Security and the Urban Communities: Crime-prevention and New Urbanism

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Abstract

This paper explores a link between space based crime prevention strategies formulated for residential settlements and principles of 'new urbanism'.

As safe neighbourhoods enhance liveability, security is a key element that gives a sense of belonging to residents of a community. Thus, crime rates can serve as "indicators" of the cohesiveness within such urban neighbourhoods. Thus, the paper examines whether space based strategies of crime prevention could also be used as design tools to create closely knit urban neighbourhoods.

Most architectural theorists on crime prevention use the key operative term "combating anonymity". They find root causes of crime in rapid urbanisation and the deterioration of traditional social systems that supported inherent mechanisms which reduced crime. With the erosion of such mechanisms they find the dissolution of neighbourhoods and resultant social isolation. As a remedy they prescribe countering such 'isolation' by structuring physical spaces in urban habitats in a manner that could eradicate anonymity from neighbourhoods.

The paper observes similarities between such approaches and the doctrine of "new urbanism" to create cohesive neighbourhoods. It uses local examples to explore how 'neighbourhoods featuring characters of New-Urbanism' ensure low levels of crime. Thus, an exploration is made on 'common principles' shared by the two space based approaches of: crime prevention and New-Urbanism.

Keywords:
Crime prevention through environmental design, spatial structuring, neighbourhood cohesion, New-Urbanism

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Introduction:

Space based crime prevention strategies formulated since the 1970s were heavily influenced by architects. Oscar Newman[70] was such a pioneer who studied urban housing estates and residential neighbourhoods of USA. He advocated the principle of 'Defensibility' which prescribes spatial restructuring of residential neighbourhoods to enhance 'natural access control' and 'natural surveillance' of the broader environment and the target buildings. Tactical developments of this broader strategic principle were followed by authors such as Barry Poyner[71], Timothy Crowe[72] etc. who prescribe how these concepts could be adopted to residential environments in terms of form, layout etc. Alice Coleman[73] observed similar connections between crime and built space in UK, identifying lack of natural surveillance on spaces such as 'double loaded corridors' in multi storied housing apartments. While studying crime prevention strategies based on physical space, one must acknowledge the contributions by criminologist Ray Geoffrey[74] who published "*Crime Prevention Through Environmental Design*" an year before Newman published "*Defensible Space: crime prevention through urban design*". Geoffrey's contribution is more broad based that it spans beyond the 'physical environment' but also addresses 'social environment' and the 'legal environment' within which the crimes are committed and his later writings embrace the 'psychological environment' of the criminal who commits the offence. While the prescriptive architectural strategies on crime prevention received more attention, the broader theoretical contribution made by Geoffrey influenced most space based theories.

While space based crime preventive measures involve manipulation of physical space, their ultimate objective is to empower the residential community itself to deter crime, aided by the newly formulated field of engagement which now plays in their own favour. Thus, reinforcing the social fabric and the neighbourhood spirit among residents is central to all such architectural theories such as Newman's.

In discovering the crime fighting role of the built fabric by enhancing communal spirit, Jane Jacobs[75] advocates the need for cities to develop a social framework in which the city dwellers become natural guardians of their own neighbourhood. She proposes how to ensure their presence in the streets throughout the day so that the neighbourhood is ensured of its 'watch dogs' round the clock. A chronological flow of such ideas of proponents on space based crime prevention reveals Jane Jacobs among the first such proponents and it is obvious that such works influenced these strategists who prescribed manipulating physical space to harness crime fighting propensity of the residents. As the above cluster of authors depend on the strength of neighbourhoods to fight crime, the advocacies of Jacobs against urban sprawl and to increase urban diversity through mixed use neighbourhoods show concurrence in their views which is also common to proponents of New Urbanism.

While propositions on New Urbanism advocate high densities of vibrant human habitations the crime prevention doctrines do not oppose such densities as long as they could be made into vibrant social networks. Thus, while the proliferation of urban crime is attributed to intense urban densities, the space based crime prevention doctrines not directly opposing such densities

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[70] Newman O. (1972). pp.3
[71] Poyner, B . (1983).
[72] Crowe, T. (2000).
[73] Coleman, A. (1985). pp.15, 39
[74] Geoffrey, C. R. (1971 & 1977).
[75] Jacobs, J. (1962). pp. 52, 66, 48

appears to be a paradox. To resolve this, one may observe that the most prominent space based crime prevention theory of Newman is built around a hierarchical structuring of space that could be also used to give order for high densities. Thus, the above noted hierarchical structure and the related theory appears in reality a mechanism to manage high human densities while retaining such densities. This is further confirmed by the spatial strategies proposed by the proponent of New Urbanism, Jan Gehl[76] who uses the same structuring of space. Gehl proposes how to use structuring not only as an "ordering device" to deal with densities but also to ensure vibrant social interaction among residents of housing communities. Gehl describes how high density residential settlements could be articulated with a 'physical structure' that could support an intended 'social structure' which ensures rich social life.

Thus, the term 'structure' and the architectural 'structuring of space' appears to be a continuous, all-embracing undercurrent that runs through the evolution of architectural thought in the 20th century. This preoccupation with the 'structure' could be traced back to the thoughts of CIAM architects such as Aldo Van Eyck and Herman Hertzberger and their 'Team-10' associations which observed "built structures corresponding in form to social structures" in their investigation of "interrelationships between social and built structures".[77] The involvement of Oscar Newman in such discussions on the ideal 'structuralism', and their influence upon him[78] may be critical. This preoccupation of structuralism could be related to how 'hierarchical structuring of space' became central to his theory of enhancing 'defensibility' in residential neighbourhoods to prevent crime. The same 'structuring of space' also becomes associated with new urbanism through the doctrines of architects such as Gehl. This suggests that the ideals of 'structuralism' provided essential tools in the spatial articulations of New Urbanism and also forged a strong connection between space based crime prevention theories and New Urbanism.

The Ideals of New Urbanism

Urbanity features human agglomerations in pursuit of collective solutions to common aspirations that include security, economic opportunities, physical and social infrastructure etc. Density of habitations is an inherent characteristic of urbanity. It facilitates economization of urban infrastructure as it helps to concentrate the deployment of physical resources as well as the concentration of public transportation networks that discourage individual vehicle usage. However, the contemporary trends of urban development that give rise to "urban sprawl" through the development of suburbs destroy this nature of urban living. The movement of "New Urbanism" that originated in 1980s is a reaction to this trend that threatens the survival of distinct local community cultures that depend on the primary character of urbanity.

New Urbanism is an argument for 'high density development' as opposed to the "sprawling megalopolis"[79] that characterizes contemporary urbanization. The spread of a low density urban development over a vast area necessitates the individual vehicle usage, increases the demand for transport related land-use and also disrupts the urban culture. Thus, New Urbanism advocates mixed-use neighbourhoods as in European cities and encourages "walk-able" neighbourhoods where vehicle usage is discouraged. Proponents of New Urbanism favour traditional neighbourhood design. They share the views of Lewis Mumford who observes

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[76] Gehl, J. (1987).pp. 59, 61.

[77] Structuralism –http.www. Wikipedia.com. (web reference)

[78]Newman. O (ed.), *CIAM '59 in Otterlo*, Stuttgart-London-New York 1961. The Otterlo congres is considered the official start of the structuralist movement. - (web reference)

[79] Lewis Mumford uses this term to designate the modern city by comparing it with the Roman city that sprawled over a large area. Such ideas are reflected in his book, *The City in History*.(1961)

medieval city design as a suitable basis for urban development and advocate a pedestrian oriented growth of urban habitations.

Thus, the ideals of New Urbanism in the urban context may only be practiced in mixed developments of high density that will reduce the dependence of residents on the automobile and create sustainable urban neighbourhoods. However, space based doctrines of crime prevention in the 1970s observed high densities related to urbanity as a factor that induced high urban crime rates.

Dealing with High Densities and Strategies of Crime Prevention

Scholars focused on the relationship between urban densities and the resultant breach of the social fabric saw that high-density arrangements deny casual relationships. The adverse effect of unmanaged density is the compromise of 'privacy' that is the key ingredient of healthy urban living as pointed out by Jane Jacobs. She explains the value of "informal relationships"[80] between urban dwellers that sustain a degree of interaction which does not allow the intrusion into the private life of each other. She explains this as a 'jealously guarded' virtue of urban life as opposed to rural setting where one has to be sharing much or nothing[81]. Thus, the lack of communal spirit and the dissolution of neighbourhoods which lead to social isolation are seen as a direct result of unmanaged or mismanaged densities of urban population. It is in the same spirit that scholars attribute to the densities, more crime encouraging factors such as: the deterioration of the traditional social systems by trends such as the dominance of 'nuclear family' over the 'extended family, and the erosion of traditional mechanisms that reduce crime such as a "web of reputation, gossip, approval, disapproval and sanctions"[82]. Thus most scholars in the 70s analyzing urban crime saw high human densities related to urbanization resulting in a degree of anonymity that helped in the proliferation of crime.

Oscar Newman claimed such high densities and the resultant "anonymity" as the primary culprit among the causes of urban crime[83]. He noted that community structure fails to develop in these living arrangements as people know few other residents even by sight. Thus, criminals feel free in knowing that they will not be identified. As scholars of crime prevention saw anonymity among dwellers of such residential neighbourhoods being deprived of the formation of social – cohesion, they observed how residents do not feel that they have the "right to question" any outsider, nor do they have any faith in " street support"[84] in situations they need to react[85]. Apart from expecting "street support" from the "insiders" against a potential offender who is necessarily an "outsider", the factor of anonymity resulting from high densities would prevent residents from identifying "outsiders" from the "insiders".

Among characteristics of the built environment that encourage crime, the three main aspects observed by Newman are: Anonymity, lack of mutual surveillance and the presence of alternative escape routes.[86] Against these evils, the concept of 'defensibility' is generated. It empowers the resident to effectively fight crime, aided by manipulations to the physical space around him.

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[80] Jacobs, J. (1961). pp. 69
[81] Ibid, pp. 76
[82] Ibid, pp.45
[83] Newman, O. cited by Coleman, A (1985), pp.14
[84] Jacobs, J. (1961), pp. 48, 66; Also Poyner, B (1983), pp 15
[85] Coleman, A (1985), pp.14
[86] Newman, O. cited by Coleman, A (1985), pp.14

Newman defines defensible space as "a residential environment whose physical characteristics—building layout and site plan—function to allow inhabitants themselves to become key agents in ensuring their security."[87] Thus, it is an assurance or indication of proprioterness of the owner's right to defend a certain space against outside intrusion. In physical space, the above is achieved by creating semi-public areas in the public space, immediately adjacent to the private space, where the owners feel that they have the right to question others and outsiders feel that they are liable to be questioned.

The process of enhancing defensibility involves conscious structuring of the physical space of the residential environment. As a primary move, 'territoriality' is to be encouraged[88] by territorial markers that include: zoning, layout, expression of built form and clear demarcation of boundaries. Following the above, a clear demarcation is prescribed between public, private and intermediate spaces[89]. This is to facilitate the users of the space to identify their own domains or the spaces they have the right to be in. In this manner, a hierarchy of defensible spaces are to be formed, thus creating a series of intermediate spaces or transitional spaces through which people approaching private spaces are filtered. In formulating such a structured spatial progression the architect has to also ensure that the resident is in command of a clear visual coverage of his own territory to check any approach by a potential offender[90]. As a final but critical step in the above process, it is mandatory that open communication to the neighbourhood is ensured. This communication is defined in terms of the layout of spaces to enhance social cohesion by providing visual exposure of the residents' own domain to the neighbourhood. Such 'communication' is critical as counteraction to crime depends on actor's propriotorship of the domain as well as the support he is assured from the immediate locality if needed. The neighbourhood detecting a possible intrusion and acting upon such intrusion on its own initiative is also facilitated by such visual communication[91]. Thus the community being a 'watch-dog' in preventing crime is central to the creation of 'defensible space'.

In this regard, Jacobs prescribes to formulate the optimum mix of land uses and house types to generate a '24 hour community'. It is to ensure that people who are the 'eyes on the street' are encouraged or given a reason to be in the street irrespective of the time of day. To achieve this she proposes to exploit beneficial combinations of land use such as retail shops and houses that complement each other. This is because shops are vulnerable to burglary during night when they are closed for business and houses are mainly occupied at night when occupants come home after work. Thus a mix of both ensures each building type is under surveillance by users of the other. Another such strategy proposed by Poyner is to change the room composition of housing units to accommodate a mix of young adults, children and retired people to maintain a minimum number of occupants at any given time.[92]

Thus, a residential neighbourhood is defensible only if the residents adopt an active crime preventive role aided by good design and Newman defines defensible space as a 'sociophysical phenomenon' in which both society and physical elements are parts of its success.[93]   A residential development is safer when residents feel a sense of ownership and responsibility for that community. According to Newman "the criminal is isolated because his turf is removed"

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[87] Newman, O. *Design Guidelines for Creating Defensible Space (web reference)*
[88] Coleman, A. (1985), pp. 15; Poyner, B. (1983), pp.27
[89] Jacobs, J. (1961), pp. 45
[90] Coleman, A. (1985), pp. 15
[91] Jacobs, J. (1961), pp.45; Poyner, B. (1983), pp.8
[92] Jacobs, Jane (1961), pp.52; Poyner, B. (1983), pp.30
[93] Newman, Oscar. *Design Guidelines for Creating Defensible Space (web reference)*

when each space in a residential area is owned or controlled by responsible residents. An intruder who would sense a watchful community does not feel secure to commit an offence. Thus, crime is controlled through environmental design.

Thus, enhancing territoriality among residents and facilitating natural surveillance has been key elements in space based crime prevention doctrines of '70s. The former is often called as 'natural access control' and it is strongly rooted in natural territorial reinforcement.

Reinforcement of Territoriality and Spatial Structuring:

Territorial reinforcement enhances behavioural control through clear definition of space and increasing the sense of ownership of residents. Thus, with a clear demarcation of private space they are encouraged to challenge intruders. This sense of owned space creates an environment where "intruders" can be easily identified. Natural territorial reinforcement is carried out by defining "public, semi-public, semi-private and private space" through functional and symbolic built elements[94] such as: the overall massing of the building, fences, paved areas, portals, street furniture, light fixtures and landscape to express ownership.

The resident feels safe when territorial reinforcement measures are adopted and the potential offender feels at risk of apprehension or violent confrontation. When people take the initiative to actively protect their neighbourhood, the criminal is deterred from committing an offence.[95] According to Newman, territorialism is 'the strongest deterrent to criminal activity' in residential neighbourhoods.[96] Physical features are used to create a sense of territorialism in community members which will ensure the safety of residents from crime. Defensible space is enforced by a hierarchy of community spaces that sequentially reduce the number of residents sharing these common spaces as they move from 'public' to more 'private' areas.[97] This mainly counteracts anonymity as the number of people sharing the same place becomes larger the anonymity becomes higher, which reduces defensibility.[98]

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[94] Newman, O.(1972), pp.3
[95] Poyner, B. (1983), pp.33
[96] Newman, O. (1972), pp.3
[97] Newman, O (1972); quoted Coleman. A (1985), pp.15
[98] Coleman, A (1985), pp.15

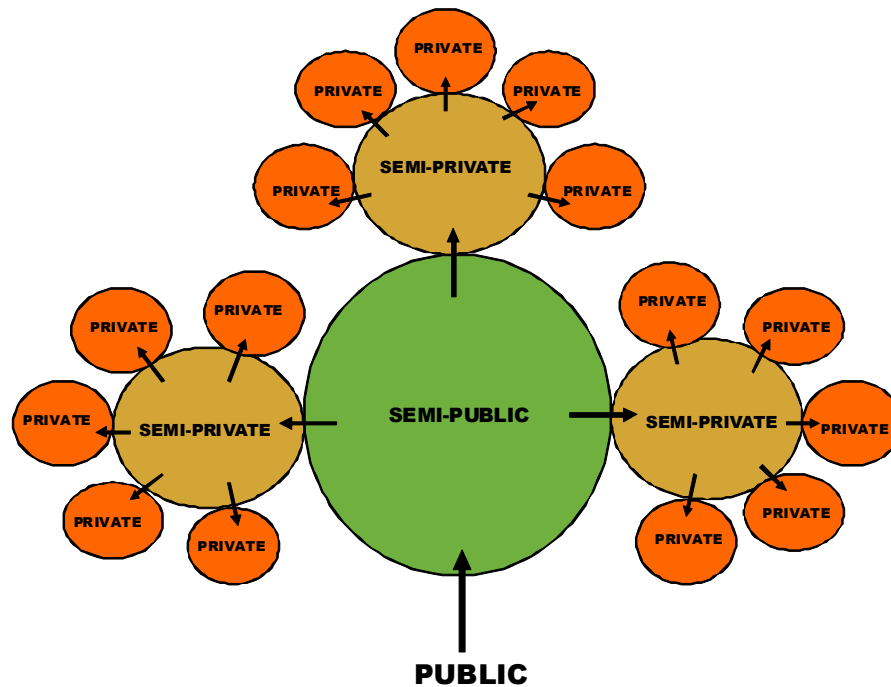This hierarchy of communal spaces is graphically defined by Newman as follows.

Fig. 1: Hierarchical Structuring of Communal Spaces Prescribed by Newman

It is with this structuring of space that we see a clear connection between the authors who advocate space based strategies of crime prevention and the proponents of New Urbanism. Jan Gehl's usage of the same identical structure[99] to create harmonious communities in housing developments reveal how this 'hierarchical structuring of space' can create neighbourhood cohesion among high density residential environments rather than being a mere tactical tool to filter individuals through a series of defined spaces that functionally facilitate security oriented screening.

Gehl argues how possibilities of social interaction among residents of a community could be impeded or facilitated by the 'physical framework'[100]. He further notes how planners should carefully consider "both social and physical structure" in order to get the social process and the physical structure to work together. The Tinggarden Project completed by him in 1978 consisting of 80 rental houses in which the building complex is divided into 6 groups of approximately 15 individual housing units, each with a communal building. In addition a large community centre had been included for the entire complex. This reflects 'hierarchical division' as discussed: 'dwelling'- 'dwelling group'- 'housing complex'- 'city', which Gehl claims to strengthen the community in the individual housing groups as well as the whole development. He explains how the physical structure of the building complex reflects and supports the desired social structure where the hierarchy of social groupings is reflected by a hierarchy of communal spaces. Residents are organized around two communal round two communal spaces, the square and the communal house; and finally the entire residential complex is noted to be built around a public

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[99] Gehl, J. (1987), pp.61
[100] Ibid, pp.57

street in which a large community centre is located. He observes how members of the residential group meet in the group square and the residents of the entire neighbourhood meet in the main street.[101]

Gehl notes the connection between 'hierarchical structuring of space' and 'territories', 'security' and 'sense of belonging'. He prescribes the establishment of a social structure and corresponding physical structure with communal spaces at various levels to permit movement from more private to the gradually more public spaces which give a greater feeling of security and a stronger sense of belonging to the areas outside the private residence. Through such spatial structuring, the residential environment is extended well beyond the actual dwelling; resulting in a greater use of public space as young children are allowed to play outdoors. This graduation of outdoor spaces with semi public, intimate and familiar spaces nearest the residences makes it possible to know people in the area better and outdoor spaces belonging to the residential area results in a greater degree of surveillance and collective responsibility for the whole neighbourhood. Thus, public space becomes part of the residential habitat and is protected against crime and vandalism. Further, Gehl notes when residential areas are sub-divided into smaller, better defined units as a link in more comprehensive hierarchical systems, residents in these small units are able to recognize themselves for group activities and to solve mutual problems. He rejects large scales and imprecisely defined public areas without clarity that create "no-man's land". A gentle transition between various categories of public spaces is prescribed where spatial transitions should be indicated physically, while demarcations allow visual contacts among residents.[102]

Structuring to for Security and Structuring for Social Interaction

Structuring of space to ensure security includes physical strategies to reduce "through traffic" within the neighbourhood by closing one end of the street. Thus, access is controled through symbolic expressions using elements such as: arches, portals etc. and giving inhabitants a feeling of control such as living on your own turf.[103]

Newman notes how residential areas should be subdivided into smaller entities of families to create a defensible community. This enhances control as responsibility for the locality is better assigned in smaller groups of families as opposed to a larger community of anonymous characters. Smaller groups more frequently use an area assigned to them actively. The resultant feeling of ownership encourages them to protect the communal space as opposed to larger groups in which no one has control over the communal space. Through such sub-division or structuring Newman expects people to feel comfortable questioning potential offenders in the neighbourhood and feel obligated to do so. Also intruders should sense the existence of a watchful neighbourhood that would observe them, confront them and resist their escape. Thus he proposes to develop a communal area which allows residents to "extend the realm of their homes and the zone of felt responsibility." Structuring of spatial progression after a common entry is a tactical approach in defensible design in which residents feel responsible to protect all levels of the hierarchically structured communal spaces from public-street onwards. Thus, defensible space would give the residents a community control of public spaces so that they would protect these spaces from crime as they protect their own homes.[104]

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[101] Ibid, pp.59
[102] Ibid, pp. 61
[103] Newman, O. (1972), pp.131; Also refer: Poyner, B. (1983), pp. 18
[104] Newman, O; quoted by Coleman (1985), pp.15 ; Also refer: Poyner, B. (1983), pp.33

The above indicates Newman's doctrine to fight crime by the structuring public spaces in a hierarchical order as it helps to combat anonymity in a dense agglomeration of people. New Urbanism also prescribes a gradation of public spaces to gradually reduce the number of people who share them. It prescribes the close integration of public spaces of vast and intimate scale as in the "traditional European city model" advocated by Leon Krier. Such spatial structure may generate lifestyles common to European cities where public spaces are full of functional and symbolic value as venues of: assembly, congregation, conversation, festivities and music etc.

Gehl, an advocate of New Urbanism practices 'spatial structuring' in residential projects. He structures the community around a hierarchy of communal spaces that coincide with the intended social structure and declares that "the major function of the communal space is to provide an arena for life between buildings". He claims good neighbourhood design has clear social and corresponding physical divisions and condemns diffused sub-divisions. In settlements with no clear divisions in the physical structure, he notes how space does not indicate where and how "communal activities" can take place. Thus undefined physical structure is seen as a tangible obstacle to 'life between buildings'. Gehl observes public spaces and life between buildings connected with social processes and group sizes, as 'meeting opportunities' at various levels develop and maintain the social processes. He notes degrees of privacy attached to each space in hierarchical systems of communal spaces. Through the relationship of these spaces to various social groups, one may define varying degrees to which different spaces are public or private in a gradient of: 'public', 'semi public', 'semi private' and 'Private'. Thus an 'undefined city (spatial) structure' denies the existence of a 'middle ground' or a transition between private and very public territory, which denies the opportunity for social processes and interaction to happen at each level.[105] Finally, this advocate of New Urbanism reveals the objective attempted through his structuring of space as follows: "Architects and Planners can affect the possibilities for meeting, seeing and hearing people".[106] This is achieved by enabling various levels of human contacts at different hierarchical levels of communal spaces which develop into other meaningful levels of social relationships.

A Case Study of Spatial Structuring in Application

While ensuring neighbourhood cohesion, hierarchical structuring of space and the sequential ordering of communal spaces accordingly help in the prevention of crime in residential neighbourhoods. In testing the above, the author cites from his own research carried out in the city of Colombo, using empirical crime data obtained from the Sri Lanka Police Department. The segment of research presented in this paper is only one example from a wide range of neighbourhoods studied. It concentrates on two housing schemes located adjacent to one another but features sharply contrasting crime rates[107].

The city of Colombo is administratively divided into areas of police jurisdiction and these two housing schemes are within the Borella Police Division. During the research, the crime rates of Borella Police Division depicted in their "Annual Crime Maps" of years 1995 and 1996 were instrumental in identifying the two adjacent housing schemes featuring contrasting crime rates. It was observed that the Manning Town housing scheme reported a high crime rate while the adjacent Elvitigala housing scheme reported no crime records within these two years.

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[105] Gehl, J (1987), pp. 59-61
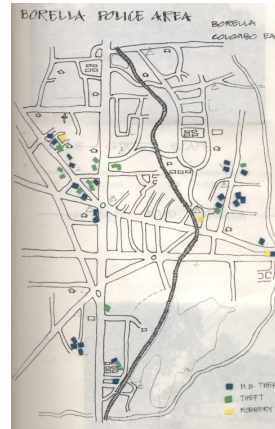[106] Ibid, p.15
[107] Dharmatilleke, S. (1996)

Fig. 2: Borella Police Division Crime Maps. The coloured map filters off other crime types to only depict:
Theft, House break and theft and Robbery

During 1995, the Manning Town housing scheme reported 6 crimes in the Borella Police "Grave Crimes Record". Two of these crimes involved breaking and entry into units while four of them were related to parked vehicles (GCR Nos. 57, 84, 202, 259, 80, and 152). During this period no crimes were reported from the adjoining Elvitigala housing scheme.

The Negative Results of Bad Spatial Structuring

The residents of the Manning Town housing scheme which reported a high rate of crime were frequently victimized by cases of theft. Some of these offences were committed in the car parks and cases of house units being burgled were reported mainly while the residents were away. An analysis of the built space and how it was structured revealed a close connection of the overall layout of the scheme and the crime rates. As depicted in Fig.3, the residential blocks were introverted buildings that trapped its own apartment units around a central space. However, these units had very limited visual contact with their own internal road network. Further, these internal roads were arranged in a manner that allowed an unlimited amount of 'through-traffic' around the housing blocks so that any outsider had the right to be near any housing block and the owners could not develop the confidence to question any potential offender. This situation appeared to be worsened by the scheme and its internal road network being located juxtaposed with a main arterial road and another public road on its flank which resulted in total outsiders using internal roads to find short-cuts through the scheme. This prevented any hierarchical structuring of the circulation routes or a gradual gradation of the approach ways or communal spaces. Such lack of structuring of communal spaces had prevented the formation of a broader neighbourhood within the scheme as most residents could not identify residents from outsiders. This lack of 'spatial structuring' had resulted in an obvious absence of 'defensibility' among residents which was demonstrated in the high rate of crime.
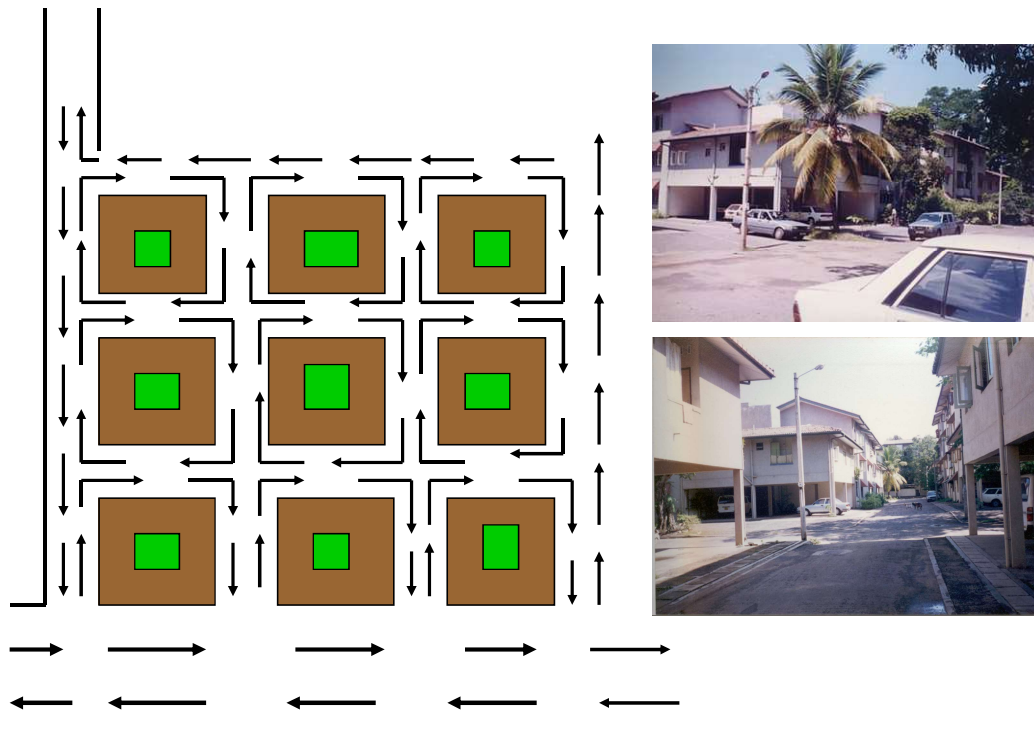
Fig. 3: Manning Town Housing scheme. The housing blocks are marked in brown and arrows indicate the direction of vehicular traffic. Also, note the directly adjacent side road and the main arterial road on the left flank and below.

Another weakness in the structuring of space in this housing scheme was the location of intermediary social spaces and their visual connection with the common spaces where neighbours are present in numbers. The intermediary transitional spaces sharing mutual surveillance with each other is an aspect that enhances security as noted by authors such as Newman and Poyner. However, as it is evident in the images, the facades of the residential blocks are dominated by solids rather than voids. This indicates how common staircases and landings in these blocks are located towards the centre of the built-mass which prevents them from having any visual connection with the main public spaces where neighbours may be present. This had reportedly made the staircases unsafe for residents, as most house wives interviewed during the research stated that they fear to use these claustrophobically enclosed stairs that terminate at a dark corner of the car-park area without being accompanied by someone (please see Fig.4). This 'fear psychosis' had prevented the usage of common spaces by residents during day time when most working males are not present. This had retarded the formation of vibrant social interactions among neighbours which itself is a factor that prevents crime in neighbourhoods by discouraging the presence of potential offenders. This demonstrates how structuring of spaces could directly affect behaviour patterns of the users of urban space and their communal relationships within the locality that either enhance or retard the crime preventive propensities of a neighbourhood.

Fig. 4: The staircase and its hidden location that prevents surveillance from the neighbourhood.

The Positive Results of Good Spatial Structuring

The adjacent housing scheme which featured a significantly low rate of crime (no crimes were reported in 1995 and 1996) featured different characteristics in its layout. As indicated in Fig.5, it had a retail commercial block as a buffer from the main arterial road and this is marked in light green in Fig.5. This is positive spatial structuring as total strangers who use the main arterial road are discouraged to use the linear roadway between the commercial blocks and the residential blocks. Thus it becomes a 'semi-public' space which can be only shared by the neighbourhood of this residential complex.

Each two housing blocks were placed in a manner that ensured a 'return-loop' access route for their approach which also trapped a small court yard in their middle. As seen in the sketch and the images, these court yards were grass patches that facilitated communal activities of the two related blocks and became a community spaces around which the residents parked their cars. Thus, they became semi-private spaces over which the residents of the flanking blocks could exercise their defensibility. This hierarchical gradation of circulation and communal spaces had obviously helped the residents of this housing scheme to develop defensibility over the communal spaces. It shows that the structuring of spaces in a hierarchical order had enhanced their territoriality and ensured a cohesive neighbourhood.
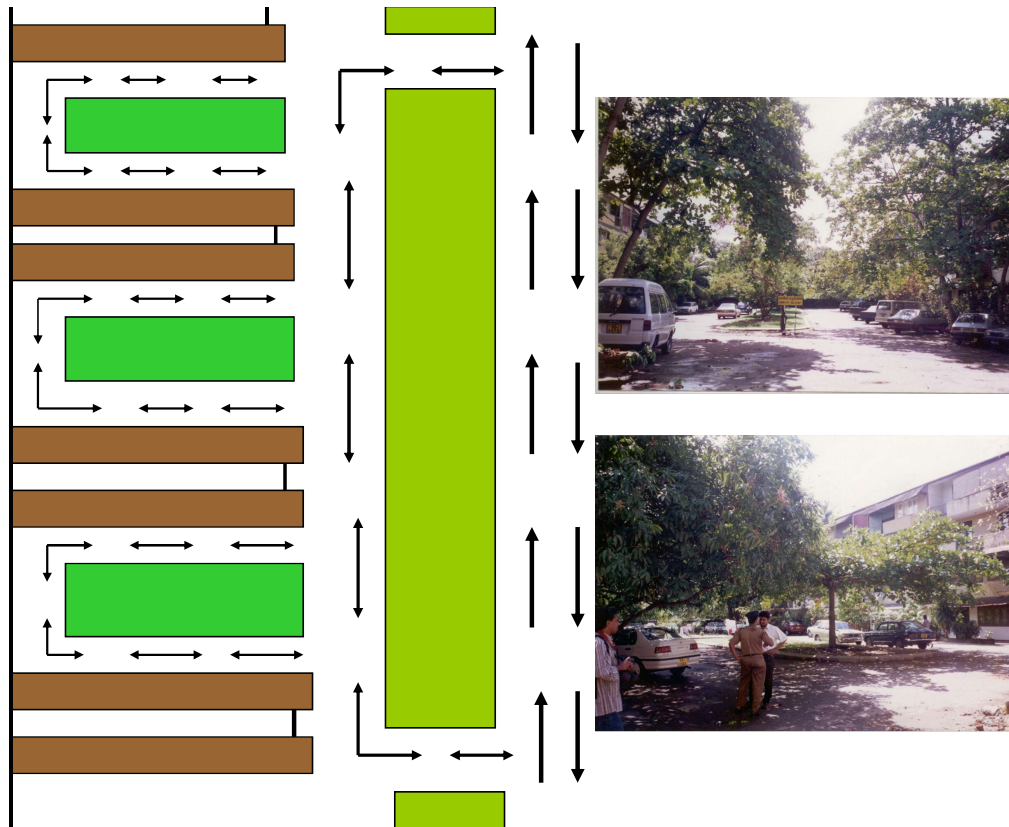
Fig. 5**:** Elvitigala Housing Scheme. The housing blocks are marked in brown. The arrows indicate vehicular circulation and return-loop arrangements around courts yards. The arterial road is located on the extreme right flank.

Another aspect in this scheme is the structuring of semi-private transitional spaces in relation to the Public or semi-public spaces and their visual relationship. The images in Fig.5 indicate how voids dominate the facades that face the semi-private green space trapped by the return loop arrangement. However, a closer look at these facades in Fig.6 reveals how all front entrances of apartments and their windows face the semi-private green spaces between residential blocks. Further, staircases and the landings which serve as common access pints for two apartment units at each level also face this green space through cement grills. Thus, the stair case and the landings that serve two stacks of residential units have also become further division in the hierarchical structuring of space between the semi-private green space and the private residential units while visually connecting them to enhance mutual surveillance.

Fig. 6: Elvitigala Housing scheme. The stair case that serves two adjacent residential stacks and its landings are located behind the red cement grill which ensures visual connectivity with the semi-private green space below.

To further demonstrate how the hierarchical structuring of communal spaces help to prevent crime and also create intimate neighbourhoods prescribed in New Urbanism another example from the above noted research may be focused upon. This example is the Soyza Pura housing scheme located in a suburb south of Colombo. It features a 'common access road stretch' for each two housing blocks (less than 50 meters in length) while preventing through traffic within this stretch of entrance road. Thus, the stretch of access road becomes a semi-private space for the two blocks flanking it from both sides. The image in Fig.7 shows how this arrangement has fostered a vibrant communal spirit which explains the strikingly low amount of crime reported here in contrast to the surrounding neighbourhoods.

Fig. 7: Soyza Pura housing scheme. The vibrant social life generated by the dead-end approach road stretch that prevented through traffic appears to explain the low crime rates.

In 1995 during the research, the Mt. Lavinia Police records indicated only one crime committed within this housing complex. The author examined this isolated case and found that it was in a peripheral block that did not conform to the general layout of the scheme. The façades in this housing scheme also reveal the same characteristics as the Elvitigala scheme. The common stairs and landings that serve as entry points to each two adjacent apartments in a vertical stack become semi-private spaces. These spaces share direct mutual surveillance with the semi-public street segment below which is the main communal space of the two housing blocks (Please see Fig.8). This hierarchical structuring of communal spaces with a descending degree of sharing has immensely helped to enhance the neighbourhood cohesion of this housing scheme and to reduce its crime rates.
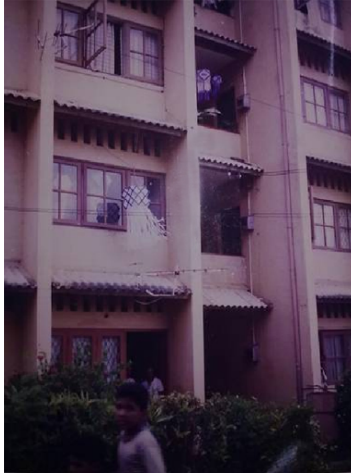

Fig. 8: The stack of stair case landings at Soyza Pura that serve two adjacent residential stacks are directly exposed to view from the public space below.

Recommendations for Common Residential Situations

Above findings on low rise multi-storied housing developments demonstrate conscious structuring of space retarding their vulnerability to opportunistic crime. Such structuring of space could also be adopted in high-rise apartment complexes where the staircases are less used with the dependence on lifts.

Most middle-income high-rise apartments are 'slab blocks' with a common corridor located along the front façade of residential units. While this corridor offers a potential semi-private social space for all residents inhabiting the same floor, in most cases the doors and windows of apartments facing this corridor are kept closed. This is due to the privacy of such units being violated by close proximity to the circulation route. This resonates with the views of Jane Jacobs on 'sharing much or nothing' in non-urban contexts.

One solution for this issue is to alter the section to prevent corridor-users from having direct visibility into private spaces of residential units. This could be achieved by lowering the level of corridors as noted in Fig.9 so that the eye level of the corridor-user is below the window sill. Thus, residents may keep the windows open so that the corridor becomes a semi-private space adjacent to the house unit over which the dweller enjoys greater defensibility.
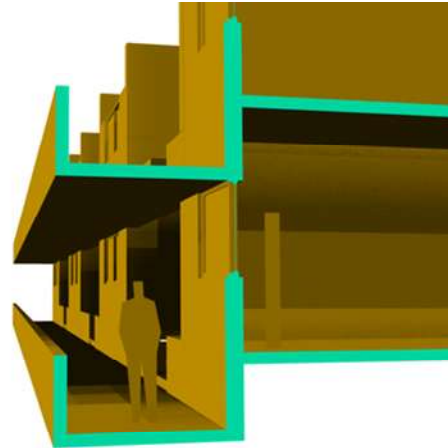
Fig. 9: A space based strategy that could ensure greater defensibility over the corridors.

Further, intermediary transitional spaces could be created with the unit entrances that resemble 'verandas' in tropical houses so that they supplement the above defensibility while encouraging vibrant social interaction among dwellers inhabiting the same level. As indicated in Fig.10 this added space, which is relatively neutral than the private apartment interior may encourage corridor-users to stop and engage in lively discussions with the residents of that unit, turning the corridor into a vibrant communal space.

Fig. 10: Incorporating a transitional space to ensure greater interaction along the corridors.

The above strategy may also enhance defensibility of the residential unit by introducing an additional intermediary space between the 'semi-private' corridor and the apartment entrance. This enhances the 'strategic depth' of the house unit as a target since a potential offender has to cross an additional defensible space in reaching his target while being visually exposed to a socially utilised semi-private corridor space. Further, if residential blocks could be positioned in the overall layout in a manner that the above corridors are visually exposed to a common semi-public space at ground level, the sense of defensibility among unit dwellers could increase dramatically.

Conclusion

The structuring of space had played a critical role in an evolutionary line of architectural thought that developed through the 21st century. Structuralism, inspired by the team-10 approach had identified the principle "structure and coincidence" which could be applied to housing schemes by interrelating the structuring of physical space and its communal spaces with the intended social structure. Being redefined in the '70s as a basis to develop crime preventive strategies, now it is used to deal with high density developments prescribed by New Urbanism.

Architects have been preoccupied with the issue of how to encourage rich human interaction among the dwellers of high density urban environments through manipulating built space[108]. Accordingly New Urbanism prescribes high-density developments to provide a mix of civic activities within a sustainable neighbourhood[109]. This will reduce the dependence on automobiles and create sustainable and pedestrian oriented urban neighbourhoods that contain public spaces which are structured in a hierarchical gradation to ensure vibrant social interaction. These well designed 'urban housing' in contrast to suburban houses, would create urban communities in environments where urban dwellers can relate to each other. Spatial structuring is the prescribed tool for such urban habitats for facilitating congregation and interaction to counteract social isolation and alienation that characterize contemporary city life. Thus 'structuring' is a valuable architectural device to order the distribution of a mass community into manageable clusters along with a corresponding clustering of communal spaces. One may note how the architectural strategists who explored ways to prevent urban crime used such 'spatial-structuring' for counteracting 'anonymity', as the 'New Urbanists' who used it much later to vitalise social life.

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