

**PROMINENT FEATURES OF THE BUILT ENVIRONMENT: DERIVED FROM THE
LITERATURE REVIEW**

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ABSTRACT

Over the past decade, publications in the field of Built Environment have accelerated. A vibrant, robust movement has arisen. What still needs to be done is to unveil the Literature of Built Environment. This paper presents the Prominent Features of the Built Environment derived from a wide array of Review of Literature of Built Environment.

KEYWORDS: Built Environment, Modern Built Environment, Building Information Modelling (BIM)

INTRODUCTION

The term "built environment" places the concept in direct contrast to the supposedly "unbuilt" environment (Moffatt & Kohler, 2008). However, taking a long - term perspective, the distinction between built and unbuilt become less clear because of the significant effect of human activity on the natural environment - whether through "clearing, terracing, ditching, planting, harvesting, fires" or from "accumulated layers of roads, bridges, dams, and buildings." (Braudel, 1995)

HISTORY

Early concepts of built environment in urban contexts date to Classical Antiquity: Hippodamus of Miletos, known as the "father of urban planning", developed Greek cities from 498 BC to 408 BC that created order by using grid plans that arranged the city in a more structured pattern (Burns, 1976). These early city plans eventually gave way to the City Beautiful movement in the late 1800s and early 1900s, inspired by Daniel Hudson Burnham, a reformist for the Progressivism movement who actively promoted "a reform of the landscape in tandem with political change." (American Studies, 2011) The effort was in partnership with others who believed that beautifying American cities would improve the moral compass of the cities and encourage the upper class to spend their money in cities. This beautification process included grand baroque parks and European - inspired architectural design to emphasize ideals of European culture as a supposed improvement to society (Encyclopaedia of Chicago, 2012). By mid - 19th century, modernist or "indifferent" design influenced the character of work and public spaces, followed by a late twentieth century "revival of interest relating to the concept of place (including the built environment), and its relevance to mental health and other fields of study." (Alexander, 2008)

The built environment has significant social implications as well as physical ones. Concern with the built environment can be found in anthropological literature as early as the early 19th century in studies of social and cultural history (Lawrence & Low, 1990). Early theories recognized that shelter and city organization was not only utilitarian, but reflected the culture of the societies that erected it. Durkheim, a foundational sociological theorist, similarly recognized that spatial organization is both a product of social factors but also plays a role in reproducing social forms (Durkheim, 1912).

Modern Built Environment

Currently, the built environment is typically used to describe the interdisciplinary field that encompasses the design, construction, management, and use of man - made physical influence as an interrelated whole. The concept also includes the relationship of these elements of the built environment with human activities over time - rather than a particular element in isolation or at a single moment in time, these aspects act together via the multiplier effect. The field is generally not regarded as a traditional profession or academic discipline in its own right, instead drawing upon areas such as

economics, law, public policy, sociology, anthropology, public health, management, geography, design, engineering, technology, and environmental sustainability (Moffatt & Kohler, 2008). Within the field of public health, built environments are referred to as building or renovating areas in an effort to improve the community's well-being through construction of "aesthetically, health improved, and environmentally improved landscapes and living structures" (Prevention Institute, 2012). For example: a community forest user group in Nepal is a multidimensional institution, which provides goods and services to local communities through natural resource management.

Technology is playing a pivotal role in shaping the industries of today by augmenting processes, streamlining activities, and integrating innovations to propel the functioning of companies and organizations across a multitude of industries and help them achieve new heights. Building Information Modelling (BIM) is prominent practice. It involves illustration & pre-execution overview of physical and functional characteristics of places. Building Information Modelling (BIM) tools help the planner in making a future ready informed decision regarding a building or other built asset. Smart Building Management, Drone-based Surveying, 3D Printing, and Intelligent Transportation System are recent implementations of technology that serve as proof that the modern built environment is not always physically influenced in the digital age (Petri et al., 2017).

Building Information Modelling (BIM)

Building Information Modelling (BIM) is a process supported by various tools, technologies and contracts involving the generation and management of digital representations of physical and functional characteristics of places. Building Information Models (BIMs) are computer files (often but not always in proprietary formats and containing proprietary data) which can be extracted, exchanged or networked to support decision-making regarding a built asset. Building Information Modelling (BIM) software is used by individuals, businesses and government agencies who plan, design, construct, operate, and maintain buildings and diverse physical infrastructures, such as water, refuse, electricity, gas, communication utilities, roads, railways, bridges, ports, and tunnels.

The concept of Building Information Modelling (BIM) has been in development since the 1970s, but it only became an agreed term in the early 2000s. Development of standards and adoption of Building Information Modelling (BIM) has progressed at different speeds in different countries; standards developed in the United Kingdom from 2007 onwards have formed the basis of international standard ISO 19650, launched in January 2019.

PROMINENT FEATURES OF THE BUILT ENVIRONMENT

Transportation Options: Transportation options within a community play a large role in communities, both socially and physically. These options can include roads, sidewalks, and public transportation infrastructure.

Roads and Highways: Roads allow pedestrians and people operating vehicles (whether cars, buses, motorcycles, or bicycles) to reliably access all areas of an urban or regional space. For millennia, road systems have served as the veins of urban spaces, allowing people to travel efficiently between areas within a city or region. Roads circulate people and materials throughout cities, just as "the cardiovascular network distributes energy and materials to cells" (Samaniego & Moses, 2008). Without well-planned roadways, cities operate as collections of smaller isolated neighbourhoods with little movement between them to stimulate city-wide economic growth and the socioeconomic mobility of households (Samaniego & Moses, 2008). While primarily intended to promote transit, can also serve as physical barriers in the built environment. One study out of Cornell University used U.S. Census data to compare the differences between linear distance and distance-by-road in American cities. The results found that road distance was disproportionately high between clusters of different racial groups, while it is much closer to linear distance within neighbourhood clusters (Roberto &

Jackelyn, 2017). Major roadways can also divide social space by reducing walkability and separating business from residential areas (Pando, 2011).

Sidewalks: Sidewalks are an important feature of the built environment that enable pedestrian mobility and increase walkability. Urban road networks used to be primarily a place for the pedestrian, but have become increasingly dominated by automobiles. The city sidewalk, therefore, is a place safe for bipedal commuters (Sugiyama et al., 2019). The quality and service of sidewalks can be impacted by factors like police patrolling, cleanliness, obstructions, and damage to the surface such as cracks (Bivina & Parida, 2019). Walkable neighbourhoods are proven to be safer and more accessible, with the presence of many pedestrians creating a watchful community (Wekerle, 2000). Businesses also benefit from increased foot - traffic near their establishments that encourages people to stop and shop more frequently than if they were driving past the store (Said et al., 2020).

Public Transportation: Public transportation is an essential part of urban spaces and the built environment. Public transport raises property values by improving access to surrounding resources, lowers the cost of living by reducing the need for a car, and improves an area's environmental footprint by reducing carbon - rich greenhouse gas emissions (Carmona, 2019). Studies show that land use and transit infrastructure has a great impact on the use of public transit in cities globally (Pucher & Lefevre, 1996). Individuals' decisions to either drive, walk, bike, or use public transit are shown to be influenced by spatial factors such as density (Handy et al., 2005).

Research also shows that the availability and nature of bike lanes and trails impacts cyclist numbers and behaviour. When the proper infrastructure is implemented, residents are likely to utilize the amenity (Tilahun et al., 2007). However, the construction of bike lanes in America has sometimes been recognized as a symbol of gentrification, as it attracts younger white residents and impacts a location's demographics because of the benefits to the neighbourhood (Hoffmann, 2020).

Buildings: At their most basic level, buildings are used as spaces of shelter for residential and business uses. They are one of the most clear elements of the built environment because of their physical presence and purpose to protect against the natural or "un - built" environment (Macmillan, 2004). The location, design, and layout of buildings all have an impact on the function and effectiveness of a building's service as an aspect of the built environment. A building's location can influence its function, and how frequently it is used by people (Walker & Brown, 2004). Additionally, the design of indoor space, as determined by architects and designers, has a great impact on how the space functions and the behaviour it promotes (Sebastian, 2004).

Features in the Built Environment in Government Institutions in India present physical barriers which constitute the boundaries between neighbourhoods (Kramer, 2017). Roads and railways, for instance, play a large role in how people can feasibly navigate their environment (Roberto & Jackelyn, 2017). This can result in the isolation of certain communities from various resources and from each other (Roberto & Jackelyn, 2017). The placement of roads, highways, and sidewalks also determines what access people have to jobs and childcare close to home, especially in areas where most people do not own vehicles. Walkability directly influences community, so the way a neighbourhood is built affects the outcomes and opportunities of the community that lives there (Pando, 2011). Even less physically imposing features, such as architectural design, can distinguish the boundaries between communities and decrease movement across neighbourhood lines (Small, 2004).

The segregation of communities is significant because the qualities of any given space directly impact the wellbeing of the people who live and work there (Galster & Sharkey, 2017). George Galster and Patrick Sharkey refer to this variation in geographic context as "spatial opportunity structure," and claim that the Built Environment in Government Institutions in India influences socioeconomic

outcomes and general welfare (Galster & Sharkey, 2017). For instance, the history of redlining and housing segregation means that there is less green space in many Black and Hispanic neighbourhoods. Access to parks and green space has been proven to be good for mental health which puts these communities at a disadvantage (Carmona, 2019). The historical segregation has contributed to environmental injustice, as these neighbourhoods suffer from hotter summers since urban asphalt absorbs more heat than trees and grass (Plumer et al., 2020). The effects of special segregation initiatives in the Built Environment in Government Institutions in India, such as redlining in the 1930s and 1940s, are long lasting. The inability to feasibly move from forcibly economically depressed areas into more prosperous ones creates fiscal disadvantages that are passed down generationally (Aaronson et al., 2021). With proper public education access tied to the economic prosperity of a neighbourhood, many formerly redlined areas continue to lack educational opportunities for residents and, thus, job and higher - income opportunities are limited (Case, 2020).

Parks and Green Space: Parks provide a number of neighbourhood benefits including promotion of physical activity and environmental wellbeing (Jackson, 2003). The location and accessibility of parks also has a great positive influence on the surrounding communities. For example, the addition green spaces to urban space can combat air pollution, provide a break from otherwise monotonous urban networks, and even impact city - wide temperatures by reducing the Heat - island effect (Plumer et al., 2020).

CONCLUSION

In India Building Information Modelling (BIM) is also known as Virtual Design and Construction (VDC). Due to its population and economic growth, India has an expanding construction market. In spite of this, Building Information Modelling (BIM) usage was reported by only 22% of respondents to a 2014 survey (Sawhney, 2014). In 2019, government officials said Building Information Modelling (BIM) could help save up to 20% by shortening construction time, and urged wider adoption by infrastructure ministries (Haidar, 2019).

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