

Urban Transformation and Role of Architecture towards Social Sustainability

Ar. Soma A. Mishra¹, Dr. R. K. Pandit²,
Research Scholar, MITS, Gwalior¹, Professor, MITS, Gwalior²

Abstract:- Urban Transformation Is Not A New Phenomenon. But In The Context Of History, People Continuously Reshape Environments Based On Their Current Demands. Understanding And Controlling Urban Physical Transformation Social Changes As Well As Crime, Which Occur In Space, With Respect Ot Time Had Been The Core Of Consideration Of Philosophers, Planners And Architects . Planning Practice And Urban Design Projects Have Been Suggested Based On These Epistemological Understanding From Urban Transformation. But, The Planning Practices Largely Fail To Reach Their Aims Which Are Suggested For. The Scientific Models Particularly Are Unable To Define And Analyse The Urban Phenomena. This Paper Is An Attempt To Demonstrate The Scientifictheories In Planning And Analyzing The Urban Transformation And Prevention Of Crime Perspective The Adverse Effects Of These Urban Spaces Have Been Illustrated By Pictures And Maps. This Paper Will Show How These Theories And Practices Reduce The Crime Rate Of The City.

Keywords:- Urban transformation, Sustainability, Defensible Spaces' urban planning, urban change,

I. INTRODUCTION

Transformation is the way of life. Motion is inside living organisms, motion of universe. Motion is relative to space. Motion is in respect of time and space. Change of space and time generates adaptation; adaptivity creates domination, which with time generates transformation. This is nature's creation and need. Transformations are taking place everywhere; it is at the global economic, political and social structures down to the way people fashion their everyday lives. Urban transformation aims to better the social, economic and spatial quality of the cities. Urban structure not only represents the past but also conceals catalytic drivers for the growth of a city in the future. Cities represent the most powerful economic engines in the world. The transformation of cities to sustainable economic development will be critical to the 21st century global state of affairs.

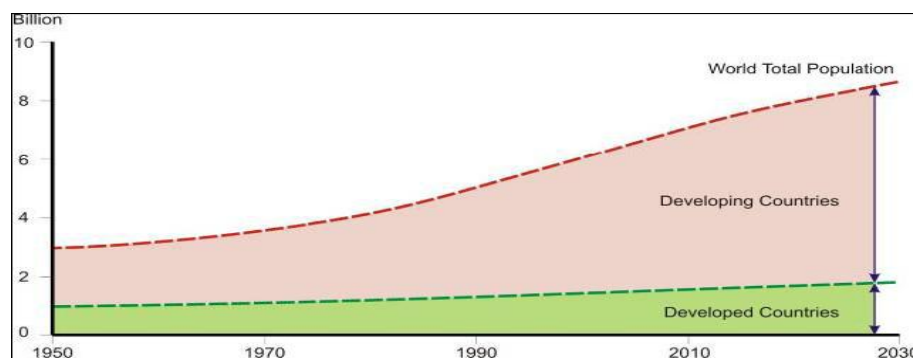


Fig. :1: World Population Source: Carley, M. and Christie, I. (2000). Managing sustainable development. Earthscan

Today we share a global culture, yet live out our lives in- 'local places'-in our houses to neighborhoods to cities to regions and nations. Key transformation of the last two decades is globalization. Globalization is not a sudden happening or a product but it is a phenomenon of interrelation of economic, social, political, cultural and ecological processes that continuously shape and reshape the world. Globalization processes have affected urban places more than villages. For a group of people it has brought homogeneity and for the others it has called for difference and heterogeneity. For some, this global phenomenon has reduced the ability as individuals, families and communities to shape human lives. For others, resistance is still possible.

“We shape our buildings and then our buildings shape us” (Churchill)

City transformation study from the industrial age to the global city requires vigorous examination. Transformation implies changes over time; the present urban fabric is resultant of successive generations of settlers who left their mark in physical structure as well as political, economic and social institutions. The city passed through a number of transformations since its inception in human history. The industrial revolution of nineteenth century after First World War due to technological revolution has created major transformation, the rapid shift in patterns of settlement from the country to the city. As industrialization changed the nature of urban life, globalization is doing the job since the latter part of the twentieth century - a further transformation process. Previously it was large-scale commodity production for a targeted mass market place, now it is a new system based around the generation of wealth from information services which are globally organized. For survival, cities have to compete in an international system having new hierarchies of power and opportunity from core global cities of New York, London and Tokyo where the worlds information and financial super highway is centered, to regional and local centers.[1] The transition to the urban industrial world and eighteenth and nineteenth centuries produced one of the great transformations in human history. Separation of work and residence took place. Factory based production started. Urban economy become capitalist based which bought labor power from the wage earning men and women. Single family housing came up. Clearer separation of gender roles came up. Women occupied role out of domestic sphere. This was about growth in terms of wealth and urban expansion. Now the transformation has shifted to the so-called knowledge and information industries [1]. Physical placement within particular region is not so important now. Ideas and knowledge are raw materials, industries being the research centers, flow of knowledge needs access. Flourishing sectors in present scenario are Information technologies, and World Wide Web.

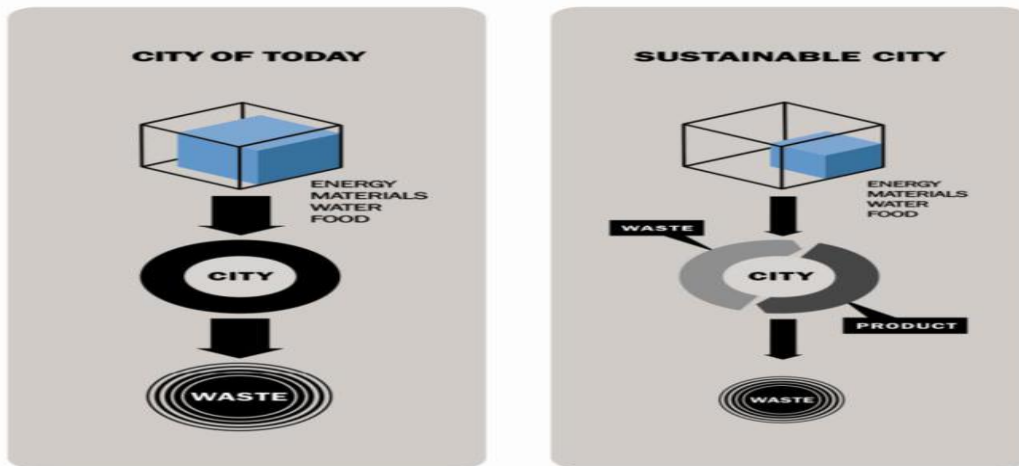


Fig: 2: Sustainable city Matrix

India is at the brink of urban transformation. The environmental impact of globalization will depend upon the particular trail of urbanization that India chooses to adopt. Since we are still in the early stages of the phenomenon, we may be able to embed “good DNA” in to the pattern of urban growth. [1] City sub-urbs are getting absorbed into the parent City. Peri-urban developments are galloping along with urban developments. India is moving fast towards urbanisation. According to 2011 census, 29.5% of total population lives in urban areas. Growth rate of urban population has been 2.27% in the year 2010-2011. **“India’s urban population will more than double to over 600 million by 2035 as increasing number of people migrate to cities because of better infrastructure and employment opportunities.”**- Statement given by then finance minister of India now honorable President of India, Shree. Pranab Mukherjee to Times of India, New Delhi on 17th Dec. 2010. Urban areas are the places of the excessive use of energy and resources, of production of waste and pollution, of crimes and deprivation and socio-cultural un-stability. For the human beings to stay till the destiny of universe, sustainable urban environment has to be provided by the decision makers. As specified in the Brutland report (World Commission on Environment and Development 1987) the concept of sustainable development comprises three aspects: economic, social and environmental. Hence development must be equitable, livable and viable. Social and economic conditions are outcome of the environment and vice-versa. Livable environment promotes good social conditions and economic growth.

This study analyzed two urban design characteristics, New Urbanism and Defensible Space. The paper lays stress on the role of Architects towards social aspects of sustainability. Due to rapid urbanization and population growth crime has become one of the most serious social problems. Government and other authorities are investing a lot of money in trying to overcome this phenomenon but in vain. Crime rates are continuously

escalating. To tackle and reduce the negative effects of crime on human beings, grater regulatory controls are needed which require more participation of individuals and community. Crime is influenced by multiplicity of factors such as economic, social and governmental as well as physical elements [2] Safety and security are basic human needs. At urban design level building designs, street layouts, public facilities and urban spaces can be tackled to affect the opportunity of crime and fear of crime. Sustainability and security should be considered at the initial level of designing “Sustainable community is safe, perceives itself designing to be safe and considered by others to be safe”. [3].The methodologies in studies assessing sustainability are more qualitative than quantitative as per 2009, British crime survey. The paper aims at reviewing pioneer’s research conducted in the field of crime prevention then reaching sustainable development.

II. PLACE BASED CRIME PREVENTION

Human behaviour takes place in space, and the spatial layout of the environment provides various opportunities for people’s interaction. The interaction between people can create safe or unsafe communities which are a foundational part of society’s welfare. [4] Extensive study tells that architects play a major role in the improvement of urban safely through designing of the built environment.



Fig: 3: Types of street use and the degree of road accessibility

The origins of designing out crime can be traced back to Jane Jacob’s “The Death and Life of Great American Cities” (1961) followed by Jeffery’s “Crime Prevention Through Environmental Design” (1971) then Newman’s “Defensible Space” (1972) Jacob (1961) claimed that diverse land use can prevent crime. She explained that diverse functions of neighborhoods like residential, commercial and leisure activities promotes increased continual flow of people enhancing natural surveillance which is an effective factor in preventing crime. She calls it ‘a basic supply of activities and eyes’. Similarly, Newman claimed that spatial control by residents is the key factor for effective crime prevention. Later Clark (1997) [5] proved that Newman’s defensible space pattern provide a basic system to reduce crime vulnerability, especially catering to residential burglary. Types of street use and the degree of road accessibility play an important and effective role in distribution of crime. [6]. Four classical theories of place based crime prevention are Defensible Space, Crime Prevention Through Environmental Design (CPTED), Situational crime prevention and environmental criminology. Diverse functions of neighborhoods like residential, commercial and leisure activities promotes increased continual flow of people enhancing natural surveillance

III. DEFENSIBLE SPACES

This theory was established by Ar. Oscar Newman in 1972. It assures a definite relationship of crime rates with urban design. According to the defensible spaces theory, physical layout of communities can make occupants control the areas. It creates the physical appearance of a social bond that defends itself [2] Newman named the related physical strategies in terms of crime prevention as ‘target hardening’. He focused more on the architectural approach of the residential area rather than urban planning approach as Jane Jacob. Crime is a function of general patterns of layout. Means of street closures can be successful in reducing crime. Houses located or adjacent to major arteries with high accessibility are more prone to residential burglary. Newman’s defensible space is the fundamental theory for crime prevention which enables residents to control their surroundings.

IV. CRIME PREVENTION THROUGH ENVIRONMENTAL DESIGN

The term was brought in 1971 by criminologist and sociologist C.Ray.Jeffery. It refers to design solutions in reducing crimes. It argues that most crime events are linked with the opportunities created by environmental design. CPTED approach refers to reducing crime opportunity by manipulating the built environment which will affect users’ behavior, hence reducing crime and the fear of crime. *“The proper design*

and effective use of the built environment can lead to a reduction in the fear of crime and the incidence of crime, and an improvement in the quality of life.” [7] The theory suggests that proper design can reduce opportunities of criminal acts, mitigate fear of crime and provide a better quality to human life. The planning approach of CPTED includes natural surveillance, natural access control, territorial reinforcement and maintenance. [8] Natural Surveillance refers to placement of design features with activities and people so as to maximize surveillance, consequently discouraging crime. Public areas have maximum activities and offenders prefer those places with less observational control. Design can foster natural surveillance from within the home premises by residents and at the same time from the exterior by passers – by and neighbors. Natural access control refers to design strategies controlling the ingress and egress of persons related to a particular space. This approach focuses on proper design strategies to direct pedestrians and vehicular traffic to an easy flow, simultaneously discouraging criminal activities. [8] Territoriality is about creating recognizable and identifiable zones, so that people feel connected and thus would try to defend their own community. [9] It tells that design should enhance a sense of propriety among the occupants and create environments with high perceived probability of resident intervention.

V. SITUATIONAL CRIME PREVENTION

For any crime to take place, it needs a particular situation, which depends upon the surrounding, the victim, the place and a certain point of time. This theory approaches to reduce opportunities of any kind of crime in any kind of setting; Situational Crime Prevention unifies law enforcement along with environmental design. It is defined as “a preventive approach that relies, not upon improving society or its institutions, but simply upon reducing opportunities for crime.”[10] It applies at micro-scale, lays stress on location and specific crime.

VI. ENVIRONMENTAL CRIMINOLOGY

The theory is derived by Brantingham and Brantingham (1981) [11] who noted that for any crime to occur, some factors must happen simultaneously: the victim or target, the specific location, the legal setting and the technical or mechanical requirements of the crime. Hence environmental criminology should be considered within the planning process. Knowledge of crime patterns, crime attractors, crime generators, and the importance of edges, paths and nodes is essential before proceeding for the planning process.



Fig: 4: Street defensible spaces

VII. SAFETY AND SUSTAINABILITY

Sustainable development emphasizes balance between socio-economic activities with the environment enhancing quality of human life. Planners and designers should take into account the ways of future development because sustainable development is “the long term ability of a system to reproduce” [12]. Link local to global concerns must be considered as an aspect of sustainability in the process of development. [13].

RESOURCES: The wise use and management of economic and natural resources +

RESPECT: Respect for people and other living things

= SUSTAINABLE DEVELOPMENT

The development activities should protect bio-diversity, enhance social cohesion, meet the needs of communities and bring social welfare by using some basic elements in design and built environment. Crime is considered as a mirror of the quality of life and a component of public well being [14] Architects have a pivotal role in the promotion of sustainable development by affecting the built environment [15]. They must lay stress on cultural, economic, physical and social contentment of people by taking into consideration, safety of the surrounding environment in their design. People should be able to live without fear of crime. It is one of the principal human needs in providing sustainability. Dewberry (2003) in her work titled ‘Designing out crime: Insights for Eco-Design’, considered both crime and sustainable development as social and environmental

problems. [16] It is less costly to install crime prevention by design strategies such as surveillance and access control features in the initial stage of design rather than to retrofit them at later stages.

VIII. CONCLUSION

In recent years, globalization leading to urban transformation has brought forth social, environmental and security challenges against sustainability. Crime and fear of crime contribute to the deterioration in quality of human life. From early pre-historic cave-dwellers to medieval and modern cities, the organisation of settlements has always tended to provide security and safety as major human needs [17]. In the long run, sustainability aims at enhancing the quality of life for preserving the natural environment for future requirements. Planning is to provide people with better conditions hence issue of crime and fear of crime is a prime issue.

The studies conducted by Jane Jacobs and Oscar Newman among others proved that spatial layout and type of land uses affect the vulnerability of residents against burglaries. Crime and fear of crime measures need to be considered as integral components of urban sustainability. [17]. Furthermore, designing out crime strategies are highly in line with environmental, social as well as economic sustainability. Taken as a whole, crime and fear of crime must be considered in the development process as effective indicators in achieving sustainability for the ever transforming urban centres.

REFERENCES

- [1]. David C Thomas (2002) *The Transformation of Cities, Urban Theory and Urban Life*.
- [2]. Newman, O. (1972). *Defensible space; crime prevention through urban design*, New York: Macmillan.
- [3]. Cozens, P. M., Saville, G., & Hillier, D. (2005). *Crime prevention through environmental design (CPTED): a review and modern bibliography*. *Property Management*, 23(5), 328-356.
- [4]. Nes, A.V., & Rueb, L. (2009). *Spatial Behaviour in Dutch Dwelling Areas- How Housing Layouts Affects the Behaviour of its Users*. Paper presented at the 7th International Space Syntax Symposium, Stockholm.
- [5]. Clarke, R. V. (1997a). *Situational Crime Prevention: Successful Case Studies* (second ed.). New York: Harrow and Heston. Clarke, R. V. (1997b). *The theory of crime prevention through environmental design: School of Criminal Justice, Rutgers University*
- [6]. Shu, C.-F. (2009). *Spatial Configuration of Residential Area and Vulnerability of Burglary: Case Studies from UK and Taiwan*, Paper presented at the 7th International Space Syntax Symposium, Stockholm.
- [7]. Crowe, T. D. (1991). *Crime Prevention Through Environmental Design: Applications of Architectural Design and Space Management Concepts*, Boston: Butterworth-Heinemann.
- [8]. Cozens, P. M. (2002). *Sustainable urban development and crime prevention through environmental design for the British city, Towards an effective urban environmentalism for the 21st century*. *Cities*, 19(2), 129-137.
- [9]. Geason, S., & Wilson, P. R. (1989). *Designing out crime: Crime prevention through environmental design*, Canberra: Australian Institute of Criminology.
- [10]. Clarke, R. V. (1992). Introduction. In R.V. Clarke (Ed.), *Situational Crime Prevention: Successful Case Studies* (p. 3-36). Albany, NY: Harrow and Heston.
- [11]. Brantingham, P. J., & Brantingham, P. L. (1981). *Urban Crime and Environmental Criminology*, California: Sage.
- [12]. Campbell, S. (1996). *Green cities, growing cities, just cities? Urban planning and the contradictions of sustainable development*. *Journal of the American Planning Association*, 62, 296-312.
- [13]. Mega, V. (1996), *Our city, our future: towards sustainable development in European cities*, *Environment and Urbanization*, 8(1), 133.
- [14]. Sampson, R. J., & Raudenbush, S. W. (1999). *Systematic social observation of public spaces: A new look at disorder in urban neighborhoods*. *American Journal of Sociology*, 105(3), 603-651.
- [15]. Glasson, J., & Cozens, P. (2010). *Making communities safer from crime: An undervalued element in impact assessment*. *Environmental Impact Assessment Review* (doi:10.1016/j.eiar.2010.03.007).
- [16]. Dewberry, E. (2003). *Designing Out Crime: Insights from Ecodesign*. *Security Journal*, 16, 51-62.
- [17]. Cozens, P. (2007a). *Planning, crime and urban sustainability*. *Sustainable Development and Planning III*, 1,187-196.
- [18]. Cozens, P. (2007b). *Public health and the potential benefits of crime prevention through environmental design*. *New South Wales Public Health Bulletin*, 18, 232-237.
- [19]. www.ccsenet.org/jsd *Journal of Sustainable Development* Vol. 4, No. 1; February 2011
- [20]. *Published by Canadian Center of Science and Education* 169