicts the first primary requirements before a security manager can do anything to effectively mitigate crime. It is called a Security Risk Analysis (ISMI, 2013:11). The risk analysis is the first stage in the overall process of security risk management, an important corporate governance tool. In fact it is the most important tool or weapon a security risk professional possesses, because with it you can justify and assess the appetite for risk and then displace the risk. Without it you are leading blind and live in the hope that things will not happen for which you are not prepared.

A security professional must be able to apply with ease, such a security risk analysis methodology, which will assess the likelihood of undesirable, usually malevolent events, and then be able to measure these against the potential impact and vulnerability of what he is responsible for (ISMI, 2013:11). Such a security analysis method (ISMI, 2013:8-28), as adapted and applied for this Rosslyn research, consists of four stages (A, B, C and D) and eight phases (see Figure 5.7).
STAGE A: RESEARCH AND INTERPRETATION

- PHASE 1: Identify assets and characterise the context in which they exist.
- PHASE 2: Identify potential undesirable events (threats).
- PHASE 3: Estimate the likelihood of each threat.
- PHASE 4: Consolidation of the phase concluded.

STAGE B: CONCLUSION

- PHASE 5: Determine the potential impact to the asset if the threat occurs.
- PHASE 6: Plot impact and likelihood on a graph to determine a level of ‘raw’ risk (known as the intermediate risk value or IRV (see Figure 5.8). Tabulate all known variables as per Figure 5.9.
- PHASE 7: Measure the ‘raw’ risk against vulnerability or controllability to determine protection priorities, (see figure 5.10).

STAGE C: RECOMMENDATION

- PHASE 8: Priority defined.

At the end of stages A and B a specific crime and/or need will have been dissected. It will be fully understood from the target, to the offender, up to the modes operandi; the likelihood and the impact will be known; the potential victim’s vulnerabilities will be uncovered; an appetite for risk will have been negotiated with management; the cost to mitigate will be transparent and a plan will be ready to be implemented and audited.

THE CRA IN GRAPHIC FORMAT

The total risk process can be visually shown utilising three related matrixes called the ‘ISMI Risk Analysis Matrix System’ as demonstrated in Figures 5.8 - 5.10. (ISMI,
The first step is calculating the IRV (Intermediate Risk Value) as depicted in Figure 5.8.

![Figure 5.8: Calculating the CRA-IRV-Matrix (Likelihood/Probability and Impact)](image)

Figure 5.8: Calculating the CRA-IRV-Matrix (Likelihood/Probability and Impact)

The second step, in Figure 5.9, will be to populate the CRA-Table from where the third step Figure 5.10, will be straightforward by plotting the IRV, Vulnerabilities and Controls on the CRA-3-Matrix tool to indicate priorities needed from a CRA perspective.
**Figure 5.9:** The CRA-Table, The full risk process transcribed, uncovered and explained and set out in table form for easy interpretation.

![CRA-Table Diagram]

**Figure 5.10:** Calculating the actual risk and treatment priority on the CRA-3-Matrix.
A CONTINUOUS AWARENESS REQUIREMENT: COSTS

The costs of counter measures are always the deciding factor of the chosen solution. Many formulas exist and it usually becomes very complicated, however, the most used and logical ROI (Return On Investment) formula used by ISMI (2013:28, citing ASIS, 2004) demonstrates the value of the security programme in cold financial terms with a simple equation for the cost/benefit analysis of security measures: \( \frac{(\text{Avoided Losses} + \text{Recoveries Made})}{\text{Cost of the Security Programme}} = \text{ROI} \). The risk analysis will therefore be continuously aware of proposed solution costs and the proper justification thereof.

5.3.3 To ensure successful implementation and ongoing performance

From the perspective of the researcher the following Performance Management Controls (PMC), depicted and known as the ‘six-pillars-checklist’, were found to be invaluable to ascertain if the security practitioner was in control of his environment and the potential risks.

a. Is there a clear programme?

b. Are there clear instructions?

c. Is there clear supervision and management?

d. Are there clear internal controls?

e. Are there clear standards and performance?

f. Is there clear sequence and records?

5.4 CONCLUSION

5.4.1 Criminological risk analysis (CRA)

This research identified the following serious limitation: the lack of a proper analysis of needs and crime risks, which encapsulated the physical, psychological and space
areas within the Multi- Inter- disciplinary environment of crime and criminology in Rosslyn, which was both explorative and descriptive from a quantitative and qualitative perspective.

In this chapter the researcher identified an applied risk analysis and adapted the structure to incorporate Multi- Inter- Trans disciplinary needs that were encountered relevant to Criminology and required for the multidisciplinary solution for the Rosslyn Industry. This analysis has been named the Criminological Risk Analysis (CRA). Its operations were discussed in detail in this chapter. The CRA is incorporated in the interview schedule and questionnaire implemented in the Rosslyn Industry (Chapter 6).

5.4.2 CPTED SUITE

The prime focus in this chapter concerned the extrapolation of all the applied crime preventative measures uncovered and discussed in Chapters Two (Environmental Criminology), Three (CPTED) and Four (SCS), and then structuring these extrapolated measures into specific CPTED related theme brackets called the CPTED SUITE.

5.4.3 Crime prevention intervention model (CPIM)

The primary goal of this research was to design a model which will identify the risks and needs of the Rosslyn Industry and provide a method to manage or even intervene such risks and needs (see Figure 5.11). The following Chapter 6 is about the identification of these risks and needs. Chapter 7 will demonstrate the CPIM in context and in relation to the CRA results. The proposed crime prevention plan for Rosslyn Industry will then be concluded.
Figure 5.11: CPIM process in Graph
CHAPTER 6
ROSSLYN INDUSTRY NEEDS SURVEY AND RISK ANALYSIS

6. RESEARCH FIELD – THREE

6.1 INTRODUCTION

The primary goal of this research is to design a pro-active crime prevention intervention model for the Rosslyn industrial environment. The achievement of this goal, as indicated in Figure 6.1, is dependent on the existence of a solid knowledge base, from a crime prevention perspective, of the specific risks, threats and needs in Rosslyn industries. No such information has ever existed, not even in a business directory of sorts. This knowledge is necessary to provide more insight regarding the perpetrator, the target and the modus operandi or actions of the offender.

Crucial knowledge required, from an operational point of view, is that, which encapsulates the most recent status regarding the risks, threats, vulnerability and security controls of any environment where crime must be mitigated. It is not only quantitative data that is required, the expressed needs and fears of the community are just as important. Another crucial factor is; what, according to the recommendations and desires of the inhabitants, must be changed or modified to prevent crime. This requirement clearly implies the importance of an in depth understanding of the total environment of Rosslyn, which can only be disclosed in a detailed needs survey and risk analysis for Rosslyn industry.

This chapter is about the survey deductions and analysis sourced from Rosslyn through the ISMI CRA (Criminological Risk Analysis) (see Figure 5.7).

The intention of this needs survey and risk analysis is to present Rosslyn Industry with a proper problem statement for the CPTED SUITE framework from which a
CPIM can be developed that must ultimately mitigate and/or manage these identified risks and needs.

A Criminological assessment and interventions for the Rosslyn industrial environment in Tshwane, South Africa based on Multi-Inter-Trans-disciplinary principles

Figure 6.1: A graphical display of the research scope in context

6.2 THE DATA SOURCING TOOL USED AND ITS WORKINGS

In this chapter the consolidated information derived from the illustrated cases and the analysed data, converge with the ever present psychological construct to provide valuable insight in the risks and needs in the Rosslyn environment. The collective
and corresponding experiences of respondents’, as recorded during the interview schedule, were transcribed. The quantitative data that was sourced was analysed and interpreted. Where possible the most debatable themes will be discussed in the phenomenological method in conjunction with the analysed quantitative data and supported with clear graphs, where possible. The essential psychological knowledge that was gained will be summarised in the conclusion of the chapter.

6.3 THE SPECIFIC INFORMATION REQUIRED FROM THE CRA

1. Operational demographics of Rosslyn.
2. Crime threat survey of Rosslyn.
3. Security capacity of Rosslyn
5. Crime Prevention Methodology utilised in Rosslyn.
7. Plotting the Rosslyn Risk.
8. Identifying priority factors required to ensure crime prevention sustainability.

6.4 THE IMPLEMENTATION OF THE CRA IN ROSSLYN INDUSTRY

The operational statistics, requested for this research, required the following modus operandi: The first priority was getting to know the Rosslyn Industry/Community from a crime preventative, security and business perspective, and being informed about their opinions and experiences, while finding the gist of the Rosslyn Industry problems and requirements. To achieve this more than 160 Small and Medium businesses and more than 30 Big Businesses were personally interviewed for this research. This constituted more Rosslyn businesses than anticipated. Although
saturation was reached at about 50% of the anticipated number, this research effort will continue until approximately 100% of all Rosslyn businesses are on the data base.

A collaborative effort will be made to make all businesses part of the proposed CPIM as it will be to the benefit of all. Thus the process will still continue after this research has been completed. Where possible all the role players in Rosslyn will be contacted and invited to become actively involved in the solutions offered and in the implementation thereof, (see Chapter 7). This CRA will be the criterion that will be applied when updating the status of the needs and the requirements for the Rosslyn industry.

The abovementioned ‘Gist of Rosslyn’ will be analysed and discussed under a wide spectrum of topics in this Chapter to understand both the internal and the external crime prevention and services needs within the Rosslyn Industry. The MIT disciplinary approach will also be evident in this chapter, as everything related to contribute to an environment for crime, and/or that may be a causal factor for crime, will be uncovered and investigated; from loiterers, to working shifts, up to specific risks and vulnerabilities, to name but a few.

6.5 GEOMETRY OF ROSSLYN
Figure 6.2: Orientation of Rosslyn in ZA and Gauteng

For more than 40 years Rosslyn has been a well known industrial/manufacturing suburb of the City of Tshwane, in the Gauteng Province of South Africa (Fig. 6.2). It is 16km north west of Pretoria, the capital city of South Africa. The Tshwane municipality produces 40% of South Africa’s automotive output. Rosslyn is the main centre and employs about 38 000 workers and contributes an estimated 4.3% to the province’s GGP - worth R13 billion per year (Parliament of the RSA, 2013)

It is an industrial settlement within a rapid closing-in rural area where townships and more formal residential areas are already directly adjacent to each other, thus making Rosslyn a dynamic, bustling environment. For the benefit of this research, the aerial photograph (see Fig. 6.3) shows the different zones Rosslyn is divided into. Zones C, D and E are primarily manufacturing Big Business (BB), Zone B is a mix between BB and Medium manufacturing businesses and Zone A (City Centre) is mostly Small and Medium (S&M) commercial businesses. However, these odd mixes are found in all the zones.
6.6 ROSSLYN DEMOGRAPHICS AND THE CULTURE OF BUSINESS

6.6.1 The general Rosslyn business profile

The research has shown that Rosslyn is in actual fact an industrial town where no residential infrastructure is provided or allowed. The total number of businesses in Rosslyn is between 190 and approximately 210. They come in all shapes and sizes. Figure 6.4 shows that Small and Medium business (S&M) make up the vast majority of businesses in Rosslyn - up to 85%. These figures, even though close to being factual, are still an estimate.

Figure 6.4: S&M and BB ratio in Rosslyn

Rosslyn is an industrial area, its core business is motor vehicle manufacturing. The operational emphasis and concerns are about maintaining the sustainability of such a business industry in lieu of the crime, poor service delivery and labour unrest. Rosslyn’s S&M businesses primarily revolve around the big manufacturing plants and serves as a supporting function; be it as suppliers and/or service providers covering
various manufacturing requirements both directly or indirectly. Figure 6.5 provides an overview of the different types of business sectors comprised of S&M businesses and BB.

![General Rosslyn business profile](image)

**Figure 6.5: General Rosslyn business profile**

Figure 6.5 shows that 45% of all S&M businesses are also inclined towards manufacturing and/or engineering; 20% are inclined towards commercial and infrastructure such as; transport, services and banks; 15% are wholesale distributors and 15% are general retail stores. Food providers make up 5% of all S&M businesses. BB is solely focussed on the manufacturing industry, 90% of BB are manufactures, and the remaining 10% of BB provide supportive industries, mostly inclined towards warehouses and logistics.

### 6.6.2 Business longevity in Rosslyn

Figure 6.6, shows that 46% S&M businesses have been operating in Rosslyn for longer than 12 years. The dynamic growth potential of the area is shown in the 11% growth of new small and medium business over the past two years. The average longevity is estimated at more than 12 years for 80% of BB. The survey showed some of the largest BB has resided in Rosslyn for more than 35 years. Such
longevity is good news for business sustainability. It also provides a good foundation for long term planning, and for knowledgeable and experienced support when needed. In fact the government has given the AIDC a period of 50 years in which to develop Rosslyn into a first world Auto City for motor manufacturing, to make it a; ‘one of its kind’.

Figure 6.6: Longevity of businesses in Rosslyn
6.6.3 Labour force numbers

Figure 6.7: Business spread in relation to labour force

(Note S&M business revolves around big business.)

- Large Businesses: 19%
- Small to Medium Businesses: 81%

- ± 12000 workers
- ± 4 000 workers or about 33%

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According to Figure 6.7 S&M businesses provide permanent work to approximately 4000 labourers, with each business in this segment providing employment to between 20 to 40 people. BB provides permanent work to about 12 000 labourers, which accounts for about 66% of the Rosslyn labour force. If managers, professionals, casual workers and contract workers were to be included these figures could rise to nearly 65 000 people employed in Rosslyn (Rosslyn Hub, 2013:1). This proves that Rosslyn is clearly an important contributor to employment in the region.

6.6.4 Location and distribution of businesses in Rosslyn

As noted in Figure 6.8, 69% of S&M businesses are involved in the Rosslyn City Centre and 13% are situated in shopping complexes. Another 13% of S&M businesses are situated in business parks outside city centre environments. BB mostly comprise landlords and/or owners of property outside the city centre and not in business parks.
6.6.5 Importance of the Rosslyn culture to the CPIM (Crime Prevention Intervention Model).

The respondents introduced Rosslyn as a business environment, more specific in the manufacturing field. The Rosslyn society is stated as a bottom-line society, an environment that firstly asks; “What is in it for me and what is it going to cost in money, time and resources?” “Never expect handouts or favours.”

The personal interaction is with board of directors and the structured management, no immediate answer must be expected as everything must be cost aligned and supported before an answer will be given in writing.

The respondents stated that any request had to be clearly justified from a ROI (return on investment) point of view and a project management perspective, with very clear requirements and justification before a request could be considered.

Financial policies, budget and procurement requirements had to be understood, “if you don’t talk the language of business you will not succeed in this industrial environment”.

The respondents reiterated the complexity of communication challenges in that so many Rosslyn businesses were foreign companies, which increased red-tape, and feedback timelines within a multi business cultural set-up.

BB set the trend for all activities and ventures, according to the S&M business respondents they would follow BB: “We expect BB to lead as BB sets the trends.”

The respondents evidently perceived Rosslyn and their role in the industry as an essential part of the South African economy in general and in the regional economy in particular. As a respondent stated; “Rosslyn is an essential lifeline for ZA and it needs to be nurtured, protected, maximised and developed.” This research has as goal the provision of a CPIM which will ensure a safe and sustainable working environment for Rosslyn as deducted from, and prescribed by, the CRA and CPTED SUITE later in this research.
6.7 RATING AND REQUIREMENTS OF SPECIFIC SERVICES REQUIRED BY BUSINESSES IN ROSSLYN THAT ALSO IMPACT ON THE CRIME SITUATION

6.7.1 Parking

According to Figure 6.9, S&M businesses were generally satisfied with the parking facilities in Rosslyn. They are mostly in the city centre where designated public parking, tarred roads and clear parking spaces are provided. BB has a problem with the available parking on sidewalks, because the conditions on the sidewalks and in the overgrown veldt, or open parking facilities, are not conducive to safe parking. In fact 25% of BB is very dissatisfied with the parking situation. The reports received of hijacking, especially of female drivers, and of cars being broken into or even stolen in these unprotected areas are sufficient proof of the opportunities that have indirectly been created for criminal acts in these areas. A respondent stated; “after hours we are at the mercy of darkness and criminals. We are very afraid and the security can’t be everywhere”. Another stated “The sidewalks are overgrown and open (vacant) areas are hiding places for vagrants, I sometimes arrive 2 hours before opening time just to make sure I get parking on, or close to the premises.”
6.7.2 Control of Loiterers

Figure 6.10: Loiterers in Rosslyn

Loiterers were clearly a problem in Rosslyn, both for BB and S&M businesses. The increase in surrounding townships and the establishment of even closer informal settlements have created an influx of people for many reasons. However, Rosslyn is not designed for loiterers and does not want loiterers. Figure 6.10 clearly shows more than 50% of business requested improvement in this area as they were very dissatisfied with the situation. A respondent stated: “The increase in loiterers the past five years has caught us off guard. It looks like a flea market at the best of times and it has brought with it beggars, street vendors, drugs and common thieves. Our experience of attempted burglaries has increased extensively.” Especially the increase of small vendors on sidewalks and scrap yards dealing in small waste/scrap, which ‘put-up-shop’ in the middle of the BB areas, have become problematic as these invite loiterers and the homeless, unemployed persons. Even though Rosslyn is not an environment for children BB training facilities in outlying areas, stated that young people tend to gather around their offices because of the lack of general facilities. “Rosslyn has no ‘hang-out’ place for young people.”
6.7.3 Street Lights

Figure 6.11: Lighting in Rosslyn

 Businesses in general and more specific BB, which are not in the city central areas, found street lighting to be inadequate. Figure 6.11 demonstrate the high level of dissatisfaction with the street light status. As a respondent stated; “I am really scared. After hours Rosslyn has many shadows and vacated areas from where to launch an attack.” Other respondents in city central areas also complained. “Rosslyn is an industrial area which operates 24/7, lighting is required – period. And we should not be asking for this.” Dark and unlit areas clearly provided an opportunity for crime. BB stated that they were frustrated with the municipality and their lack of interest in doing maintenance on street lights. A BB respondent stated: “The municipality is all about job creation, we must employ guards with torches to escort people to where they are parked at night.”
6.7.4 Local council effectiveness

Figure 6.12: Rosslyn local council performance

Local council largely represents the effectiveness of how businesses can operate and produce. Services needed must be implemented and maintained. Figure 6.12 demonstrate that S&M Businesses were more dissatisfied than satisfied with the performance in general of local council in their working environments. The fact that these businesses were mostly within the focus areas of Rosslyn, where such services should be easy to provide and sustained did not bode well. BB was in fact extremely dissatisfied with local council on many accounts; from road type maintenance, to the handling of inspections and the instability of the energy supply. A respondent summed it up;

“Local council gets paid tax, and we get nothing back.” Another stated: “It seems that they don’t know what is expected from them, or if they are just not interested. But it is not funny; it is actually a sad disgrace. They are sabotaging the country’s economy, why is this not realised?”
6.7.5 Professional services

In Figure 6.13, the perceptions regarding the delivery of professional services supporting S&M businesses, for e.g., legal, plumbing, electrical, etc. were split between those who were satisfied and those who were dissatisfied. However, BB was very dissatisfied with the services provided by so-called professionals; from plumbing to project consultants, to local transport systems. A BB respondent stated; “We don’t even look for professional services in Rosslyn anymore, we usually find it in Johannesburg”. From a crime prevention perspective, it is clear that if businesses do not even talk to each other about their core functions, then it should not be surprising if they are sceptical when it comes to collaborating in combating crime. Another aspect to consider is the unwanted entities or people invited to Rosslyn, which is totally unnecessary, if the internal potential that Rosslyn has to offer is not utilised to the full. Many respondents recommended that these challenges could be addressed if a local business chamber was appointed that would be responsible for marketing the current capacity in Rosslyn – facilitating, introducing and collaborating the process so that the proposed CPIM could add value to business in general.
6.7.6 Is Rosslyn a good investment?

As depicted in Figure 6.14, five years ago and even longer many businesses, especially BB’s, thought that Rosslyn was an area well worth investing in, and at that stage it was the right decision to make. S&M were more cautious and pragmatic in their approach, acknowledging they were newer to the environment in Rosslyn than BB. In fact five plus years ago businesses in Rosslyn were optimistic about their future.

Figure 6.14: Investment sentiment five years ago

Figure 6.15: Current sentiment about Rosslyn as investment

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Currently, as shown in Figure 6.15, 50% of S&M’s are of the opinion that there is a future with sustainable opportunities for them in Rosslyn. There are a few instances where disillusionment levels are increasing with approximately 16% falling within the very dissatisfied segment. BB basically has all shifted from being satisfied to requesting the need for improvement in a number of areas, while nearly 20% have moved into the very dissatisfied segment. Unfortunately the extremely dissatisfied substantially outweighs the extremely satisfied. This clearly demonstrates a steep decline in sustainable business confidence specifically within Rosslyn. As a respondent stated; “It seems that there is no rule to keep Rosslyn under control, which surely implies the ship is sinking and I am not going to let my business sink with it. We are already seriously looking for a better location, especially where labour will be more stable and public services are delivered as expected.” The following respondent stated a recurring theme: “We experience weakening services and incompetence, we have a continuously increasing crime threat and a non existing police capacity, town planning seems to be a forgotten trait and the taxes we pay are being squandered. The ROI to be in Rosslyn is diminishing. What keeps us here?”

6.7.7 Electricity / Energy

![Electricity Status in Rosslyn](image)

**Figure 6.16: Electricity status in Rosslyn**
Reliable power supply is perhaps the most important factor in the sustainability of the manufacturing industry. As per Figure 6.16, businesses in general were extremely discontented with the current electricity situation in Rosslyn. In fact 91% of BB had serious doubts about the electricity provider, and 78% of S&M businesses expressed the same concerns. Copper cable theft and maintenance issues were the main reasons given for the unstable electricity situation. However, in our research it became apparent that ESCOM, the national electricity provider, was also experiencing problems that contributed to the increasing problems surrounding the provision of electricity. As a respondent stated; “Electricity is the most important ingredient for sustainable business, currently the stability thereof is a major concern and is costing business dearly”. Another stated, “Whilst the energy provision is unstable, no new extension or expansions will be planned for in Rosslyn”.

6.7.8 Environment control

![Bar Chart Image]

**Figure 6.17:** Rosslyn in general is an environmental friendly area

S&M businesses experience Rosslyn as an environmental friendly town. However, S&M businesses do not make use of large quantities of substances that may be a threat to the environment. They are mostly within city controlled boundaries where they do not encounter big waste threats. BB on the other hand clearly deals with environmental issues daily. In a way they are the guardians of the environment. As
deducted from Figure 6.17 it is, therefore, alarming to see 75% of BB were concerned about environmental issues, while 15% appeared to be very dissatisfied with how the environment was being managed - from the perspective of a landlord. This specific issue needs to be researched and studied soon. A responded stated; “If only Rosslyn were given a facelift with nice parks, clean streets, kept sidewalks and enforce business to keep to a high exterior standard, then environmental issues will also be sorted. Now everyone does as he pleases, and most just don’t give a damn”. Some respondents were highly annoyed about weak controls especially concerning waste management and scrap yards. The theme of the respondents is echoed in this statement: “Scrap yards are like having a waste dump on your front porch. We daily witness environmental spillages there. They attract criminal traders and they look like crap”.

Air pollution was another concern. BB was dissatisfied with the quality the air, especially the unpleasant odour that more often than not welcomed you to Rosslyn - the tannery and the brewery together produce some very rank odours.

6.7.9 Neatness and general maintenance

Figure 6.18: General neatness of Rosslyn
Businesses in general found Rosslyn to be polluted and derelict with litter and refuse hazards. This aspect proved to be a serious issue with BB because general waste mismanagement in the surrounding industry is not policed by local government. Thus the misconduct of some businesses impacted negatively, not only on the environment but also on the health of its inhabitants. And it tainted the first impressions of the city. As one respondent stated; “If we don’t cleanup behind others this place will smell like a pigsty, attracting the rats from society”.

According to Figure 6.18, S&M businesses experience Rosslyn as an untidy working environment. Nearly 20% were very dissatisfied. In comparison BB had a serious issue with the state of affairs 93% expressed their dissatisfaction. The condition of roads, fences, overgrown vegetation, derelict open stands and the hazard of littering was mentioned. Another bone of content was the ‘uncontrolled’ informal street vendors that were frequently mentioned. BB was basically embarrassed by the general appearance of Rosslyn as the dilapidating infrastructure gave and impression of neglect and lawlessness. The following statement is echoed by basically every BB: “We pay millions on taxes, we provide work to thousands of people, but we only get lip service at best when we require general good governance. Nothing tangible has ever come in the form of sustainable accountability and responsibility in an attempt to manage Rosslyn. We are treated as if they are doing us a favour just by listening to us.”

6.7.10 Importance of services needing CPIM and the phenomenological, psychological structure

In this section the needs and perceptions that impact directly and indirectly on the sustainability of businesses are uncovered. These factors are important because they give a very good indication of what challenges will be encountered in the implementation of a project like the crime prevention intervention model.

Respondents from business were clearly concerned that the Rosslyn infrastructure has not kept up with changing socio economic developments, and that local government has not displayed the controls necessary to instil confidence in Rosslyn as an Industrial area of choice. The respondents in general stated that they were
very concerned about the obvious deterioration of crucial services, which involved traffic management, environmental factors, crime, littering, neatness and electricity stability.

What the research has uncovered is that although the respondents have the same concerns they still don’t talk to each other. They all place the blame for the current state of affairs on the local council and believe local council must rectify matters as they (business) pay tax to that effect. But it was also clear that some respondents had come to the conclusion that local council could not do what they were supposed to do. Some respondents had even gone so far as to apply for a license from local government to handover property to enable the respondents themselves, to do the upkeep thereof and to introduce parks, parking areas and other beautification projects.

From a CPIM perspective it is evident that the most important task, to get any community based project off the ground, will be to get respondents from business to talk to each other. Also to collaborate with each other regarding solutions and also to either engage with local council from a unity perspective or even get local council involved by providing them with guidance and counsel. Introducing a CPIM will provide an opportunity for it to become the channel, not just for crime prevention, but also the model that establishes a communication channel and a collaboration capacity for general services issues as well.
6.8 WORKING HOURS AND SHIFTS IN ROSSLYN

6.8.1 Operational days in Rosslyn

Figure 6.19: Working days in Rosslyn

Depicted in Figure 6.19 S&M businesses mostly work five to six days per week with a small number also operating on Sundays. BB mostly operate up to six days a week and the biggest of the BB operate on a 24/7 basis. It is envisaged that S&M business will follow this pattern and that BB will increase their 24/7 capacity even further.

6.8.2 Shifts in Rosslyn

Figure 6.20: Shifts in Rosslyn
In Figure 6.20 it is clear that S&M businesses primarily work by day, but the hours worked vary to suite business requirements. Smaller manufacturers or suppliers to the industry follow the demand of industry with different shift patterns to also incorporate night shifts. In Figure 6.20 it is also clear that BB is moving to a 24/7 three shift pattern. Thus with businesses in Rosslyn dramatically increasing their after hours working profile, to be operational 24/7, it will also require 24/7 transport solutions. It was mentioned that the best model was still working on a trial and error base. However, the greatest challenge for a best solution was the lack of a proper after hours public transport infrastructure.

The times and the shifts people work in Rosslyn is of substantial importance from a crime prevention perspective. Rosslyn is fast becoming a 24/7 ‘working’ area, and with these hours extending into late night shifts and more dark unlit places, criminal acts have also become a 24/7 threat.

### 6.8.3 CPIM and the importance of working hours and working shifts in Rosslyn

According to the respondents, Rosslyn, in a very short period of time, switched from a day time working environment to a fully fledged 24/7 manufacturing area. This created another dilemma, with peak traffic, operational vehicles and support services present at all times. As a responded mentioned, “this (Rosslyn) was a peaceful working village now it is a down town working slum”.

The respondents claimed that in Rosslyn crime primarily took place at night; “At night Rosslyn under goes a transformation. It is a scary place.” The respondents all agreed that with business implementing more 24/7 capacities it meant that opportunities for crime increased dramatically. Night time presented a totally different working environment understood especially by crime syndicates and or organised crime. The respondents mentioned that at night less supervisory and managerial elements were present than for the same day type operations, this created more opportunity for insider crime and collaboration with crime syndicates. The respondents explained that because of the poor public lighting at night, there were many dark places where...
activities and targets could be hidden that would have been clearly visible in the day light.

Respondents, especially from BB, stated that the quick change-over in working hours in Rosslyn has had a direct impact on the security design and the security related operations and support, for example; the change in visibility (day and night) also impacted on technical security, especially on technology systems for e.g., CCTV applications and lighting requirements. The respondents demanded sufficient street lighting and police visibility on a much higher level during night hours than currently experienced. They, however, had no faith that this would be happening soon - if at all.

6.9 PUBLIC TRANSPORT

This research found public transport a sensitive and even contentious issue. It was in fact an issue frequently mentioned by the vast majority of respondents. Figure 6.21 demonstrates the dissatisfaction experienced with transport services in Rosslyn. The major complaint was that public transport in Rosslyn was very limited and even non-existent after hours. These factors contributed towards opportunities for criminal acts and made innocent commuters vulnerable targets.

![Figure 6.21: Public transport status in Rosslyn](image)

Figure 6.21: Public transport status in Rosslyn
6.9.1 Psychological structure of Rosslyn business regarding Public Transport

Transport is one of the main themes in practically every discussion about the needs of businesses in Rosslyn and therefore it is an important aspect of the Crime Prevention Intervention model. From a CPIM point of view it was clear that the unacceptable transport situation, especially at night, contributed to the increase in crime and the victimisation of innocent people. The uncertainty and angst experienced by workers, wondering if transport was going to be available, or if there was going to be disciplinary actions against them for being late for work, etc., was another factor that contributed to placing innocent people in vulnerable situations out of desperation, and making them easy targets for criminal acts.

A respondent explained from experience that transport in Rosslyn was just not reliable; “Public transport is hardly ever on time. Most of my employees have received warnings in this regard. Business cannot continuously budget for late comers or sit with workers who can’t get home”.

The safety aspect was also described as horrendous, as a respondent explained: “My employee’s walk a long distance from a bus stop to work and that is what makes them late. Walking is also not safe for them; it makes them vulnerable to crime”. Another respondent blandly stated; “It is not safe. For example, one employee got killed on his way home after work”. A respondent stated that; “Taxis are safe, but trains are not safe. Workers complain about being robbed inside the trains because there are no security guards”.

Transport in relation to income was also out of proportion; “Taxis are too expensive for daily use, unaffordable, at the end of the day we work just to pay transport”.

“Transport during strike periods is a very big problem; the intimidation, burning of trains and road blocks make it impossible”.

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6.9.2 Recommendations of respondents

Respondents required public transport and asked for stricter regulations to be placed on taxis, especially for safety purposes; “Checks are needed to check whether the public transport and taxis are roadworthy”. Respondents recommend that the upgrading of the transport infrastructure had to be listed as a priority; “A very important requirement is to have a mobile transport capacity in and around Rosslyn for pick up and drop off aspects in the industrial area. I suggest free public (local) transport services around Rosslyn, from train and bus stations to workstations.”

The abovementioned experiences were stated in conjunction with a unanimous call to prioritise the improvement of general services for trains and busses. And to achieve this, a respondent stated; “I would recommend the forming of a forum or pressure group represented by all Rosslyn companies, to put pressure on local government to improve this industrial area requirement and to realise it is a weak spot.”

Respondents were clearly desperate for a solution. It was evident, from a crime prevention perspective, that public transport had to be addressed as a priority, either directly or indirectly, by the proposed CPIM.

6.10 LAW ENFORCEMENT

Rosslyn industry’s perception of law enforcement

General Law enforcement, and in particular the SAPS residing in Rosslyn, are held accountable for the crime and security situation in Rosslyn, their poor performance is possibly the biggest reason for the current crime situation in the area.

The researcher experienced emotions ranging from despondency to aggression with emotional outbursts from respondents whenever the topic of law enforcement was discussed. The researcher never had to probe the respondents for their perceptions regarding law enforcement; it was usually the first and the last issue they freely offered in detail.
Figure 6.22: Rosslyn business experience and perception of law enforcement

Based on Figure 6.22, 100% of BB and 70% of S&M businesses experienced and perceived law enforcement negatively. This is supported by Figure 6.23 where 95% of BB was very dissatisfied with the services they received from the SAPS. While S&M businesses seem to have little interaction with law enforcement.

Figure 6.23: Satisfaction on effectiveness of law enforcement in Rosslyn?
6.10.1 The psychological structure of Rosslyn business regarding law enforcement.

The themes encountered continuously are as follows:

- Work ethic and professionalism
- Image of local law enforcement
- Conduct of law enforcement
- Recommendations and/or solutions

6.10.2 Work ethic and professionalism

Respondents claimed that the SAPS did not interact with business;

“The SAPS is non-existing, we use them only for official purposes - to get a case number for insurance, or affidavits”.

“They can just as well not be here, we never see them. There is absolutely no interaction with them”.

The SAPS were perceived as having no interested in business complaints, while the Metro Police were more supportive; “We use the metro mostly when needed. They have a more municipal type of profile, however, they can’t do investigations of crime and they are far from the perfect product”.

The SAPS seemed to be disinterested and needed incentives to work, they had no initiative of their own; “We sponsor the law enforcement agencies with various ‘good-will’ actions, just to get them to be close. We must monitor them very closely as they work when they want to. And don’t expect any initiative from them”. The SAPS seemed to have a limited capacity; “The police are just case number registrars, they are useless with regard to any type of law enforcement requirement”. The SAPS, according to the respondents, don’t have a customer care responsibility; “we called them time and again, they never respond even on messages left”. In this regard some respondents stated; “They never give feedback, they show no effort and no
interest is demonstrated. No feedback, even four months after arrests had been made, still no news, we think the criminals were released.”

The SAPS were accused of not understanding their duties and tasks, leaving the respondents to perform the tasks themselves to make it easier for the SAPS; “We arrested people, the police never pitched up, and then we take them to police station, the SAPs quickly release them. Clearly the police can't prepare dockets for the prosecuting processes. Criminals know there is a very high possibility that the police will bugger–up”.

Another experience in this regard; “We provided the case, all the evidence, CCTV footage, photos, extensive procedures were followed to cover all legal aspects. Four out of the six charges were ‘extremely strong’, we handed these over to SAPS 12 months ago, but we have not heard anything from them ever again.”

The SAP’s seems not to follow through; “They always start these little community projects, then they disappear. Possibly just for showing their bosses they did something”

Some respondents with experience in law enforcement stated the fact that SAPS members were not trained and they invariably had no aptitude for police work; “From my experience, as an old and experienced detective, I can see and experience the absolute weakness in training, in especially their unsure and obstinate conduct even when presenting them with facts”. This fact was supported by respondents mentioning negligence and incompetence; “Firstly the investigator was not available at court. There after the docket gets lost. They try, but they usually fail to resolve cases, they are in one word: incompetent.”

6.10.3 Image of local law enforcement

The respondents had very strong perceptions of and experiences with the local police station. The respondents mentioned the following about the physical station and the appearance of police members,: “The Police station is so unkempt and run down, it is a dirty place and the officers give you the impression of doing you a very
big favour just to talk to you.” “The SAPS Rosslyn station is perhaps one of the untidiest SAPS stations ever, a rundown station with rundown officers.”

About the operational experience the respondents commented as follows; “...our SAPS don’t understand the meaning of visible policing, and they think it means driving around in a van. We need visible policing, not just guys driving around in vans, but no matter, I have not seen a police vehicle this side of town anyhow”.

Respondents also complained about the police not responding because they had no vehicles available; “We have witnessed that the police use government vehicles for their own personal interest and for their own personal gains. For example, they use police vans to do shopping. When one then calls the police station to report crime, there is no vehicle to attend to the crime scene.”

The respondents did not regard the local police officers as competent; “Most Rosslyn police officers come over as illiterate, they are in urgent need of proper training on so many levels, especially the low level officers who deal with customers directly, are very unsure and clearly uneducated in basic police matters.”

6.10.4 Conduct of law enforcement

Respondents were very opinionated about the conduct of SAPS. The researcher has dictated the most common experiences with the SAPS verbatim as follows:

a. “No police performance conduct is ever measured; they get paid for doing nothing, so they keep on doing nothing”.

b. “We report cases, but just to receive a case number. In the last 7 years the SAPS have only been here twice, and we are their next door neighbours. We reported a stolen tyre case in 2010, they have still not arrived. We must clearly bribe them to come here, a senior member even asked for petrol for his sponsored vehicle...”
c. “The police are totally open to bribes and it is a continuous presence. Either they fix your attention on the warm office without air-conditioning or it is a direct statement ‘you do something for me and I will do something for you’ attitude.”

d. “My people come back to me and stated that the police officer asked them R20 - R50 per docket, to open dockets”.

e. “The police are bad as they work for self enrichment. They should stop taking bribes and practise better communication and awareness with the public”.

f. “According to me the police are corrupt and there is nothing that can be done as long as there is corruption within the law enforcement department”.

g. “They (police) lost their dignity and we do not trust and respect them anymore.”

h. “The police are bad, they work for themselves, will never call the police for help.”

i. “The law enforcement enforces laws and rules but fail to obey them, so how can they expect other people to obey these rules”.

The abovementioned comments clearly provide an experience of utter disgust and dismay with the local law enforcement capacity in Rosslyn.

6.10.5 Recommendations

The respondents were clear in their recommendations on how to improve law enforcement and to comply with the requirements of Rosslyn industry.

Visible policing, which was effective and constant, with the focus on hotspots especially regarding place and time, was the foremost requirement of the respondents. “They (SAPS) will save a lot of wasted time on investigations if they stop crime from happening in the first place; the police must think crime prevention and not just crime re-active”. Roelofse (2007:100-103) concurs with this statement stating “early identification is necessary to allow early remedial action at an early stage”.

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Chapter 6: ROSSLYN INDUSTRY NEEDS SURVEY AND RISK ANALYSIS
A second primary recommendation was that the SAPS had to acquire proper investigations skills and; “the police must understand the manufacturing environment, currently they don’t understand the language of Rosslyn industry”.

The police was required to show an interest in their environment. It was expected of them to be vigilant and to provide awareness coaching or training to the Rosslyn businesses. The police had to become a household name. “Faces must be familiar, the constant movement or transfers of police must stop, we need a Sheriff who we know and who understand us. The police must have a plan to infiltrate the Rosslyn Industrial area. An operations room must clearly show hot spots and capacities in real time. Business must buy- in to that plan”.

Unfortunately a large number of respondents had no faith that any solution recommended by them would be successfully implemented by the SAPS. Their recommendation was for Rosslyn Industry to accept the fact that the SAPS was a lost cause, and to rely on their own security capacity, appoint qualified internal investigators and strengthen collaboration between businesses.

6.10.6 The importance of law enforcement to the Crime Prevention Intervention Model

As perceived from the abovementioned, Rosslyn, for all purposes, does not have a functional law enforcement capacity which can support businesses through crime prevention, investigations, arrests and prosecutions. Thus without adequate law enforcement at all levels, businesses are responsible for ensuring their own crime prevention, protection and security. This is an important factor because any proposed crime prevention model must be aware of the available law enforcement capacity, and what is required for it to comply with the requirements of Rosslyn industries.

However, the proposed CPIM cannot and will not discard the SAPS as it is the official channel through which to successfully utilise the criminal justice system. With patience and leadership within the CPIM, the SAPS can and must still play a major role in mitigating crime in Rosslyn. The collaboration and facilitation roles between law enforcement, security and business needs, in this case specific structures, will
need a clear programme, clear management and supervision, clear instructions and clear internal controls. The SAPS should be revisited and perhaps approached with more tolerance and understanding.

6.10.7 The unrealistic expectancy from the police

Roelofse (2010:42-43) a renowned criminology exponent and police specialist argues; “that the criminological theory does not support the general opinion that the police are responsible for crime reduction and prevention”. Roelofse also indicates that regardless the SAPS accepted the mandate “...to prevent anything that may threaten the safety and security of any community and to investigate any crime that threatens the safety and security of any community and this should be called ‘mission impossible’”.

Roelofse argues that it is evident that the critical shortcomings in the SAPS are the lack of training, expertise at senior level and the lack of insight when implementing strategies and policies of the accepted mandate. This is the true situation regardless what is stated in the Constitution of South Africa, Act 108 of 1996, which states inter alia, that the South Africa Police has to: “Prevent, combat and investigate crime” (Roelofse, 2010:46). De Vries (2007) supports the statements made by Roelofse by further indicating that the SAPS capacity, regarding strategy and policy, has been severely hampered by the emphasis on restructuring and affirmative action programmes.

To explain the abovementioned statements in the context of these research findings, Roelofse (2010:45-53) places the role of crime prevention in perspective by stating that the police is at best a secondary crime prevention functionary. Primarily it is in the hands of society; “Policing, therefore, in essence is not crime prevention in the classical sense, but implies control over the behaviours of predisposed individuals”. Extensive research has indicated that the police can only play a contributing or supporting role regarding crime prevention. The primary role of police in crime prevention is rooted in partnership policing. Basically, the point is that the political interpretation of crime prevention is not in line with the scientific interpretation, hence, the mandate handed down reflect this.
According to Roelofse (2010:58), the most important policing strategies are:

a. Developing the partnership,
b. Creating trust,
c. Joint problem-solving,
d. Information gathering and sharing,
e. Investigations, and
f. Accountability.

The abovementioned clarification by Roelofse is of utmost importance in the South African environment in general and also in Rosslyn in particular. The current expectancy from the police and the non performance perceptions, as mentioned in this section, must also be seen in the context presented by Roelofse. In this instance it would be beneficial to all relevant parties if the SAPS were incorporated in a community crime prevention project, and within their ‘true’ capacities. This implies; not to expect the SAPS to drive such a project but rather to function as an equal player.

6.11 THE CRIME STATUS AND SECURITY CAPACITY IN ROSSLYN INDUSTRIES

Discussed in this section is the Rosslyn perspective on crime and its crime fighting capacities, as well as the role and application of security service providers and the general crime prevention measures utilised to detect, delay and deter crime.

6.11.1 Crime and safety experience as per Rosslyn businesses

Businesses were seriously concerned with the crime situation in Rosslyn. Approximately 90% of business, (see Figure 6.24), stated that a drastic improvement in the situation was required, or that they were very dissatisfied with crime in Rosslyn. “Crime has always been with us, however, with the rate of incidents and attempts happening we can only wonder where it will end, but it will not be good for sure”.
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Figure 6.24: Concerns about the Crime Status in Rosslyn

In the general satisfaction survey (see figure 6.25), approximately 45% of BB and S&M businesses stated that they were ‘very’ dissatisfied with the crime situation in Rosslyn, with just as many demanding improvement. Thus approximately 80% of all businesses were dissatisfied. Figure 6.25, shows that in the last two to three years this situation was aggravated as 38% of S&M businesses claimed crime had increased. While, BB, with a damning 90%, stated that crime had increased drastically.

Figure 6.25: In general, has crime in your company/business increased, decreased or remained the same over the past two or three years?
6.11.2 The Rosslyn Security Capacity and Status

Figure 6.27: Type of Security

Figure 6.27 demonstrates that 42% of S&M businesses only use an armed response type of security and 20% only use guards, 17% use a combination of guarding and armed response. This shows that 97% of S&M businesses invest in armed response...
and/or guarding. While 12% of S&M businesses solely depend on complex or business park security arrangements. Only 9% of S&M businesses made use of clever systems, or integrated systems to combat crime.

According to the respondents, the trust in armed response was about the required mobility and the quick response when requested. The armed response personnel are all A-grade accredited security officers who also offer a more professional demeanour and interaction. The armed response officers also tend to have more experience, with up to 25 years of service, whilst the experience of ordinary guards is approximately two years at most.

The respondents were generally not impressed with guards with only a grade C-D level certificate. They lacked valuable insight and understanding and were perceived as; “Nothing more than a loiterer in uniform”, as a respondent sarcastically mentioned. In many instances the grading level of appointed guards was also an unknown factor in that 98% of S&M business respondents did not know if their security guards complied with the qualification requirements or not. Some S&M businesses did not even know there was a grading level for guards.

Another revealing fact is; 95% of S&M businesses outsourced their security whilst the remaining 5% appointed full time security staff to manage their security functions. 50% of S&M business outsourced the full control and management of their security capacity to a service provider and/or landlord. 12% of S&M businesses in business parks and/or shopping centres did not know who the appointed security person was, or what they were supposed to do. It was clear that S&M business did not understand or take responsibility for their security requirements. They outsourced this responsibility and ‘hoped’ for the best. A respondent summarised it as follows; “We pay for security and we hope we get value for money, but we are too scared to scratch the issue as we most probably will not like at all what we will see, and if something is wrong we will not know how to fix it. A bit like the ostrich syndrome”.

In comparison, up to 83% of BB made use of high level guarding and armed response integrated within a layered approach to mitigate crime. BB security managers knew and managed their service providers and guarding within a mixed
approach on a professional and accountable level that was far removed from the inadequate capacity of S&M businesses. This comparison and the implications are clear in the risk analysis rating at the end of this chapter.

6.11.3 Are security service providers rated as best practise and adding value to business?

Figure 6.28: Security service providers rated for adding value

Figure 6.29: Security service providers rated for adding best practise
In Figure 6.28, 54% of the S&M businesses stated that their security was adding value to business, as it allowed them to run their business unhindered from crime. However, 46% felt that security had no impact on their business and many S&M businesses were not sure what security could do to add value to their business. In Figure 6.29, best practise for security, as per the S&M businesses; is to do with efficiency and effectiveness in either response to a crime incident, or as per requirement when needed. In this instance 49% of S&M businesses rated their security in this category. However, 28% felt that their security was not worth anything as they were cheap labour with little or no capacity to combat or to prevent crime. 23% of S&M businesses did not know what security was supposed to do, and neither did they have any experience in managing security. The concept of best practise security was unknown to them.

This deduction implies that 51% of security services do not add any value and do not provide best practise services to S&M businesses; “If the security provider would provide us with services that exceeded or added value we surely would have noticed that, and I tell you I have not experienced any.”

Of the BB’s 39% seemed to be more satisfied with their service providers than S&M businesses; “My security service provider is subject to very strict standards, it is basically a zero tolerance for any mistake or incident”. The researcher found BB to be more critical about performance and they required measurable KPI’s. The BB security providers did much more, and had far more responsibility in comparison to S&M businesses. In BB, dedicated security managers were appointed to ensure security services are delivered according to the required standard. What the researcher found surprising was that 44% of BB still did not know what best practise security was, and 70% believed the security providers did not add value, even though they paid for an expensive service. The researcher however did deduct, from the personal interviews, that most people responsible for security did not understand the terms; best practise and value added within a security concept. This, in itself, was an important finding and showed the lack of formal security training given to the appointed security managers.
6.11.4 Spread of security service providers

S&M Business security service providers

A plethora of security providers were identified in Rosslyn, more than 25 armed response institutions and more than 15 guarding type companies were regularly named. The security services that are used are primarily comprised of armed response and limited guarding. It is also clear that approximately 80% of all the armed response services are derived from five service providers, out of the 25 identified providers, providing services to Rosslyn industry. One service provider nearly provides 40% of all armed response services. A rough estimate, from the figures provided by Rosslyn S&M Business, indicates the cost for Armed Response alone can be up to twelve million rand p.a. for guarding companies alone, this is not inclusive of security systems and full time personnel. Of the S&M businesses 73% felt they would recommend their armed response security providers and 27% would not recommend their providers as they were too small and very ineffective.

BB mostly employed big name/brand guarding providers who could be held accountable in cases of negligence. According to Figure 6.31 the spread was evenly
distributed between 11 service providers, whilst 4 service providers exceeded the rest. BB security service providers were expected to have an office in Rosslyn. They also had to have the capacity to provide the required support, on short notice when, for example; labour unrest proved imminent. In many cases BB expected the security service provider to take full responsibility for all security issues and give feedback to the responsible BB security manager. This sounded like a convenient ‘passing of the buck’, but as one manager responsible for security stated: “We have outsourced all our security requirements and at first it was sufficient, however, it becomes more and more clear that we have also given away control to an institution that does not understand our culture and our way of doing things. In a way the security function has now become grudge expenditure and as best practise is unsure and being ‘value added’ to business is just a grey concept, crime did not improve at all. We have no loyalty to our security service provider, and they are in it for the money, which is an unhealthy situation.”

The fact that security was spread over so many different security providers demonstrated the low point of collaboration and the fact that every business operated in its own silo.

**BB Business security service providers**

![Bar chart showing security providers for BB](image)

**Figure 6.31:** Security providers for BB (names withheld on request)
Roughly estimated, Big Business in Rosslyn spent a minimum of R30 million pa, on security service providers alone, mostly guarding companies. This did not include security systems and full time risk and/or dedicated in house security personnel.

Thus, from a crime prevention perspective security measures cost Rosslyn businesses millions of rand per annum, and this just for reactive measures. BB mostly outsource their security, thus placing many Rosslyn Businesses at the mercy of security providers for whom crime and the fear of crime is just another job. Then to expect security service providers to design crime out and to lessen the fear of crime is akin to expecting cigarette providers to actively encourage people to smoke less.

The CPIM programme, envisaged for Rosslyn, must take cognisance of these facts. This emphasises the importance of informing and guiding businesses to see the bigger picture and to understand the benefits of implementing a CPIM for Rosslyn, which will also entails collaboration in acquiring the ‘right’ security service providers.

6.1.5 Crime prevention methods used in Rosslyn to Detect, Deter and Delay crime

S&M businesses in Rosslyn focussed primarily on guard patrols, armed response and physical guarding to deter crime. They try to delay adversary actions through physical systems like locks and burglar proofing, and to detect crime they focused on limited intruder detection systems. The successful integration of these systems, which is core to an effective security system, was not witnessed.

BB had as basis a demarcated perimeter fence from where they added counter intruder measures which favoured a broad layered approach. They used guards and patrols, CCTV and counter crime informant networks to detect, deter and delay crime. Areas with developed perimeter capacities consisted of various PIDS integrated with a control room capacity. And to delay crime effectively, BB made use of the principle where a detected attempt to breach a perimeter must take long enough for a reactive security capacity to arrive at the scene before penetration was achieved. The following sections will discuss these crime prevention aspects in more detail.
6.11.5.1 Security capacities used to deter crime in Rosslyn

Deterrence was the main objective of all the respondents regarding crime, as once crime had occurred, it has a cost implication. Deterrence methods were not always clearly defined thus the respondents mostly reverted to guarding activities. However, some did perceive deterrence as a priority in security performance with applications like CCTV, patrolling, perimeter fences and even clear signage.

![Figure 6.32: What security measures deter crime?](image)

According to Figure 6.32, S&M businesses firmly believe in their methods of deterring criminal activities, namely; patrols, armed response and guarding. Even though it is not mentioned during the research, S&M businesses, because of their close proximity to each other, also provide each other, as neighbouring businesses, with a natural surveillance and alarm capacity which also deter criminals.

6.11.5.2 Security capacities used to detect crime in Rosslyn

Unlike the expectancies respondents had of police work, the emphasis in Rosslyn Industry was first and foremost to try and prevent the undesirable event. Catching the offender red-handed was secondary to this. However, the general feeling was that regardless of what was done to prevent and to deter crime, some incidents' would
still happen. But on a positive note; detection activities were seen to be an important early warning or detection or the identification of potential offenders. Intrusion detection systems (PIDS/BIDS) were commonly used.

According to Figure 6.33, 72% of S&M businesses use building and perimeter intruder detection systems. However, these systems are baseline intruder alarm systems that many S&M businesses do not trust as being serviceable. Many stated they made use of CCTV and the integration of security systems. But on closer inspection it was found to be baseline, standalone systems. The contextual meaning of integrating security systems was not understood. In Figure 6.33 it is demonstrated that BB detection equipment was spread over most spheres of counter criminal activities, and where possible the integration of security systems was attempted throughout.

**6.11.5.3 Security capacities used to delay crime in Rosslyn**

Delays are regarded by the respondents as something that provides time for detection to take place.
According to Figure 6.34, S&M businesses believe the most effective method of delaying a criminal attack is through physical security measurements, namely locks and burglar proofing (54%), fences (31%). A small number of S&M businesses also use dogs and alarms as delay tactics. BB spread these delay capacities over their extensive resources in a layered approach as part of the counter measures to detect and deter. In most instances BB uses the principle of a detecting attempt taking longer to breach a perimeter so that a security capacity can arrive at the scene. In principle, delaying is perceived to be placing some type of barrier between the offender and the target to provide additional time so that the offender can either be detected, or defeated.

6.11.6 The essential themes or psychological structure concerning the crime status and security capacity in Rosslyn Industry.

The following two quotes from respondents basically sum up the psychological structure regarding crime and security counter measures:

We thought crime was not getting to us, so we just put a fence up and appointed a gate guard. Then we were hit, by the time we had realised there was a problem we
were already crippled as they first took the non obvious items for e.g. spare parts and copper earth wiring. We made it more difficult with more guards. After which they went to the next aggressive stage, they took many trucks tyres off, knocked down walls, jumped fences at will, activated their internal networks… it was like a criminal invasion. Now we are ready with everything under lock, key and surveillance, but it cost us much, in security and in losses… and it will costs us again as they plan their next invasion.

Another risk manager stated that;

The Criminals are getting more and more brazen. They plan and give themselves time, testing our security continuously looking for gaps. Any small lapse in security is pounded on so quickly it is uncanny. Once a perimeter camera was bumped over by a forklift, the next day they even attempted to break down the wall. It is a war. They will steal anything, petrol, bricks, tyres, metal, in fact anything inside the factory and from cars parked outside.

The respondents were unanimous that crime was serious in the Rosslyn Industry and that without proper security, crime would destroy any business quickly; “If crime in Rosslyn was unhindered Rosslyn will be flattened to the last brick in days”.

Another respondent stated that; “The crime threat is very serious, measurements must be strong, if not, crime will hit us like a storm. Crime can and will kill our business. It will quickly become anarchy if not continuously controlled”.

The challenge was; the many different shapes and guises in which crime was presented in Rosslyn. “It is like protecting yourself against the same enemy which changes and becomes more and more experienced”.

Respondents experienced organised crime and perceived the threat of organised crime in the highest order; “Organised crime is a very, very big problem as they infiltrate us (BB) in various ways through various guises, through own personnel, contract brokers and service providers, even security. They have extremely well developed networks and through these contacts they know the Rosslyn businesses supply chains by heart, our strong and also our weak points are known to them”.

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Closely linked with organised crime is internal crime. One respondent stated; “We had 93 cases of internal theft in 12 months. We were aware of it, we know who did it, but could not prove who did it. They are well connected through the whole supply chain, both internal and external”.

What was also uncovered in this research was that; although crime was broadly identified it was also quite clear that the type of security required by business had to mitigate all types of crimes, all of the time and pro-actively where possible. This implied a complex challenge and a situation best left alone for accredited crime prevention professionals. But such professionals were very scarce, very expensive and not always available to small businesses in Rosslyn. Instead a very low level of security was found, lacking in the required knowledge and the required skills with which to manage security and security systems especially in S&M businesses. The BB appointed specialist security practitioners. Their level of internal skills and knowledge was adequate enough to manage security as required. But in some instances ‘outsider’ managers were managing security as an additional, ad hoc responsibility, which resulted in security being mismanaged at best as a baseline capacity that was totally reactive.

BB, with some security expertise, mostly endeavoured to run all their security systems and applications in an integrated manner. S&M businesses, and BB without specialist security managers, did not apply integrated security as it was outside their frame of reference.

It was also clear that security within Rosslyn was unfortunately silo-based and unstructured. No general standard could be found, no leading role player existed, and everyone was doing what they thought best under the circumstances.

A theme that came up more often than not was the fact that Rosslyn needed a central JOC (Joint Operations Centre) for central control, incident reporting and even to serve as a general service call centre. The proposed JOC had to operate 24/7. It had to be maintained by at most 1-3 specialist security providers, who had to collaborate and build an intelligence network. Also called for was the concept of a
‘gated’ Rosslyn capacity for proper access control. A ‘code of conduct’ control was also frequently mentioned.

Business required guidance in how to establish and how to manage security properly and more importantly how to reach out to other role players in Rosslyn to enhance their current capacities as a united front. This called for a CPIM that everyone supported and from where a steering committee, consisting of various specialists, could be sourced for effective security application.

6.12 RISK ANALYSIS OF ROSSLYN

6.12.1 Crime profile and targets in Rosslyn

As per Figure 6.35, S&M businesses experience of crime was based primarily in three categories; 63% in theft and burglary, and 17% in robbery, which was an alarmingly high figure, an unfortunate disclosure to be reckoned with. An S&M business respondent stated; “we can attempt to protect ourselves against asset crime, where the game is to make it difficult to commit crime, but with regard to robbery they have the unfair advantage, your life is at direct risk, - new game new rules”.

![Figure 6.35: Crime profile of Rosslyn](image-url)
Hi-jacking made up the third crime act most commonly encountered in Rosslyn, albeit only 4% of the crimes reported in this research. But it still remained a feared, serious incident even more so when it did happen. 16% of S&M businesses never encountered crime to the level worth mentioning. It was assumed that 78% of all S&M businesses had experienced crime in Rosslyn, such as; theft, burglary, robbery and hi-jacking. It was noticed that S&M businesses did not report a large percentage of crimes to the SAPS; “We only report crime to the police for insurance purposes, otherwise it is a waste of time”.

BB, in relation to their extensive security measures in place, mostly experienced theft, burglary and fraud as direct and continuous threats. They were especially concerned about the continuous threat of organised crime. Even if the amount of hi-jacking’s were higher in BB than in S&M businesses, it must be stated that BB had more vehicles in operation than in the S&M businesses. Thus in relation hi-jacking was therefore a bigger threat to S&M businesses than to BB.

The worrying factor represented in Figure 6.35, was the large percentage of businesses in Rosslyn encountering crime at a regular interval, 63% of S&M businesses had already experienced theft and or burglary, whilst 36% of BB had experienced theft and burglaries, and 32% had experienced organised crime regardless of their existing security capacities. A common question posed by a respondent was; “Where will we be without our security measures, it is a disturbing thought seeing that we are still targeted regardless, this is not a safe environment at all, the threat is ever pressing”.

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A respondent stated that; “Whatever we possess, it is a target for criminals, from computer parts, all metals, food, private and company assets, anything with value will be stolen if not protected, if the opportunity is there, be assured, it will be gone”.

During the research it soon became apparent that criminals in Rosslyn targeted a wide variety of valuable objects, directly and indirectly, from industry and other supporting businesses. They chose to initiate criminal activities at any given time when such a valuable target became attainable and the opportunity arose. Figure 6.36 shows the most targeted items at the time of the research. Business, however, could not pin point that one most sought after item, although scrap metal or any metal come close; “Metal, especially copper is like cash to criminals, they will move mountains to get to it. The reason is the scrap yards will buy from anyone, even from the devil himself”. Spare parts were also mentioned as ‘tools’” to steal when an opportunity presented itself.
6.12.2 Probability of crime in Rosslyn

![Probability of crime in Rosslyn](image)

Of the S&M businesses 98% stated crime was a possibility in their environments, 32% accepted that crime would happen, 33% expected criminal attacks from time to time, while for 23% it happened regularly. Only 2% of S&M businesses did not expect crime. The percentages were similar for BB; however, if Figure 6.37 is interpreted correctly it will be relatively safe to say 100% of BB has experienced crime from time to time. This makes crime a certainty in Rosslyn.

6.12.3 Impact of crime in Rosslyn

![Impact of crime in Rosslyn](image)

Figure 6.37: Probability of crime in Rosslyn

Figure 6.38: Impact of crime in Rosslyn
The impact of crime can be best described by the statement of this respondent; “Crime has a consequential impact, especially in the manufacturing environment, for example, a small piece of copper cable theft can cause a major power failure resulting in many hours of production loss costing millions”.

Figure 6.38, shows that 96% of S&M businesses have experienced consequences of crime of which 31% experienced moderate consequences, 27% experienced moderate to serious consequences, and up to a grave 14% experienced extreme crimes with extreme consequences. Only 4% experienced the impact of crime as negligible. BB, however, agreed that crime was a serious to grave element if it impacted on business. In Rosslyn, BB was mostly involved in manufacturing and crime impacted directly and indirectly on production causing BB to lose market share and/or business, resulting in dire consequences. These figures stated empathically that crime was impacting negatively on Rosslyn industry; “Crime is a factor seen as a crisis in my business, we plan for such scenarios as others do for hurricanes and tsunamis. The difference is our crisis is threatening all the time”.

6.12.4 Seriousness of crime in Rosslyn

![Graph showing seriousness of crime in Rosslyn]

Figure 6.39: The seriousness of crime in Rosslyn
A respondent stated: “what crime in business is not serious, we don’t have things lying around which are not functional or not needed. When it is taken it is serious for my business and my bottom-line, it is a bottom-line thing”.

According to Figure 6.39, 94% of S&M businesses rated the seriousness of crime to be between moderate (32%) to grave (9%). A moderate to serious rating was acknowledged by 31% and a serious rating was received by 22%. This implied that 62% of S&M businesses experienced crime in Rosslyn as serious. For 100% of BB crime was a serious to grave threat in Rosslyn Industry. A BB respondent stated; “Unfortunately crime and labour unreliability are the two threats that will still make me move to another area or even country, these are such negative factors that are present all the time. Not conducive for a sustainable business”.

The seriousness of crime was, therefore, a grave threat not just for businesses in Rosslyn, but also for the sustainability of the regional economy and indirectly the national economy as well. Fear of crime was increasing drastically in Rosslyn, and according to Prinsloo (2006:17); “fear and concern of fear about crime remain complex issues that are further enhanced by randomness and the unpredictability of insidious victimisation on an individual level manifesting in circumstances that go against the grain of systematic routines, sense and convention and create feelings of helplessness, fatalism and altruistic fear.”
6.12.5 Vulnerability to crime in Rosslyn

Based on Figure 6.40 only 28% of S&M businesses believed their security was a strong deterrent against crime. 47% stated that their security was basic and 25% believed their security measurements did not do anything to protect them from a criminal act. The implication was that 72% of S&M businesses felt vulnerable to crime in Rosslyn. An S&M respondent echoed the general feelings by stating; “We are sitting ducks, we cannot cover all the gaps, we are here to do business not to wage a war against crime. We are like civilians in a warzone, totally vulnerable and unprepared.”

BB on the other hand felt more confident, 62% said they were prepared, but even then nearly 40% still felt vulnerable – still a big margin. The BB percentages that felt confident had a general opinion which was summed up by this BB respondent; “we spend millions on security, if you cannot afford to invest in proper professional security then Rosslyn is clearly not the place for you.”
6.12.6 Custodian capacity in Rosslyn

"We must rely on some contracted security and the SAPS are our custodians regarding the crime threat and this did not give me a warm fuzzy feeling."

This statement mirrored the general feelings of the S&M businesses that experienced the custodian capacity of security within Rosslyn as low and inadequate, whether it was private security and/or official law enforcement. Actually 57% of all S&M businesses declared such custodian status as either hardly adequate to totally inadequate, Figure 6.41.

BB, on the other hand, was not dependant on external custodians for their security; therefore, they graded such capacity mostly as strong and adequate, as per Figure 6.41. “We are our own guardians; we trust our own capacity as custodians”. However, between 5% and 30% of BB were still between baseline and inadequate. A respondent previously from this section stated; “We were slack, we took chances, it was just a matter of time before we had a major incident, my business lost thirty plus tons of high value produce in one night, we lost millions, we realised we are the only custodians of security we can rely on".

Figure 6.41: Custodian capacity in Rosslyn
6.12.7 The essential themes regarding the security status and security capacity in Rosslyn industry

a. Rosslyn was under threat from crime that focussed on theft, burglary, organised crime and fraud. Robbery and hijacking did happen but it was not regarded an epidemic as the other crimes.

b. Targets were everything that had value, if there was an opportunity it would be stolen.

c. The probability of a crime happening was a surety; if there was an opportunity it would happen.

d. The impact and seriousness of crime was perceived as grave, threatening not just the bottom-line of business and its sustainability, but also that of the entire region.

e. Vulnerability and the capacity regarding crime depended solely on own resources and capacity. The SAPS could not be counted on.

6.13 CRIME PREVENTION IN ROSSLYN

6.13.1 Introduction

Crime prevention is the main theme of this research. The measuring instrument used in this research, as applied in the interview schedule and data sourcing questionnaire, is based on the situational crime prevention model described in Figure 3.2, namely; to identify the factors in Rosslyn which will guide crime prevention measures to:

- Increase the effort
- Increase the personal risk
- Lesson opportunity
- Reduce provocation/temptation
Remove Excuses

Included in this model is the situation of broken down areas; the reason why criminals get away with crime in Rosslyn; and what the underlying reasons are for crime in Rosslyn.

These findings will, together with Section 6:11 and 6:12, form the more technological grounded crime prevention solutions for the Rosslyn Industry, but with a definite explanation and reason for what is to be used where.

6.13.2 What security measurements are required to decrease the effort for committing crime in Rosslyn?

![Figure 6.42: S&M Business perspectives on measurements needed to increase effort to deter criminals](image)

According to Figure 6.42, to make it difficult for criminals to commit crime, S&M businesses make use of many different activities, singularly or at times integrated.
50% of S&M businesses focus on physical security measures, comprised of; fences, security walls, patrols, visibility and access control. CCTV is a developing trend in S&M businesses; however, its application and utilisation still require more understanding, especially since the integration of security systems is not pursued where possible. S&M business security measurements are solely based on reactive methodologies. An interesting fact is that Biometrics is a trend than many S&M businesses are exploring for future application, a trend also implemented by BB, which can guide future application collaboration between all Rosslyn businesses.

![Figure 6.43 Big Business Perspectives on what increases effort for criminals](image)

**Figure 6.43 Big Business Perspectives on what increases effort for criminals**

BB, according to Figure 6.43, clearly do not place the repellent capacity of their counter crime measures into one basket, they are varied and evenly structured, and many of these measurements are integrated and fashioned in a layered approach.

All BB’s valued fences as important - the first primary layers in their security approach. They come in all shapes, materials and standards, some just an ordinary palisade fence, others high tech integrated PIDS systems.
BB also has an affinity for security dogs, some even stated it to be the best guard solution for static assets. However, the dog providers and handlers cannot always be trusted when it comes to qualified care and training. “The dog handlers are not trained, the dogs are not taken care of, and it is more animal cruelty than security”.

Trust played an important role when appointing a security provider. Businesses that were not involved with the functions of their security service providers, especially where ‘no name brand’ service providers had been appointed, did not have a relationship based on mutual trust. S&M businesses in general believed they received no value from security service providers who tend to do as little as possible for as much money as possible. Furthermore, businesses did not expect a security service provider to show any initiative other than what they were paid for, especially thinking outside the box. However this research has uncovered from the respondents that the bigger the security service provider, the more capable they were of providing a qualified management capacity to integrate with business.

Another aspect of security that was receiving more consideration is the CCTV. BB was buying into this concept and was continuously improving on the positive identification of any potential criminal through the integration of access control and CCTV. CCTV is claimed by BB to have brought theft under some control. The application of CCTV varied from fully fledged control surveillance to basic stand alone systems with a recording capacity when needed.

BB were open to the idea that their current CCTV capacity could, where possible, be structured to also do external or across border/perimeter monitoring or recordings, thus also covering adjacent streets, areas and neighbours as well; “If Law Enforcement were to get off their behinds they could use corporate security assets to greater value, if they want the bigger picture it is there for them to see, they must just ask”.

BB stated that it was imperative for CCTV to be part of a Rosslyn wide security integration strategy. It should not be a ‘stand-alone’ capacity without a proper surveillance control room that would render it an expensive recording device with no added value. If managed correctly, CCTV could easily become a value added
component to every business. A CCTV qualified respondent stated; “If CCTV and other security systems can be integrated, and if it is correctly applied, then crime can pro-actively be stopped in Rosslyn.”

BB and S&M shared similar recommendations about what had to be done to make it very difficult for criminals to act. The number one drastic change recommended by everyone started with the police, namely; visible policing, interested police and qualified police. The second recommendation was moving towards the integration of security systems mostly comprised of CCTV with PIDS and a proper control room capacity. The third recommendation was creating a JOC supported by close collaboration of all businesses in Rosslyn.

6.13.3 How can personal risk be increased for the offender?

![Figure 6.44: How to increase personal risk in Rosslyn for offenders, S&M business](image)

Based on Figure 6.44, 46% of S&M businesses recommended that the personal risk for the offender could be increased by internal and external camera type surveillance. 29% recommended active surveillance and foot patrols as the solution. Single figure percentages suggested SAPS visibility, lighting, alarms and access control. It was clear that CCTV was the preferred security measurement for deterring criminals from
committing crimes. The fear of being positively identified, as in this instance, was a reality. S&M businesses were not security specialists. They did not know the pros and the cons or the requirements with which to effectively manage a CCTV system. Unfortunately there are not many security specialists available, thus there is no immediate help at hand to assist them.

![Diagram showing various security measures and their percentages.]

**Figure 6.45:** BB perspective to increase personal risk for offenders

BB used a channelling layered approach to create a high risk environment for potential offenders. Figure 6.45 demonstrates how BB has spread their systems and capacities by working together to create an environment in which an offender will struggle to commit any crime and get away with it.
### 6.13.4 What can be done to lessen the opportunity/temptation/reward for crime?

<table>
<thead>
<tr>
<th>Recommendation</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Code of Conduct</td>
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<td>CPF</td>
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<td>Lighting</td>
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<td>Screening</td>
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<td>Access</td>
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<td>CCTV</td>
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<td>Police Visibility</td>
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<td>Impossible</td>
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<td>Scrap Yards</td>
<td>7%</td>
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<td>ID Prop</td>
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<tr>
<td>Counter Intelligence</td>
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<td>Remove Assets</td>
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<tr>
<td>Locks</td>
<td>15%</td>
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<tr>
<td>Target Conceal</td>
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</table>

**Figure 6.46: How S&M businesses can lessen the opportunity for crime in Rosslyn**

S&M businesses in Rosslyn understand that if you created even the smallest opportunity in a crime risk environment it would invite crime. Based on the findings depicted in Figure 6.46, S&M business know that there are many solutions available, which if integrated will be an effective security tool that will decrease the opportunities for crime.

The most popular recommendations received from respondents were; 32% recommended removing and concealing valuable targets, while 15% recommended locking the targets up when not in use. It was also mentioned that in view of the copper theft endemic, aluminium should rather be used to lessen the value and the opportunity for criminals. Any metal that could be turned into scrap metal was problematic. In this instance it was the buyers of such metals, namely; scraps yards, which should be monitored more closely.

BB agreed that it was a situation where the ‘opportunity’ was the over arching factor which had to be controlled. Any opportunity would immediately be spotted by the predisposed individuals, and the area surrounding BB was full of vagrants living in...
open spaces, drug dealers, drug users, and loiterers. They were all indirectly roaming
informants of organised crime; “Metal thieves are the first criminals out of their holes.
The speed with which metal thieves act is absolutely dazzling”. BB considered the
uncontrolled or under policed scrap metal environment as being the lifeline for
criminals; “with up to seven scrap metal yards in Rosslyn that will buy any metal from
anyone, makes this area like a supermarket for metal thieves. The scrap metal
dealers are in control, the SAPS have no clue as how to enforce the Second Hand
Goods Act.”

Visible policing was vaguely mentioned to be in effect and when probed it was stated
as possibly being the most important component in lessoning opportunities for
criminal activities. However, it was not really discussed in depth; instead it was
discarded as not being a viable option because of the continuous non performance of
the police. But the hope stays and is the police still seen as to be a necessary
requirement, whenever they are again credible and willing to partake.

Electronics, especially laptops were popular items targeted by criminals. Here the
solution was simple; carry these with you at all times and never leave any unattended
for long periods of time. Screening was also mentioned, but the practicality thereof, in
a high turnover environment, made it difficult to use. If there was a way in which it
could be more practical and more cost effective to use, it would probably be the first
choice for scrutinising both permanent and temporary staff as well as visitors to the
premises. A biometric solution may address these issues in the near future.
BB does have a bigger-picture approach regarding managing opportunity as depicted in Figure 6.47. The focus has clearly moved to the external factors that have to be addressed, but would entail collaboration between businesses, a CPF capacity, and a police presence, scrap yard monitoring and the vetting of Rosslyn workers. If these are in place the physical measures will be supportive rather than primary.

6.13.5 What can be done to reduce provocations for the offender?

S&M businesses, as indicated in Figure 6.48, have a number of ideas or ways in which to curb situations that provoke offenders into committing criminal acts. Suggestions made by 33% included minimising temptation by removing or concealing targets and controlling the movement of loiterers. However, it was disturbing to learn that 11% of the respondents were totally despondent and at their wits end, while 2% had decided that the only alternative left was to move out of the area. Furthermore, it was evident that all these recommendations shared a common factor, which was important in the greater context; namely social ecological differences, especially poverty and inequalities in income within in the Rosslyn environment.
The respondents also mentioned that criminals thought they were untouchable. This mindset had to be overthrown by inducing fear of being apprehended, and even more so of being recognised in the community. The respondents actually pleaded for harsher sentences; putting up ‘wanted-type’ posters; establishing a crime line for Rosslyn managed by a dedicated information call centre that would give regular updates on criminal behaviours/threats; providing access control into the area to prevent overcrowding and loitering and introducing a ‘bobby on the beat’ type of vigilance to enforce better, more disciplined behaviour.

Figure 6.49: Big Business perspectives on reducing provocations for crime in Rosslyn

According to the BB respondents, when operating in a manufacturing industry, offenders were more easily tempted to get involved in ‘small’ criminal activities, so much so that crime were rife in an open manufacturing process. BB worked on a big scale, which made it easy to steal on a small scale, and get away with it on numerous levels, especially in a moving supply chain. The BB’s have tried to curb these ‘petty’ crimes by installing security systems in logistical supply chains and keeping small valuables locked up under surveillance when not operational.

In many instances BB also had the additional problem of protecting intellectual property thus, as far as possible they tended to ‘hide’ many production lines from scrutiny by making use of hangers, walls and storing facilities. Figure 6.49 endorses
the remarks made by the respondents and also indicates that BB spreads their counter crime activities equally in a layered approach, unlike S&M businesses that tend to put all of their counter measures into one proverbial basket, meaning; using one measurement or application which can easily be overcome by resourceful criminals.

6.13.6 **What can be done to remove the excuses of the offender?**

According to Figure 6.50, 24% of the S&M businesses stated that if socio economical aspects like poverty and unemployment were alleviated most of the reasons for committing crime would be eliminated. However, during interviews with the respondents from the S&M business environment it was agreed that poverty and unemployment were a major problem, but it had unfortunately become the scapegoat to rationalise criminal conduct and if caught, criminals expected an ‘understanding’ reprimand and no more. S&M businesses reiterated that the ‘gap’ between top management and the lower levels was too big, and it was getting even bigger, which created an attitude of indifference - an ‘us’ versus ‘them’ attitude. When this
happened crime was regarded as an act against the business and management, and the internal personnel turned a blind eye, omitting to report these activities - and an ‘it is not my problem’ attitude prevailed.

Interestingly 22% of S&M business respondents recommended that in every working environment a code of conduct ought to exist that was lodged in mutual respect at all levels. This was supported by respondents who also pointed out this was an area in which education and training would be required.

Another aspect highlighted by the S&M businesses respondents was the fact that drugs and alcohol were readily available and actively traded in Rosslyn. These encouraged negative elements and were also the cause of criminal activities and undesirable conduct. It was nothing new, or unusual to walk around, or even come to work ‘under the influence’ in Rosslyn. It had become such a common appearance that in most instances offenders just received a slap on the wrist and were sent home to sober up. If drugs were actively removed from, and banned with extreme intolerance in Rosslyn there would be far less ‘excuses’ to commit crime.

More than 30% of the S&M respondents felt that Rosslyn was an area that in essence, did not reflect any law enforcement where a ‘zero tolerance to crime’ attitude existed. Instead it painted a picture of being a scruffy, lawless environment and for this state of affairs there was absolutely no excuse - it was in fact an injustice to the so called status of Rosslyn - an important business hub in the global village.

Another contentious issue with the S&M businesses was the scrap yards that were known to purchase stolen material, entice crime and attract criminal elements to Rosslyn. Another issue that came up continuously was the untidy, scruffy appearances of these scrap metal yards – “was it to conceal the criminal activities they were involved in”, was asked? Strictly spoken the SAPS have no excuse for not patrolling the area and implementing the new Second Hand Goods Act. And neither do the metal vendors have any excuses for not trading within the law.
Figure 6.51: Big Business perspectives on removing excuses for doing crime

BB and S&M businesses shared the same point of view on this issue. BB just had a much more ‘Zero-Tolerance’ approach to offenders and especially internal workers that did not follow policy requirements. As a respondent from BB stated; “We cannot afford to keep people on site who have proven to be unreliable and criminally inclined, the smallest indiscretion is met with the harshest action possible. The BB environment is an environment that provides too many opportunities for the criminally inclined.”

BB, as presented in Figure 6.51, increased compliance to internal rules through information networks, and incorporated it as part of the induction training before being allowed on site. It also implemented stricter access controls with a clear audit trail. BB also displayed signs and handed out informative reading material to advertise anonymous reporting and to emphasise zero tolerance to crime. A respondent stated, “We make sure all personnel understand that to commit crime or to support crime will be a severe career limiting exercise.”
6.13.7 Do ‘broken down’ areas attract criminals? What should be done?

As depicted in Figure 6.52, 33% of S&M businesses emphatically stated that from experience they have learnt that derelict, vacant, scruffy, neglected buildings and stands attract criminal elements. Only a mere 6% said that they had these areas under control. The following solutions were given: 31% felt that if the area belonged to the local government, it was their responsibility to maintain and to monitor these areas. If it was privately owned land the applicable regulations had to be enforced, especially if the area had been left to become a dilapidated gathering place for criminals and vagrants. 11% of the respondents recommended that open stands had to be maintained and cared for and kept clean. Dilapidated buildings had to be demolished or refurbished, while vacant stands had to be clearly demarcated and fenced in with a visible sign displaying the ‘no trespassers’ policy and if necessary sold before becoming a burden.

Figure 6.52: Do open and ‘broken down’ areas attract criminals in Rosslyn S&M businesses?
As shown in Figure 6.53, only 3% of BB did not regard empty open spaces as a direct threat. The rest said the solution to the problem of derelict land lies evenly spread between maintenance and active control, involving the landlord and or law enforcement. A BB respondent stated; “We see the unkempt areas infiltrated by unsavoury individuals, it becomes a meeting place for the like-minded. When confronted they are aggressive and confrontational. The scrap scavengers and the drug dealers share these areas”.

Respondents close to the railway lines and to riverbeds complained excessively about the fact that these areas were not maintained by local government and Transnet freight. These areas had become known hiding places for criminal elements. Respondents working close to vacant factories expressed the same concerns. They were, however, especially alarmed by the power cable theft and the fire risks these criminal hideouts attracted. All the respondents were in favour of demolishing these derelict structures that were not maintained by anyone.
6.13.8 Offenders tend get away with crime but can it be remedied?

Figure 6.54: Reasons why criminals get away with crime. From a S&M business perspective

As depicted in Figures 6.54 and 6.55, 80% of S&M businesses blamed the incompetent law enforcement and/or the ineffective criminal justice system, in which they had no confidence, for the out of control situation in the Rosslyn environment. It was so bad that they never bothered to report a crime or a potential crime, other than to get a case number for insurance purposes. And besides that, criminals got away with crime because they had no fear of any consequences. If they were caught they knew they would not be held in a holding cell for long. Dockets went missing, thus the investigating and prosecuting process was seldom completed, or technically processed. And if, per chance, they were prosecuted the sentence would be light and they would be back on the streets again. The police were regarded as uneducated and ineffective. Another matter of concern was bribery, a notion law officials looked upon as a matter of routine. 5% of the S&M businesses felt the entire situation had become hopeless. They had no idea what to do anymore.
The S&M businesses also stated that the majority of the security service providers, in Rosslyn were ineffective. They were of the cheapest but the least trained and they did not know how to collaborate with other providers.

It was recommended that only one security service provider should be appointed in Rosslyn to manage the security services with a high level of capacity and control, such as the police cannot or will not be able to render.

10% of the S&M businesses reiterated the fact that the socio aspect of the Rosslyn area was another contributor to crime. The number of unemployed people infiltrating Rosslyn was on the increase. They earned their living through crime, stretching the limits of law enforcement even more beyond control. Illegal immigrants were also mentioned, but if they did bring a different scope to the current problem there was no sound proof to verify it.

As depicted in Figure 6.55, BB held the CJS, and more specifically the SAPS, accountable for the out of control criminal activities. Criminals just did not fear the possibility of being arrested and prosecuted. The reasons being, the SAPS could not investigate properly; the evidence collected was inadequate and if there was the possibility of being prosecuted, there was nothing that bribery could not fix.

Figure 6.55: Big Business Perspectives why criminals get away with crime
6.13.9 What are the underlying reason/causes for crime, both direct and indirect?

According to Figure 6.56, 63% of S&M businesses stated that the underlying reasons for crime in Rosslyn were unemployment, poverty and hunger. 17% stated that salary inequality and the ensuing financial problems because of the high cost of living resulted in many resorting to crime with a feeling of justification. Respondents also mentioned that many employees did not know how to work with money. They spent it very quickly and had to resort to other means, mostly criminal, to get more money.

![Figure 6.56: Underlying reasons for crime as per S&M business in Rosslyn](image)

The education system of the country was one of the main contributing factors of unemployment, and indirectly also to crime, according to the S&M respondents who stated;

“My main concern is the lack of practical skills and poor planning skills.”

“All in all, culture, politics and childhood background, play a major role in an individual's behaviour. Unemployment is also because of a poor education and the
lack of skills. The weak school standards make the youth think they can compete and perform which, they then find out in the hard way, they can’t.”

“Rosslyn is a manufacturing industry, quality skills and schooling is important to us, but we get people with high school certificates who can barely write. Illiteracy is worse than what people think.”

Another reason that was highlighted by the respondents was: “…that crime cannot be prevented, deterred, nor combated as long as laws and policies are not enforced. There is a need to push to enforce the laws and policies, criminals should not be given more rights than the victims.”

The lack of ethics and morale was mentioned time and again by S&M business respondents, as this, they agreed fuelled criminal behaviour. Such conditions “are influenced by the lack of parental guidance and mentors, limited role models, dysfunctional families, disorganised communities and corrupt political leaders.” This aspect was further fuelled by drug and alcohol dependencies as stated by 5% of the S&M respondents that were interviewed.

![Figure 6.57: Big Business perspectives what the reasons for crime are in Rosslyn?](image-url)
According to Figure 6.57, BB and S&M business agree that unemployment and the lack of skills contribute to poverty and encourage risks to capitalise on any opportunity for subsistence reasons. BB is less emotional; they distance themselves from the problem. In their opinion it is unfortunately a macro economic problem the South African Government must manage. BB is more focussed on preventing crime in their place of work by increasing security effectiveness and curbing opportunities for crime.

6.14 COLLABORATION

The term used most in the context of controlling crime and acquiring business related needs in Rosslyn is: collaboration. This section will discuss the concept of collaboration as proposed by the Rosslyn Industry. Figure 6.58 shows that nearly 80% of all businesses do not collaborate with each other even though they have requested it on numerous occasions.

![Figure 6.58: BB and S&M Business perspective on collaboration](image)

Figure 6.58: BB and S&M Business perspective on collaboration
6.14.1 The collective reasoning of the 10% Rosslyn businesses that do collaborate.

Collaboration has already been attempted by 10% of Rosslyn businesses. Their motive is to step out of isolation and to share information regarding any threat which may impact on neighbouring companies and on themselves. Respondents stated they were pro-actively trying to collaborate:

“We do collaborate every now and then, I am satisfied we are crime aware.”

“We warn and alert each other about crime in the Park, it is helping and I wish we could speak more often.”

The collaboration mentioned is, however, at a very low scale and is invariably unstructured. It primarily takes place amongst security personnel who speak to other like-minded people. What is interesting is that the police seem to be in favour of collaborating; “The police regularly alert us (the collaborating group) concerning security awareness. They provide us with information about safety and security.”

The S&M businesses that do collaborate feel that big businesses are reluctant to collaborate with S&M businesses as they are too focussed on their own survival and tasks; “We do collaborate with other small business owners, big companies do not want to have any relationship with us.” This is a frustrating factor, as S&M businesses deem the influence capacity of big businesses as crucial, if area collaboration is to function effectively; “Big business has the resources and the capacity to take leadership in Rosslyn, but it is as if they don’t care about aspects outside of their boundaries.”

The businesses that do collaborate, even though at a very superficial level, have seen and experienced some of the benefits. They have mentioned the possibility of taking control of Rosslyn and the potential involved if all businesses were to collaborate in sharing resources and information effectively and efficiently. These ‘experienced’ respondents did not understand why other businesses were not willing to follow the same route. The research found the collaborating businesses were more secure and more positive about the future in Rosslyn and in combating crime.
successfully. It was obvious that collaboration did indeed create a positive attitude. It also provided the police with an identified ‘partner’ to interact with.

6.14.2 The collective reasoning of the 80% of Rosslyn businesses that do not collaborate.

Even though more than 79% of businesses stated that they did not collaborate, not one in this category stated that collaboration was unnecessary and should not be pursued. The reasons shared for a non collaboration status were varied, yet most encompassed the following perceptions:

“The business culture diversity prevents us from communicating and collaborating.”

“We do our own thing; at this stage ‘each to their own’.”

“Nobody seems to care what happens next door, or they just don’t know.”

“Big business is so focussed on itself it tends to forget about its neighbours.”

These statements endorse the core of all arguments for not participating in collaborating actions. “No related business forums exist and therefore no information and security awareness can be shared.” Instead they have adopted the ‘silo effect’: each to their own. “They do not communicate, and do not share, thus they are not aware of the common problems and needs they could share and could solve if they were to work together as a team”. A possible solution could be: ‘We need a facilitator or leading business to take the lead on this with a definite mission and a project type plan, and not to waste our time with tea drinking meetings.’

However, finding the right entity with a unanimously accepted plan and strategy was proving to be a difficult task because those who had tried have come with a ‘hidden agenda’: In secure parks, businesses have relied on the landlord to bring the businesses together and to share information, but this definitely never happens. And then there have been other unsuccessful attempts:

“We have been contacted by one or two Rosslyn organisations to become part of a drive for a security forum. It turned out to be a ‘loaded’ meeting with unrealistic
requests for funding for a security capacity which was not even aligned or agreed upon.”

“There are currently no known forums that could aid with security awareness and with the capacity to build a Rosslyn collaboration initiative.”

It is experiences such as these that make businesses reluctant to become involved in ventures where an accredited facilitator cannot take the lead and where the SAPS is not involved either:

“A Rosslyn security forum is necessary, but my knowledge of security is very limited, I want to be part of a dynamic forum where shakers and movers are involved who know how and what to do.”

“The SAPS must play an informative role by providing us with the latest’s crime states, patterns and trends of criminality. The SAPS cannot facilitate such forum, it must be business driven, internal or contracted by a professional who understands business and security and crime.”

The fact that Rosslyn is a large area makes businesses even more reluctant to join an overriding security forum. They would prefer to be involved in smaller forums or focus groups which feed into a central capacity. In fact their feelings are unanimous: “It would be great to collaborate with other companies as collaboration between businesses is necessary; a Rosslyn type initiative is seriously needed.”

6.14.3 What Rosslyn businesses envisage as the core action necessary to take control of the crime situation in Rosslyn

Businesses want to share thoughts and concerns regarding the crime threat in Rosslyn with other role players, as they believe it will be crime preventative, “I think communication, collaboration and awareness is urgently required. This would prevent crime from occurring constantly.”
According to the respondents, collaboration would bring new ideas and would make Rosslyn businesses understand and know Rosslyn better. It would no longer be a situation of; ‘each to their own’ anymore.

“A Rosslyn Forum will create a body of strength that must be listened to and that can strong-arm weak service delivery to deliver what they are paid for.”

“We would be part of collaboration if possible, but then it must be organised and an officially recognised and structured process.”

“We need a facilitator who knows what he says, not parasites who want to make money as first priority, we have no intention of sponsoring anything on a whim, and it must first prove that it can work.”

6.14.4 The needs required by Rosslyn businesses before a collaboration capacity could function effectively.

According to respondents, Rosslyn needed a forum comprised of selected representatives before collaboration could take place;

“This forum must consist of a selected committee that will discuss the issues of the entire security structure in the area of Rosslyn. We even need to communicate more often, maybe even weekly when needed.”

“Perhaps quarterly held business forum meetings must be held to discuss problems of crime. Then monthly meetings to educate and to alert people about security awareness.”

The Rosslyn businesses recommended that a representative with leadership abilities and knowledge of security should be appointed to liaise between businesses and the SAPS on business matters that need police involvement. The police in turn should provide the appointed representative with crime reports and statistics. The respondents reiterated the importance of a formal forum or a Rosslyn indaba.

“Businesses should get together to discuss matters and help each other with crime solutions.”
“Exchanging ideas to fight crime and other crime related problems should help a lot. We can meet to discuss and share security issues as well as address the complaints and the needs and some specific security threats such as; electronic awareness and supply chain requirements.”

6.14.5 Role-players mentioned by Rosslyn businesses that would make the collaboration requirements effective and efficient

“Police should provide crime reports and send us security awareness updates through emails. A crime news letter from the police must be provided or be initiated by the forum and distributed by the forum to all the members.” Rosslyn businesses want the SAPS as well as the local government to be involved in crime prevention approaches; “municipality and police force involvement is a must, to jointly address the issues of crime around Rosslyn industry.”

Furthermore it was established that this collaboration could only be a success if it had the buy-in of all businesses in Rosslyn.

Co-operation among businesses is a must. A forum to meet and to discuss issues concerning security for specific areas is a must. There should be a delegate from the City of Tshwane attending all the meetings in order to hear out our needs and complaints.

The respondents understood that crime prevention ultimately resided in the hands of the security service providers and they advised that; “there should be close collaboration amongst security providers, they must become well aware of the demographics of Rosslyn”. The general thinking was that Rosslyn businesses should bring a CPF- type organisation into existence, that “the Rosslyn industry should be made a safe business park. There should be one or two entrances where there must be proper access control and security, like boom gates”. The CPF idea was a recurring theme;

“We need a CPF urgently, we will support that, and it will shorten re-action time to crime and emergencies.”
“We need a CPF everyone will be in radio contact, easy and quick communications will be possible, everyone can then lookout for each other.”

“A CPF will effectively monitor and manage the SAPS performance.”

The respondents believed that with the appointment of competent security service providers and an educated security forum capacity the necessary guidance would be received concerning security applications. Collaboration will be encouraged that in turn will contribute towards an empowered united security capacity in the Rosslyn environment. In conjunction with these the potential for a Biometric access and vetting solution for the Rosslyn environment was also mentioned.

6.14.6 Rosslyn businesses that do not require collaboration

All BB’s requested the presence of an active collaboration capacity in Rosslyn. Only 4% of S&M businesses in Rosslyn stated that they did not want a collaboration capacity as they were of the opinion that it would not work. Their reasons were based on two facts, as experienced by the following respondent;

a. “We do not contact each other at all. I personally do not think we need to collaborate because we sell different products and we are too culturally different.”

b. “There is no collaboration and I do not see the need because so far we have never experienced crime.”

This small group felt content on their own. They did not believe they needed such an action as there was no crime to speak of. The following respondent’s statement sums it up; “There is no collaboration and I do not think it is needed. But in the future there might be the necessity to have that kind of relationship, if crime and other area risks become a problem.”

It was not that this small group did not believe in the concept of collaboration, they did, for them it was not a serious enough situation for them to go that route.
The irony is that this small group was living in a false sense of security, which could have been placed in perspective if there were a collaboration capacity in Rosslyn.

6.14.7 What the establishment of a collaboration forum will create

From the abovementioned section it is clear that business in Rosslyn believed a functional business forum would play a major role in mitigating crime and provide a capacity to alleviate services needs, in general, in Rosslyn industry. As a respondent stated; Rosslyn needed a body from where collaboration could be moulded into a focussed pressure group; “Surely a collective senior management body from Rosslyn can put pressure on government to do what they are supposed to do? The idea of a collective approach, be it through direct involvement or just guidance, is summarised in the following respondents statement; “Collaboration can reduce costs and improve services and save time. Many hands will make a big difference.”

6.15 EXPORTING AND SUPPLY CHAIN SECURITY

6.15.1 Exporting profile

Rosslyn is primarily a multi manufacturing industry. Exporting and importing is a daily occurrence with various supply chains actively busy with this international process. In fact the goal of many businesses in Rosslyn is to export their products. However, to be an exporter requires compliance with many exporting criteria, of which one is security, or more specific C-TPAT and AEO criteria. It would be beneficial for Rosslyn to be C-TPAT inclined. This section briefly provides an insight in the awareness of Rosslyn businesses regarding these criteria and the potential beneficiaries of such a status.
Chapter 6: Rosslyn Industry Needs Survey and Risk Analysis

Figure 6.59: Export profile of Rosslyn (BB)

Figure 6.60: Export profile of Rosslyn (S&M Businesses)

Export to African countries includes; Kenya, Nigeria and direct neighbours like Botswana. Out of Africa exporting only counts for a handful of BB manufacturers, and it covers Europe, Japan, India, Canada, USA, Argentina Japan and Australia.
According to Figure 6.60, 36% of S&M businesses export manufactured goods from Rosslyn mostly to Africa and 30% provide support to BB exporters. According to Figure 6.59, 52% of Big Businesses are exporters. However, many S&M manufacturers are aspiring to eventually become exporters.

6.15.2 Supply chain security

The current implication is that more than 60% of the Rosslyn businesses have some or other connections with international supply chains. This requires supply chain security compliance with bodies such as C-TPAT and AEO. Currently, only one Rosslyn BB exporter complies with C-TPAT requirements and is also accredited with C-TPAT - the highest ‘Tier 3’ status. According to Figure 6.59, 100% of all Rosslyn businesses have stated that it is important and beneficial to upgrade the whole of Rosslyn to become a C-TPAT friendly industry for exporting and for security purposes. C-TPAT can therefore become the vehicle for collaboration and for security standards. This endeavour can be achieved through the proposed CPIM by providing coaching and training as a specialist function of the steering committee implementing and maintaining the CPIM.

6.16 CONCLUSION AND ESSENTIAL PSYCHOLOGICAL STRUCTURE

The security survey and risk analysis, as conducted for Rosslyn, was to gain information regarding the current security status, and the specific needs and recommendations from the inhabitants of Rosslyn. The goal was to provide Rosslyn with a CPIM, which would support and even enhance business sustainability. The researcher took notice of the fact that security and risks were not isolated, stand-alone issues. These could only be fully understood if the total/multi ecology and society related factors were incorporated through a qualitative interaction with the respondents, and the close personal witnessing of the environment, to support the quantitative data that were sourced. Thus very comprehensive sourcing as was done to complete an in depth security survey and risk analysis, and on completion of these the following essential psychological structures were identified;
1. **Operational demographics of Rosslyn**

   The Rosslyn industry operations were understood and known to the point where valid and reliable deductions could be made for planning and focussed priorities. This entailed operational aspects involving crime status, population spread, loitering, law enforcement, public transport, etc. All areas had been successfully covered, which might have a direct or an indirect impact within the context of risk and security.

2. **Crime threat survey**

   The crime status of Rosslyn was a known factor. The type of offender, the targets sought after and the modus operandi of the offenders were also known.

3. **Security capacity of Rosslyn**

   The status of physical and non physical security within Rosslyn was fully understood. The variety of measures to delay, detect and deter crime, its efficiencies and effectiveness and also limitations were identified and the recommendations within the context of scenarios were fully sourced.

4. **Risk analysis**

   The analysis included the threats, vulnerabilities, likelihood of occurrences and the impact of specific crime issues in relation to S&M businesses and BB, both separately and jointly. The information sourced through raw data and personal experiences allowed for reliable and valid interpretations and deductions.

5. **Crime prevention methodology utilised and recommended in Rosslyn**

   The crime prevention methodologies that had been put to use and recommended within Rosslyn to create awareness and to be more vigilant concerning personal risks, and to lesson opportunities for crime, and to reduce provocations and excuses to do crime, were fully disclosed and understood. The impacts of vacant land and/or broken areas were recorded in detail. The perceptions of business as to why criminals got away with crime; the reasons
for crime either directly and/or indirectly were recorded and discussed in detail. The collaboration factor as a crime prevention methodology with which to combat crime was the preferred method, endorsed by support and demand.

6. **The graphic diagram of Rosslyn security and crime.**

Figure 6.61 shows the basic crime infected and secure areas as depicted by the respondents. This is a very basic diagram for the purpose of general orientation. The more detailed crime records indicated the crime threat is basically spread equally over the entire Rosslyn area.

![Figure 6.61: A high-level overview of the Rosslyn crime and demographics make up.](image)

a. The red areas are where crime mostly emanates from. These areas are railways, pylon servitudes, small watercourses, vacant land, townships, and vacant factories. Roads must all be seen as red.
b. The blue borders encapsulate BB where security is excellent and where crime in many ways has been displaced.

c. The orange borders are where S&M businesses are mostly found.

d. The green area is a mix between BB and S&M businesses. This area is relatively secure as these businesses are mostly manufacturers with above average security. However, there are red spots in these areas mostly because of scrap yard dealers and vacant land or factories.

e. The A, B, C, D and E markers are used to divide Rosslyn into 5 Zones for easier reference and research planning. The same Zones are utilised in the implementation of the CPIM later in Chapter 7.

7. Exporting and supply chains security

The exporting profile of Rosslyn businesses was disclosed in full. The importance of supply chain security and the international supply chain security criteria was shared with the applicable businesses. The support for a C-TPAT friendly Rosslyn was explained and accepted without any opposition.

Chapter 7 will make use of all the above mentioned problems and risks identified and filter them through the CPTED SUITE (Chapter 5) to calculate the correct applied CPIM for the Rosslyn Industry after which the implementation of the CPIM will be demonstrated.
7.1 INTRODUCTION

The social research, including the criminological research, connects theory and empirical data. Theory and data have a two-way mutually reinforcing relationship, namely; inductive and deductive reasoning, to provide a valid result (Bachman and Schutt, 2014:33). This chapter is about the applied demonstration of the analysed evidence derived (through deductive and inductive reasoning as per this mixed research approach), from all the findings as presented in this research. This chapter is also about the demonstration of the application of the criminological tools (CRA and CPTED SUITE), as designed from applied criminological theory/methods, in its endeavour to develop and implement a valid and reliable CPIM for Rosslyn Industry. The reader will be taken through the development of a CPIM process, from its inception to its implementation, as demonstrated in Rosslyn.

This chapter supports Lake (2012:6) who stated that there is a need for evidence that CPTED projects work and the guidelines are being used. “Nobody has actually gone out and said; ‘Are these working, are they being used?’ We have got to do that: we have got out there and find out if councils are using the guidelines and how they are using them.”

The scope of this research is ultimately about the design of the CPIM for the Rosslyn industry. The ultimate success can only be measured after a prolonged period of time. However, the implementation and adoption of this CPIM plan is vital to the ultimate success of the CPTED process and the intermediate projects. This chapter will show that the CPIM for Rosslyn has been implemented, that it is already working. But the only way to ensure continuity is to keep the momentum going from one CPTED project to the other, so that it continuously grows. CPTED is not a once off
project, it is a continuous process. The CPIM for Rosslyn in the total context of this research is graphically shown in Figure 7.1.

This chapter consist of four sections. In Section One the processes followed to assess the crime problems within Rosslyn industry will be presented to the security practitioner as well as demonstrated and recommended as applied criminological tools, which can be used for the valid identification, measurement and containment of crime threats and risks. Here the CRA (Criminological Risk Analysis) will be the focus. The CPTED SUITE with its make-up of CPTED filter levels will be covered in Section Two. Section Three will demonstrated the formulation of a unique CPIM for Rosslyn, as derived from the applied CRA, and guided by the CPTED SUITE. In Section Four the reader will be taken through the practical implementation of the CPIM in Rosslyn and the required steps and phases utilised and applied.
Figure 7.1:  The CPIM for Rosslyn in context
7.2  SECTION ONE OF THE CPIM: THE CRA

The foundation of any problem statement is information. And the more valid and more reliable the information is the closer to the truth any deduction will be so that the correct problem-solving approach can be instituted. It is, therefore, evident that before any CPIM can be designed and implemented it is necessary to identify the threat and risk values by means of the CRA. The CRA is the sourcing of information and the analysis thereof which will indicate the required problem statement which will eventually be filtered and tested against the CPTED SUITE as is depicted in Figures 7.1; 7.2; 7.3 and 7.4.

Specific information sourcing questions, which the applied Criminological Risk Analysis must answer before a CPIM can be designed and implemented are:

1. Who is the aggressor/adversary/offender?
2. What are the sought after assets/target(s)?
3. What are the actions or the modus operandi of the criminal?
4. What are the priority areas if the probability/likelihood and impact are considered?
5. What is their appetite for risk?
6. How vulnerable is Rosslyn business/industry at this stage?
7. What controls are need and are in place?
8. How must the correct CPTED application be established?
9. Based on in its assimilation of all the data sourced; what risk profile is used in the CRA (Criminological Risk Analysis) with which to rate the Rosslyn industry?
10. What identified CRA factors/themes/problems must be filtered through the CPTED SUITE, which in turn must identify the specific CPIM (Crime Prevention Intervention Model), and must be used as the correct/appropriate approach/plan.
7.2.1 Calculating the risk and priority identification of Rosslyn

Using the results of all the risk factors uncovered in Chapter 6; the CRA-IRV-Matrix, as depicted in Figure 7.2, plotted the “raw” impact and probability of crime in Rosslyn, in the high category. The IRV implies the raw risk level without incorporating vulnerabilities and controls as per the Figures 7.3 and 7.4.

![CRA-IRV-Matrix for Rosslyn Business](image)

**Figure 7.2:** The CRA-IRV-Matrix for Rosslyn Business

According to the CRA-Table for calculating risk and demonstrating priorities, (Figure 7.3) it is identified that the offender operates mainly from an environment of theft, burglary, robbery, fraud and organised crime. The sought after targets/assets and the modes operandi must be evaluated in relation to the value of the asset and the opportunity for crime. In Rosslyn anything will be stolen if the opportunity is presented. In this instance the likelihood that a criminal act will occur is high to extreme, especially when such an easy opportunity is presented and the asset value is an enticing driver, see Figure 7.4.
## Figure 7.3: The CRA-Table for calculating risk and demonstrating priorities

<table>
<thead>
<tr>
<th>ENTITY</th>
<th>ADVERSARY</th>
<th>ASSET</th>
<th>ACTION</th>
<th>LIKELIHOOD</th>
<th>IMPACT</th>
<th>IRV</th>
<th>VULNERABILITY</th>
<th>MANAGEMENT &amp; CONTROLS</th>
</tr>
</thead>
<tbody>
<tr>
<td>S&amp;M</td>
<td>Theft</td>
<td>Various</td>
<td>Opportunity</td>
<td>5</td>
<td>4</td>
<td>Extreme High</td>
<td>Baseline Barely adequate</td>
<td>Inadequate</td>
</tr>
<tr>
<td></td>
<td>Burglary</td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<td></td>
</tr>
<tr>
<td></td>
<td>Robbery</td>
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</tr>
<tr>
<td></td>
<td>Fraud</td>
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<td></td>
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<td></td>
</tr>
<tr>
<td></td>
<td>Various</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Org crime</td>
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<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Fraud</td>
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<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Various</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BB</td>
<td>Theft</td>
<td>Various</td>
<td>Opportunity</td>
<td>5</td>
<td>4</td>
<td>Extreme High</td>
<td>Strong</td>
<td>Strong</td>
</tr>
<tr>
<td></td>
<td>Burglary</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Org crime</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Fraud</td>
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<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Various</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

**Chapter 7:**
DEMONSTRATING THE IMPLEMENTATION OF A CPIM FOR THE ROSSLYN INDUSTRY
The CRA further demonstrates that the S&M business groups are challenged with inadequate security management and security control capacities. The vulnerability, as per Figure 7.3, of S&M businesses in Rosslyn is rated as between barely adequate to base line, at best. S&M businesses, as previously shown in Chapter 6, have some ‘uncertain’ private security capacity and, therefore, they rely more on official law enforcement, even though they know it is non functional as this research has also established. BB, however, is rated as having a strong vulnerability threshold because they invest in extensive security measures, and apply their own internal capacities over a wide front, to mitigate the identified crime threat. They don’t rely on law enforcement at all, to prevent crime. Thus the security management and control rating of BB is strong.

![Figure 7.4: The treatment priority required for Rosslyn Industry as plotted by the CRA-3 Level-Matrix tool for the CRA](image)

Taking all the above mentioned CRA deductions and interpretations into consideration, and plotting these on the CRA-3 Level-Matrix, it is evident that a crime prevention plan is necessary. But what level of priority must be allocated to such a CRA profile presented to Rosslyn Industry? Figure 7.4 shows that from a controlling
perspective, S&M businesses are threatened by the risk factors containing high risk value, high vulnerability levels and inadequate security capacity. These aspects make the risk perspective of S&M business in Rosslyn industry the Highest Priority level to address.

Figure 7.4 equally demonstrates BB is threatened by risks plotted in the extreme to high risk levels. However, the strong security management and vulnerability control capacity of BB, positions BB in a High Priority at the highest rating and a Medium Priority at the lowest rating. This is clearly still very far removed from a 'not-to-care or worry' situation. All it means is that BB is currently controlling the threat effectively: a threat which is continuous and which demands a priority status.

To summarise: the CRA states that the entire Rosslyn Industry, as a best case scenario, is still at high risk and in urgent need of a high priority crime prevention intervention.

7.2.2 The CRA problem themes identified for Rosslyn industry

The main crime related problem areas, as identified in the Rosslyn Industry according to the Criminological Risk Analysis (CRA) exercise are as follows:

Table 7.1: Main problems identified by the CRA of Rosslyn

<table>
<thead>
<tr>
<th>MAIN PROBLEMS IDENTIFIED IN ROSSLYN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rosslyn demographics are unknown.</td>
</tr>
<tr>
<td>No crime records or patterns of crime are on record.</td>
</tr>
<tr>
<td>Crime as a whole is not understood.</td>
</tr>
<tr>
<td>The socio ecology dynamics are unknown.</td>
</tr>
<tr>
<td>Law enforcement is not taken into account.</td>
</tr>
<tr>
<td>Local municipality is not involved.</td>
</tr>
<tr>
<td>There is no community forum to address specific or mutual issues.</td>
</tr>
<tr>
<td>No collaboration exists between Rosslyn community members.</td>
</tr>
</tbody>
</table>
Chapter 7: DEMONSTRATING THE IMPLEMENTATION OF A CPIM FOR THE ROSSLYN INDUSTRY

### MAIN PROBLEMS IDENTIFIED IN ROSSLYN

<table>
<thead>
<tr>
<th>Problem</th>
</tr>
</thead>
<tbody>
<tr>
<td>No crime prevention plan exists.</td>
</tr>
<tr>
<td>Area not mapped for orientation.</td>
</tr>
<tr>
<td>No central information and controlling capacity.</td>
</tr>
<tr>
<td>No leadership and/or knowledgeable body have been appointed.</td>
</tr>
<tr>
<td>Security is practised in silos, and not as best practise.</td>
</tr>
<tr>
<td>Security is not designed for the whole community.</td>
</tr>
<tr>
<td>A Reactive risk and security mindset prevails.</td>
</tr>
<tr>
<td>Opportunities for crime are unrestricted.</td>
</tr>
<tr>
<td>There is a general vulnerability and fear of crime.</td>
</tr>
<tr>
<td>CTPAT supply chain security is an unknown concept.</td>
</tr>
</tbody>
</table>

These problems identified must be presented to the CPTED SUITE and solved through the CPTED SUITE, which will be discussed next.

#### 7.3 SECTION TWO: THE CPTED SUITE

The identified CRA problems and/or themes (Table: 7.1) must be filtered through the CPTED SUITE before a relevant CPIM for Rosslyn can be established.

#### 7.3.1 The CPTED SUITE in practise for the Rosslyn industry

The CPTED SUITE is the crime prevention framework against which all identified crime related problems are measured to identify the proper CPTED solutions. In demonstrating the workings of the CPTED SUITE, in Figure 7.1 for the Rosslyn Industry specific, the abovementioned problem themes are measured against and filtered through the corresponding CPTED SUITE application as provided in Par 5.2. In this process the required CPTED position and actions will become clear, and from these the required CPIM for the Rosslyn Industry can be constructed.
For space and practical reasons only the Principle and Descriptive Fundamentals of the CPTED SUITE groupings for Rosslyn were populated in Table 7.2. The remaining CPTED SUITE Fundamentals, namely; Applications, Outcomes and Limitations (presented in detail in table 5.2), are only referred to with numeric values. This is done to demonstrate the level of involvement of the specific CPTED SUITE fundamentals in accommodating the identified CRA problem themes so that the correct CPIM solution can be calculated and/or designed.
### Table 7.2: Rosslyn Industry CPTED SUITE fundamentals identified/needed

<table>
<thead>
<tr>
<th>CPTED BASIC</th>
<th>CPTED GENERAL</th>
<th>CPTED ADVANCED</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td></td>
<td>1. A community based dimension/approach</td>
</tr>
<tr>
<td></td>
<td>1. A holistic and sustainable approach in an identified space</td>
<td>2. Ensure factors which drive community sustainability</td>
</tr>
<tr>
<td></td>
<td>3. Collaboration and co-operative crime prevention actions</td>
<td>4. Integrated consultative community involvement</td>
</tr>
<tr>
<td></td>
<td>4. To reduce opportunity and fear of crime</td>
<td>5. Green energy and/or novel technology</td>
</tr>
<tr>
<td></td>
<td>5. Protecting predictable supply chains pro-actively</td>
<td></td>
</tr>
<tr>
<td>DESCRIPTION</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Practical and situational crime prevention factors needed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Removal/reduction of crime opportunities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Security criteria, tailor made per location, per threat identified</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| 1. Collaboration between the socio ecology and crime prevention factors must be enhanced |

| 1. Community consultation/leadership needed for: |
| a. physical, |
| b. social and |
| c. environmental crime prevention. |

| 2. Must promote future sustainable development |
| 3. Create livable, civilised and balanced communities |
| 4. Well-maintained work and urban capacity |
| 5. To empower citizens |
| 6. Foster community engagement. |
| 7. Trans-disciplinary crime prevention |
| 8. Integrated community groupings |
| 9. Holistic intensity |
| 10. Protect the economy and the environment |
## Chapter 7: Demonstrating the Implementation of a CPIM for the Rosslyn Industry

### Application (See Par 5.2.3)

| None | Thirty applications relevant for Rosslyn | Sixty four applications relevant for Rosslyn |

### Outcome (See Par 5.2.4)

| None | All applications relevant for Rosslyn | All applications relevant for Rosslyn |

### Limitations (See Par 5.2.5)

| None | All applications relevant for Rosslyn | All applications relevant for Rosslyn |
7.3.2 The CPTED SUITE profile identified for Rosslyn industry

From the abovementioned CPIM processes the identified CPTED SUITE profile for the Rosslyn Industry is clearly leaning towards the CPTED SUITE Advanced range and overlapping some of the CPTED SUITE General application, see Figure 7.5.

![Figure 7.5: The Rosslyn CPTED SUITE Profile](image)

7.4 SECTION THREE: THE RESULTS AND IMPLICATIONS OF THE CRA AND THE CPTED SUITE

The main problem themes identified in Chapter 7 (Table 7.1) are absorbed by specific practical recommendations (Table 7.2) as derived from the CPTED SUITE application. From this (Table 7.2) it is also clear that the recommendations and solutions for Rosslyn problems primarily come from the General and Advanced
CPTED SUITE applications as depicted in Table 7.3. It is also evident that the Basic CPTED SUITE application, comprised of more physical protection/security issues, is not a first priority for combating crime in Rosslyn. It is, however, an option most uninformed persons responsible for security entities traditionally opt for. However from the CPTED SUITE it is clear that an applied Multi-, Inter-, Trans-, disciplinary approach is required, which will encapsulate the Rosslyn socio ecology as well as the external and the internal environment of the criminal and of the victim.

Table 7.3: Main problems identified by the CRA of Rosslyn and the CPTED SUITE recommendations

<table>
<thead>
<tr>
<th>PROBLEMS IDENTIFIED</th>
<th>CPTED SUITE RECOMMENDATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rosslyn demographics are unknown.</td>
<td>Update demographics and then keep these continuously current.</td>
</tr>
<tr>
<td>No crime records or patterns of crime on record.</td>
<td>Keep and provide records of crime patterns and trends.</td>
</tr>
<tr>
<td>Don't know the socio ecology dynamics.</td>
<td>Understand the interaction between society and crime.</td>
</tr>
<tr>
<td>Law enforcement not taken into account.</td>
<td>Engage and build bridges to involve law enforcement agencies.</td>
</tr>
<tr>
<td>Local municipality is not involved.</td>
<td>Engage and build bridges with local municipality. Secure public services.</td>
</tr>
<tr>
<td>No community forum to work towards regarding specific or mutual issues.</td>
<td>Establish a credible community forum involving the police and local government.</td>
</tr>
<tr>
<td>No collaboration between Rosslyn role players.</td>
<td>Establish a network capacity. Go to each player; don’t wait for them to come to you.</td>
</tr>
<tr>
<td>No crime prevention plan.</td>
<td>A CPIM for Rosslyn Industry.</td>
</tr>
<tr>
<td>PROBLEMS IDENTIFIED</td>
<td>CPTED SUITE RECOMMENDATIONS</td>
</tr>
<tr>
<td>-------------------------------------------------------------------------------------</td>
<td>------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Area not mapped for orientation.</td>
<td>Map all role players and capacities.</td>
</tr>
<tr>
<td>No central information and controlling capacity is available.</td>
<td>Implement and manage a central hub or Joint Operations Centre for information and control.</td>
</tr>
<tr>
<td>No leadership and/or such a knowledgeable body have been appointed.</td>
<td>Identify a team of leaders and specialists for networking, facilitation and guidance purposes.</td>
</tr>
<tr>
<td>Security works in silos, and not best practise.</td>
<td>Identify specialists for security advice, skills training and guidance.</td>
</tr>
<tr>
<td>Security is not designed for the community.</td>
<td>Collaboration for mutual support, sharing and focussed activities involving the community.</td>
</tr>
<tr>
<td>Reactive risk and security mindset.</td>
<td>Change the reactive mind set to pro-active collaboration and planning mindset.</td>
</tr>
<tr>
<td>Opportunity for crime is unrestricted.</td>
<td>A collaborative and focussed design of the environment to manage opportunities for crime.</td>
</tr>
<tr>
<td>General vulnerability and fear of crime.</td>
<td>Create an awareness and vigilant state to change vulnerability and fear of crime, to confident preparedness.</td>
</tr>
<tr>
<td>CTPAT supply chain security is an unknown concept.</td>
<td>Educate, guide and prepare Rosslyn for this international requirement.</td>
</tr>
</tbody>
</table>

The CRA completed for the Rosslyn Industry indicated that for the sustainability of the Rosslyn Industry, crime was a high risk and urgent action had to be taken.

The required CPTED SUITE approach identified a CPTED process which recommended the involvement of the entire community. The process had to be managed by highly skilled professionals, who had the ability to inform and to facilitate
multidisciplinary environments in an endeavour to empower Rosslyn to control the crime threat pro-actively.

### 7.5 THE CONCLUSION OF THE CPIM PROCESS

The primary goal of this research was to design a CPIM (demonstrated in Figure 7.1) which would mitigate crime and related service problems as identified in the Rosslyn Industry. CPTED was presented as the multi dimensional criminological theory on which to base the required CPIM, as it brought into play all the criminological Multi-Inter- Trans-disciplinary capacities and approaches in the search for an applied solution to any crime prevention problem or challenge.

A CPTED SUITE or framework was constructed with all of its different applications and approaches to guide anyone in finding the right CPTED approach for a specific problem. This approach would be applicable in the context of:

- a low level physical type security requirement, for which the CPTED SUITE Basic grouping is more suitably structured, and/or
- a more interactive level requirement for which the CPTED SUITE General grouping is structured, and/or
- an extremely complicated level requirement for which the CPTED SUITE Advanced grouping is structured.

The CPTED SUITE application, provided with the correct and applicable problem statement factors and derived from a CRA, must be used to filter the correct applications and/or answers. These guidelines will indicate what is necessary to construct/establish a unique CPIM for any specific situation, environment and requirement. From this information the CPIM can be designed and ‘fine tuned’ before implementation.

It is again reiterated that the correct and applicable problem statements, which are filtered through the CPTED SUITE framework, can only be ensured after the CRA has been completed. The end result is an applied crime prevention design, based on
applied sources and applied theories, introducing the CPIM, as depicted in Figure 7.1, thus completing The CPIM for Rosslyn. This CPTED process is applicable in any crime prevention requirement in any environment.

However, no crime threat or risk is the same for everyone, or even stays the same for a specific given period of time. There is no ‘one-fix’ solution for all crimes. And what makes it even more complicated is that in a multidisciplinary environment each different stage of being pro-active and crime preventative can require its own CRA, CPTED SUITE configuration and CPIM – it could be singular, parallel and/or interlinked and/or integrated. This is why the CPTED SUITE framework, for identifying the required application, is designed to be a CPTED SUITE, which can ‘talk’ to any problem and be enhanced by new developments and or knowledge to be added-’in’ to counter any ‘new’ challenge. The CPTED application is a universal application.

In view of these it is therefore important to understand and to know what the CPTED SUITE presents, as a CPIM is solely dependent on the CPTED SUITE and CRA process. The CPIM can even require a second or third feed through the CPTED SUITE to guide the CPIM to the lowest possible reasonable requirement needed. It can even require a specific CRA for each level of the CPIM journey, or just as a regular maintenance procedure. This will be demonstrated in Section Four.

The abovementioned also implies that CPTED is a phased and process driven solution to crime problems because these problems, after having been uncovered by a CRA, are positioned in the required CPTED level through the CPTED filter process. Thereafter the CPTED applications are implemented or applied in mitigating the required level of crime. After which the more focused crime prevention requirements will most possibly again require a more focused CRA to provide specific problem statements for these focussed areas, which must again be filtered through the CPTED SUITE to provide applicable criminological guided solutions or actions for the ‘new’ place and change period. It can become a continuous process until saturation is met, until the problem is fully defined and the correct CPTED application implemented.
The next section demonstrates the implementation process, steps and phasing of a CPIM through a current demonstration as evidence of its application in the Rosslyn Industry.

7.6 SECTION FOUR: THE IMPLEMENTATION OF THE CPTED CPIM

7.6.1 Introduction

The research focussed on the development of a criminological crime prevention model, a goal which was successfully concluded and presented. And to further emphasise the effectiveness of the CPTED CPIM, the researcher thought it prudent to take the reader through the most difficult phase, namely to get the CPTED CPIM off the ground, implemented and supported by the most relevant role players as soon as possible. The maintenance of the CPTED CPIM will be through continuous guidance, leadership and passion. A tenacious and dedicated approach, over a period of time, will be necessary to make this CPTED CPIM a household approach and name.

The requirements for the CPIM for Rosslyn are set out in Table 7.2. The implementation of the CPIM for Rosslyn consists of The Six Step CPTED process as displayed in Figure 7.6:

- The first step is the spontaneous action during the research.
- The second step is about the formal introduction and active involvement.
- The third step is marketing. (Presentations, training, workshops, etc).
- The fourth step is implementing the Micro Phase (More CPTED Basic).
- The fifth step is establishing the Macro Phase (More CPTED Advanced).
- The sixth step is the continuous maintenance and development of the CPTED CPIM.
These six steps can occur at different levels, at the same time, in different zones or even in the same areas, either at Micro levels (inside a business) or at Macro levels (whole community) where urgency, dynamics, speed or leadership differ.

Valuable insight in lessons learned when implementing a CPIM type project is incorporated in this section namely:

a. ‘Always’ complete a risk assessment and infrastructure survey to prioritise risks, to plan properly and to provide justification for executives, in this instance a

Figure 7.6: The 6 Steps of the CPIM Implementation
‘mini-CRA’ is designed as it make the risk coverage of quick, successive and multiple phases easier (Discussed in detail in Par. 7.6.2.4).

b. ‘Always’, develop a project roadmap or framework up front to guide the CPIM, in this instance the CPTED SUITE was applied.

c. When working with vendors/partners ensure you talk the same language on non technology and technology levels as demonstrated in the Micro CPTED Phase.

d. Be pragmatic in your approach when budgets are tight. Look for best practise and value add rather than capital outlay in the Micro CPTED Phase.

e. Where possible always pilot the proposed solution, align with process partners and get early buy-in from role players through dynamic liaison. This requirement was extensively adhered to for all the phases of building the Rosslyn CPTED Focus Group application which will be demonstrated in detail later in this section.

7.6.2 Evidence and demonstration of the implementation of the CPIM six step CPTED process

7.6.2.1 Implementation Step One: Spontaneous

The first step started at the very beginning of this research, even during the interviews and data sourcing with the Rosslyn Industry role players. The BB especially created a spontaneous dynamic within itself. Some of the respondents got to know each other through this process and an informal collaboration network was formed. The researcher experienced this phenomenon more and more as the research progressed. The spontaneous development is depicted with yellow dots, in Figure 7.7
7.6.2.2 Implementation Step Two: The formal introduction

The second step of the implementation was the more formal process through meetings, correspondence and specific networking to create support and understanding of the requirements. In Rosslyn the first formal introduction was at a business forum meeting called by the Tshwane Business Forum, CCBC and AIDC. Thereafter a Crime Prevention Task Team was put together comprised of the representatives who had attended the forum meeting.

Three weeks later a well prepared crime prevention meeting was held that included most of the available BB participants in this research. And as only positive minded people were needed in the beginning no reminder of the scheduled meeting was intentionally circulated so that only the ‘most’ interested parties would attend the first meeting. Only 20 interested people attended this meeting. An in-depth orientation and overview of the research results (Chapter 6) was given and discussed. The
formulation of the CPIM for Rosslyn (CRA, CPTED Suite, Six Step CPTED Process and the Micro and Macro Phases) was presented and explained. At this stage the CPIM project for Rosslyn was formally implemented, proper buy-in and formal support was achieved and the first ‘CPTED Cells’ were structured.

7.6.2.3 **Implementation Step Three: Marketing through presentations, training and workshops**

The third step ranged from big to small groups or even individuals. These could be dedicated small groups or part of other workshops, seminars or even meetings. This step was a logic progression of Step Two as it had as aim the saturation of all the Rosslyn areas; to get all role players involved, to get them all talking, and also to meet each other.

To achieve this, a continuous ‘pull’ had to be in place to keep the businesses interested through, for example; ‘whatsup’ communications, e-mails, newsletters, etc. This aspect was clearly a permanent requirement that had be built on as far as possible for more efficient and more effective communication.

7.6.2.4 **Implementation Step Four: The Micro Roll-Out**

After the comprehensive and complicated research project for the Rosslyn industry had been concluded, it presented the bigger or more strategic geometric and socio ecology picture, after which the more tactical CPTED process could commence.

Step Four was a ‘first’ extension or next phase of the CPIM (see Figure 7.1). Although the CPIM requirements (problem statements) as depicted in table 7.2 clearly were for the bigger Rosslyn, the individual businesses (in the first area chosen for the pilot CPIM implementation) were also part of the CPIM in figure 7.1, as part of the bigger Rosslyn picture. For any individual businesses to make the CPIM for Rosslyn alive at their specific work place, they first had to turn to the micro picture, to those aspects which had a direct impact on their ‘specific’ crime and security situation, their closest internal and external environment. For this ‘closest’ internal (within their own perimeters) and ‘closest’ external (direct neighbours and/or supportive businesses) a ‘mini’ CRA had to be done, to uncover more current and
detailed information. The ‘mini’ CRA would eventually cover all the same fields as the CRA for Rosslyn namely:

i. Operational demographics.


iii. Security Capacity and Vulnerabilities Survey.

vi. Risk Analysis.

v. Crime Prevention Methodology.

However, to keep it really simple (Einstein said; “Everythingshould bemadeassimpleassimple, butnotsimpler.”) and not to estrange non security professionals from the CPIM programme and processes, the mini ‘CRA’ or Design Base Threat (DBT) was on a much smaller scale with the focus on ‘first things first’, and just for the ‘closest’ internal and external environments (Figure 7.8) they cover the focus points of Step Four, namely the Micro Phase approach.

i. Most important is the formation of a Local CPTED Focus Group that share and work together to give identification and substance to their criminological territoriality, image and milieu.

ii. Then when they understand and know the dynamics of their mutual area the Focus Group must ask the CRA questions for identifying the (AAA):

- Adversary
- Asset
- Action

iii. The threats with the highest likelihood and highest negative impact must be identified.
iv. Identify the security capacity(s) which will Detect, Delay and Deter (DDD) opportunity for crime.

vi. i. Identify what are the best practise measurements that are needed.

vi. To not spend any money where possible, but to make what they have work even better, to show the CPIM’s inherent quality, namely; to design crime out through collaboration. The CPIM model must never be seen as to be expensive.

Figure 7.8      Step Four, the second phase of a CPIM, the implementation of a Micro Rollout

A CPTED Focus Group checklist is used, as continuous guidance and/or measurement, whilst implementing a CPIM related project, namely:

i. Does it enhance business sustainability?

ii. Does it lesson false perceptions of fear?
iii. Is there more situational awareness?

iv. Are there shorter response times to critical incidents?

v. Is there improved management of threats, risks and vulnerabilities?

vi. Is there an increased level of asset protection?

vii. Is there an improved co-ordination and collaboration of services?

viii. Is there improved command and control?

ix. Is there improved information and data gathering and sharing?

x. Is there improved compliance to by laws and regulatory standards?

xi. Is there an enhanced investment in PSIM/dashboard systems?

xii. Is there reduced risks and safety issues?

xiii. Is there an increase in the effectiveness of security operations?

xiv. Are there reduced costs for contracted security services, through controls, automation, monitoring and alerting for critical systems?

The CPIM Micro Phase primarily implies human interaction, deliberation, consensus, goodwill and support. However, the sudden mix of people, different behaviours and expectancies will create conflict and/or misunderstanding if everyone is not in agreement. From this perspective the author identified, through experience, Four Pillars on which any diverse programme resides, namely:

- Pillar One: The programme and processes must be clear and documented.
- Pillar Two: Clear instructions and expectations for role players must exist.
- Pillar Three: Internal controls must be known and accepted.
- Pillar Four: Supervision and management must be a constant.
The Micro Phase especially is found to be dependent on such a pillar approach.

The basic goal for Step Four, for the initial roll out, was to lead the specific businesses and/or groups through the internal micro phase, as per Figure 7.6, and first to get the voluntary members on board and then to get the buy-in of the rest. This step covered businesses in their formal and/or voluntary capacities. At first some BB only worked closely with their neighbours, service providers and suppliers, while other bigger BB’s got all their own business areas to work together. And others that were neither related nor neighbours fell in with any other category or even started their own CPTED focus group.

The intended goal of above collaboration was to identify and record the problem areas which would enable the individual businesses and smaller focus groups to filter these problems through the CPTED SUITE, which would indicate the required CPIM for that specific environment at that specific given time. CPTED in its process-format guided the businesses to the correct CPIM for their specific areas. An example will be discussed next.

7.7 THE ROSSLYN EXAMPLE OF THE MICRO CPTED CPIM ROLL OUT

To demonstrate the Micro Phase CPIM Roll-Out in Rosslyn, Zones B and C in Figure 7.8 are implicated, referred to as the ‘Rosslyn CPTED Focus Group A’. The largest business in Zone C (Figure 7.9, the area circled in green), took the initiative to initiate the Rosslyn CPIM in its direct area and in other important adjacent areas of influence. This BB has an excellent security capacity and is well respected in Rosslyn - an ideal example of a stepping stone for the CPIM.

Each business was required to constitute a CPTED Focus Group where reach-out introductions were made, business cards were exchanged, the CPIM was discussed, the required data for the mini CRA was shared and the role players were incorporated in the communications network for this area.
A basic Design-Base-Threat (DBT) profile was formulated from this Micro Phase outreach, to cover information on adversary, asset targets and the mode operandi of the offenders. The security capacity was investigated to understand what was seen as the best practise for deterring, detecting and delaying the perceived security threats.

As expected, even though most of the businesses incorporated in the Rosslyn CPTED Focus Group A, had been interviewed during the Rosslyn Risk and Needs Analysis, even more detailed information and ‘new’ experiences were shared in the CPTED Focus Group A context. Figure 7.9 depicts the CPTED Focus Group A.

Figure 7.9 The ‘CPTED Focus Group A’, in Zones B and C of Rosslyn

7.7.1 The CPTED focus group profile

In Figure 7.9, Zone B contains the main route to Zone C which ends within the main entrance of the initiating BB (Green Circle) in Zone C. Some of the suppliers to the BB also reside in Zone B. Zone C and Zone B are both well populated with businesses that have shared this area for many years (up to 40 years). The Zones are divided by an open area which contains a small river bed, a railway line and overhead electricity pylons. The light colour blue area on figure 7.9 is a servitude area which belongs to local government. This servitude area is experienced as a free way or gate way for criminal elements to gain easy access into and out of Rosslyn.
The immediate information shared by these businesses is that they are all affected by crime (burglary, theft, and organised crime, and by-law trespassers) and the continuous threat of crime requires a vast number of diverse security applications, ranging from stacked razor wire fences, CCTV, various fences, armed response and guarding with a plethora of P/BIDS’s. The non security specialist applications are evident, also the lack of bona-fide security managers. In one instance it is the PA of a CEO who manages security. Other factors shared by these businesses (the yellow dots on figure 7.9), are the influx of unsavoury loiterers, informal vendors (illegal side walk shops), drug dealers, vacant spaces and bad service provision by the council regarding maintenance and law enforcement. These become the immediate most common denominators which make the role players feel united.

An alarming observance made from the ‘Mini’ CRA and DBT, was that the Rosslyn industry in Zones C and B were facing a rapidly increasing threat to business, a fact, which had a negative impact on the sustainability of this area as a manufacturing investment. The fear for crime was continuously increasing for many in the CPTED Focus Group ‘A’. Rosslyn had lost its appeal to attract potential investors. What surfaced more than once was the fact that businesses in Rosslyn had absolutely no trust in the law enforcement (SAPS) and the local government for support or services, even though everyone recognised the importance of these essential role players.

What caught the tenants of Zones C and B off guard and unprepared was the speed with which general deterioration was taking place, leaving an impression of a lawless society. First impressions were no longer positive. As a result of the DBT (Mini CRA) it become apparent that over a relatively short period of time the main street (in Figure 7.9) earned a negative reputation. An unsettling feeling prevailed in the area, because of the increasing dubious street activities and the 24/7 questionable operations that attracted more and more undesirable individuals.

This fact was aggravated by the opening of a scrap yard dealer in the main street (the red dot in Figure 7.9), which within a very short period of time rendered that part of the street unkempt, dirty and neglected in appearance, attracting many subsistence metal scavengers and other illegal commodity vendors.
Copper thieves were photographed burning stolen copper cables in front of the scrap yard dealer’s entrance. Alleged drug dealers and the tenant had ugly brawls in public. The generally unscrupulous dealings of scrap yard dealers attracted any second hand goods thieves to further vandalise vacant factories, occupy vacant lands to stay and to hide stolen items (see the blue triangles in Figure 7.8). Anything with value was dragged to this scrap yard. Other businesses reported they were threatened and intimidated by these lawless entities. The scrap yard appeared to become more run down every day. And environmentally unfriendly activities continued on a daily basis.

It was, as the ‘Broken-Window-Theory’ correctly identified, an environment of lawlessness, and uncaring behaviour. The general mess and disrepair caused a perpetual increasing worsening state of site conditions. The wrongdoings of some individuals seemed to be a contagion catalyst or an excuse for the ever worsening behaviour of others, which seemed to escalate rapidly in the main street. It was also suggestive of the fact that when a business environment was not robust in taking action against wrongdoers, it was sending the wrong signals and encouraging a recipe for disaster. What did become evident was that without the police, metro police and the local government such robust action was not possible and that such role players needed to make up a Specialist CPTED Committee for Rosslyn.

The problems identified, as per the Mini CRA for the CPTED Focus Group A, mirrors the general Rosslyn problem statements as per Table 7.3. However, the Rosslyn CPTED Focus Group A did provide their recommendations over and above the CPTED SUITE as per Table 7.4.

Table 7.4: Main recommendations by the Rosslyn ‘CPTED Focus Group A’

<table>
<thead>
<tr>
<th>PROBLEMS IDENTIFIED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Working with the Metro and SAPS in adopting a zero tolerance approach to street begging and unlicensed street vending. Increase and repair the trust in law enforcement</td>
</tr>
</tbody>
</table>
Build relationships with the local government, increase and repair the trust in service delivery, demonstrate mutual pride in Rosslyn as ‘our’ standard. Create an ‘internationally’ respected working environment.

A zero tolerance with youths/loiterers gathering around the premises, especially those who may commit any level of anti-social behaviour.

A robust housekeeping policy to ensure waste removal was prompt and that sidewalks were frequently cleared/removed.

The prompt removal of any street vandalism. Vandalism also implied unkempt sidewalks, vacant areas and informal vendor sites.

Increased security patrols for the street and business perimeters, and joint patrolling with the Metro and SAPS to deter rouge sleeping around and to identify areas where repair was required.

Discouraging workers to fraternise with illegal street vendors and vagrants.

A dedicated canteen area for workmen to prevent large numbers of people loitering the surrounding streets during rest breaks. Or even high standard and licensed street vendors supported by business.

From the abovementioned scenario the CPTED Focus Group A (consisting of the BB and the Businesses identified), called for a meeting with all the role players. After an intense yet thought provoking meeting on the BB premises amongst the businesses implicated; the police, metro police, and the law enforcers bought into the CPIM for Zones B and C in particular and for Rosslyn in general. They immediately became partners and members on this CPTED Focus Group A. They even requested that the CPIM be expanded to also incorporate business areas on the border of Rosslyn, namely; Klerksoord. The senior Metro Police officer requested the possibility of this initiative being rolled out for the whole of Tshwane. His request was enthusiastically supported, but first things first, and in this instance it was Rosslyn Industry.
A next meeting was held within a week, where the senior police officials invited the local council members, responsible for allocating permits to vendors, and who were responsible for the maintenance of facilities. The business chamber representative also introduced the senior director responsible for the development of the regions. A plan was accepted to implement and manage a by-law assessment for Rosslyn and to plan a crime prevention operation driven by law enforcement in collaboration with business. At this meeting business urged the local government and law enforcement officials to pledges their influence when justifications were needed for any business related requirement, which seemed to be delayed. This entailed specialist guidance and even action to acquire political support from the mayor’s office and/or the local or national business chamber(s) and or national government, where and when needed. A next meeting was called to discuss the feedback from law enforcement and local government, the proposed newsletter, workshops, training, collaboration, projects identified and whatever came to mind, to make Rosslyn a sustainable area. A newsletter to sensitise Rosslyn businesses and the active CPTED participants, on the current status of the CPTED process for Rosslyn, was put together.

All of the abovementioned happened within two weeks after the BB initiator had reached-out to his neighbours and created the Rosslyn CPTED Focus Group A (see Figure 7.9), based on the CPTED SUITE recommendations.

7.8 THE FINAL IMPLEMENTATION. STEP FIVE: THE MACRO MATURITY

A prerequisite for an advanced CPTED SUITE Filter initiative, for the magnitude of the Rosslyn Industry, as depicted in Table 5.3 and Table 5.5, is a community forum for the people by the people, owned and managed by the community: A CPIM forum, representative of the total Rosslyn. The requirement of such a community run forum or body will consist of the following advanced CPTED SUITE applications:

1. Promote crime prevention through multiple parties.

2. Exchange ideas and experience between active networks.
3. Apply a multi-agency, social and community development approach when implementing crime prevention policies and practices.

4. Foster combined socio ecology and crime prevention activities.

5. Represent community.

6. Social community network for interacting and real time information.

7. Ensure local enforcement understanding and support.

8. Creating a neighbourhood profile/image.


10. Encouraging community engagement.

11. Close consultation with the community.

12. Responsive to community needs.

13. Establish a community voice.


15. Strengthen local authority’s capacity through support and actions.

16. Increase the knowledge, awareness and understanding of crime prevention through the provision of training, education and marketing.

17. Build the CPTED Forum membership from locals and influential forums.

18. Establish a team of core CPTED (8-10) specialists in their own fields.

19. Strong collaboration characteristics.

20. Keep the local council and its resources as part of any plan.

21. Show clear project management skills.
A mature approach as depicted by the Macro Phase for Maturity (Figure 7.10) is required to implement the abovementioned applications successfully. This requires the participation of all business and the community over a wide area. And to make this phase a simple exercise three steps have been identified.

- Step one to call for a leadership workshop where ideas can be exchanged to determine the way ahead to get such a community forum up and running. This step will be supported by graphic area mapping consisting of some advanced examples of completed Micro Rollouts.

- Step two will consist of lobbying and collaboration to put together a Community Forum.

- Step three will see the CPIM fully operational with continuous CRA and CPTED SUITE activities launched to remain current and informed whilst at the same time to build ‘into’ the known CPTED SUITE new knowledge.

Figure 7.10  The third phase of a CPIM, the implementation of the Macro Maturity Control

An urgent requirement is the formation of a JOC (Joint Operation Centre) type capacity as soon as possible. According to Roelofse (2007:103-104) “the JOC should operate as an extension of the Community Police Forum and should be established
by a conglomerate of local government, businesses, NGO’s, Police and other community role players. This JOC is a key player in the total set-up providing co-ordinated support to the community at large.” Logically the JOC must flow out of the Macro Phase, but in reality this capacity is core to mobilise and to support a first point of contact to be of significance to all role players. In this instance a ‘voluntary’ BB capacity is required to act as a JOC in the interim. As a fully functional JOC is not available early in the CPIM process, it was substituted with a leading specialist committee consisting mostly of senior officials from Local Government, Police, Metro, Municipality, Local Councillors and the Business Chamber. This committee provided the CPIM with an invaluable constant presence and an official status much needed.

7.9 CONCLUSION

All of the mentioned implementation steps were in some way or other already in an implementation phase for the Rosslyn Industry at any given time. Some businesses were new and/or under new management and had to be approached from scratch. Some spontaneously started with the Micro Phase, and in some instances the Macro Phase role players had already been identified and were involved with the implementation of the CPIM in various environments on all levels. The primary goal was to have a substantial share of BB businesses on the active participating membership role as soon as possible so that it would logically expand to involve the S&M business groupings that would then follow suit.

However, during this research it was apparent it would not be an easy task to co-ordinate these groups, which would form the last phase of implementation, before the entire Rosslyn was involved. The researcher was personally the facilitator of this process and has been involved in all of the phases mentioned until each phase progressed independently.

It must be remembered: the challenge is not whether or not the CPIM is working, the challenge is about co-ordinating this CPTED approach in an environment where businesses and individuals have been going it alone for many years and where time is literally money. No business will get involved for altruistic reasons, this CPIM must make business sense, it must make their bottom line look better and at least improve
the sustainability of the business. Above all it must be properly managed through a credible entity. Roelofse (2007: 100) makes it clear that if the “leading body is unsuitable or even distrusted by community members, it will create fear and non co-operation.” An acceptable image will be achieved when the community operates in an integrated manner assisting all sizes, new and old, which will build trust and invite people to get involved and empower the CPIM to achieve its full potential.

The implementation goal of the CPIM in Rosslyn has successfully been achieved.
CHAPTER 8
SUMMARY, CONFIRMATION OF GOALS, OUTCOMES AND RECOMMENDATIONS, VALUE OF RESEARCH AND CONCLUSION

8.1 INTRODUCTION

This chapter concludes the research goals and the outcomes of the research, as discussed in Chapter 1. The outcomes described will be supported, where applicable, by the recommended essential elements. A synopsis will be given of the value added through this research and the proposed recommendations for further research.

8.2 SHORT SUMMARY OF THE RESEARCH

The methodological foundation of the research was explained in Chapter 1. The area of focus was the Rosslyn Industry and the subsequent sustainability thereof, especially, since it is an essential element in the sustainable socio economical development of the Tshwane region. The overarching goal was to design a proactive, applied criminological crime prevention intervention model (CPIM) for the Rosslyn industrial environment. In the process the ontology of Environmental Criminology and especially the origin and development of CPTED was researched in depth for an applied crime prevention framework from which a CPIM could be developed.

The outcomes of this research lead to designing a comprehensive CPTED SUITE structure that could be used as a framework for an applied Crime Prevention Intervention Model (CPIM) that encapsulated SCS requirements. However, the emphasis at first was on the theory. The causal bond between the theory, the required risk analyses, the model design and the implementation thereof had to be
fully understood and logically set out. In this study the causal bond is demonstrated throughout the following process: The risk analysis (CRA) uncovered the problems and also defined the problems in the context of the Rosslyn Industry (Chapter 6). The theory (CPTED filter) uncovered and defined problems through the CPTED SUITE (Chapter 5), which provided the specific problem solving actions that were required. The applications that were required for the problem solving actions to be effectively implemented were given step-by-step (Chapter 7) through various priorities, phases and projects.

In the following section the goals achieved and the essential elements, with which they were met, are confirmed. Where applicable these goals are referenced to the specific chapter or chapters where they were concluded in context and in more detail.

### 8.3 CONFIRMATION AND OUTCOMES OF THE RESEARCH GOALS

#### 8.3.1 The Primary goal

a. **Goal:** To provide the Rosslyn Industry with a criminological grounded crime prevention intervention model.

b. **Research findings:** No crime prevention model for the Rosslyn Industry existed. No data was available from which to derive and design the envisaged model. Criminology was not acknowledged or understood, thus not recognised as a grounded ontology.

c. **Outcome:** After designing and implementing a comprehensive CRA (Criminological Risk Analysis) and designing a CPTED SUITE, to filter the CRA findings, a Criminological CPIM (Crime Prevention Intervention Model) was successfully designed for implementation in the Rosslyn Industry.

| Goal achieved?: Yes | Reference: Chapter 2 - 7. |
8.3.2 Secondary Goals. Field-one: The applied criminological theories, methodologies and crime prevention approaches that will effectively address the identified crime risks in the industry sector of Rosslyn

8.3.2.1 Ontological grounding

i. **Goal**: To demonstrate the ontological grounding of this research.

ii. **Research findings**: Except for one big business, Criminology was not specifically consulted or applied in the Rosslyn Industry.

iii. **Outcome and recommendation**: Based on the findings of this research, Criminology is the ontology from where the Rosslyn Industry’s needs and risks were successfully approached for crime prevention purposes. And it should be applied as such for all similar future requirements.

| Goal achieved?: Yes | Reference: Chapters 3 and 4. |

i. **Goal**: To identify proper criminological crime prevention approaches, which analyse all the environmental factors that provide opportunities for crime to occur, and what is required to mitigate these.

ii. **Research findings**: Criminology inherently drives or searches for relevant information in any dimension or domain in its endeavour to understand and to solve crime. The general environmental criminology framework; to identify, to analyse and to mitigate crime opportunities was too narrowly spread and too theoretical and not consolidated enough for easy application.

iii. **Recommendations**: Applied criminology has no ‘holy-cows’ in the effort to understand and to treat crime situations. The criminological MIT disciplinary approach, encapsulating environmental criminology and specifically consolidated CPTED, is the correct crime prevention approach identified for the Rosslyn Industry.
8.3.2.2 **Criminological approaches**

i. **Goal**: To understand how to investigate a multidimensional crime threat within a multidimensional criminological paradigm.

ii. **Outcome of the investigation**: This criminological study investigated the complex and multi-dimensional demands of crime prevention in the Rosslyn Industry. In the process the interactions and the changing status of the specific aspects of crime, the risks and the relevant needs were questioned so that via this observation, and the critique received, new information could be produced.

iii. **Recommendations**: Criminology allows parameters of paradigms to expand or to shrink, as per demand, and in so doing encapsulating the research goals in their pursuit of solutions. Criminology in general, and environmental criminology in particular (CPTED), leans naturally towards a MIT disciplinary approach and its attributes.

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8.3.2.2 Summary

**Goal achieved?: Yes**

**Reference**: Chapters 3 and 4.

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8.3.3.1 **Goal**: To integrate the Rosslyn Industry’s physical security environment with the socio ecology of the offender and of the victim in a crime prevention approach.

**Research findings**: Crime prevention models that focussed on the physical security of the criminal, or the victim alone, were not suitable for a crime prevention model that needed to address the crime situation in a socio ecological rich industrial environment. It was found that any crime prevention research in an industrial area required a MIT-disciplinary approach, or mindset, to understand the wide variety of environments and role players.

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**Goal achieved?: Yes**

**Reference**: Chapter 5.
iii. **Recommendations**: The CPTED SUITE, as structured in this research, is the correct framework from which to approach the integrated environments of the physical security of the offender and of the victim.

| Goal achieved?: Yes | Reference: Chapter 5. |

### 8.3.2.3 Applied criminological methodologies

i. **Goal**: To investigate and to uncover the applied crime preventative methodologies within criminology:

ii. **Research findings**: Criminology is an applied science with applied solutions for real time challenges: to act pro-actively, to intervene, to mitigate and to control opportunities for crime.

iii. **Recommendations**: Criminology offers a wide range of theories to prevent crime, however, CPTED as inferred by this research, was found to be the applied theory most suitable for crime prevention in Rosslyn Industry.

| Goal achieved?: Yes | Reference: Chapters 5 and 6 |

### 8.3.2.4 Business sustainability and the role of criminology

i. **Goal**: To demonstrate that criminology plays a pivotal role in developing a sustainable industrial environment.

ii. **Research findings**: Without security and proper crime prevention, fear of crime increased and a situation prevailed where business sustainability was not possible.

iii. **Recommendations**: Criminology through the CPTED SUITE has shown it consists of many attributes that can play a pivotal role in the establishment,
development, implementation and maintenance of a sustainable industrial environment.

| Goal achieved?: Yes | Reference: Chapters 3, 4, 5 and 6 |

8.3.2.5 Risk analysis

i. **Goal**: To investigate whether the applied environmental criminology did provide this research with a risk analysis instrument that could be used to analyse Rosslyn from a security and socio ecological needs perspective, uncovering unknown threats and taking care of known problems.

ii. **Outcome of the investigation**: Many risk analysis models were found, however, most were either for collecting data on physical security capacities or these resembled ‘cook book’ checklists on how to treat a known problem. However, a Risk Analysis was required that would be easy to implement and to analyse, which would identify offenders, targets, MO’s, likelihood, impact, vulnerabilities, controls, and be able to demonstrate the levels of risk and prioritise where actions were needed, and be able to analyse general services needs from a ‘broken window’ perspective.

iii. **Recommendations**: A criminological risk analysis framework that can be applied and integrated with criminology principles that can uncover unknown threats and take care of known problems. During this research such a Criminological Crime Prevention Risk Analysis (CRA) framework was designed and implemented. This CRA successfully analysed the Rosslyn Industry using an applied MIT disciplinary criminology platform from which all the observations of the Rosslyn Industry in this research originated.

| Goal achieved?: Yes | Reference: Chapters 5, 6 and 7 |
8.3.2.6 **Relevance and contribution of Criminology to applied security.**

i. **Goal:** To demonstrate the importance of Criminology in applied security as a core crime prevention solution.

ii. **Research findings:** This research has proven Criminology as probably the most important fundamental element from where any applied crime prevention approach can be initiated, be it from the physical security domain, and/or socio ecology domain, and/or psychological domain in any environment or paradigm. Criminology is not only grounded in theoretical rhetoric but it is an essential tool for every day micro and macro crime problems. Without a criminological approach security in general is a short term reactive approach, blind to causal factors, causal bonds, current and future trends and patterns.

iii. **Recommendations:** Any security application without a proper criminological grounding must be regarded as suspect when it comes to the validity and reliability of its justification and sustainability. Security must flow out of applied criminology.

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<th>Goal achieved?: Yes</th>
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iv. **Goal:** To find the reason why Criminology is not generally used as a first choice crime prevention tool.

v. **Research findings:** Practitioners responsible for addressing security requirements found the numerous theoretical approaches in crime preventative criminology very confusing. In CPTED the problem was aggravated by new names and new authors including ‘add-ons’ (instead of ‘add-ins’) to the existing crime prevention approaches and creating an ever increasing labyrinth of ‘stand-alone’ bits and pieces. The many ‘add-on’ claims and ‘add-on’ approaches rendered criminology an incomplete tool - not yet ready to function.
properly in the applied domain. In an industry and a business environment this uncertainty was frowned upon and would not be applied.

vi. **Recommendations**: The persons responsible for security had to be educated in the principles of Criminology, and shown how to implement the crime prevention tools that are embedded in Criminology such as the CRA and the CPTED SUITE methodology as applied in this research. They must be able to use criminology principles to disclose the full spectrum of knowledge about a crime before taking action against the crime. The CPIM approach, as designed in this research, is the consolidation of the required knowledge in order to enhance the application of criminology as an applied science. This process resulted in the development of the CPTED SUITE, a core element of the CPIM, by structuring the CPTED approaches for easy reference and application in the case of a crime related threat.

| Goal achieved?: Yes | Reference: Chapters 2 to 7 |

vii. **Goal**: To ensure applied criminological methods are recognised, that it embrace business processes from where Criminology could be seen as an credible and effective crime prevention tool in the applied domain of industry.

viii. **Research findings**: In general, the senior security professionals tended to demonstrate an attitude of ‘knowing – it – all’. They perceived the experience they had in managing security as the required benchmark for security prowess. But their knowledge of core science domains like Criminology was non-existent. Academic security knowledge or courses were seen as book knowledge thought up by inexperienced academics far removed from the reality. What was even more troubling was the fact that non security personnel were given the responsibility of managing the security of a business. This phenomenon was found more specifically in S&M businesses where security responsibilities were regarded an ad-hoc responsibility, left to the mercy of security service providers with no recognised professional security accreditation.
ix. **Recommendations**: The personnel responsible for security have to be properly trained and shown that applied criminology works – it must become a component in the general language of business. For example; in the Rosslyn Industry, manufacturing projects and processes are part of the everyday life in Rosslyn. It entails proof of concept, the alignment thereof with existing projects, a pilot project and finally a proper project roll-out plan for total implementation – this is the language of business. The implementation of the CPIM followed the same structured route while simultaneously educating people in believing in the relevance of a criminological approach. Criminology gained credibility immediately.

| Goal achieved?: Yes | Reference Chapter 2 to 7 |

x. **Goal**: To enhance criminology to become even more relevant as an applied integrated physical security approach by encapsulating the required standards for SCS.

xi. **Research findings**: In Rosslyn, SCS, as required by C-TPAT, was in essence an unknown concept. The only BB that implemented SCS criteria had a proper security strategy which was CPTED driven. They implemented regular risk analysis to prove that the SCS requirements, as part of the general security strategy, were current. The SCS criteria in general were lodged in situational criminology prevention measurements, which were focussed on reducing opportunities of potential crimes as identified. Subsequently, from a criminological perspective, SCS was regarded as just another add-on to the CPTED/situational criminology approach.

xii. **Recommendations**: SCS, as required by C-TPAT, must be implemented via the CPIM and processes (CRA+CPTED SUITE). SCS as a quasi stand alone theory has been incorporated with ease in the CPTED SUITE as an extension of CPTED in general. SCS inherently requires a MIT disciplinary approach, but without a criminological grounding it will be in danger of becoming a ‘jack of all trades and master of none’ concept.
8.3.3 Secondary Goals. Field-two: The role and application of SCS in creating support and enhancing best practise security in the industrial environment of Rosslyn

8.3.3.1 The relevance and importance of SCS for Rosslyn industry

i. **Goal:** To demonstrate the SCS/C-TPAT criteria, approach and objectives and also the importance thereof.

ii. **Research findings:** SCS has proven to be of international importance; a high priority requirement for all exporting businesses. In fact, as world security becomes more threatened, SCS and C-TPAT will in future become a crucial mandatory requirement not only for Rosslyn businesses but for all globally connected businesses. In the Rosslyn environment it was evident that SCS was not a concept that was known or understood by most of the current and the potential exporting businesses. Possibly because they were at first concerned it was just another bureaucratic audit requirement which would cost more money without any real dividends. However, they did express their interest and requested assistance in learning more about the approach. They were desperate for solutions to the supply chain threats arising as a result of the lawless elements that were threatening the security and the sustainability of the Rosslyn environment.

iii. **Recommendations:** Big Business must buy-in to the concept and into a unilateral Rosslyn approach to become pro-actively C-TPAT friendly. Rosslyn industry must be supported with guidance and training by means of a competent entity initiated by business and the C-TPAT role players. This will be possible with the implementation of the CPIM designed specifically for Rosslyn
in this research. The CPIM inherently promotes SCS through the CPTED SUITE.

Goal achieved?: Yes  |  Reference: Chapter 4

iv. **Goal**: To demonstrate what is expected of corporate security so as to become SCS/C-TPAT complaint.

v. **Research findings**: C-TPAT criteria and expectations were very clear and freely available through the media, SARS and CBP USA. It is a simple concept that is easily understood, but once implemented it can become complicated to manage because it connects with, and involves multi disciplines; HR, procurement, security, logistics, IT and transport.

vi. **Recommendations**: The only accredited crime prevention approach that can make corporate security C-TPAT complaint and which encapsulates the SCS type criteria, as part of a general crime prevention approach, is an applied criminological approach: the CPTED as embedded in the CPIM. It is therefore imperative that Corporate Security requires professional training, guidance and coaching from knowledgeable role player(s), regarding the requirements of SARS and C-TPAT and the benefits of managing a secure supply chain. Also C-TPAT and SARS should comply with the standard and incorporate it as core to their current approaches.

Goal achieved?: Yes  |  Reference: Chapter 4

vii. **Goal**: To test the SCS status in the Rosslyn industry and to ascertain what is recommended via the CRA to become C-TPAT complaint.

viii. **Outcome of the test**: The CRA revealed that in the Rosslyn Industry only one BB understood and has successfully implemented the SCS requirements. However, the CRA confirmed that most exporters and even other manufacturers
perceived SCS as a positive value. It was the ‘how and what’ that was unclear to the respondents.

ix. **Recommendations**: A concerted effort has to be made by SARS, USA CBP and qualified business forums to educate and guide the relevant Rosslyn businesses in a structured manner to become C-TPAT complaint. The CPIM developed in this research must be used to instil C-TPAT, where needed, through collaboration and the integration of knowledge and systems in the Rosslyn Industry. If Rosslyn businesses utilise the CPIM to full effect a general C-TPAT ‘Ready’ environment in the Rosslyn Industry can be in place for accreditation whenever needed. However, another short term option is for each business to work independently to achieve such status.

| Goal achieved?: Yes | Reference: Chapters 4, 5 and 6 |

### 8.3.4 Secondary Goal Field-three: Data to be sourced regarding the risks, needs and requirements for crime prevention in the Rosslyn industries

i. **Goal**: To identify the role players, geography, demographics and what the services of Rosslyn industry are comprised of.

ii. **Research findings**: Rosslyn is an established Big Business industrial and manufacturing environment with all the necessary commercial support structures. About 70 000 people work in Rosslyn. Currently it is fast becoming a 24/7 working town with closer moving townships, increasing population and more services required. Big Business constitutes approximately 15% of all businesses in Rosslyn and provides employment to approximately 65% of the people in the area, while about 60% of all small and medium businesses are also directly or indirectly dependant on Big Business.
iii. **Recommendation**: Rosslyn, as a strategic revenue and employment source, must receive proper services from local government and law enforcement agencies to support business and to ensure its expanding capacity remains sustainable. However, it was found that Rosslyn businesses were largely ignorant regarding Rosslyn planning and its decision making bodies. Businesses continuously have to collaborate and negotiate with these organisations to make sure they receive the required services. A Rosslyn Business Chamber is necessary to provide leadership and representation in this regard.

| Goal achieved?: Yes | Reference: Chapter 6 |

iv. **Goal**: To identify the risks, threats and vulnerabilities of Rosslyn industry.

v. **Research findings**: Rosslyn had been identified as a haven for criminals who were always on the lookout for opportunities to commit asset crimes. Anything that was of value and unprotected would be stolen.

vi. **Recommendations**: The constant risk, threats and vulnerabilities imposed on Rosslyn require constant measuring and rating. It is recommended that a CRA (Criminological Risk Analysis) be implemented, at least once per annum, to keep abreast of these factors. The purpose is not to reinvent the wheel but to build on the data-base established during this research.

| Goal achieved?: Yes | Reference: Chapter 6 |

vii. **Goal**: To know and to understand; the way in which the perpetrators work, the targets they pursue, and their actions, as well as the threats and risks these pose.

viii. **Research findings**: The perpetrators were characterised by the size and the type of opportunities that were presented; from laptops, to containers, to vehicles, to manufacturing equipment. If there was value attached and a
demand for the target, it would be targeted. The probability that a crime risk would occur, if such an opportunity presented itself, was a reality. The perpetrators ranged from subsistence thieves and drug addicts to high profile specialised criminals, which usually involved internal and external well organised syndicate operations. The threat primarily involved theft and burglary activities with some remote incidents of armed robbery. The impact has been identified as extremely high because the unforeseen interruptions experienced, especially by big businesses could cost millions.

ix. **Recommendations**: A Criminological Risk Analysis (CRA) which encapsulates the offender, the assets targeted and the modes operandi is critical to understanding the threat and the approach required to mitigate it. This type of CRA for Rosslyn should be done at least once per annum.

| Goal achieved?: Yes | Reference: Chapter 6 |

x. **Goal**: To understand the current security capacity of Rosslyn industry.

xi. **Research findings**: Security played a vital role in all aspects of the Rosslyn Industry. BB was well protected because money could be spent on ensuring sufficient preventative security that was professionally managed with the involvement of top management. Even though S&M businesses were at the mercy of weak, inadequate, reactive security providers, who provided little to no proper management, they too endeavoured to make their limited security systems value added to the business, especially in supply chains. Generally the norm in security systems meant covering broad spectrum of standalone applications; a good fence and access control supported with capable guarding and PIDS (CCTV/Lighting/Electricity). However, the integration of these capacities was in most instances inadequate, except at a handful Big Businesses.

xii. **Recommendations**: Rosslyn’s abundance of diverse security systems and service providers, together with the BB security professionals, must collaborate
and share capacities and knowledge so that an integrative approach against crime prevention for Rosslyn can become a reality. A JOC (joint operations centre) is envisaged from where a Community Security Forum can manage and control crime information, crime intelligence and the relevant capacities required.

| Goal achieved?: Yes | Reference: Chapter 6 |

xiii. **Goal**: To understand the crime levels in the Rosslyn industry.

xiv. **Research findings**: In the past two years crime has escalated in Rosslyn. Close to a 100% of the respondents expressed fear of crime and/or have had a negative perception about crime. In fact, more than 90% of all businesses still experienced crime regardless of the security measures that had been implemented. Some businesses experienced crime on a daily basis, especially BB where opportunities were aplenty. The losses reported, where security was not present, gave a clear indication that crime would run amok if not controlled.

xvi. **Recommendations**: Implement the CPIM. The CPIM provides justifiable recommendations for industry to approach its high crime levels and its fear of crime, singularly and jointly. The CPIM, as vested within environmental criminology, can eventually design crime out.

| Goal achieved?: Yes | Reference: Chapter 6 |

xvi. **Goal**: To understand the reasons behind crime in Rosslyn Industry?

xvii. **Research findings**: Crime in the Rosslyn Industry had multifaceted causal factors. The research identified that crime in Rosslyn was mostly for self enrichment and that it was directly related to value and opportunity. However, a large portion of the blame on the ensuing crime threat could be accounted to poverty factors, namely; unemployment, inadequate education, hunger, inequality, etc. Another reason why crime was so difficult to curb was the result
of inadequate guardians, especially since law enforcement and the criminal justice system lost its credibility.

xviii. Recommendations: Crime prevention is a process, not an isolated drive or project. In Rosslyn the reasons for crime indicated that a community driven crime prevention plan (the CPIM) has to be implemented; a plan which encapsulates the sociological, the security and the ecology elements.

| Goal achieved?: Yes | Reference: Chapters 6 and 7 |

xix. Goal: To understand what the Rosslyn industry needs and requires to effectively prevent crime.

xx. Research findings: The following needs were identified; real time crime awareness, collaboration between role players and neighbours, a central control capacity, high quality security service providers and visible policing. Industry crime preventative measures clearly required the support of an effective community service, or an infrastructure maintenance capacity, that focussed on a clean safe environment encompassing the roads, the sidewalks, the city centre, general lighting, public transport, law enforcement, etc.

xxi. Recommendations: The CPTED SUITE demonstrated that Rosslyn needs transparent, professional facilitation and collaboration to acquire and/or to manage the required services of the crime prevention initiatives. The key requirement is a specialist committee to who such needs can be tabled for action and guidance. The existing Rosslyn CPTED specialist committee currently consists of the same people that represent business, those who must ensure satisfactory law enforcement as well as the general services of local government. It has become the common denominator that plays a pivotal role in encouraging successful communication between all the entities involved from; the man on the street to the mayor if necessary. Eventually a performance SLA criterion can be agreed upon and managed between the future CPTED forum and such specialist committee. Including and managing both crime prevention
and service delivery for Rosslyn on the same CPTED Forum, will empower CPTED initiatives immensely.

| Goal achieved?: Yes | Reference: Chapters 6 |

xxii. **Goal**: To understand the role of law enforcement and local government in the Rosslyn industry.

xxiii. **Research findings**: Rosslyn industry expressed no trust in the police force and in the criminal justice system. A similar attitude was perceived concerning infrastructure services and the capacity of the local government, or the council for the municipality, to deliver. Law enforcement was experienced as being extremely weak and riddled with corruption and incompetence. The research could not find any substantial evidence to prove these findings wrong. And from a criminological point of view this was disturbing as this type of situation breeds public cynicism about the rule of law on one side, while it encouraged negative outcomes on the other. Local government elicited different responses from the respondents. The major complaint was not so much about the non-delivery of services but about the attitude of indifference towards the provision of services, the lack of urgency and the inability to solve problems due to sheer incompetence.

xxvii. **Recommendations**: The implication is that Rosslyn Industry will have to provide their own services at great expense in cost, time and effort and/or facilitate these requirements via a dedicated forum. Again it is evident that Rosslyn Industry needs a voice and an action plan that is unanimously accepted. The CPTED Forum can fulfil this role.

| Goal achieved?: Yes | Reference: Chapter 6 and 7 |
8.4 EDUCATIONAL CAPACITY AND SKILLS TRANSFER

1. **Goal**: The challenge is to teach security practitioners the applicable criminological crime preventative methods, approaches and skills.

2. **Research findings**: The absence of formal security training with the relevant qualifications was evident. Most of the dedicated, responsible security practitioners and managers were either ex-police or ex-military. Where security was managed without security professionals, these responsibilities resided mostly on Operational, HR or Financial managers. Thus, in most instances the personnel who were responsible for security only had a basic knowledge of security and little to none of criminological matters. Thus it was no surprise that the common concepts of best practise security and value-added to business were not fully understood. A lot of duplicating (for e.g. CCTV on adjacent fences by different companies, even double electric fences, etc.) was found amongst neighbouring security capacities. But the real numbers, trends, patterns and profiles of crime in general were unknown to most. Security practitioners were in dire need of crucial practical, instructional training to learn the necessary critical thinking skills with which to manage crime prevention initiatives within the Rosslyn environment. It was evident that in Rosslyn, a simple crime prevention solution, methodology and approach to a complex problem was urgently required.

3. **Recommendations**: The only way in which to change this challenging situation is to inform and to train security practitioners in the methods and the approaches that are in line with the applicable criminological crime preventative benchmarks, as identified during this research. The CRA, the CPTED SUITE and the CPIM via the CPTED Forum for Rosslyn are the answer. At the same time security practitioners must be encouraged to enrol for an accredited security management course such as the CSMP course at ISMI and/or the CPP at ASIS, to learn more about crime prevention and physical security applications and management.
Chapter 8: SUMMARY, CONFIRMATION OF GOALS, OUTCOMES AND RECOMMENDATIONS, VALUE OF RESEARCH AND CONCLUSION

8.5 IMPLEMENTATION OF THE CPIM FOR ROSSLYN INDUSTRY

1. **Goal**: To implement the CPIM for Rosslyn as explained and recommended in the CRA and the CPTED SUITE. However, the numerous failures already experienced in trying to implement similar initiatives with a workable CPTED approach became important hurdles that first had to be overcome. These required evidence that proved the implementation of CPIM could work successfully and it could be a sustainable process with value added options.

2. **Research findings**: The CPIM, developed from the CRA and the CPTED SUITE, was implemented over a three month period using a process very similar to a project driven plan. It involved meeting and aligning with core role-players and a specialist steering committee comprised of local government, business and law enforcement representatives. Specific activities were then prioritised and phased-in to achieve visible short term results (street beautification, vendor control, show-of-force programmes by law enforcement) that could be maintained long term to extend the CPTED vision and to increase the number of active members.

3. **Recommendations**: During the research it was realised that regardless of the stated requirements and the support for the CPIM, a quick implementation goal will be earmarked from the onset by a serious shortage of skills, knowledge and resources. An astute leader is required to prevent this from happening. And together with a competent marketing team the ‘what is in it for us’ questions can be anticipated and insightfully answered. It is important to focus on the core areas with the most interest and the highest capacity and to develop these before infiltrating the already sensitised areas. Once the research results are...
known there must be no procrastination - the respondents have to be kept informed through e-mails, news-letters and meetings if the implemented plan is to be a success.

| Goal achieved?: Yes | Reference: Chapter Seven |

### 8.6 ADDED VALUE OF THE RESEARCH

#### 8.6.1 To the criminological domain and mixed research application

a. This study innovatively contributed to the criminology crime prevention academic debate by demonstrating the applied nature of Criminology and more specifically that of environmental criminology and CPTED.

b. This study added to the minimal existing body of knowledge on this topic by incorporating SCS and C-TPAT in the CPTED framework.

c. This study presented CPTED as the core applied crime prevention theory within criminology by encapsulating all CPTED related variants in one CPTED framework called a CPTED SUITE. Any crime prevention requirement or problem could be filtered through, or tested through, this framework to find the correct crime prevention application.

d. This study demonstrated that CPTED had an inherent capacity and aptitude to act in a MIT-disciplinary approach for valid and reliable sourcing from any ontology.

e. During this study a CRA was designed to source relevant data (problem statements) that could be used by the CPTED SUITE for applied guidance in preventing crime in any entity, regardless of its size.
f. This research was based on the mix method of data sourcing. An added strain was designed that intertwined two convergence methods into one, with a further extended triangulation capacity to ensure saturation.

8.6.2 To the required skills and the application thereof

a. This study provided export businesses with a value added supply chain security capacity that ensured compliance to international counter terrorism customs standards as prescribed by the C-TPAT criteria.

b. This study empowered crime prevention and security practitioners with crucial actionable recommendations, methods, approaches, the necessary critical thinking skills and the step-by-step transferable skills regarding criminological approaches, security applications and risk management.

c. Security practitioners were shown how their own skills could be enhanced and their status uplifted if they understood and implemented best practise security and value added services when operating within a business environment.

d. This study provided responsible security entities with easy to follow skills with which to keep a ‘real time’ threat and risk analysis at hand for timely action when needed.

e. This study provided businesses and/or employers with a framework from which they could, not only understand what was expected of their responsible security entities, but also could measure their performance, and identify the necessary skills levels required to design and implement an applied crime prevention plan when needed.

8.6.3 For community and the industry

a. This study provided a method with which to approach crime, and the fear of crime, through environmental criminology, and design crime out. This approach could be used in any entity.
b. This study also provided the techniques required to design a unique CPIM, based on the CPTED SUITE framework, which would provide a unique CPTED solution for every crime problem encountered in every entity.

c. An implementation guide with a detailed step-by-step implementation plan for a CPIM, including relevant examples, was also provided.

d. A fully functional CPIM was implemented in the Rosslyn industrial environment.

e. Rosslyn industry as well as the local government was also provided with a valid and reliable data base that highlighted the risk and needs in the Rosslyn environment. An address list of all the businesses and residents was included in this data base.

f. This study contributed towards establishing a positive platform for collaboration amongst Rosslyn industry, the local government and law enforcement agencies, neighbouring communities, BB and S&M businesses.

g. The envisaged development and subsequent required sustainability of Rosslyn is empowered by the research deliverables, enabling rational decisions. Thus a direct and positive impact on the sustainability of Rosslyn.

8.7 RECOMMENDATIONS FOR FUTURE RESEARCH:

The following recommendations for future research are based on the experiences and the findings that have been made in this study. Future researchers, both local and global, will be able to identify, for further study, the following areas of concern that emanated from this research

1. What duties or services can the CJS (Police, Traffic, Courts, etc...) in its current state effectively execute or not, with regard to the expectancies and experiences from business.
2. Alternative avenues that can be followed, without creating dissent, when a dysfunctional law enforcement system does not meet with the required standards.

3. The link between experience, competency in the workplace and the level of education attained in the field of security - or qualifications achieved - and the performance of people responsible for security.

4. The standard of the current courses presented in security training, especially their relevance to present day situations need to be researched, and the relevance of the number of short, attendance, certificate courses as opposed to a degree, diploma courses and other accredited courses.

5. Security is a criminological application. But is this concept insightfully understood so that it is embedded in all the security planning or is it regarded as a purely theoretical component?

6. In the fields of applied security and law enforcement, as part of the vocational training, Criminology should be included as a core component. Criminology is a science that forms an important link with the sciences such as Police Science, Traffic Science, and the Sciences applicable in customs and correctional services, etc.

7. Security in the corporate environment is mostly regarded as an additional entity that cannot function independently – possibly another HR-, Finance-, Facilities-, type function. However if its role is properly understood it should function as an independent entity involving the interest and participation of all personnel who can contribute to mitigating criminal acts in and around the workplace.

8. Security cannot function in isolation it must understand and supports the core businesses of the company as a continuous value add. It should refrain from becoming grudge expenditure through performing as an added value to the company. Learning how to complement the business is an area that needs to be addressed.
9. If neighbouring business can learn how to communicate their experiences and to share their knowledge it will enhance crime prevention already in place, and make the process of crime prevention more cost effective. Required is an integrated approach between all security capacities involving BB, S&M businesses, neighbouring communities, and local residents.

10. Specific CPTED and MIT (Multi-Inter-Trans-disciplinary) products for specific security related situations can be especially designed for security practitioners as part of their toolbox - the applied tools. The MIT capacity of CPTED allows security research and problem solving to address any threat in every environment no matter how unique the challenge may be. If added to the CPTED SUITE application it will make the concept more understandable and acceptable.

11. CPTED processes should be embedded in a performance and quality process system such as ISO where it can be documented for easy assessment and auditing purposes.

12. C-TPAT and AEO will eventually become important criteria that all security entities will have to comply with. Therefore, these need to be more dynamically implemented in all security and or CPTED processes. Its ‘mandatory’ role needs to be transparent and, therefore, it has to be understood. However, it is just as important that the C-TPAT and AEO type organisations must realise and adapt the role of applied criminology in their respective approaches.

13. Security should in fact be a legal and insurance compliance issue, similar to Fire and OHS. Security must become a fiduciary responsibility with clear accountability, enforced through an Act. This must be researched for effect.

14. A criminological analysis is necessary to show how to get sustainable buy-in from businesses and local government so as to support a CPTED initiative if not via legislation. Case studies can be used to demonstrate how successful buy-in for CPTED was obtained and how it was effectively implemented.
15. A comparative study is necessary between South Africa and other countries (Canada, UK, USA, Australia, etc.) where CPTED forms an integral part of policy making and planning, involving all socio ecological levels, especially when planning new buildings, new cities and new communities. This concept can be adapted for the South African environment where crime prevention is a significant factor that must be proactively planned for, especially when the sustainability of a community depends on the implementation of successful crime prevention models.

8.8 CONCLUSION

Rosslyn Industry is an insecure environment where people generally live in fear, distrust law enforcement and have very little faith in the ability of both municipal and local government to deliver the required services. It is an environment where any opportunity for crime is exploited regardless of the effort and money spent to mitigate crime because: The threat of crime is ever present.

A mixed research project was initiated to gather all the opinions and data pertaining to crime prevention in Rosslyn Industry with the intention of implementing a sustainable CPIM for the area. At the onset of the research no one anticipated the challenges that would be encountered as the research progressed:

- The basic structures from which data was supposed to be sourced did not exist. There were no risk analysis models or networking models to work from, not even a current business or a residential address list was available. And neither the local government nor the law enforcement agencies could provide any meaningful information. The only recourse was to meet an unknown number of potential respondents in person, who would be willing to participate in the research, and in the process begin to build up a network. Those who eventually became involved were from the fields of logistics, security, production, manufacturing, service providers, suppliers, commercial, industrial, local government, business chambers, developers, and
representatives from the municipality and from both BB and S&M businesses.

- It soon became apparent that there was no security profile for Rosslyn. Little was known about security and even less was known about Criminology and the link between the two concepts. Thus even before beginning with the research process these concepts had to be explained to the participants.

- Most delegates representing S&M businesses were not employed to manage security issues on a full time basis, as assumed, this was done part time. The representatives from BB were employed to manage security in a full time capacity. However, they were inclined to work ‘in silos’, or on their own, and their attitude of ‘we-know-it-all’ was another challenge to overcome.

- There were mixed feelings about the researcher being able to implement a CPIM for the area because so many previous attempts had failed. Thus with all the sceptics to convince, the researcher became the facilitator and eventually what started off as a criminological research project for a thesis, became a fully fledged community project: A MIT disciplinary approach, project and process - from researching the problem, identifying the problem, defining the solution, sourcing the resources, implementing the solution and ensuring the sustainability thereof.

The outcome of this research project was a sustainable crime prevention model, namely the CPIM (Crime Prevention Intervention Model). This CPIM comprise of criminological elements integrated in a process starting at a CRA (Criminological Risk Analysis) to ascertain and to analyse the problems derived from the needs and risks sourced in the Rosslyn Industry. These problems were then filtered through a criminological CPTED (Crime Prevention Through Environmental Design) model called CPTED SUITE from where the CPIM was then structured, formulated and presented as a sustainable solution to the crime and security situation in the Rosslyn industrial area.
The ongoing challenge is to keep the interest, and to continuously mobilise the relevant role players until the formal process is fully mature. The next step is to duplicate the applied outcomes of this research in other similar environments.
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REFERENCE


This is to confirm that I, Catherine Coetzee, edited the thesis on ‘The development of a criminological intervention model for the Rosslyn industrial environment in Tshwane, Gauteng, South Africa,’ submitted by Mr William Lyon Pretorius, Student number 4572297, in accordance with the requirements for the PhD degree in Criminology at UNISA.

The detailed language edit included

1. Assistance with rearranging and rewriting certain components of the text in Plain English to make sure the intended meaning of the author is clear.

2. Checked for repetition of thoughts and assisted with summarising sections where necessary.

3. Checked for consistency especially with numbering system, use of quotation marks and consistency of references cited in the text and in the Reference List.

However, the final responsibility for the correctness of facts and the references referred to, lies with the student; Mr Lyon Pretorius.

Yours faithfully,

Catherine Coetzee
ADDENDUM B
RISK SURVEY & NEEDS ANALYSIS OF ROSSLYN INDUSTRY

INTERVIEW + QUESTIONNAIRE NUMBER

Field worker name:………………………………..

Date:………………………………………………
INTRODUCTION, INFORMATION AND INSTRUCTIONS

PRIMARY GOALS (AIDC, CCBC, UNISA and CoT)

First Goal: This research must uncover/understand the demographics of Rosslyn, the physical, tangible and intangible operational factors impacting on business and the perceptions and the requirements regarding services.

Second Goal: This research is to gather information about the pattern of crimes against businesses, the risks, threats and vulnerabilities as experienced by business and the needs of business to mitigate such crimes, in order to design a crime prevention model to assist Rosslyn Industry in how to avoid being victims of crime.

Third Goal: To introduce the AIDC automotive city project, the CCBC and CoT support structures implemented to collaborate for the sake of business resilience.

Fourth Goal: To introduce awareness and knowledge (benefits and requirements) for the C-TPAT/AEO international criteria of exporting via an accredited supply chain security and to be regarded as a preferred trade partner of SARS.

THIS QUESTIONNAIRE IS DIVIDED IN THE FOLLOWING SECTIONS:

Section A: Operational demographics.
Section B: Crime Threat Survey.
Section C: Security Capacity & Vulnerabilities Survey.
Section D: Risk Analysis (Probability and Impact).
Section E: Crime Prevention Methodology.

Back Up: Definitions, Weight Question guides and Informed Consent.

THIS RESEARCH AND/OR NEEDS ANALYSIS IS CONDUCTED UNDER THE AUSPICIOUS OF THE FOLLOWING BODIES:

i. The Automotive Industry Development Centre (AIDC) (Ms Jenny Marshall)
ii. The University of South Africa (UNISA), Department of Criminology and Security (Professor Johan Prinsloo and Mr Lyon Pretorius).
iii. The Capitol City Business Chamber (CCBC) (Mr Lyon Pretorius and Mr Fanie du Plessis).
iv. The City of Tshwane (CoT) (Mr James Murphy and Mr Frans Manganye).

The survey will be coordinated by Mr Lyon Pretorius (0825253662) of the CCBC, as part of a PhD project, and is he Chairperson for the Rosslyn Security Steering Committee. AIDC (the limited survey sponsors) is represented by Ms Jenny Marshall (012 5643510).

Your participation will allow the correct analysis and measuring of the situational risk, threat and vulnerability factors that impact on the industrial area of Rosslyn. This research will lead to a better understanding about what is needed to make Rosslyn a vibrant industrial area where business and future investment stakeholders can flourish. It is also aimed to create a trade friendly zone supported by local and international customs and excise bodies.

PLEASE SEE LAST PAGE FOR INFORMED CONSENT.
Please mark the relevant/appropriate answer with a cross [X]. All information will be treated in the strictest confidence.

PLEASE MAKE SURE THAT YOU ANSWER ALL THE RELEVANT QUESTIONS.

NAME OF BUSINESS: .................................................................

NAME OF RESPONSIDENT/OWNER: ...........................................

STREET ADDRESS: ....................................................................

TEL. NO.: .................. CELL NO.: ...........................................

FAX NO.: .............. EMAIL: .....................................................

(So we can send you a copy of the results of the survey, or confirmation where needed)

Snowball references: ................................................................

SECTION A: OPERATIONAL DEMOGRAPHICS

1. What is the MAIN activity of your company at these premises?
   1.1 Manufacturing ................................................................. 1
   1.2 Retail (non-food) ............................................................. 2
   1.3 Retail (food) .................................................................. 3
   1.4 Wholesale/distributing .................................................... 4
   1.6 Other (specify) ............................................................... 5

2. How long has your business been operating at THESE PREMISES?
   2.1 < 2 years: .................................................................. 6
   2.2 2-6 years: .................................................................
   2.3 6-12 years: ................................................................
   2.4 Longer:........................................................................

3. How many employees (both full-time and part-time) work at, or from these premises at present, including yourself?
   3.1 1-4 ............................................................................ 7
   3.2 5-10 .......................................................................... 8
   3.3 11-19 ........................................................................ 9
   3.4 20-49 ........................................................................ 10
   3.5 50-99 ........................................................................ 11
   3.6 100-199 .................................................................... 12
   3.7 200-399 .................................................................... 13
   3.8 ≥ 400 .......................................................................... 14

4. Are these premises located in a specialised specific commercial area?
   4.1 An industrial estate (Name.................................) ........... 15

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ADDITION B:
RISK SURVEY & NEEDS ANALYSIS OF ROSSLYN INDUSTRY
ADDENDUM B:  
RISK SURVEY & NEEDS ANALYSIS OF ROSSLYN INDUSTRY

4.2 A business park (Name…………………………)  
4.3 A shopping complex (Name…………………………)  
4.4 Rosslyn Industrial area city centre (Name………………)  
4.5 Are you renting:  
4.6 Are you the owner:  

5  Rate the following factors on you and your business by making use of the following criteria:

<table>
<thead>
<tr>
<th>Factor</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Very dissatisfied</td>
<td></td>
</tr>
<tr>
<td>2 Improvement required</td>
<td></td>
</tr>
<tr>
<td>3 Satisfied</td>
<td></td>
</tr>
<tr>
<td>4 Exceptional</td>
<td></td>
</tr>
</tbody>
</table>

5.1 Parking facilities                                       | 1 2 3 4 | 21  
5.2 Noise                                                    | 1 2 3 4 | 22  
5.3 Loiterers                                                | 1 2 3 4 | 23  
5.4 Litter                                                   | 1 2 3 4 | 24  
5.5 Teenagers hanging around                                | 1 2 3 4 | 25  
5.6 Air pollution or fumes (Who:?…………………………)     | 1 2 3 4 | 26  
5.7 Street lighting                                          | 1 2 3 4 | 27  
5.8 Crime                                                   | 1 2 3 4 | 28  
5.9 Local government/municipality efficiencies              | 1 2 3 4 | 29  
5.10 Specific services provision for your business (power…) | 1 2 3 4 | 30  
5.11 Investment opportunity 5 years ago                     | 1 2 3 4 | 31  
5.12 Investment opportunity current and future              | 1 2 3 4 | 32  
5.13 Electricity stability                                  | 1 2 3 4 | 33  
5.14 Environmental friendly                                 | 1 2 3 4 | 34  
5.15 Public transport                                        | 1 2 3 4 | 35  
5.16 Traffic flow                                            | 1 2 3 4 | 36  
5.17 Neatness                                                | 1 2 3 4 | 37  

6  Shared Services (Transport Solution)

6.1 Do you operate on a:  
6.2 1 Shift (0800 -1600), □ 39  
6.3 or own hours: (…………….), □ 40  
6.4 2 Shift (7-7) □ 41  
6.5 or own hours (…………….)(…………….), □ 42  
6.6 3 Shift (7-3) (3-11) (11-7), □ 43  
6.7 How many days per week, □ 44  
6.8 How many staff per shift:  
6.9 For what time (outside public transport) do you provide:  
Transport to Rosslyn:  

420
Transport from Rosslyn (to employees addresses): 50

6.10 What is the furthest distance you provide transport to: km 51
6.11 Do you use mainly taxi buses: Yes or No 52
6.12 If not, what transport do you use: (Internal, Public, etc) 53
6.13 Is it satisfactory: Yes or No 54

Q.1 Experience, needs and recommendation about the transport solution for Rosslyn:

SECTION B: CRIME THREAT SURVEY
The following questions concern crime which have occurred at your premises, including crimes against employees or crimes against visitors.

1 In general, have crime problems for your company/business increased, decreased or remained the same over the last two or three years?
   1.1 Increased 55
   1.2 Decreased 56
   1.3 Remained the same 57

The following questions are about specific types of crimes/ offences which happened in the last 2 years, 2012-2013. (See Back pg.17 up for guides on questions)

2 Specific Crime on premises

<table>
<thead>
<tr>
<th>Type</th>
<th>Number of Incidents</th>
<th>Target (Copper)</th>
<th>Value</th>
<th>Ease / Opportunity to steal</th>
<th>Security of at Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.1</td>
<td>Robbery</td>
<td>(1)(2)(3)</td>
<td></td>
<td>1-2-3</td>
<td>1-4</td>
</tr>
<tr>
<td>2.3</td>
<td>Hi.Jack</td>
<td>(1)(2)(3)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.4</td>
<td>Burglary</td>
<td>(1)(2)(3)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.5</td>
<td>Fraud</td>
<td>(1)(2)(3)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## ADDENDUM B

### RISK SURVEY & NEEDS ANALYSIS OF ROSSLYN INDUSTRY

<table>
<thead>
<tr>
<th>2.6</th>
<th>Bribery</th>
<th>(1)(2)(3)</th>
<th>62</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.7</td>
<td>Assault</td>
<td>(1)(2)(3)</td>
<td>63</td>
</tr>
<tr>
<td>2.8</td>
<td>Organised C</td>
<td>(1)(2)(3)</td>
<td>64</td>
</tr>
<tr>
<td>2.9</td>
<td>Theft</td>
<td>(1)(2)(3)</td>
<td>65</td>
</tr>
</tbody>
</table>

#### Specific Crime on premises:

<table>
<thead>
<tr>
<th>Type</th>
<th>Number of Incidents + Months</th>
<th>Target Value</th>
<th>Ease / Opportunity to steal 1 + 2 + 3</th>
<th>Security of/at Target 1 - 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.10</td>
<td></td>
<td>(1)(2)(3)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.11</td>
<td></td>
<td>(1)(2)(3)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.12</td>
<td></td>
<td>(1)(2)(3)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.13</td>
<td></td>
<td>(1)(2)(3)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.14</td>
<td></td>
<td>(1)(2)(3)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Specific Suspicious behaviour on premises

| 2.15 | Loitering | (1)(2)(3) | 66 |
| 2.16 | Intimidation | (1)(2)(3) | 67 |

#### General Crime in Rosslyn industry to your knowledge (not on premises)

| 2.17 | (1)(2)(3) | 69 |
| 2.18 | (1)(2)(3) | 70 |

### Q.2 Experience and recommendation about crime in Rosslyn.

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---
### LOSSES
#### Insurance and reporting of crime incidents

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>Does your insurance cover the full amount of any loss or damage caused by crime related incidents as mentioned above – that is, apart from any excess you have agreed to pay – or does it cover only a limited amount?</td>
<td></td>
</tr>
<tr>
<td>3.1</td>
<td>Yes, full amount covered</td>
<td>75</td>
</tr>
<tr>
<td>3.2</td>
<td>Yes, but only limited amount covered</td>
<td>76</td>
</tr>
<tr>
<td>3.3</td>
<td>Yes, but don’t know how much it covers</td>
<td>78</td>
</tr>
<tr>
<td>3.4</td>
<td>No insurance</td>
<td>79</td>
</tr>
<tr>
<td>3.5</td>
<td>Don’t know</td>
<td>80</td>
</tr>
</tbody>
</table>

Q3 Experience about losses/impact because of crime, also indirect causes and its value.

### LAW ENFORCEMENT

<table>
<thead>
<tr>
<th></th>
<th>To your knowledge, were any of the crime incidents before mentioned reported to the police?</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td></td>
</tr>
<tr>
<td>4.1</td>
<td>Yes</td>
</tr>
<tr>
<td>4.2</td>
<td>No</td>
</tr>
<tr>
<td>4.3</td>
<td>Don’t know</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Regarding crime how many incidents were reported to the police?</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td></td>
</tr>
<tr>
<td>5.1</td>
<td>All incidents</td>
</tr>
<tr>
<td>5.2</td>
<td>Most incidents (%.............)</td>
</tr>
<tr>
<td>5.3</td>
<td>Some incidents (%.............)</td>
</tr>
<tr>
<td>5.4</td>
<td>No incidents</td>
</tr>
<tr>
<td>5.5</td>
<td>Are they investigated (Yes/No)</td>
</tr>
<tr>
<td>5.6</td>
<td>Did you get feedback (Yes/No)</td>
</tr>
<tr>
<td>5.7</td>
<td>Were they successfully concluded (Yes/No) (%......................)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>What are the main reasons for not reporting such incidents to the police? (More than one answer is allowed).</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td></td>
</tr>
<tr>
<td>6.1</td>
<td>Not worth reporting, not serious enough</td>
</tr>
<tr>
<td>6.2</td>
<td>Police wouldn’t have done anything/not interested</td>
</tr>
</tbody>
</table>
6.3 Police couldn’t have done anything/slight chance of success 93
6.4 Have internal investigators 94
6.5 It was an internal matter (not police matter) 95
6.6 Fear of reprisals 96
6.7 Fear of negative publicity 97
6.8 Insurance will cover, only need MAS. 98
6.9 Lack of time/too much trouble 99
6.10 Lack of proof/evidence/witnesses 100
6.11 Not company policy to get police interaction 101

7 In general, how satisfied or dissatisfied are you with the way the police deal with the crime problems facing business in this area?
7.1 Very satisfied 102
7.2 Fairly satisfied 103
7.3 Neither satisfied nor dissatisfied 104
7.4 Fairly dissatisfied 105
7.5 Very dissatisfied 106

Q.4 Experience about Rosslyn law enforcement, alternatives, needs and recommendations.


SECTION C: SECURITY CAPACITY & VULNERABILITIES SURVEY.
Rosslyn, the level of security collaboration
1 To your knowledge, have businesses in this area taken any kind of cooperative action against crime, such as sharing security patrols, setting up a business watch, etc?
1.1 Yes, and have participated 107
1.2 Yes, but have not participated 108
1.3 No 109
1.4 Don’t know 110
2 Apart from any crimes you may have reported to the police, did your business have any contact with the police regarding crime awareness, guidance or crime prevention?

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>2.1 Yes</td>
<td>111</td>
</tr>
<tr>
<td>2.2 No</td>
<td>112</td>
</tr>
<tr>
<td>2.3 Don’t know</td>
<td>113</td>
</tr>
</tbody>
</table>

3 Did your business have any contact with “Area Security initiatives” about crime problems or crime reduction?

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>3.1 Yes</td>
<td>114</td>
</tr>
<tr>
<td>3.2 No</td>
<td>115</td>
</tr>
<tr>
<td>3.3 Don’t know</td>
<td>116</td>
</tr>
<tr>
<td>3.4 Would like to participate (Yes/No)</td>
<td>117</td>
</tr>
</tbody>
</table>

4 In general, how satisfied or dissatisfied are you with the way security is dealt with in this area?

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>4.1 Very satisfied</td>
<td>118</td>
</tr>
<tr>
<td>4.2 Fairly satisfied</td>
<td>119</td>
</tr>
<tr>
<td>4.3 Neither satisfied nor dissatisfied</td>
<td>120</td>
</tr>
<tr>
<td>4.4 Fairly dissatisfied</td>
<td>121</td>
</tr>
<tr>
<td>4.5 Very dissatisfied</td>
<td>122</td>
</tr>
</tbody>
</table>

Q.5 Experience about security awareness and collaboration in Rosslyn, needs, requirements and recommendations.


Physical security systems

5 What measures have you taken to protect your company premises and your company against crime? (I would like to stress again that this survey is entirely confidential). Which of the following measures are in place at your premises?

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>5.1 Access control during business hours</td>
<td>123</td>
</tr>
<tr>
<td>5.2 Caretaker on premises or security patrols or guards outside business hours</td>
<td>124</td>
</tr>
<tr>
<td>5.3 Burglar alarm system</td>
<td>125</td>
</tr>
</tbody>
</table>
5.4 System whereby security guards react if alarm goes of

5.5 Special security lighting

5.6 Special window protection (bars, grating, special window locks, shutterproof glass)

5.7 Valuable equipment marked with identification numbers/marks

5.8 A layered approach to protect specific assets

5.9 None of these

6 To your knowledge, which of the following have given your company advice about security for these premises at any time?

More than one answer is allowed.

6.1 The head of security for these premises

6.2 Other managers from these premises

6.3 Managers from headquarters, regional headquarters, parent company

6.4 An insurance company

6.5 A recognised security firm

6.6 Any other knowledgeable person or organisation

6.7 None of these

Q.6 Experience about your own business security capacity.

a. Name accredited qualifications/experience of responsible security manager?:

b. Years of security experience?

c. Is security managed as a value add to business? In what way?

d. Is best practise security in place, what is best practise security?

e. Does your security manager collaborate with neighbours, how?

f. Type of security: (E.g., armed response, guarding, access, reception...):

g. Is you security outsourced? To what level? (Just guards or also management). Numbers?

h. Security service provider:
## ADDENDUM B
RISK SURVEY & NEEDS ANALYSIS OF ROSSLYN INDUSTRY

### Quality

1. Value of service provider contract (ZAR?):

2. Will you recommend as area service provider, why?

3. Name of company:

4. What do you do to successfully deter crime? Time/Cost/Risk for offender …Recommend?

5. What do you do to successfully detect crime? Alarm/Detection systems…Recommendation?

6. What do you do to delay (slow down) crime? Fence/Dogs/Locks… Recommendation?

### Physical Security

7. Security systems survey, what security “tools or systems” do you employ: 1. CCTV as base.

7.1 Do you apply CCTV (Yes/No) If yes please answer the following: 139

Q.7 Reasons:

Q.8 Positioning (Fence, internal, gates...):

Q.9 How many CCTV Cameras and monitors do you apply?:

Q.10 What model and year?

Q.11 Day and/or Night?

Q.12 Do you have a LPR (License Plate Recognition system)

Q.13 Integrated with other systems, for, e.g. armed response, perimeter intrusion, access control, just stand alone…?

Q.14 Dedicated/trained surveillance officers employed? Number per shift?

Q.15 A control / monitoring room, just recording (storage time)? On site? Primary and
ADDENDUM B
RISK SURVEY & NEEDS ANALYSIS OF ROSSLYN INDUSTRY

secondary uses?

Q.16 Your opinion regarding surveillance and the effective usage on you premises, recommendations?

---

8 Security systems survey, what security "tools or systems" do you employ? 2. Perimeter and Lighting as base.
8.1 Do you have a dedicated perimeter (Yes/No) If yes please answer the following:

Q.17 Brief description of your fence and lighting:

Q.18 Part of business park or own fence and lighting?

Q.19 Type:
   Perimeter: For example; Barbed wire, Razor wire, Welded mesh, Double Fence, Wall, Chain link, Palisade, Electrified, Concreted in ground:

   Can you fence be breached/penetrated (Over/under/through)? Ease? Time?

Q.20 Lighting: For example; Standalone, Lux type, LED or..., Day/night:

   Do you have a back-generator for lighting:

   How many power outages do you experience per month?
Q.21 Condition of fence and lighting, out of 10:

Q.22 Is there any PIDS (Perimeter Intruder Detection Systems) integrated with fence, for e.g. lighting, motion detection systems, alarms, integrated with control room, patrols, armed response? Please explain rationale:

Q.23 Your opinion and recommendation for an effective fence/perimeter for business?
### Section D. Risk Analysis (Probability/Impact/Seriousness/Vulnerability/Custodian)

<table>
<thead>
<tr>
<th>A</th>
<th>Offender type (Thief, Robber…)</th>
<th>Rating</th>
<th>Target after</th>
<th>Actions / Manner</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td>2</td>
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<td>4</td>
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<td>5</td>
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<table>
<thead>
<tr>
<th>B</th>
<th>Crime / Action (Theft, Robbery…)</th>
<th>Probability Weight</th>
<th>Impact Weight</th>
<th>Seriousness Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
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<td>5</td>
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</table>

<table>
<thead>
<tr>
<th>C</th>
<th>Crime / Action</th>
<th>Type Controls to prevent (Fence, CCTV, Patrols…)</th>
<th>Vulnerability Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>2</td>
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<td>5</td>
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<table>
<thead>
<tr>
<th>D</th>
<th>Crime / Action</th>
<th>Law enforcement weight (and/or custodians)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
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<td>3</td>
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### Colour-Coded-Key to the weighting of the abovementioned Risk Analysis

- **Custodians Weight**
  - 1- Strong
  - 2- Baseline
  - 3- Barely Adequate
  - 4- Inadequate

- **Vulnerability and Controls**
  - 1- Strong
  - 2- Baseline
  - 3- Barely Adequate
  - 4- Inadequate

- **Probability is the Likelihood that the threat will occur**
  - 1- Never,
  - 2- Distinct possibility,
  - 3- Has happened,
  - 4- Happens from time to time,
  - 5- Happens regularly.

- **An Impact is the severity to you, your business if it does happen.**
  - 1- Negligible,
  - 2- Moderate consequences,
  - 3- Serious consequences,
  - 4- Exceptionally grave consequences

- **Seriousness if it happens?**
  - 1- Negligible consequences
  - 2- Moderate consequences
  - 3- Serious consequences
  - 5- Exceptionally grave consequences

---

ADDENDUM B:
RISK SURVEY & NEEDS ANALYSIS OF ROSSLYN INDUSTRY
<table>
<thead>
<tr>
<th>Q.32</th>
<th>What can be done to physically increase the effort (Fence, ..) for the offender?</th>
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<table>
<thead>
<tr>
<th>Q.33</th>
<th>How can the personal risk (ID/Surveillance) be increased for the offender?</th>
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<thead>
<tr>
<th>Q.34</th>
<th>What can be done to lesson opportunity/temptation/reward (remove targets) for crime?</th>
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<thead>
<tr>
<th>Q.35</th>
<th>What can be done to reduce provocations for the offender?</th>
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<tr>
<th>Q.36</th>
<th>What can be done to remove excuses by the offender?</th>
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<tr>
<th>Q.37</th>
<th>Does the broken down area’s attract criminals. What should be done?</th>
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<tr>
<th>Q.38</th>
<th>According you offenders get away with crime because of.………How can it be fixed?</th>
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<tr>
<th>Q.39</th>
<th>What are the underlying reason/causes for crime, direct and indirect?</th>
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### Section F: International Criteria for Supply Chain Security.

**Q.41. Are you C-TPAT/AEO ready?**

a. Do you know what C-TPAT/AEO are about? Are you compliant, and on what level?

Criteria:
- i. Are your HR security C-TPAT compliant? Yes or No? 141
- ii. Are your IT Security C-TPAT compliant? Yes or No? 142
- iii. Are your container security C-TPAT compliant? Yes or No? 143
- iv. Are your service providers and suppliers C-TPAT compliant? Yes or No? 144
- v. Are your access and egress measures C-TPAT compliant? Yes or No? 145
- vi. Are your continuous training C-TPAT compliant? Yes or No? 146
- vii. Are your procurement processes C-TPAT compliant? Yes or No? 147
- viii. Can you proof at any given time the processes are in place? Yes or No? 148

b. Do you export? To what countries?

c. Are you providing services to export manufacturers/clients? To what countries?

d. Do you plan to become C-TPAT/AEO compliant?

e. Do you need assistance to become C-TPAT/AEO compliant?

f. Do you think it will be beneficial if Rosslyn as a whole become C-TPAT/AEO friendly compliant? Your recommendation.
Last question
Do you have fear for crime in Rosslyn?:

In one sentence what will make your fear go away?:

THANK YOU FOR YOUR COOPERATION

General Notes by field worker:
INFORMED CONSENT SHARED AND AGREED UPON BY THE RESPONDENTS OF THIS RESEARCH

Voluntary participation
You have as contact person most possibly been contacted by the AIDC call centre to inform/pre warn you of this research. However as a requirement of ethical research and good conduct we would like your formal cooperation to be physically interviewed by a trained field worker (in person or via electronic media) during a session that will take roughly an hour, or it can be split over more than one contact period. You can be contacted again purely for the need to saturate information on specific topics when needed. Your participation is purely voluntary; you can withdraw from the study at any point by stating that you no longer wish to participate. Your participation in the research will have no effect on your participation in the programme and there will be no consequences if you choose not to participate. No one in the programme has to know if you choose to participate, or what you answer in the interview. The interview is confidential and your name will not be used in the final report writing. Only the bona fide fieldworker and the analyst will have access to your responses. Your responses will, if permitted, be recorded in written notes and or recorded on audiotape. Any recordings, dictations, questionnaires and the interview schedule will be stored for archiving purposes only.

Risks
There are no direct risks in participating in this study.

Benefits
There are no immediate benefits from participating in this survey; however the benefit of a stable and vibrant Rosslyn Industrial area to all stakeholders is obvious.

Confidentiality
As already stated, all information will be kept confidential and only those involved in the research will have access to it.

Sharing of information
The information gathered in this research will be documented in the form of a thesis and in scientific articles, so that other interested parties may learn from the research. Stakeholders of the CCBC and AIDC for Rosslyn will utilise gathered information to establish, design, implement and maintain numerous plans and activities in the endeavour to uplift Rosslyn as a whole.

Right to refuse
You have the right to refuse or to participate in this study.

Please note that the Ethics Committee of the University of South Africa, that must ensure that all participants are protected from harm, has approved this research project.

Signature of respondent(s):…………………………

Signature of interviewer: .................. Date: ..........................