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THE LINKS BETWEEN CRIME PREVENTION AND SUSTAINABLE DEVELOPMENT

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ABSTRACT

This paper explores the links between the requirements for safer communities and those for more sustainable communities. It firstly examines safety as an indicator of sustainable development, as well as the social and environmental factors that contribute to both crime and unsustainable settlements. It then looks at what a safer, sustainable community would look like and lastly identifies certain key principles these communities have in common. It concludes that added benefits can be achieved if the broader issues of sustainable development are kept in mind when planning crime prevention strategies, and vice versa.

KEYWORDS

Sustainable development, crime, poverty, ownership, mixed land-use, equal distribution, quality of life.

1. INTRODUCTION

One of the requirements of a sustainable environment is that it should be safe for all who use it. Just as it should not pose health threats to its inhabitants, people should not have cause to fear for their personal safety and the safety of their possessions.

In South Africa the Land Development Objectives process (a participatory process that must precede any urban development planning) found that safety and security is often considered by the poor as a more pressing need than housing, job creation and

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infrastructure provision (Napier et al, 1998:30). In fact, safety has become a demand, and often the first priority, of the urban poor world-wide and particularly in developing countries (Vanderschueren, 1998:4).

As far back as the previous century, researchers were making connections between crime and areas with poor economic, social and environmental performance, as can be seen in the work of 19th century observers of poverty in London, Mayhew (1864) and Booth (1891). Today, crime and violence form the basis of many indicators of sustainable development. In a study of sustainable development strategies for cities, Hart Environmental Data (Hart, 1996) has collected sample indicators of sustainability from cities all over North America. Twenty of these indicators deal with crime issues and a further twelve with violence. According to them, two of the most important signs of an unsustainable community are an increase in poverty and homelessness and an increase in crime.

Crime is an issue high on the agenda of many cities (and governments) in the world. According to Lawrence (1996) information and data confirm that during the last three decades the incidence of violence and riots has increased in several of the OECD countries. Over the same period the recorded incidence of delinquency, crimes and vandalism has also increased in all Member countries of the OECD, except Japan, particularly in poorer urban areas including deprived housing estates.

No city can call itself sustainable if the citizens of that city fear for their personal safety and the safety of their livelihood. Likewise, a city with a low quality environment, little scope for personal improvement and high poverty levels will never free itself from crime. What is less often realised is that the preventative strategies and environmental design recommendations aimed at creating safer communities in many cases also address the socio-economic requirements for more sustainable settlements and the solutions complement each other.

Possibly the most important lesson practitioners in the built environment are learning from sustainable development is the need for integrated planning. Not just integration in terms of urban planning, infrastructure provision and architecture, but also in terms of management and social services. A sustainable city depends on many more factors than

its environmental sustainability. It is the result of a complex system of social, economic and environmental factors, all influenced by physical planning, effective management, and holistic intervention strategies. Strategies for effective transportation, local economic development, environmental conservation and crime prevention are all beginning to point towards a single urban form as the most conducive to sustainability. However, it is also becoming increasingly clear that cities cannot just rely on their urban form to make them more sustainable or safer. Without a change in how people live, work, consume and think, urban form and architectural solutions will make little difference to the performance of the city. It is the combination of operational patterns and an environment conducive to their efficiency that determines the safety and sustainability of a city.

In the field of crime prevention, this integrative approach can be seen in the move away from the pure design solutions of Crime Prevention through Environmental Design (CPTED), towards the more holistic Situational Crime Prevention (SCP). Proceeding from an analysis of the circumstances giving rise to specific kinds of crime, Situational Crime Prevention introduces discrete managerial and environmental change to reduce the opportunity for those crimes to occur (Clarke, 1997, p.2). Thus it does not make merely superficial environmental changes such as target hardening, but addresses a specific problem within its environmental and social context and includes the operation and management of the intervention in the suggested crime prevention strategy.

This paper primarily draws on a study done in South Africa by the Council for Scientific and Industrial Research (CSIR) and the Institute for Security Studies (ISS) on crime patterns in South Africa and crime prevention through environmental design within the South African context (Napier, et al. 1998), and therefore uses many illustrations from South Africa. While the South African city has certain unique features due to the history of apartheid city planning, the main problems such as uncontrolled urban sprawl, decaying inner cities and poor, crime-ridden housing estates are universal and can be found in any large Western city, as is shown by the work, amongst others, of researchers from the British Home Office, the Australian Institute of Criminology, the European Forum for Urban Safety and the National Crime Prevention Council in the USA. Furthermore, South African cities also suffer from the same problems of rapid urbanisation, overcrowding, and lack of infrastructure that result in the informal

settlements that characterise the developing world cityscape. South African cities therefore represent a microcosm of the problems facing urban development world-wide.

The paper firstly explores the factors that directly influence both sustainability and crime patterns in human settlements. It then looks at what a safer, sustainable community would look like and finally, outlines some of the main principles designers of the built environment should bear in mind when designing the communities of the future.

2. THE PRINCIPLES OF SUSTAINABLE DEVELOPMENT AND DESIGN FOR SAFER ENVIRONMENTS

In order to know what the requirements are for sustainable communities, it is first necessary to know what sustainable development is.

Sustainable development can be defined as the dynamic balancing act between:

- Using and protecting the physical and natural environment and its resources;
- Creating equitable and viable economic systems with an ethical basis; and
- Acknowledging and guiding social and cultural systems and values towards greater equitability, responsibility and human well-being.

This definition is based on the principles of sustainable development as contained in Table.1. These have been extracted from the currently available literature as those principles enjoying universal acceptance.

Table 1 – The Principles of Sustainable Development

Environmental	<ul style="list-style-type: none"> • Conserve the earth's vitality and diversity • Conserve life support systems • Use renewable resources sustainably • Minimise use of non-renewable resources • Minimise pollution and damage to the environment and health of all living creatures • Conserve the cultural and historical environment
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Economical	<ul style="list-style-type: none"> • Promote equity between nations and generations • Avoid unequal exchange and ensure real-cost pricing • Do not impoverish one group to enrich another • Encourage ethical procurement and investment policies • Promote equitable distribution of costs and benefits • Support local economies
Social	<ul style="list-style-type: none"> • Allow improvement in the quality of human life • Promote social equity amongst all peoples • Allow for cultural and social integrity • Foster self-reliance and self-determination • Encourage participation and co-operation in decision-making on all levels from the individual to the international. • Empower people and provide opportunity for capacity enhancement

Overarching these three principles, is the principle of adaptability. This principle requires that development is error-friendly, has entrenched feedback loops, checks and balances, and can easily adapt to accommodate changes brought about by feedback.

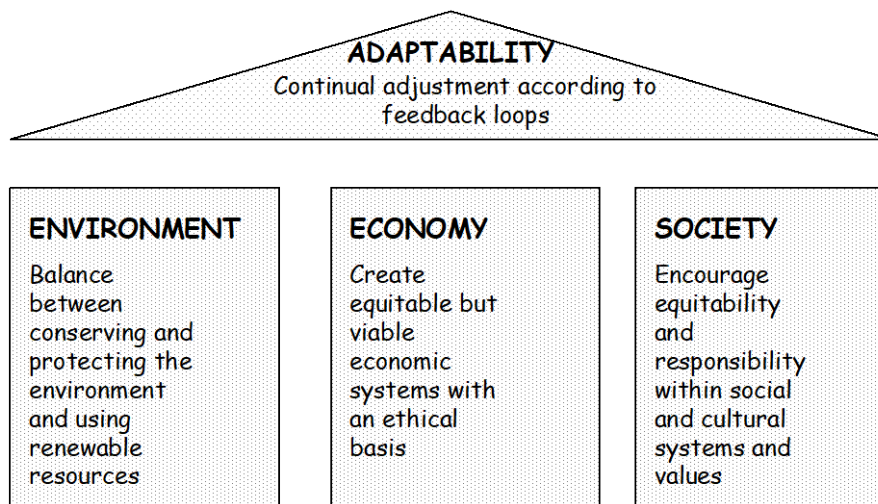


Fig.1 – The building blocks of sustainable development

Just as these principles are used to inform sustainable development, there are certain principles that inform the design of safer communities. Drawing on work done internationally by, amongst others, Newman (1972), Poyner (1983), and Wekerle and

Whitzman (1995), four basic principles can be identified as fundamental in designing urban areas and buildings with the intention of reducing crime. These are surveillance and visibility, territoriality and defensible space, image and aesthetics and target hardening.

Surveillance can be either passive or active. Passive surveillance is the casual observance of public and private areas by users or residents in the course of their normal activities. Active surveillance refers to surveillance by police or other agents whose express function it is to police an area.

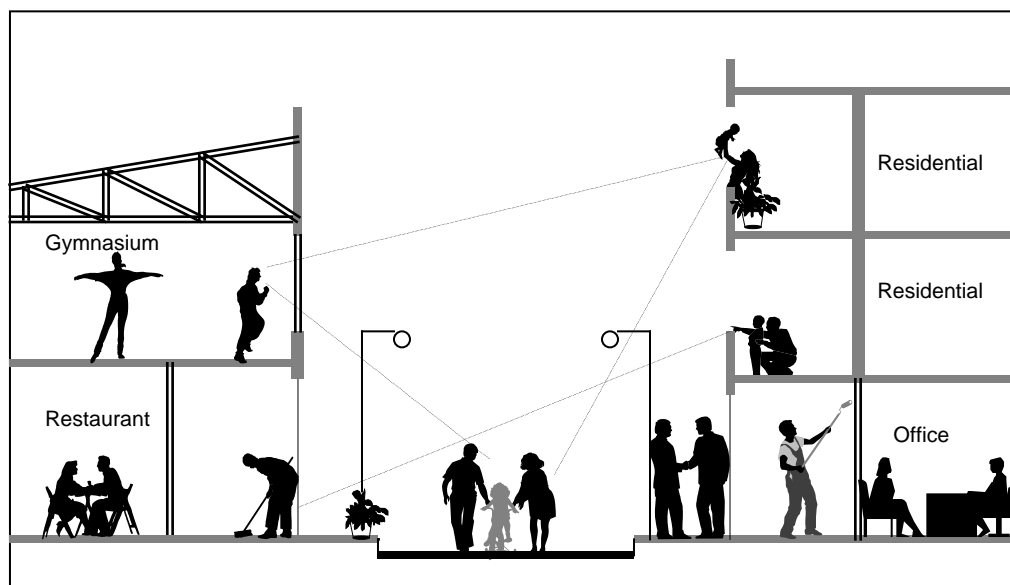


Fig.2 – Surveillance through mixed use, uninterrupted lines of sight and lighting

Surveillance can be improved or hampered by the degree to which an environment is made visible by elements such as lighting and uninterrupted lines of sight. Mixed-use developments that include a range of activities over a 24-hour period improve surveillance.

Territoriality is a sense of ownership of one's living or working environments. When owners/users are encouraged to take responsibility of their environments and are able to exercise control over these spaces, the likelihood of them "defending" these spaces increase. The extent of emotional or psychological contact people have with their space determines the degree to which they feel responsible for its use, upkeep and maintenance. This can be influenced by the extent to which the physical form and

celebration of the spaces acknowledges their cultural constructs and personal development needs.

The **image and aesthetics** projected by buildings or public areas has been clearly linked to levels of crime and particularly fear of crime (refer Wilson and Kelling, 1982). Urban decay and the resultant degradation makes people using these areas feel unsafe and can encourage vandalism and other incivilities (Fig.3). The design and management of spaces in the city are both important if neighbourhoods are not to become actual or perceived crime “hot spots”.

Target hardening is the physical strengthening of building facades or boundary walls to reduce the attractiveness or vulnerability of potential targets (Fig.4). However, controlled access spaces such as residential precincts (gated communities), shopping centres and recreational areas can have a detrimental effect on their immediate environment and even contribute to crime displacement and feelings of resentment from those excluded from these areas.

These principles not only have to work together for an effective crime prevention strategy, they need to be used in tandem with other planning principles for well-performing, healthy and sustainable settlements. As explained by Repetto (1974), CPTED treats only the symptoms and not the causes of crime and, without a broader strategy to establish functional communities, would not hold lasting benefits.

Target hardening, for instance, often only leads to more violent forms of crime. A good example is that of auto-theft: as it has become nearly impossible to steal cars because of anti-theft devices, criminals are resorting to more violent crimes such as hijacking. In many of the more violence-prone cities of the world, the principles of surveillance and territoriality are academic constructs only, as their effectiveness depends on people's willingness to intervene in a potential criminal situation. As Mayhew (1979) and Moughtin and Gardiner (1990) points out, people frequently decide not to intervene in an incident because of the fear of personal injury or retribution, the fear of embarrassment of mistakenly intervening in a private quarrel, and the inconvenience of becoming involved. Various experts (Merry, 1991, Foster, et al, 1993 and Sampson, 1985) have concluded that the effectiveness of crime prevention measures depends on the social cohesion of

the community, and that such social cohesion depends on the homogeneity of the community and the strength of social, family and ethnic ties. Schneider and Pearcy (1996:39) point out that crime prevention strategies have particularly failed in those communities that need these programmes the most: low-income, socially and racially heterogeneous, high-crime neighbourhoods. This lack of success is a mirror reflection of why these programmes succeed in higher-income neighbourhoods.

The creation of viable communities with strong social cohesion is one of the aims of sustainable development. This can only be achieved through recognition of the two main social aspects of sustainability. The first refers to the principle of **equity**. This entails not only inter-generational equity as prescribed in the Brundtland definition of sustainable development¹, but also intra-generational equity. Meeting basic human needs (especially the needs of the poor and marginalized) in an equitable manner, is regarded as integral to sustainable development. These needs can be met through the provision of physical, social and economic infrastructure, the delivery of which should enable poverty alleviation. The second aspect refers to **quality of life**, not just physically, but also emotionally, psychologically and spiritually. This includes issues such as ownership, safety and security, aesthetics and cultural acknowledgement.

3. SUSTAINABLE COMMUNITIES – SAFER COMMUNITIES

Apart from the obvious environmental consideration regarding pollution and resource use, there are also less quantitative issues that need to be considered for the ultimate sustainability of a settlement. These centre on the creation of viable communities with strong social cohesion.

The Habitat Agenda (UNCHS, 1996, Ch.2) defines sustainable human settlements as:

“... those in which all people, without discrimination of any kind...have equal access to housing, infrastructure, health services, education, open spaces; equal opportunity for a

¹ “ Meeting the needs of the present, without compromising the ability of future generations to meet their own needs” WCED, 1987, p.8

productive and freely chosen livelihood; and equal opportunity for personal, spiritual, religious, cultural and social development.”

It goes on to state that sustainable human settlements are those that, *inter alia*, generate a sense of citizenship and identity. People's need for community and their aspirations for more liveable neighbourhoods and settlements should guide the process of design, management and maintenance of human settlements.

Section 91 of the Habitat Agenda include the provision of safety and security as a sustainable development objective and lists the following factors that undermine community safety and lead to crime: poverty, inequality, family stress, unemployment, and absence of educational and vocational opportunities. Related factors are lack of ownership, overcrowding, a lack of recreational opportunities and the social stigma associated with a particular neighbourhood. Sustainable development leads to the creation of communities who live, work and play together within an identifiable neighbourhood on an equitable basis. An essential element of a sustainable settlement is its ability to foster social cohesion and provide security for all who live in it.

It would appear that there are various social and environmental factors that greatly influence both crime and sustainability. These are:

- poverty;
- equity and ownership;
- quality of the environment; and
- access to infrastructure, facilities and services.

Davidson (1981:59) points out that there is a wealth of international studies proving the links between crime and the type of environment from which both the offender and the victim come. As in the inner city ghettos of the USA, the housing estates in the UK, the shantytowns from South America to South East Asia, in South Africa those areas with the highest incidence of violent crime are also the poorest, with people having very little ownership of their environment. These areas have some of the highest pollution levels in the world, the quality of available housing is inferior with people living in crowded conditions, and the landscape is often bleak and harsh with little attempt at urban

greening (Fig.5). These are also the areas where infrastructure provision is haphazard and there are few functioning facilities and services within easy travelling distance.

The above-mentioned factors rarely stand in isolation and they influence each other, often compounding the negative impacts. Addressing each one on a stand-alone basis would therefore be a futile exercise.

Poverty, crime and sustainability

Poverty, whatever its causes, is one of the greatest stumbling blocks to sustainable development. It impacts on the environment, the economy and the society. Poor rural and urban communities have to prioritise survival and therefore ignore the consequences of the over-utilisation of resources, while governments in developing countries are often tempted to embrace ecologically unsound development strategies in order to achieve short term delivery or economic growth.

Faced with physical and social marginalisation and therefore little opportunity for self-improvement, many poor people turn to crime as both a survival mechanism and an entrepreneurial opportunity. This severely impacts on the economy, as businesses have to provide for extra security, insurance and expected losses by increasing prices and whole areas of cities become no-go zones for investors due to fear of crime.

Poverty sets up its victims to be both victims and perpetrators of crime, thereby eroding the trust necessary for effective social cohesion. Research done by the CSIR and the ISS (Napier, et al, 1998:13) suggests that people in South Africa who live in informal settlements, and more particularly in townships, are most likely to be victimised by both property and violent crime. Residents of these areas are also likely to be the poorest in the city and therefore unable to implement basic crime prevention strategies like target hardening (i.e. locks, burglar bars and alarm systems). This is a universal problem as pointed out by the studies of Baldwin and Bottoms (1976) and Davidson (1981) and it affects the poor in developed and developing countries alike.

In all fairness, the environmental problems of the world must not be laid at the door of the poor. The twenty per cent of the world's population who live in the developed world is

responsible for eighty per cent of the world's resource use and most of its CO₂ emissions. However, the poor's aspirations to equal the same standard of living (and thus consumption) give rise to one of the fundamental ethical dilemmas of sustainable development. Already the need for TV's, Nikes and other entrapments of the consumer society is creating a willing black market for stolen goods, and subsistence living is abandoned in the search for a living that can provide the money to pay for these consumer goods. The biggest challenge the world faces is how to solve the dilemma of poverty without increasing the already unsustainable consumption patterns of humankind.

There is also the danger that poverty and social inequity become excuses for crime (the Robin Hood syndrome). In South Africa property crime is wryly referred to as "involuntary redistribution of wealth" and shoplifting has become "affirmative shopping". While these might be bleak attempts by the "previously advantaged" to come to terms with their guilt at oppressing the "previously disadvantaged", it no longer is a simple political or racial issue. Increasingly the line is drawn between those who can afford to live according to First World standards and those who are living at the edge of survival, but aspiring towards the lifestyle of the wealthy. This is not a problem unique to South Africa. Poor people in developing countries all over the world are aspiring to the "Bold and the Beautiful" lifestyle and attempts to convince them that they must abandon their claim to an equal share of the world's resources are going to meet with severe resistance, if not large scale insurrection.

While poverty is mainly an issue that requires socio-economic solutions, the built environment can contribute to sustaining poverty levels. Many of today's cities create 'poverty traps' by placing the poor on the urban periphery at the mercy of expensive public transport systems, thereby preventing equitable access to health and educational facilities, as well as economic opportunities. Furthermore, people living in poorer areas not only have to cope with insufficient and badly-maintained infrastructure, high crime rates and a bad quality environment, but the stigma of living in certain areas often lead to discrimination when applying for jobs or financial services.

However, the question must be asked how much crime is for survival reasons, fuelled by poverty, and how much to feed aspirations and redistribute the trappings of wealth? And

while it would undoubtedly be a marvellous thing to eradicate poverty, can the environment afford it if this would mean raising the current consumption levels of the world's poor to the level enjoyed by most lower middle-class households in the USA?

Ownership issues

Ownership addresses the principles of equity and self-determination that underlie sustainable development, and, through fostering territoriality, influences crime patterns and the willingness of people to intervene in a potential crime situation.

One of the major conclusions of Baldwin and Bottoms' (1976) analysis of Sheffield is the importance of housing tenure in explaining patterns of offending. This study showed that offending is much more common in high renting areas. Crime statistics and police information point to this being the case in South Africa as well (Napier, et al, 1998:24).

In South Africa, hostels and council housing schemes are often pinpointed by police as high crime areas. These areas are characterised by poorly developed or damaged infrastructure, overcrowding, lack of privacy, and lack of ownership (Fig.6). There is *often* less crime in adjacent informal settlements or self-help housing schemes where people have invested time, money and effort into their environment. These residents are also more likely to intervene in crime incidents because of stronger communal ties and feelings of ownership (*ibid.*).

Newman (1972) saw the issue of territoriality as one of the key principles for crime prevention through environmental design. Clear delineation of boundaries between public, semi-public and private space create what Newman called 'defensible space' - spaces over which people have control and some degree of responsibility. Spaces without clear ownership quickly become derelict and increase fear of crime, even if they do not become sites of conflict. However, a balance must be kept between territoriality and respecting the common ownership of the public realm.

A prime example of unhealthy territoriality are the so-called "gated communities" (Fig.7) where fear of crime results in the spatial segregation of residential areas in terms of class or age (retirement villages). If properly managed, with manned security access and

patrols, these interventions have proved successful in terms of drastically reduced crime levels within the enclosed area. However, the main criticisms against enclosing communities are that they fragment the city and claim exclusive ownership of the public realm, as well as the idea that crime is displaced to other, more vulnerable areas.

Another example can be found in what Tiesdell and Oc (1998:643) calls fortress cities. Fortress cities entail the physical segregation, territorialisation and defence of space with express access controls determining who can and who cannot enter. Examples of fortress cities are the area nicknamed Bunker Hill in Los Angeles and the vast underground network of streets under Houston that can only be accessed by “legitimate” users. By isolating and defending particular territories and social groups, fortress cities are socially divisive and their almost military aspect increases fear of crime and fear of “the other”, thereby reducing social cohesion.

As explained earlier, ownership and territoriality is only effective as crime prevention measures in areas where there are cohesive communities with strong values. Tiesdell and Oc (1998:648) argue that the ideal public realm in a safer city is pluralist and inclusive, rather than segregated and exclusive. It must be remembered that the desire for a safer city is not limited to the affluent and more mobile citizens and the poor also have ownership of the public realm and do not deserve to be cut off from it.

Associated with ownership is self-determination. Self-determination forms an important component of sustainable development with the Habitat Agenda making a specific commitment to “*institutionalising a participatory approach to sustainable human settlement development and management, based on a continuing dialogue among all actors involved in urban development.*” (UNCHS, 1996, Ch.3) Communities that have control over and a personal stake in the development of their environment, are more inclined to intervene in issues such as crime that may be to their social and economic detriment.

Ownership and territoriality are not limited to tenure alone. Marcuse (1998:123) lists key incidents of ownership as, amongst others,

- Privilege to occupy and have shelter,
- Privilege of broader uses,

- Privilege not to have use restricted,
- Privilege of privacy, not to have others invade unit, right to exclude others, and
- Rights to residential services, utilities.

Acknowledgement of spiritual well-being and cultural diversity in development projects also creates a sense of self-determination and ownership for the intended users and promotes social sustainability (Hill, et al. 1998). This can be achieved through, for instance, allowing for traditional practices and social patterns in the design of housing developments, creating neighbourhoods with a strongly identifiable character, and providing adequate recreational facilities.

The benefit of strong territoriality and ownership stretches wider than encouraging the defending of private space. It also encourages improvements to and better maintenance of the built environment, resulting in a better quality environment.

Quality of the environment

The quality of one's environment can be negatively influenced by a variety of factors such as pollution of the air and water, badly maintained sanitary services, litter, overcrowding and hostile or bad quality buildings. People living in an environment of inferior quality are less likely to feel pride of belonging and ownership of their environment and are therefore less likely to act on both environmental problems and crime. Davidson (1981:75) also found that poor or deteriorating residential environments have been seen to be concomitant with a high rate of offending, and that often offenders coming from poorer areas with a lower quality environment are more predisposed to violent crimes (Fig.8).

The 'Broken Window' (Wilson and Kelling, 1982) model of crime generation suggests that visible signs of neighbourhood deterioration (characterised by increasing levels of 'grime') negatively affect residents' perceptions of the area, resulting in a withdrawal from community life, a reduction of social control and increased crime. Signs of physical disorder signal an environment that is out of control and lead to fear of victimisation (Painter, 1996:52).

When New York City adopted its 'Zero Tolerance' policy in 1993, targeting small offences like vandalism and littering and introducing a strong police presence on the street, it succeeded in drastically lowering the overall crime rate of the city to make it one of the safest cities in the United States today. However, critics of the Zero Tolerance policy point to increased police brutality. It is also debatable whether the police have the level of resources to enable them to maintain the intensity of a zero-tolerance approach in the longer term and across wider areas and indeed, whether the criminal justice and prison systems can cope with the additional burdens (Tiesdell and OC, 1998:651).

It is not, however, only broken windows and overflowing dustbins that need to be addressed, but also environmental factors like pollution, inadequate infrastructure and population density.

Apart from the "Crime and Grime" links, population density that is high enough to cause overcrowding is another factor contributing to both unsustainability and high crime levels. The United Nations Department for Policy Co-ordination and Sustainable Development is currently compiling a list of sustainability indicators. One of the key indicators of housing quality is the available floor area per person. This is seen as affecting living conditions and health risks. According to Roncek (quoted in Davidson, 1981:77) overcrowding is also seen as a housing criterion predisposing to crime and the number of persons per room is often more important a predictor of crime rates than population density.

Another environmental element that can cause stress and lead to crime, is certain types of high-rise buildings. Girardet (1996:80) describes these blocks as bleak and comfortless, with alienation, loneliness and stress common experiences (Fig.9). Living high up was found to be more stressful than living on the ground. He maintains that studies conducted in Britain found the incidence of psychoneurotic disorders to be three times higher among residents of multi-storeyed dwellings than among those living in low-level detached houses, and the higher up people lived the greater the likelihood of stress. The scale, long empty corridors and general lack of identity also gave rise to fear of crime, vandalism and actual crime. While the infamous Pruitt-Igoe housing project was demolished in 1972, setting a trend in the United States and Europe for the

demolition of similar housing projects, population pressure is forcing many cities in the developing world to continue building high-rise housing projects.

However, the stresses of living in a high-rise apartment are not universal and depend on other factors such as level of services and finishes, cultural characteristics, per capita living space and the wealth of the owners or tenants. In some areas such as Hong Kong and Singapore, better design and supervision and the mutual support of large extended families help people to cope more successfully (ibid.). In cities such as Istanbul, Cairo and Mumbai, these high-rise blocks are often the exclusive domain of the middle-class and rich, who buy luxurious apartments with high security features, while the poor are left to their shacks at the outskirts of the city (Fig.10). In short, it appears that it is not the height of the building as much as the quality of the built environment that makes a housing project acceptable.

In an experiment in the 1950's, controversial behavioural scientists Abraham Maslow found that "ugly" or low quality environments significantly contributed to aggression levels and feelings of depression (Maslow and Mintz, 1956). Low quality buildings not only create a hostile atmosphere, but are also not as durable or as energy efficient as buildings with higher standards of workmanship and materials, and often create health problems due to dampness and the release of volatile organic compounds (VOC's) from low cost materials. Some of these VOC's, particularly those released by vinyl flooring, can influence mental health, leading to depression and neurological disorders, which in turn can cause increased aggression and violent crime (Lövgren, E. 1998).

Lower quality environments are therefore not only environmentally unsound and unhealthy, but may also make their inhabitants vulnerable to violent crime.

Infrastructure, facilities and services

Davidson (1981:78) pointed out that many British peripheral council estates were built with inadequate social and recreational facilities. For crime, this may have two consequences. Firstly, it may lead to an amplification of delinquency among groups, particularly the youth, trapped by isolation in such estates. Secondly, offenders may

travel to the inner city areas to commit their offences, not as a purposive act, but because the inner city remains the focus of their recreational world.

The situation is similar in South Africa where the crime problem is greatest in townships and informal settlements - parts of the city and environs where infrastructure, facilities and services are either absent or poorly maintained and urban planning (if any) is inappropriate or informal (Napier, et al. 1998:4). The problem, however, stretches wider than just a lack of recreational, social and educational facilities.

In South Africa and many other developing countries, infrastructure that is largely absent or has fallen into disrepair exposes people (and particularly women) living in these areas to greater risk for the following reasons:

- services and facilities are often far from residential areas and isolated by empty land earmarked for future development;
- people have to walk long distances, often through unoccupied areas to reach sources of fuel and water; and
- long commuting distances means people often have to travel while it is dark, the absence of street lighting and poorly developed, badly located transport interchanges make these journeys dangerous (Fig.11).

It is therefore necessary to provide adequate physical infrastructure not only to prevent environmental problems like deforestation, air pollution and contamination of water sources, but also to provide safer living environments for the world's poor.

Furthermore, the provision and equitable distribution of social services, educational facilities and recreational opportunities not only addresses some of the root causes of crime, but also the demands made by the principles of sustainable development for social equity, self-reliance, improvement in quality of life and empowerment of people.

4. WHAT DOES A SAFER, SUSTAINABLE COMMUNITY LOOKS LIKE?

The question that concerns designers of the built environment is how to create the physical form that will allow the creation of sustainable and safer communities.

Napier et al (1998:43) lists the following spatial characteristics of South African cities that need to be challenged and comprehensively addressed in the drive to create safer communities:

- the spatial dislocation of the poor;
- the separation of communities;
- the rigid mono-functional zoning of land which leaves some areas deserted at night and others deserted during the day;
- the wide disparities in living levels evident in the depressed quality of life and degraded built environments experienced by many;
- the stigma attached to living in certain parts of the city;
- the effective exclusion of many city residents from the amenities and economic opportunities offered by the city;
- the inequalities reinforced by the city structure, with the poorest having to travel furthest in order to access employment and other opportunities; and
- urban sprawl resulting from the fragmented, suburban form in which open land separates pockets of development.

These very same characteristics make cities unsustainable, not just in South Africa, but everywhere. The spatial dislocation of the poor and the separation of communities leading to the exclusion of many residents from amenities and economic opportunities go against the principle of equity. The stigma attached to certain areas, the depressed quality of life and degraded built environments ignore the need for physical and emotional well-being. The mono-functional land use goes against the principles of diversity of land use and reduction of transportation needs and curbing urban sprawl is considered the first step in creating more sustainable settlements.

To achieve sustainable development of human settlements, the Habitat Agenda sees the promotion of spatial diversification and mixed use of housing and services as of crucial importance, and recommends land use patterns that minimise transport demands and save energy, protect open and green spaces, encourage appropriate urban density, and enable mixed land-use guidelines (UNCHS, 1996. Ch.3).

The Centre for Urban Transport Research in California (CUTR, 1995), Early (1993) and Walter, Arkin and Crenshaw (1992) all agree on the following guidelines for sustainable development of cities:

- mixed-use development with retail, residential and office space clustered together and within walking distance of public transport;
- higher than average residential densities;
- a variety of housing types to accommodate a cross-section of income groups;
- pedestrian-friendly commercial clusters in easily accessible locations; and
- the use of Traditional Neighbourhood (pre-automobile) planning principles to foster place making and create communities.

It would appear then that sustainable communities will have mixed land use at appropriate densities, have a diversity of inhabitants living within neighbourhoods that encourage place making and the creation of community and be structured for pedestrianisation and public transport. They would also encourage social integration, attempt to minimise the inequalities between groups in societies and address environmental conditions that could lead to the stigmatising of a neighbourhood, all factors, according to the Australian Institute of Criminology, associated with the root causes of crime and violence.

However, it is worth noting that design inventions by themselves cannot solve the crime problem or make a city sustainable. They can merely create a supportive physical environment for social and economic initiatives. Design interventions without supportive social and economic initiatives may lead to displacement of crime and environmental problems to another part of the city, instead of preventing its occurrence in general.

5. PRINCIPLES FOR SAFER AND SUSTAINABLE COMMUNITIES

From the above, certain commonalities in the design approach for safer and more sustainable communities can be isolated. These interlinked principles concern land-use, the structure of the city and distribution of population and facilities, and the quality of life made possible by the built environment.

The first is **the principle of mixed land-use** (Fig. 12). Mixed land-use increases the hours of use and therefore passive surveillance, making the area safer. It also provides optimum use of land and a decrease in automobile use and subsequently energy savings and less pollution. Furthermore, it creates a strong neighbourhood character, providing opportunity for community building. Mixed land-use is essential for the planning of the compact, multi-nucleated city that is being suggested as the ideal city form for sustainability. This is seen as an urban pattern that allows for housing, employment and other needs of a community in close proximity to one another. Such a pattern reduces the need for transportation, fosters community building, provides a safer environment and creates stable local economies.

However, mixed land use as a crime prevention measure and tool for sustainability is only effective if it encourages pedestrian and bicycle use, and discourages disruptive vehicular through traffic.

The second is **the principle of compact cities**. This deals firstly with the efficient use of land, and secondly with creating identifiable communities. It is estimated that in 20 years time the world would have run out of enough arable land to support its population – that is if everyone follows a mainly vegetarian diet. One of the reasons for this is uncontrolled urban sprawl. In the developed world urban sprawl is the result of decades of planning policies centred on the automobile and the desire by city-dwellers, who remembered the foul air of industrial cities, to live a sub-urban life – of the city but not in it. This resulted in the familiar city patterns of today: inner-city ghettos and heavily policed middle-class dormitory suburbs with enclosed shopping centres and business parks (Rogers, 1997:1/11). In the developing world this pattern also includes the sprawling shanty towns on the outskirts of the city. The remedy suggested for urban sprawl by Rogers and others is the compact city – a dense and socially diverse city where economic and social activities overlap and where communities are focused around neighbourhoods.

Rogers (1997:2/38) describes the compact city as neighbourhoods growing around centres of social and commercial activity located at public transport nodes (Fig.13). The Compact City is a network of these neighbourhoods, each with its own parks and public spaces and accommodating a diversity of overlapping private and public activities

(Fig.14). It thus reduces the city to a scale that allows the formation of communities, and strong communities are more resistant to crime.

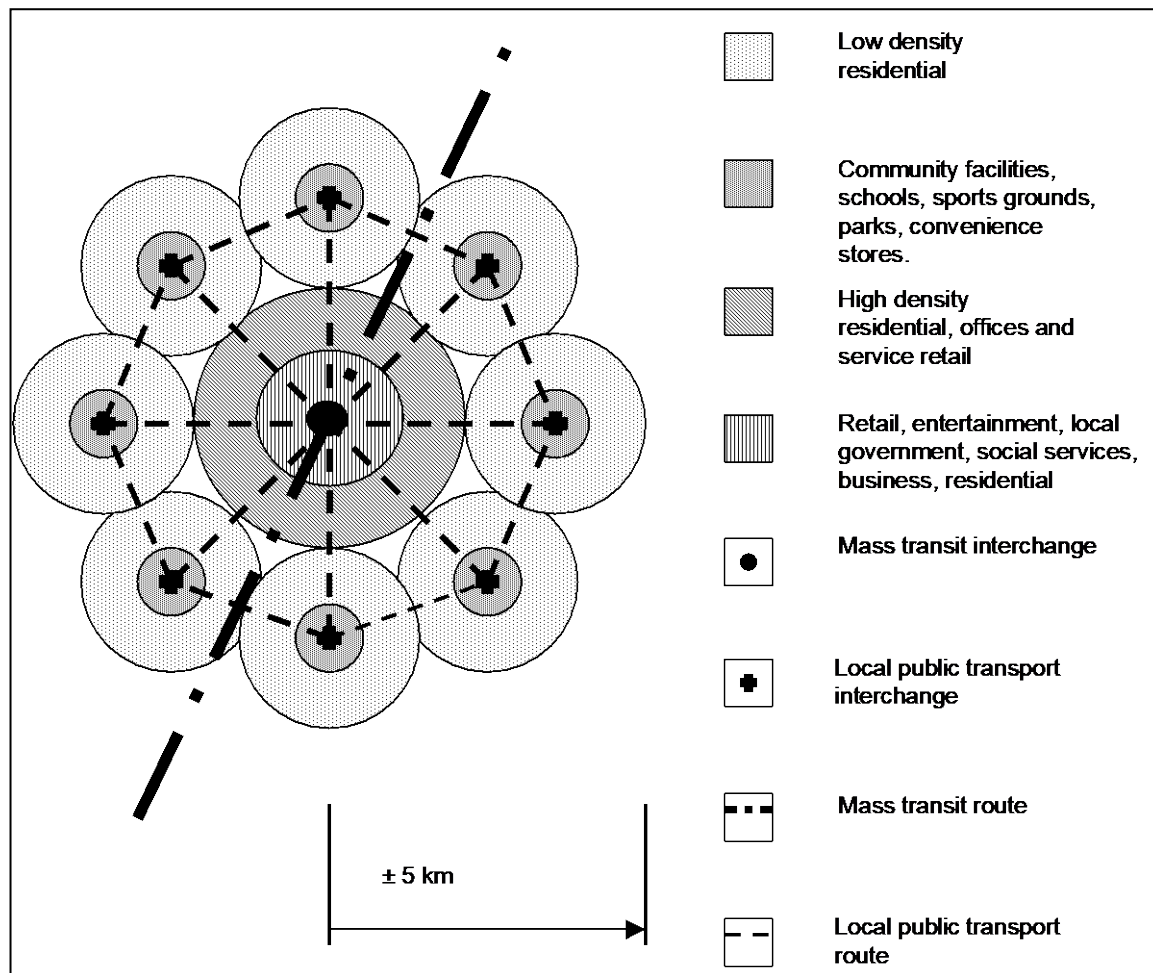


Fig.13 - Idealised diagram of a compact city neighbourhood

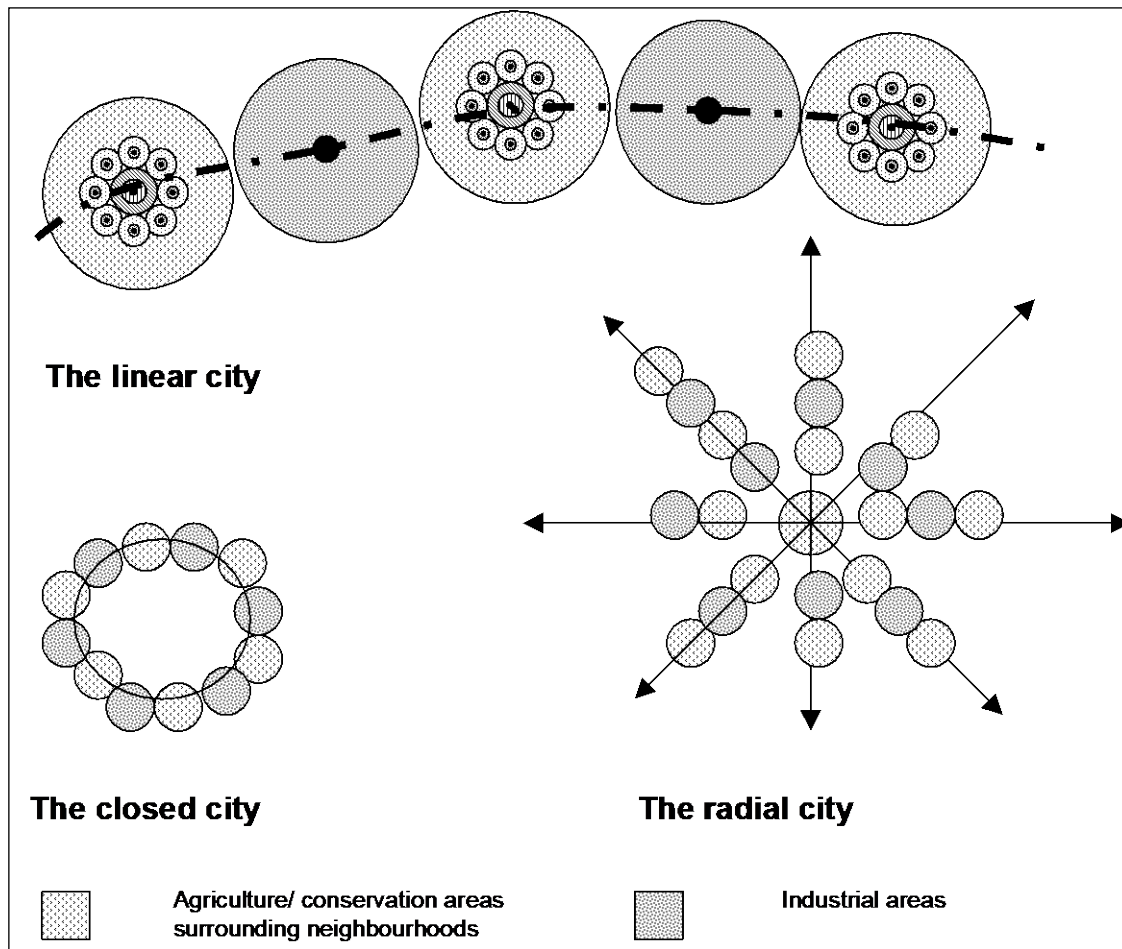


Fig.14 – Various forms of the compact city

The third is **the principle of equal distribution**. This is both equal distribution of population and of facilities. While sustainable development calls for higher population densities in order to maximise land use and reduce transport use, care should be taken to strive for optimum density and not maximum density. Overcrowding not only leads to social discontent and crime, but also to overuse of resources and breakdown of services.

In unsustainable cities, the poor are excluded from economic activities and educational facilities due to their geographical position either on the city periphery or in decaying inner cities. Community facilities like libraries, clinics, day care, schools and recreational facilities, if they do exist, are often inadequate and offer inferior service. Separating the poor from the rich in artificially striated communities heightens social disparities and

incites negative, rather than positive interactions (CUTR, 1995). Davidson (1981:121) points out that community support (social cohesion) is weakened by social segregation, since the more homogeneous the community, the narrower and more unstable its base.

A more sustainable city fabric would bring more economic activities and community facilities to those areas where the poor are, and allow for a range of housing options in each neighbourhood to accommodate all classes. This would create stronger, more diverse communities, bringing the poor closer to employment opportunities and providing the rich with another tier of people with a vested interest in keeping their neighbourhood safe.

It should be noted, however, that not everyone agrees on the sustainability of a heterogeneous community. Foster et al (1993) suggested that a significant obstacle to crime prevention in council estates in England was the instability of residential communities due in part to social heterogeneity. He is supported by studies done by Bennet and Lavrakas (1989) and Garofalo and McLeod (1989).

The fourth is **the principle of quality of life**. The quality of both the natural and the built environment, the perceptions of one's neighbourhood, the opportunities provided by the environment for self-betterment and community building, and the extent of real and perceived ownership all influence quality of life.

Areas with inferior housing and high levels of pollution and grime, not only impact on physiological health, but also on psychological health, reducing their inhabitant's sense of self-worth and their willingness to take ownership of their environment.

There is also an economic cost to be paid for badly performing environments, as property values are reduced and businesses leave for other parts of the city where the environment allows them to present a better image.

A low quality environment creates a negative image that leads to fear of crime. This often causes these areas to be stigmatised and vital economic investment being withheld or withdrawn. As unemployment rises people cannot afford to improve their

situation and their quality of life drops. Maintenance of the environment also diminishes and the area descends into a vicious spiral.

There is very little that designers can do once an area has fallen into decay. During the design phase, however, they can make sure that the materials they specify and workmanship they approve are of high quality and will not require expensive maintenance. Mixed land-use will also allow opportunity for local entrepreneurship, making the area less dependent on outside investment and giving both businesses and residents a reason for maintaining and improving the area. Adequate infrastructure, landscaping and place making using the prevalent cultural norm, all add to an environment that would improve quality of life.

6. CONCLUSION

As stated earlier, communities cannot be sustainable unless they are safe for all their residents. A shortage of both human and financial resources is often blamed for the lack of effective crime prevention and sustainable development initiatives. It should be realised that added benefits could be achieved if the broader issues of sustainable development are kept in mind when addressing crime, and vice versa. Identifying those areas where both issues can be addressed by using the same planning policies and resources, would make more resources available for the fast tracking of implementation strategies and allow more cost effective resource use. This would ultimately lead to more rapid achievement of crime prevention and sustainable development goals and a higher quality of life for all.

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