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Implication of Public Health Ordinance, Building Regulations and Highway Code on Urban and Regional Planning

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Abstract: Urban planning, also called city and regional planning, is a multidisciplinary field in which professionals work to improve the welfare of persons and communities by creating more convenient, equitable, healthful, efficient, and attractive places now and for the future. one of the contribution of urban and regional planning to public Health is the creation of green space to promote physical activity, social integration, and better mental health; prevention of infectious diseases through community infrastructure, such as drinking water and sewage systems; and protection of persons from hazardous industrial exposures and injury risks through land-use and zoning ordinances. the relationship between urban planning and public health is to increase physical activity, persons need safe and accessible areas; development of these areas can be aided by determining the environmental barriers and facilitators that affect activity levels; designing, constructing, and maintaining community environments to help ensure safety and accessibility; and developing programs to encourage people to use improved community environments to increase their activity levels. Without the contributions of both disciplines, the odds of substantial increases in community physical activity decrease considerably, building regulations and urban planning often play a vital role in human habitation, occupancy, endeavors and activities, such as residential, commercial, industrial, recreational, agricultural and institutional ones while the vital elements and structure of building is codified for easy reference. The objective inherent in the establishment of building codes are in congruence with urban and regional principles. Conclusively, urban and regional planning is a technical, academic and political process concerned with the use of land and the design of the built environment, including transportation networks and other basic infrastructure, to guide and ensure the orderly development, of settlements and communities. While The Highway Code therefore is a set of information, advice and mandatory rules for all road users in the country with the primary objective of promoting safety.

Keywords*:* Public health ordinance, building regulations**,** Highway Code, urban and regional planning.

INTRODUCTION

Urban planning, also called city and regional planning, is a multidisciplinary field in which professionals work to improve the welfare of persons and communities by creating more convenient, equitable, healthful, efficient, and attractive places now and for the future[1]. The centerpiece of urban planning activities is a "master plan," which can take many forms, including comprehensive plans, neighborhood plans, community action plans, regulatory and incentive strategies, economic development plans, and disaster preparedness plans. Traditionally, these plans include assessing and planning for community needs in some or all of the following areas: transportation, housing, commercial/office buildings, natural resource utilization, environmental protection, and health-care infrastructure[1].

Urban planning and public health share common missions and perspectives. Both aim to improve human well-being, emphasize needs assessment and service delivery, manage complex social systems, focus at the population level, and rely on community-based participatory methods. Both fields focus on the needs of vulnerable populations. Throughout their development, both fields have broadened their perspectives. Initially, public health most often used a biomedical model (examining normal/abnormal functioning of the human organism), and urban planning often relied on a geographic model (analysis of human needs or interactions in a spatial context)[1]. However, both fields have expanded their tools and perspectives, in part because of the influence of the other.

Urban planning and public health have been intertwined for most of their histories. In 1854, British physician John Snow used geographic mapping of an outbreak of cholera in London to identify a public water pump as the outbreak's source. Geographic analysis is a key planning tool shared by urban planning and public health. In the mid-1800s, planners such as Frederick Law Olmsted bridged the gap between the fields by advancing the concept that community design contributes to physical and mental health; Jackson RJ. What Olmsted [2] and designing hundreds of places, including New York's Central Park. By 1872, the disciplines were so aligned that two of the seven founders of the American Public Health Association were urban designers (an architect and a housing specialist) according to Glasser [3]. In 1926, the U.S. Supreme Court, in validating zoning and land-use law as a legal government authority in *Village of Euclid v. Ambler Realty*, cited the protection of public health as part of its justification. Other connections have included-

- Pioneering urbanist Jane Jacobs, who during the 1960s, called for community design that offered safe and convenient options for walking, biking, and impromptu social interaction; and
- The Healthy Cities movement, which began in Europe and the United States during the 1980s and now includes projects in approximately 1,000 cities that in various ways highlight the role of health as much more than the presence of medical care.

Contributions of Urban Planning to Public Health

During the 19th and early 20th centuries, the synergies between urban planning and public health were evident in at least three areas:

- Creation of green space to promote physical activity, social integration, and better mental health;
- prevention of infectious diseases through community infrastructure, such as drinking water and sewage systems; and
- Protection of persons from hazardous industrial exposures and injury risks through land-use and zoning ordinances [1].

During the middle of the 20th century, the disciplines drifted apart, to a certain extent because of their success in limiting health and safety risks caused by inappropriate mixing of land uses.

The disciplines recently have begun to reintegrate. During the last 20 years, shared concerns have included transportation planning to improve air quality, encourage physical activity, prevent injuries, and promote wellness. In addition, some original crossover ideas, such as the potential for parks and recreational facilities to contribute to physical activity and mental health, have reemerged. Relatively recently, urban planning has focused on the effects of community design on energy use and greenhouse gas emissions to affect the growing public health concern of climate change. Finally, emergency preparedness (e.g., community infrastructure assurance, evacuation planning) and access to health care (e.g., assurance of accessibility and adequacy of facilities) are topics important to both disciplines.

Recent contributions to the public health knowledge-base by urban planners and other community designers, such as architects and engineers, are important. A recent tabulation of the 50 most-read/most-cited articles within the *American Journal of Public Health* (*AJPH*) (as of October 1, 2006) included topics of interest to both urban planning and public health.

The professionals, such as social capital, neighborhood-level effects on health, housing and health, and clustering of fast-food establishments around schools. Examples of cross-discipline collaborations from publications such as *JAMA* and *AJPH* address such diverse CDC program areas as aging studies, air pollution and respiratory diseases, disability and health, unintentional injury, and nutrition and physical activity.

Thus far, CDC has employed only a few urban planners, either temporarily or permanently. Urban planners, for instance, have worked within the ATSDR Policy Office, Division of Health Assessment and Consultation, and Office of Tribal Affairs; within the National Center for Environmental Health Policy Office and Division of Emergency and Environmental Health Services; within the National Center on Birth Defects and Developmental Disabilities Division of Human Development and Disability; and within the National Center for Chronic Disease Prevention and Health Promotion Division of Nutrition and Physical Activity. Although these urban planners have conducted some research, their primary role has been to bridge the broader urban planning, academic, and practitioner worlds.

Relationship between Urban Planning and Public Health

The interdependence of urban planning and public health in both research and intervention activities is evident in many areas. For example, to increase physical activity, persons need safe and accessible areas; development of these areas can be aided by determining the environmental barriers and facilitators that affect activity levels; designing, constructing, and maintaining community environments to help ensure safety and accessibility; and developing programs to encourage people to use improved community environments to increase their activity levels. Without the contributions of both disciplines, the odds of substantial increases in community physical activity decrease considerably.

Pedestrian and bicycle safety programs also illustrate the interdependence of public health and urban planning. Transportation planners are charged with creating streets and intersections on which all modes of transportation can safely coexist. However, considerable morbidity and mortality occur annually because of injuries related to interactions between motorists, bicyclists, and pedestrians, indicating that many communities have failed to truly balance choices of transportation modes.

Examples of recent successful cross-discipline activities include chronic disease prevention, injury prevention, health promotion for older adults and persons with disabilities, and air- and water-quality assurance. Reviews of research studies conducted by cross-disciplinary teams on behalf of the *Guide to Community Preventive Services* have documented that street-scale urban design and land-use policies affect levels of physical activity and result in recommendations for wider implementation of such policies. Similarly, research has documented the potential for design choices to reduce both unintentional (Retting RA, Ferguson SA, McCartt AT. 2003,Elvik R [4] and intentional [5, 6] injuries.

Research has described some of the impacts of physical environments on the health and quality of life of persons with disabilities [6], residents of low-income housing projects [7], and older adults [8]. In environmental health, data analysis of waterborne-disease outbreaks and extreme weather events indicates potential interaction between land-use patterns and risk for waterborne diseases [9]. In an equally important area of environmental health---air quality and respiratory health---CDC staff used the unique "natural experiment" of the Atlanta Olympics to document a 42% decrease in acute asthma events among children that were attributable to reductions in automobile traffic and associated air pollution [10]. Other impacts of the interdependence of urban planning and public health also have been demonstrated.

Urban planning in particular and the array of community design professions in general historically have played major roles in public health, and public health disciplines have played major roles in urban planning. In recent years, as reintegration between the two professions has accelerated, academia has responded by offering cross-cutting courses and, in at least five schools, joint graduate degrees in urban planning and public health. At the federal level, CDC leadership selected seven "place-related" goals reflecting this reintegration [11], many of which are impacted by urban planning. CDC scientifically and pragramatically addresses all factors associated with the interaction between people and their natural and human-made environments and promotes design and construction of places that improve both physical and social environments.

Providing safe and healthy places in which to live, work, and play is more likely to succeed if urban planning and public health work together. Future integration of and collaborations between the disciplines can serve as a cornerstone for the immediate and long-term success of the Healthy Places goals. A long-term blending of the responsibilities, tools, and eventually perspectives of public health and urban planning can result in many positive outcomes, including the following:

- Public health explicitly recognizing the importance of place-based approaches and the leverage these provide for addressing public health opportunities and threats.
- Public health and urban planning professionals increasingly drawing on tools and processes developed by the other field. Key examples are geographic information bysystems; health impact assessment [7]; and community assessment tools, such as the Protocol for Assessing Community Excellence in Environmental Health [12].
- Public health professionals increasingly engaging in the urban planning arena, participating in zoning decisions and serving on urban planning boards, and incorporating health into urban planning decision-making.
- Urban planning professionals increasingly engaging in the public health arena, participating in campaigns promoting physical activity and pedestrian injury prevention and serving on boards of health, and incorporating design into public health decision-making.

This renewed integration is essential in restoring and enhancing the health and vitality of the nation's places and people.

Building regulations and urban planning

Introduction

Buildings provide the spatial envelope, services and facilitates requisite for human habitation, occupancy, endeavors and activities, such as residential, commercial, industrial, recreational, agricultural and institutional ones.

According to the U.S environmental protection agency, humans spend nearly 90 percent of their lives inside buildings [13]. In regard, buildings form an important part of the infrastructure of the human society [14]. Likewise, it is appropriate that society ensure that buildings meet certain standards in order to adequately satisfy its desired use; which is primarily the function of building codes.

A building code is a set of rules that specify the minimum acceptable levels of safety for constructed objects, usually buildings and structures [15]. Building codes provide minimum standards to insure public safety to life and property from all hazards arising from

the occupancy of buildings, structures or premises. Building codes broadly operate at the municipal, state, regional or federal level, depending on the jurisdiction of the adopting authority and comprise laws regulating the construction of buildings. Such laws are intended primarily to set standards and govern the quality and safety for new construction, and to prevent the continued use of buildings deficient in these respects as well as subsequent maintenance to new and existing buildings.

In most instances, the codes specify the materials to be adopted, minimum quality and performance requirements, and the building components necessary in a structure that is suitable for human occupancy. In the housing sector, for instance, the quality of the housing and the inclusive services to be offered are determined by building codes.

As distinct from zoning laws, which regulate the location, use and size of various types of buildings and spatial entities, modern building codes set standards for planning and layout, provisions for adequate passages and exits, daylight and ventilation; establish requirements for construction and materials to ensure proper strength of materials and sfety; and set standards for such equipment as elevators, fire escapes, heating and ventilation, waste and sewage contrivances, as well as mechanical and electrical installations[16].

Most building codes are of the specification type; that is they establish exact specifications for all materials and methods of construction.

Objectives, Necessity and Importance of Building Codes

Building codes are very important tools for achieving society's objectives in terms of health, safety and welfare of building occupants [15]. Traditionally, these three are primary objectives of building collapse, and general deterioration underscores the need for modern building codes and their administration. Also, most aspects of building construction – electrical wiring, heating and sanitary facilities – represent a potential hazard to building occupant users. As such, building codes provide safeguards. Although no code can eliminate all risk, reducing risks to an acceptable level is of immense significance. To illustrate, paragraph 101.3 of the 2003 International Building Code states that:

The purpose of this code is to establish the minimum requirements to safeguard the public health, safety and general welfare through structural strength, means of egress facilities, stability, sanitation, adequate light and ventilation, energy conservation, and safety to life and property from fire and other hazards attributed to the built environment and to provide safety to fire fighter and emergency responders' during emergency operations. In the same way, Paragraph 1.2.2 of the Nigeria National Building Code [17] States that: The aim of this code is to set minimum standards on building pre-design, design, construction and post-construction stages, with a view to ensuring quality, safety and proficiency in the building industry.

A common denomination obvious amidst the plethora of building codes which is apparent in the two paragraphs quoted is the intent to set or establish minimum acceptable standards and requirements for the regulation of building design, construction and maintenance.

In a broader perspective, building codes are increasingly being recognized and adopted as a means of achieving other objectives, such as energy efficiency, minimizing green gas emissions, sustainability, conservation of energy, reduction of effluents and emissions, economic well-being, innovations and technological advancement, maximization of resources, control of harzardous waste, waste treatment, improved indoor air quality, and noise pollution.

Infernos which occurred in several cities around the world spurred the establishment of building codes to curb the incessant loss of lives and property. The great fire of London of 1666, and that of Chicago 1871 led to the immediate establishment of building regulations to ensure fire safety through adoption of requirements for fire-retardin and fireproof construction. More recently, in the United States, tragic fires at the MGM Grand in 1980 and the station Nightclub in 2003 led to more recent requirements for fire protection, including sprinkler systems, exit lighting and limits on explosives and pyrotechnics [13].

The scourge of pandemics and plagues predicated the need to improve upon sanitation in cities which berthed the promulgation of regulations guiding the construction of buildings to promote sanitation. In Lagos, the bubonic plague, which struck the city in 1924, led to the enactment of the Lagos Town planning Ordinance of 1928 which was basically regulations guiding the layout of buildings, provisions of sanitation, requirements wider streets, limitations on building spacing and height, light and ventilation requirements, minimum room dimensions and other health and safety requirements.

Natural disasters also lead to building code formulation and improvements. In the United States, Hurricane Andrew in 1992 resulted in the development of more stringent construction standards. Losses from Hurricane Andrew, which caused more than $20 billion in insured damage, would have been reduced by 50 percent for residential property and by 40 percent for commercial properties if they were built in accordance with Florida' 2004 state-wide building code. The storm that destroyed South Florida revealed a serious deficiency and led to Florida's first state wide code

system in 2004 [13]. Natural disaster damage is extremely expensive and to a large extent, avoidable through cost effective enhancements at the time of construction and careful construction practices which are enforced by building codes.

Seismic code provisions for buildings appeared first in Italy and Japan in the early 20th century and in the United States as an appendix to the uniform Building Code in 1927. Specific provisions within the International Building Code (IBC), the International Residential Code (IRC), and the International Existing Building Code (IEBC) are intended to ensure that structures can adequately resist seismic forces during earthquakes. These seismic provisions represent the best available guidance on how structures should be designed and constructed to limit seismic risk and loss of lives and property in the incidence of earthquakes. As a matter of fact, earthquakes cannot be prevented, but the damage they cause can be greatly reduced with communication strategies, proper structural design, emergency preparedness planning, education, and safer building after past earthquakes, many countries have established earthquakes safety and regulatory agencies. These agencies require codes for engineers to use in order to regulate development and construction. Buildings built according to these codes survive earthquakes better and ensure that earthquakes risk is reduced.

Global issues, such as global warming, climate change and environmental sustainability have brought to the fore a new dimension to the adoption of wider regulations in building codes beyond the sphers of safety, health and welfare of building occupants. Concerns about energy security and conservation of natural resources have since spurred the development of energy efficiency provisions in building codes.

The building sector currently consumes a large chunk of the world's energy expenditure more than either the transportation or industrial sectors. As most of this energy comes from fossil fuel combustion, the building sector is a major contributor to greenhouse gas emissions. Scientific evidence shows that these and other greenhouse gases are contributing to higher global temperatures and a growing concern about the effects of climate change, such as rising sea levels and more erratic weather. Energy codes in buildings help reduce greenhouse gas emissions and other pollutants from buildings that affect human health and ecosystems. Energy efficiency simply means that buildings can do more with less energy. This reduces the need for fossil fuel generated power [18]. Attained through building energy code adoption, enforcement and compliance, energy efficiency is apparently the easiest, quickest and cheapest way to reduce dependence on fossil energy and sustain our environment.

In the Nigeria context, the necessity to evolve a national building code arose from the following existing conditions of the cities and environment, as stated in paragraph 1.1 of the Nigerian national Building Code [17]:

- Planlessness of our towns and cities;
- Incessant collapse of buildings, fire infernos, built environment abuses and other disasters;
- Dearth of referenced designed standards for professionals;
- Use of non- professionals and quacks;
- Use of fake and untested products and materials;
- Lack of adequate regulations and sanctions to punish offenders;
- Lack of maintenance culture.

Theoretically, various benefits accrue from building regulations. According to Oster and Quigley [19], these benefits include protecting the consumer from the consequences of their own ignorance , for example a home buyer purchasing a hazardous dwelling as well as external benefits, such that could collapse, catch fire, and otherwise be hazardous. Hence, many, but that argue for their promulgation [20].

The importance of building Code cannot be undermined, for it sets the minimum standards on building pre-designed, design, construction and post construction stages with a view to ensuring quality, safety and proficiency of our building industry [21]. According to Snelling [22], regulations contained in building codes are intended to insure the health, safety and convenience of people in or about buildings and of others who may be affected by buildings or matters connected with them. Anderson *et al*. [23] note that building codes are obligatory in every society to take care of the risks posed by lack of uniformity, victims of poor construction, lack of enforcement of legislations and billions of annual loses, out of which up to 40 percent are avoidable.

The building and construction sector is a key sector in national economies and represents a large share of the economic assets of individuals, organizations and nations. It is one of the single largest industrial sectors with impacts on employment, economy and environment. Proper housing and infrastructure are key elements in determining the quality of life which has a significant interface with poverty reduction through the provision of basic services and the potential opportunities to engage the poor in construction, operation and maintenance activities [24]. As such, safeguarding the huge investments in buildings is vital. However, building codes provide an effective mechanism to protect all stakeholders in the building sector from losses and substandard materials. In short, building codes are the most effective, least expensive way to protect public

health, safety and welfare. They are more valuable now than ever before [13].

It is much more expensive to rebuild homes than to build right in the first place. Researchers at Louisiana State University found that if stronger building codes had been in place, wind damages from Hurricane Katrina would have been reduced by a whopping 80 percent. A 2012 Milliman study found that the Safe Building Code Incentive Act of 2011 would have saved the United States Government an average of nearly 450 million a year in hurricane relief payments if it had been enacted in 1988 [13].

The strength of a jurisdictions building code affects the competitiveness of builders and building suppliers alike. Code changes enable innovation in the building sector and permit more innovative products and processes to gain market share. These innovation add value to buildings are responsible for a high percentage of consumption of materials, greenhouse gas and other emissions, regulation of the building sector offers a prime opportunity for planners to pursue resource conservation and waste reduction objectives . Codes also play a role in increasing building performance, aligning with the ‘’green’’ goals of resource conservation and waste reduction. Building codes also provide policy market with an important tool to encourage physical planning growth and conduct risk management and help ensure that more resilent structures are built and that communities are better protected from all types of hazards and disasters.

Vital Elements and Structure of Building Codes

Practically, the building code is the government’s official statement on building safety. Technically, it is a compendium of minimum safety standards arranged in a systematic manner (codified) for easy reference. It embraces all aspects of building construction- fire, structural, plumbing, electrical and mechanical [25].

Traditionally, building codes have been accomplished by means of a set of interrelated codes, each addressing a specific building system or a specific building attribute [18]. While these codes may be packaged in different ways in different jurisdictions, they generally can be described as follows;

- A building code that addresses the building’s structural system, fire safety, general safety, enclosure, interior environment, and materials.
- A plumbing code that addresses the building’s potable water supply and waste systems.
- A mechanical code that addresses the building’s combustion and mechanical equipment.
- An electrical code that addresses the installation of electrical wiring and equipment in buildings, and a gas code that does the same with respect to the installation of gas piping and gas burning equipment.
- An energy code that addresses all parts of the building that consume, or contribute to the consumption of energy.
- Other specialty regulations, such as an accessibility code, that addresses building accessibility to the physically disabled.

A related but different set of regulations that sometimes are packaged together with the above described measures are those that control the use and maintenance of existing buildings. Parts of these codes sometimes may overlap with the plumbing, mechanical or electrical codes, such that some aspects of operation and maintenance are include therein. They generally can be described as follows [27].

- A fire prevention code, sometimes called a fire code, which regulates the building’s fire safety throughout its occupancy and use.
- A housing code that regulates the health and sanitation of residential buildings throughout their occupancy and use.
- A property maintenance code that expands the scope of the housing code to include other types of buildings.

A third category of building regulation is referred to as retroactive regulations. These generally address hazards in existing buildings that, while not necessarily imminent are identified by society as needing remediation.

Some examples of such regulation are the enclosure of open stairs in public buildings, the installation of sprinklers, and the reinforcement of unreinforced masonry buildings in zones of high seismicity. Due to the extremely high costs imposed by such regulations on building owners, retroactive regulations are quite rare and local in nature [18].

The structure and composition of any building code varies across municipality, state, region or country, depending on the level of building technology, sensitivities, concerns, cultural and climatic setting and preponderance of natural disasters. Codes are subject to periodic review in order to accommodate changes in technology, emerging needs of the people and environmental concerns. None the less, most building codes contain the under listed provisions:

- Structural framework
- Fire safety
- Site preparation and resistance to moisture
- Toxic substances
- Resistance to the passage of sound
- Ventilation
- Hygiene

- Drainage and waste disposal
- Combustion appliances and fuel storage systems
- Protection from falling, collision and impact
- Conversion of fuel and power
- Access and facilities for disabled people
- Glazing
- Electrical safety

Building codes are usually arranged in a systematic manner for easy reference, comprising parts, chapters, sections and subsections. It incorporates all aspects of building construction

Relevance of Building Codes to Urban Planning

Typically, building codes are a set of regulations governing the design, construction, alteration and maintenance of buildings and structures. Codes are specifically required to adequately safeguard the health, safety and welfare of building occupants. Health, Amenity, Safety, Economy and Convenience are public interest issues urban and regional planning takes into consideration when preparing their plans and proposal and as such, it is in consonance with what building code seeks to safeguard. With this knowledge, an understanding of the concepts and principles influencing the establishment and implementation of building codes is of necessity to the planner in professional practice.

The objectives inherent in the establishment of building codes are in congruence with urban and regional principles. As a regulatory document legally binding on all stakeholders in the building industry and building construction activities from new constructions to rehabilitation and upgrading of existing structures within a particular jurisdiction, it is mandatory for urban planners to adequately be abreast of building codes. As such, the study of the building codes in force in a particularly municipality, state and country should be instituted into urban and regional planning curricula. Not only should building codes in force be studied, other building codes across the globe and predating that in force should be studied to provide a platform to easily improve upon and understand the objectives, need and importance of building codes.

Integrating building codes in the planning curricula ensures wider circulation and publicity among the professionals and other stakeholders for effective compliance to its provisions. Early understanding of the provisions and regulations in the building codes encourages planners that have gone through the academic rigour of studying building codes and produces designs that are in conformity with standards. This, in no small manner, improves the urban scape and limits the incidence of building collapse and other risks associated with non-conformity with extant building codes and regulations. In addition, it fosters research opportunities and technical development on sustainable construction materials, green building, sustainable construction and waste management methods, code advancement and energy-efficient building codes.

The conceptualization of building codes usually involves inputs from the several professional bodies that make up the environment sector. A lack of understanding in such matters would, therefore, jeopardize the effectiveness of the contribution from such a body. This underscores the need for urban planners to adequately understand the context of the building code in order to satisfactorily contribute their quota to national development as regards the achievement of the objectives inherent in the establishment of a building code.

Education and awareness of the consequences in making non-conservative design assumptions, and of faulty construction, such as damage to property and risk to life, is required in every step of the building process(regulation, design, construction, certification and maintenance) and by all parties(designer, builder, certifier and owner) which the knowledge of building codes afford [26]. Education and awareness are needed in the areas of correct interpretation of building code provisions, correct application of design standards, testing and certifying building materials to the relevant standards, diligent construction practices, and correct application of materials and components in line with manufactures instructions, and appropriate inspection and certification at the time of construction, and ongoing inspections and maintenance for serviceable life of building.

CONCLUSION

It is unquestionable that urban and regional planning is a technical, academic and political process concerned with the use of land and the design of the built environment, including transportation networks and other basic infrastructure, to guide and ensure the orderly development, of settlements and communities.

Besides, the primary purpose of building codes is to protect public health, safety and general welfare as they relate to the construction and occupancy of buildings and structures. It can therefore be concluded that the relevance of building code to urban planning is to be abreast of regulations which help to create healthy, hygienic and aesthetically pleasing environment.

On the contrary, the modern age demands higher standards beyond issues of health, safety and welfare, bearing in mind that we are in a rapidly globalizing and interconnected world in which we are expected to conform to certain minimum standards and ethical practices in discharging urban planning responsibilities. Enforcing the provisions of building codes guarantees the safety of lives and property from all manner of hazards, particularly those relating to the

occupancy of buildings, structures or premises, and serves much broader spectra of objectives, like green buildings, eco-city, climate change mitigation, energy efficiency and resource conservation.

Many countries are setting new benchmarks in prescribing, maintaining and enforcing national minimum standards in building construction and building systems. Nigeria cannot afford to be left behind in putting a stop to the ugly trends in the building construction industry; eliminating or reducing to the barest minimum incidences of collapsed building syndrome; and promoting safety and qualitative housing for every citizen. Locally, the national Building Code provides a blueprint for operators of the built environment; it is an important document to regulate the construction industry in order to bring an end to the incessant incidences of building collapse. Also, effective implementation of the building code makes the construction industry less vulnerable to quackery, as it has become 'a free entry and exit club' without a proper regulatory mechanism.

The urban environment continues to change as cities age, making it more difficult and equally more expensive to maintain environmental quality.

Human needs and desire change as well, and the built environment must be constantly re-adapted. However, the essential purposes of all provincial and territorial planning acts, laws, standards, regulations and codes are to secure the orderly, coherent growth and development of municipalities. It must be emphasized that sound forethought and considerations of public lands through public participation from a wellco-ordinated administration and amalgamation of many laws is vital not only to a safe and healthy built environment but also facilitate efficient use of scarce resources, sustainable development and resilience in the built environment.

Highway Code and Implication on Urban Planning

The road mode of transportation is the most accessible means of movement in Nigeria. It offers door to door services to both the urban and rural populace. The importance of road in facilitating movement can however be obliterated if there is no guiding rule for the diverse users to abide by.

The Highway Code therefore is a set of information, advice and mandatory rules for all road users in the country with the primary objective of promoting safety. Many of the rules in the highway Code are legal requirements, contravention of which is equal to committing offences punishable by fine, given penalty points on the driver's license, disqualification from driving and in some cases imprisonment. Reduction in the number of deaths and injuries that occur on our roads every day is citizens shared responsibility. Knowledge and application of the highways code can help us discharge these responsibilities.

The Nigeria Highway Code has been tailored in line with international best practice and at the same time domesticated to meet the needs of traffic environment in Nigeria. It has taken into consideration the traffic culture and psychology of Nigerian road users towards positive driving habits. It has captivating and relevant pictures, signs and symbols and images for road user education.

Road traffic crash (RTC) is a major cause of loss of lives and property as well as mourning of citizens in Nigeria. Many of these crashes are actually preventable with the knowledge of the Highway Code.

The codes operate by ensuring that all categories of road users are properly guided on the "dos" and "don'ts" on the use of the roads. The challenges in sharing the road are also highlighted and strategies to ensure road safety clearly is brought to focus.It also lend sufficient enlightenment on road special conditions, defensive driving and general driving practices.

Comprehensive explanations are also provided on post- road-use activities, which include issues of emergency and rescue, automobile fire protection and prevention, transportation of hazardous substances, certification and efforts at reducing speed related RTCs through installation of the speed limiting device in vehicles.

In urban areas, road serve several purposes: vehicle, pedestrian and bicycle traffic, access to residences activities parking etc. this complexity explains the higher prevalence of accidents in urban areas, especially for vulnerable users. This knowledge empowers transportation planners to design a free-flowing traffic movement designs.

Street design, when associated with appropriate speed and travel regulations plays a decisive role in promoting a change in travel behavior and in making cities more user- friendly. The allocation of space, speed limits for vehicles and user priority rules are also elements that influence the comfort and safety of pedestrians and cyclist circulation and in turn, the choice of travel mode. Several road sharing concepts developed in other countries are of great interest; in france it is named "code de la sue" (street use code).

The France approach launched in 2006, has led to substantial advances both interms of regulation and urban street planning. Cities now have at their disposal a range of concepts that are adapted to different categories of urban roads, characterized by speed managements associated with a specified way of sharing the public space. In a context where we seek to

promoted sustainable mobility and to review how the road is shared this makes for a very interesting example.

Cities are complex ecosystems that work in part through a series of unspoken codes, negotiations and accommodation. If everyone is to have a place in the city for us to move safely and in harmony, it's time to look afresh at how we support and guide people on the rules, their rights and responsibilities.

Mark Twain reminded us that we are not making any more land, yet we are building more homes, workspace, bike lanes, widened pavements, and adding more people in a space constrained city. If our city is to accommodate that pressure it needs help from urban and regional planners.

REFERENCES

1. Umar TI. An Analysis of the Degree of quality of indigenous Building Materials used in Lapai Local Government Area of Niger state, Nigeria. International Journal in physical and Applied sciences. 2017; Vol.04, pp 34-45
2. Jackson RJ. What Olmsted knew.Western City. 2001; (March):12--15.
3. Glasser J. Back to the future [transcript]Presented atGlobal public health: issues and strategies for Hawai'i and the Pacific. 2002; June 12--13 2002.
4. Retting RA, Ferguson SA, McCartt AT. A review of evidence-based traffic engineering measures designed to reduce pedestrian--motor vehicle crashes. Am J Public Health 2003;93:1456--63.
5. Carter SP, Carter SL, Dannenberg AL. Zoning out crime and improving community health in Sarasota, Florida:"crime prevention through environmental design". American Journal of Public Health. 2003 Sep;93(9):1442-5.
6. Casteel C, Peek-Asa C. Effectiveness of crime prevention through environmental design (CPTED) in reducing robberies. American Journal of Preventive Medicine. 2000 May 1;18(4):99-115.
7. Waller LA, Gotway CA. Applied spatial statistics for public health data. John Wiley & Sons; 2004 Jul 29.
8. Kuo FE, Sullivan WC. Aggression and violence in the inner city: Effects of environment via mental fatigue. Environment and behavior. 2001 Jul;33(4):543-71.
9. Koepsell T, McCloskey L, Wolf M, Moudon AV, Buchner D, Kraus J, Patterson M. Crosswalk markings and the risk of pedestrian–motor vehicle collisions in older pedestrians. Jama. 2002 Nov 6;288(17):2136-43.
10. Curriero FC, Patz JA, Rose JB, Lele S. The association between extreme precipitation and waterborne disease outbreaks in the United States, 1948–1994. American journal of public health. 2001 Aug;91(8):1194-9.
11. Friedman MS, Powell KE, Hutwagner L, Graham LM, Teague WG. Impact of changes in transportation and commuting behaviors during the 1996 Summer Olympic Games in Atlanta on air quality and childhood asthma. Jama. 2001 Feb 21;285(7):897-905.
12. Dannenberg AL, Bhatia R, Cole BL, Dora C, Fielding JE, Kraft K, McClymont-Peace D, Mindell J, Onyekere C, Roberts JA, Ross CL. Growing the field of health impact assessment in the United States: an agenda for research and practice. American Journal of Public Health. 2006 Feb;96(2):262-70.
13. Vaughan E and Turner J. The Value and Impact of Building Codes. 2013.https://www.disastersafety.org/wp-content/uploads/The-Value-and-Impact-of-Building-Codes-by-Ellen-Vaughn-Jim-Turner.
14. Bokinni KS. An Overview of Building Code. A paper presented at the Nigerian Institute of Building Annual Conference at Osogbo, Osun State. 2008.
15. Clemmensen B. Building Codes–a good tool in the right context. InPaper presented by the Chairman, Canadian Commission on Building and Fire Codes to the Global Summit on Performance-Based Building Codes, November 2003 Nov.
16. BCA. Building Code of Australia. The Australian Building codes Board. 2007.
17. National Building Code. The National Building Code of Federal Republic of Nigeria. 2006. NBC, 1stEdn., Lexis, Nexis, Butterworths. South Africa.
18. Listokin, D and Hattis D. Building Codes and Housing. 2004.
19. Oster SM, Quigley JM. Regulatory barriers to the diffusion of innovation: Some evidence from building codes. The Bell Journal of Economics. 1977 Oct 1:361-77.
20. Johnson MB. Resolving the housing crisis. Pacific Institute for Public Policy Research; 1982.
21. Dahiru D, Abdulazeez AD, Abubakar M. An evaluation of the adequacy of the national building code for achieving a sustainable built environment in Nigeria. Research Journal of Environmental and Earth Sciences. 2012 Oct 20;4(10):857-65.
22. Snelling, N. Home Ownership-Buying and Selling. East Sussex: Guild of Master Craftsman Publication Ltd. 1997; pp:159-170
23. Anderson DB, Campbell JL, Farren CE and Hodges CP. The Business of FM.InternationalFcilities Management Association Publication U.S.A. 2004.
24. Watermeyer B. Importance of Building Regulation in Support of Building Industry, Consumer and the Economy. First Annual NRCS Regulatory Conference. 2014.
25. Umar TI and Oduwole O. Enhancing Housing Affordability through effective utilization of indigenous building material. Case study Lapai Local Government Area of Niger State. International journal in commerce, IT and Social Science. 2017; Vol 04 pp19-33

26. Henderson D, Ginger J. Role of building codes and construction standards in windstorm disaster mitigation. Australian Journal of Emergency Management, The. 2008 May;23(2):40.

27. Elvik R. Area-wide urban traffic calming schemes: a meta-analysis of safety effects. Accident Analysis & Prevention. 2001 May 1;33(3):327-36.