Sustainability Re-Thinking: A Tool for Planning and Design in Nigeria Built Environment

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Abstract— *The concept of sustainability has been introduced to combine concern for the well being of the planet with continued growth and development. This requires awareness of full short and long term consequences of any transformation of the environment. The paper investigates the principles underpinning tools and physical measures within the scope of planning and design in built environment. Working for sustainability demands an awareness of how everything works whether natural or man-made. The available range of tools for planning and design nesting with planning and design process is hereby discussed. The paper highlights that environment are met to change with inspiration and human creativity involving the concept of designing professionals within the concept of planning and design tools. Therefore, a more appropriate understanding of sustainability based on the critical activities of planning and design in the face of development and constructions are needed.*

Keywords— Design, Planning, constructions, design tools, man-made, professionals, sustainability.

I. INTRODUCTION

The built environment in many developing countries particularly Nigeria is fast decaying. The factors responsible for this can be attributed to rapid urbanization, rural-urban migration, and decades of steady economic downturn, decay of urban infrastructure and negligent urban house keeping (World Bank, 2005). Buildings and built environment as one of the bye products of the construction industry provides us with so much comfort and shelter in our homes, workplaces, place of leisure and places of learning and explanation. The built environment provides a synthesis of environmental, economic and social issues. It provides shelter for the individual, physical infrastructure for communities and is a significant part of the economy. Its design sets the pattern for resource consumption over its relatively long lifetime (Prasad and Hall, 2004). They at the same time constitute a negative impact on the natural environment throughout their entire life cycle: from the design through the obsolescent stage and the eventual demolition of the final product.

Over the decades, the environment and health nexus has remained much the same. But many man-made factors have risen in prominence and impact, including air, water and soil pollution, and the influence of industrially produced chemicals in consumer items (WHO, 2005). In the context of architecture and city design, the physical environment is generally known as the built environment. The built environment simply refers to the buildings and spaces between them. The physical environment is considered as the most important components of the environment because it is that with which the organism, individual, community or population is in direct contact and whose effects are mostly directly visible and tangible. The major elements of the physical environments include the home, its structural stability, amenity, architecture, and location characteristics, relative to the homes. When sustainable practices are put into place, it is evident that constructed buildings are healthier for the environment and healthier for people. As concerns on the condition for our natural environment increases, concept of sustainable practices has continued to gain more attention in virtually all sectors of human endeavour.

The term sustainability appeared in the early 1970s as the rapid growth of the human race and the environmental degradation associated with increased consumption of resources raised concerns. Sustainability emerges as one of today's most meaningful ideas in Architecture and Planning. It is based on the understanding that our resources are limited and their reckless usage may lead to environmental and human catastrophe. This recklessness, painful as it is, stimulates research and invention and helps us shape our understanding of Architecture and its role for the future. Urban sustainability is still far from being reached. Cities and regions are daily engaged in planning, designing, implementing and managing sustainable development processes. And yet urban sustainability is far from being reached. This situation testifies the difficulties to plan, design, implement and manage sustainable development processes in an integrative perspective The concept is not necessarily modern: Gibson et al. (2010) posited that the concept of sustainability, as an old wisdom, has been

around since the dawn of time in most communities. The definition of sustainability given by the Brundtland Commission, formally known as the World Commission on Environment and Development (WCED), was a turning point for government policy makers, scientists, politicians, sociologists, and economists. "The development that meet the needs of the present without compromising the ability of future generations to meet their own needs" is a definition for sustainability that challenged the traditional ways of doing business, changed the interpretation of the word development, and helped scientists and practitioners to understand not only the environmental impacts but also the social and economic effects of projects as the human race interacts with its surroundings (Brundtland, 1987; Bradon et al.,1997). In essence, The environment surrounds and affects man, while man also affect environment. Environment is made up of both biophysical and social economic elements, which consist of natural and manmade features of the environment with man as a major actor and component (Agbola and Adegoke, 2011).

Society, economy and the environment, as the three pillars of sustainability, pose three characteristics: independency, inter-relation/inter-connection, and equality. Based on those characteristics, an alternative definition for sustainable development is stated as the path to balance social, economic, and environmental needs. The energy crisis of the 70's reshaped building form. Building design became conscious of orientation, size of windows, shading, ventilation, insulation and important building technology. New materials, such as steel, glass and cement reshaped the volume and mass of our contemporary buildings. Indeed this energy crisis reshaped our attitude to modernity. Design elements such as pilotis, glass facades, and flat roofs were critically compared with other important objectives of the time, energy consumption, comfort and adaptation to regional affinities. Agbola and Adegoke (2011) identified four principles underlining that developing in a sustainable manner goes beyond environmental aspects. These principles are: equity, futurity, environment, and public participation. Cesar (2011), acknowledged that the protection of the environment is at the forefront of sustainable development, and this can be accomplished only through collaborative decisions, increased regulations, and each individual becoming a steward of the environment on a personal and global level," which implies that a sustainable future is in the hands of all of us, and the responsibility is shared, not left to politicians and policy decision makers. Thus, the importance of sustainable development has continued to grow, transforming and adapting according to the social, environmental, economic, and geopolitical conditions in different jurisdictions. It is generally accepted that sustainable development calls for a convergence between the three pillars of economic development, social equity, and environmental protection. Sustainable development is a visionary development paradigm; and over the past 20 years governments, businesses, and civil society have accepted sustainable development as a guiding principle, made progress on sustainable development metrics, and improved business and NGO participation in the sustainable development process. Yet the concept remains elusive and implementation has proven difficult.

Sustainability has become a primary and essential area of concern for a number of politicians, academics, and members of communities. Thus, Urban sustainability is still far from being reached. This situation testifies the difficulties to plan, design, implement and manage sustainable development processes in an integrative perspective.

There are several cognitive, political and technological challenges to be faced in order to change this situation and make sustainabilisation process of the city more effective (Monno and Conte 2015). A community of practice, as shown by bibliometric indicators such as annual conference proceedings, journal publications per year on sustainability, and university and college degrees and certificates offered around the world related to sustainability, indicates that sustainability as a tool for planning and design in the built environment is often being overlooked therefore a more pro-active approaches, such as involving decision makers in the very early stages of projects that have sustainability targets are needed. Several limiting factors can be easily mentioned when thinking about the evaluation of sustainability in the city in relation to the inconsistency of action. Besides recurrent issues concerning the democracy of its process, sustainability must be considered as an integrative process of the economic, environmental and social dimensions of development (Davidson et al., 2012). It is almost impossible to exactly define the meaning of sustainable development and what sustainability requires in order to be turned into reality in an urban environment.

However, despite such an ambiguity, sustainability in the city evokes a conception of life and development shaped by harmonious interrelations among society, economy and environment (Fisher,2000; Colin and Colin, 2012). Sustainable development goes further on the idea of facing the complexity of environmental problems caused by the illusion of an unlimited economic growth. It shows the necessity of integrating economic, social and environmental factors in any hypothesis of human intervention. However, how to integrate these factors within and among different scales and plans of action -projects, plans, policies- has become one of the utmost challenges to be faced in order to

implement sustainability (Buhrs, 2009). Monno and Conte (2015), submits that despite the enormous amount of cognitive and political investments which have been channelled in this direction, integration is still in its infancy. Consequently, the lack of integration is considered one of the causes underlying the inconsistency of action. Critics have highlighted that the idea to integrate environment, economy and society to achieve an imagined harmonic sustainable future is misleading. It is increasingly clear that, in reality, these three dimensions of development are not disconnected at all. In the absence of a more realistic and political understanding concerning how economy, environment and society interacts, the search for integrative actions among these dimensions diverts the reasoning on evaluation of sustainability from the process of city production towards a continuous search for new and better indicators (Davidson et al., 2012; Monno and Conte, 2015). Meanwhile three basic dimensions of sustainability is of essence and needed to be considered to attain overall sustainability as a tool for planning and design in a built environment which are Environmental, Economic, and Social dimensions (see figure 1).

Environmental, Economic And Social Sustainability

Several research projects have been initiated to investigate different aspects related to sustainability and the environment in general including real estate. A recent estimate puts the world's wealth at $48 trillion, of which approximately half is real estate (Lynch & Gemini, 2007 in Babawale and Oyalowo, 2011). Real property represents the commonest form of asset held by corporate bodies and individual investors (Babawale and Oyalowo, 2011). Its place in the economic growth and over well-being of any nation cannot be under estimated. Construction/real estate activities are thus expected to be enormous with its attendant's destructions and damages of the ecosystem. The construction industry and its process negatively impact nature contributing significantly in distrupting its balance, depletion of raw materials, destroying the habitat, generating waste, harmful gas emission thus, creating pollutants, and altering the balance of natural systems. This lead to a growing realization around the world to alter or improve our conventional way of development into a more responsible approach which can satisfy our needs for development without harming the world we live in. This concept of sustainability and its practical implementation have been increasingly considered by policy makers to be one of the most critical tools of achieving a balance between economic, social and environmental objectives. The concept of sustainability in building and construction has initially focused on issues of limited resources especially energy, and on how to reduce impacts on the natural environment with emphasis on technical issues such as materials, building components, construction technologies and energy related design concepts. The appreciation of the

significance of non-technical issues (soft issues) has grown, giving recognition to economic and social sustainability concerns as well as cultural heritage of the built environment as being equally important. Presently, the concept of sustainable construction governs three main pillars: environmental protection, social well-being and economic prosperity.

The basic principle of sustainability from an environmental perspective concerns the effective management of physical resources so that they are conserved for the future. In the last few decades, the physical limits of our planet, both as a provider of resources and as a sink for waste disposal, have been well established in theories, studies or concepts such as ecosystem biodiversity (Hawken, 1994), carrying capacity (Daly and Cobb, 1989), the limits to growth (Meadows *et al.,* 1992) or natural capital (Lorins *et al.,* 1999). Operating under an environmentally sustainable perspective, organisations should use only natural resources that are consumed at a rate below that of natural reproduction, or at a rate below the development of substitutes. They do not cause emissions that accumulate in the environment at a rate beyond the capacity of the natural system to absorb and assimilate. Finally, they do not engage in activity that degrades eco-system services (Dyllick and Hockerts, 2002). Although builders have little influence over the extraction of natural resources, they can help discourage this activity by demanding less non-renewable natural resources, more recycled materials, and efficient use of energy and mineral resources (Addis and Talbot, 2001). From Economic angle, the perspective initially emerged from economic growth models that assessed the limits imposed by the carrying capacity of the earth (Meadows *et al*., 1992).

The continued growth in population, industrial activity, resources use, and pollution could mean that standards of living would eventually decline. This led to the emergence of sustainability as a way of thinking about ensuring that future generations would not be disadvantaged by the activities and choices of the present generation. British economists such as Pearce *et al.*, (1989) and Kay (2004) have highly been influential in advancing the agenda for macroeconomics dealing with the understanding of sustainability. Zadek *et al.*, (2005) define the economic element as the creation of material wealth, including financial income and assets for the organisation. Organisations that wish to align their strategies, operations

and communications with some or all of the principles of sustainability for whatever reasons will need to be able to understand, manage, and communicate how their 'economic impacts', link to social and environmental outcomes. This need will be particularly marked for those organisations that have the most significant economic impacts. Sustainability does not stop at economic or environmental dimensions. To live in a society, there is a need for efficient and reliable housing, transport, energy distribution, health-care, communications and utilities. This notion of 'institutional sustainability' typically relies on a government's long term environmental and social commitment.

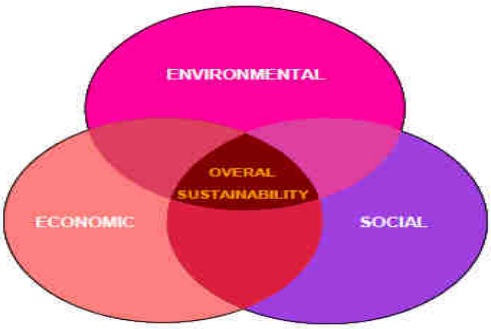

Fig.1: Three basic rings to achieve overall sustainability

Source: (Adapted from Marjana and Mine (2010).

Understanding sustainability using quandrants

The quadrants can be use to better understand a sustainability issue, organize sustainability knowledge, diagnose challenges, and prescribe appropriate solutions. Quadrants double as "training wheels" for analysis and "cross-pollination "of complex variables in achieving sustainability in the built environment. Practitioners in the built environment adopt it to effectively clarify the complexity of sustainability and deliver more sophisticated and effective responses to our social and environmental challenges.

The quadrants are used in three key ways for sustainability: to organize sustainability information, to diagnose the challenges facing a sustainability initiative, and to prescribe an integrated solution that accounts for all the major dynamics at play. The quadrants are essentially four lenses that, when taken together, help us to comprehensively look at anyone, anything, or any event. Thus, by looking at a sustainability initiative through all of the quadrants, comprehensive picture of all the dynamics at play in planning and designing that either make or break the success of our conceived project in the built environment is identified. Each quadrant represents one of four seemingly universal perspectives. According to Barrett (2005), perspectives available to us do appear to be the perspectives which are most commonly observed and most easily replicable. The bottom line is that the quadrants reveal the interiors and exteriors of individuals and collectives in the built environment. Like unique windows on the world, the quadrants offer four unique ways of looking at sustainability planning and design, each of which reveals different dimensions and qualities.

Fig.1: The quadrants are four unique, universal lenses with which to look at anything.

Source: adapted from Barrett (2005).

Each quadrant is essentially a window to a different part of the same world. One window reveals the psychological dimensions, the next the cultural dimensions, the third the behavioral and bodily dimensions, and the final window shows the systems dimensions. An integrally informed practitioner takes the time to look through each window so as to be able to identify and then effectively respond to the dynamics arising in all the major dimensions affecting his Initiative (Barret, 2005).

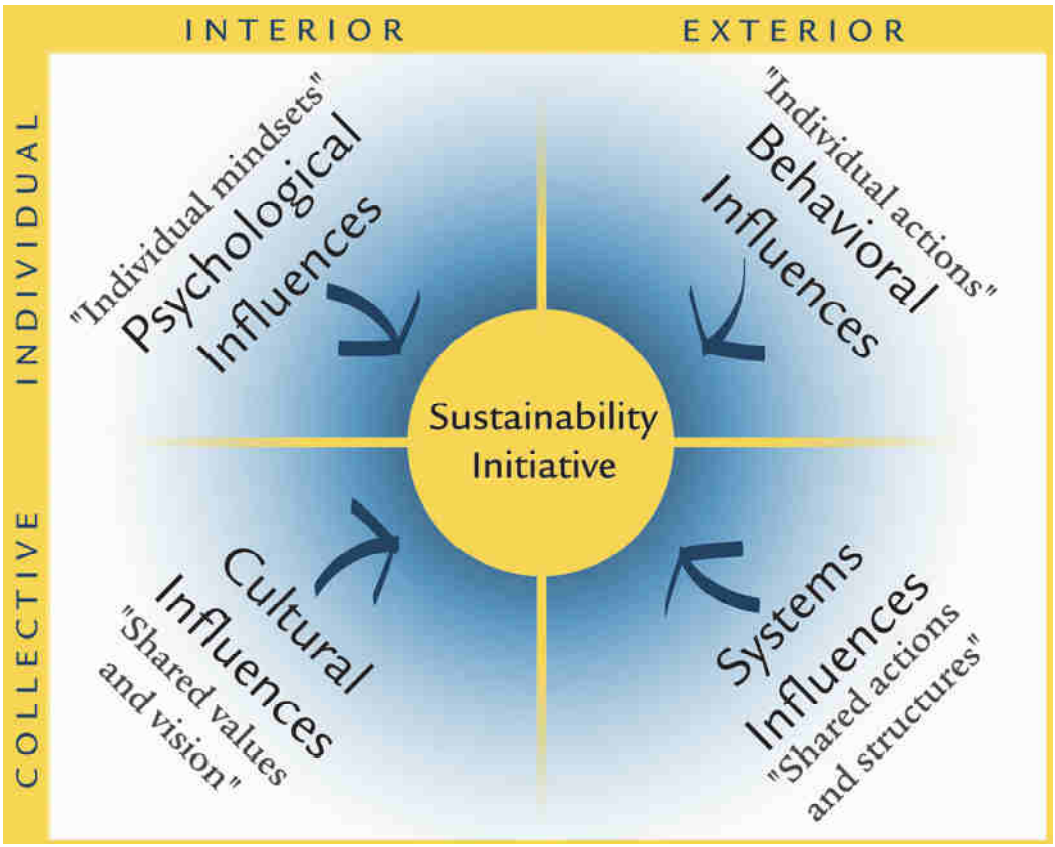

Table.1: Using the quadrants to identify the major influences on a sustainability initiative

Source: Barrett, 2005.

Table 1 above further fleshes out quadrants in the context of sustainability. It offers examples of forces which can influence a sustainability initiative in each quadrant and lists some tools which can be used to address and even transform them.

Ways to Use the Quadrants to Serve Sustainability

According to Barrett (2005), the quadrants as an analytical tool can be used to organize knowledge, to diagnose a challenge, and to prescribe a solution. The following is an overview of these approaches.

1. Organize Sustainability Knowledge

Built environment issues are faced with an insurmountable influx of new information. New research, anecdotes, frameworks, tools, approaches and insights about sustainability appear every day. How do we manage it, how do we recognize what is truly novel, how do we incorporate it into what we already know? There are many ways to organize knowledge; the quadrants provide a way of doing so which is useful for practitioners.

2. Diagnose the Forces Influencing Sustainability

Figure 2, above, visually summarizes this approach. When attempting to identify the most powerful influences on a given situation, the quadrants can serve as a guide, reminding us to check in on all the major dimensions of reality.

3. Prescribe Solutions which Account for all Major Forces in the built environment Once the quadrants have been used to identify the entire major psychological, behavioral, cultural, and systemic influences upon any situation, they can then be used to prescribe an integrated response.

	INTERIOR	EXTERIOR
INDIVIDUAL	**PSYCHOLOGY** *Shape form to engender experience.* Create natural environments which serve as a crucible for the development of people's relationship to nature and for their own ego-development. These can be centering places, or areas of rich perceptual experience.	**BEHAVIOR** *Shape form to maximize performance.* Design so that behavior and function are optimized. Good form minimizes pollution while maximizing preservation and recycling. Be eco-effective: maximize biocompatability, produce usable waste, and enable high-quality resource recovery.
COLLECTIVE	**CULTURE** *Shape form to manifest process.* Reveal the patterns that connect. Celebrate the beauty of natural order, place inhabitants into relationship with living systems, and situate habitation in bioregional place.	**SYSTEMS** *Shape form to guide flow.* Use Biomimicry to allow the built environment to work like nature. Manage the flows of air, water, minerals, and waste by mimicking ecosystems.

Table.2:Prescribed solution for forces in the built environment

Source: Barrett (2005)

In summary, the quadrants can be applied many ways, under the three general themes of organization, diagnosis, and prescription. It's important to remember that the quadrants are only lenses through which we can look at sustainability issue. They aren't boxes that rigidly categorize different parts of reality. All systems don't "go" in the Lower-Right quadrant, all behavior doesn't "go" in the Upper-Right quadrant. Anything, any event, can be looked at through the lens of all four quadrants. However, most things tend to be revealed more clearly through one quadrant or another; an economic system and its influences on a sustainability initiative are more easily seen through the lens of the Lower-Right quadrant than that of the Upper-Left quadrant. (Of course there are psychological, cultural, and behavioral aspects to any economic system as well.)

Framework of sustainability in urban building in built environment

The built environment vulnerability is described through categories of analysis related to its metabolism: structures, flows, environmental quality, and lifestyles. Monno and Conte (2015) identifies that these categories are the background against which the sustainability of a building has to be evaluated and they define the conditions to detect the effective regenerative capacity of a sustainable building (Figure 1).

Buildings are seen as complex systems which interact with the built environment metabolism through their performances: site, indoor and outdoor environment, operation and technical design.

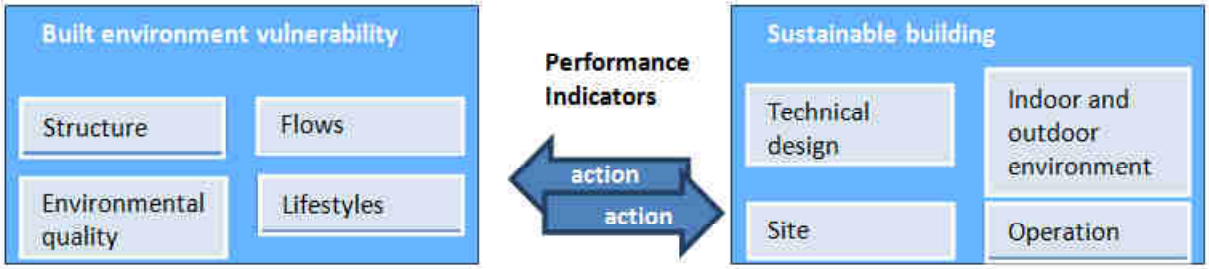

Fig.2. The integrated urban-building evaluation framework

Source :Mono and Conte (2015)

Being an agent, the building alters the metabolism of the built environment through its own performances thus reducing or increasing the built environment vulnerability. Although still considered, environmental impacts and pressures produced by a building have to be related and reinterpreted as disturbances and perturbations causing variations of vulnerability of the built environment. Thus, the framework measures the contribution of a building to the sustainability of a built environment as an induced shift away from its current vulnerability. The direction of change induced on the metabolism signals the regenerative potential. The urban space is not a dead background for the agent; in fact, an agent has to be evaluated through those qualities which interact with the built environment and its metabolism.

Logics of sustainability in Architecture

Guy and Farmer (2001) argue that it is possible to identify a number of different 'logics' at work in sustainable buildings as well as in the writing about sustainable architecture. They drew on the work of Hajer (1995) who argues that logics can be understood as an assembly of ideas, concepts and categorisations that give meaning to our notions of social and physical realities and are themselves produced, reproduced and transformed through practices such as designing, building or using eco-technologies in particular ways.

Logics 'hang together' in various ways by virtue of what is perceived as the main environmental problem and the best sustainable solution to that problem. Logics should be understood as being the products of human action, institutional location and social and political context. Moreover, 'through the design process of any particular development, logics may collide, merge, or co-inhabit debate about form, design, and specification' (Guy and Farmer, 2001; Monno &Conte, 2015). In essence Guy and Farmer (2001) posited that logics of sustainable architecture are based upon studies of buildings and extensive literature of books. The issue in our built environment is that logic of sustainability problems are hardly ever discussed in its full complexity rather the logics tend to be dominated by specific emblems and issues that dominate the perception of ecological dilemma. Hedlund-de Witt,(2014), emphasized the six competing logics as constructed by Guy and Farmer that was identified from analysis of completed buildings and a literature review of writings on sustainable building. Each of these logics includes the following:

• An image of space 'through which environmental benefits and detriments flow and are represented' (Guy and Farmer, 2001);

• A source of environmental knowledge 'through which we come to experience and understand the environment' (Hedlund-de Witt, (2014);

• An idealised concept of sustainable place or 'environmental place making' that provides the overall design strategy, and shapes which technologies will be chosen;

• Technologies – that are dependent on an idealised concept of place, and varying from hightech intelligent, through autonomous, local low-tech, non-toxic, and as well as participatory.

• A dominant building image 'in relation to the environments they inhabit' (Guy and Farmer, 2001). The following table provides a succinct summary of the six logics of eco-technic, eco-centric, ecoaesthetic, eco-cultural, eco-medical and eco-social. Guy and Farmer treat these as 'metalogics' that frame their thinking about sustainable architecture.

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Table.3: The six competing logics of sustainable Architecture

Logic	Image of Space	Service of Environmental Knowledge	Building Image	Technologies	Idealized Concept of place
Eco-technic	Global context macrophysical	Technorational scientific	Commercial modern future oriented	Integrated energy efficient high-tech intelligent	Integration of global environmental concerns into conventional building design strategies. Urban vision of the compact and dense city.
Eco-centric	Fragile microbiotic	Systemic ecology metaphysical bolism	Polluter parasitic consumer	Autonomous renewable recycled intermediate.	Harmony with nature through decentralized, autonomous buildings with limited ecological footprints, Ensuring the stability, integrity, and "flourishing" of local and global biodiversity.
Eco-aesthetic	Alienating anthropocentric	Sensual postmodern science.	Iconic architectural New age.	Pragmatic new nonlinear organic	Universally reconstructed in the light of new ecological knowledge and transforming our consciousness of nature.
Eco-cultural	Cultural context regional	Phenomenology cultural ecology	Auehentic harmonious typological.	Local low tech commonplace vernacular.	Learning to "dwell"through buildings adapted to local and bioregional physical and cultural characteristics.
Eco Medical	Polluted hazardous	Medical clinical ecology	Healthy living caring	Passive non-tonic natural tactile.	A natural and tactile environment which ensures the health, well-being, and quality of life for individuals.
Eco-social	Social context Hierarchial	Sociology social Ecology	Democratic home individual	Flexible participatory Appropriate locally managed	Reconciliation of individual and community in socially cohesive manner through decentralized " organic" nonhierachial and participatory communities.

Source: Guy and Farmer (2001)

II. EXPLANATION OF THE LOGICS

1. Eco-Technic logic

This involves using technocentric approach, science and technology to solve environmental issues. through rational analysis and management of the environment thereby creating energy-efficient built environment.

2. Eco-centric logic

This is a natural approach where building is against the nature. This is achieved by reducing the ecological footprint. Thus, with this logic , ecological footprint and natural buildings evolved from natural materials. Therefore, buildings can be a part of nature itself in which in terms of building materials, preference is for renewable, natural materials such as earth, timber, and straw combined with a reduction of the use of virgin building materials through reuse and recycling.

3. Eco-aesthetic logic

With this logic the role of sustainable architecture is metaphorical and as an iconic expression of societal values, it should act to inspire and convey an increasing identification with nature. However in the nonhuman world, what is required is a "new language in the building arts Thereby shifting the paradigm of the society to new age-ism ,a sensuous and aesthetic society (Green Architecture).

Furthermore in this logic a sensuous, stylish, creative "Green Architecture" is established which involved a move back towards organicism, expressionism, the chaotic, and the non- linear is the "aesthetic growing out of this new world view; a language of building and design close to nature, of twists and folds and undulations; of crystalline forms and fractured planes."

4. Eco-*cultural* logic

Eco cultural logic emphasizes sustainable architecture as preservation of culture. With this logic it is suggested that sustainable architectural approaches should move away from universal and technologically based design methodologies as these often fail to coincide with the cultural values of a particular place or people. The eco-cultural logic emphasizes a concern for cultural continuity expressed through the trans- formation and reuse of traditional construction techniques, build- ing typologies, and settlement patterns, each with a history of local evolution and use.

5. Eco-medical logic

This logic involves Designing healthy system of housing and architecture by utilizing a medical rhetoric to focus attention on the adverse impacts of the built environment and the causes of stress that engender health problems, both physical and psychological. The creation of "healing environment", sustainable buildings supports the healthy lifestyle of people. This is achieved by the use of natural and tactile materials and traditional building methods utilizing organic treatments and finishes, natural light and ventilation, and the use of color to promote health.

6. Eco-social logic

This involves buildings that embody the spirit of the society, freedom, and togetherness.

The aim is to construct appropriate, flexible, and participatory buildings that serve the needs of occupiers without im-pacting on the environment unnecessarily by using renewable natu-ral, recycled, and wherever possible, local materials.

The eco-social logic extends the social agenda of sustainability beyond a concern for the individual to encompass a political discourse that suggests that the root cause of the ecological crisis stems from wider social factors. It addresses the emblematic issue of democracy as the key to an ecological society.

An integrated evaluation approach

The evaluation of sustainability in the design and planning in the built environment tend to see the city as a homogeneous whole. Therefore, analysing and assessing their sustainability through detached environmental, social and economic dimensions helps in a coherent integrated framework of design and planning. Instead of considering governance as a solution to the integration problem, our evaluation approach proposes to change the socio-technical idea of the built environment underlying existing evaluation systems. Adger (2006), Monno and Conte (2015), emphasized that a way to face effectively this challenge implies reintroducing unsolved spatial issues in the sustainability evaluation discourse.

This goal can be pursued by shifting evaluation process towards an assessment of the regenerative sustainability, which "implies reconnecting human aspirations and activities with the evolution of natural systems – essentially co-evolution. It means shifting human communities and economic activities back into alignment with life processes. This is not preservation of an ecosystem, nor is it restoration; it is the continual evolution of culture in relationship to the evolution of life". If the problem of integration is one of the reasons at the basis of the inconsistency of the action as descripted above, then exploiting the local potentialities for an effective sustainable development in a specific urban context means not only reducing environmental impacts or sustain the ecological resilience, but rather trigger a regenerative process of a place that catches and exploits the regenerative potentialities of the built environment, considering it a socio ecological system. The quality and spatial extensions of a built environment depend on these flows and relationships through which any kind of agent is interconnected. Thus, the sustainability of an existing configuration of urban space with the related urban nature has to be considered in relation to the built environment metabolism.

According to Moffatt & Kohler (2008), the socio-ecological vision of the built environment underlying the regenerative approach can be the way to exceed the absence of integration characterizing the current approaches implemented in practice for conceptualising building and urban sustainability. In a regenerative perspective, buildings, infrastructures, policy-makers, people using them, and the natural environment around are a whole system. While socio-ecological perspective of the built environment constitutes a particular assemblage of human and non-human agents which are interconnected through complex socio-ecological flows, relationships and dynamics of transformation at different scales (Moffatt & Kohler, 2008; Pincetl, 2012). It is clear that in a socio-ecological perspective any object in the city is not only shaped by relationships of proximity but also by its connections with distant agents and ecological dynamics.

Therefore, the integrated evaluation is a way to reflect on a 'specific' form of integration among economic, social and environmental factors. In fact, in our approach integration already exists in the city and is what constitutes an unsustainable or sustainable profile of the built environment. The goal of evaluation is no longer to

integrate in a more or less balanced form social, economic and environmental factors through an action, but to recognise sustainable and unsustainable relationships shaping a specific configuration of the built environment in order to understand in which ways the action under scrutiny can contribute to reorient and re-align that configuration to make it regenerative rather than destructive. In this way, the evaluation will show the ability of the built environment to adapt to change, selfmaintaining the path towards a sustainable development during time, and promoting the continuous restructuring of environmental and socio-economic systems in relation to a transformative action (Monno and Conte, 2015).

III. CONCLUSION

The term “sustainability” is used broadly and in a wide variety of contexts, and is frequently seen as synonymous with green building, while at the same time viewed as a blanket term without meaning. Sustainability in the built environment is expressed in the study as essentially dependent on its responsiveness to intricate balance of culture , climate and technology in the context of each countries while its social components embraces the less tangible aspects of urban areas including architectural styles, heritage, peoples cultural values, behavior, norms and traditions. These connections were intricately connected and interdependent. Debates about sustainable built environment are shaped by different social interests based on different interpretations of the problem and characterized by quite different pathways towards range of sustainable features. These debates are not the result of uncertainty but are due to the existence of contradictory certainties (Guy and Farmer,2001).Therefore a design debates and practice involving set of actors should be a continuous process of defining and redefining the concept of sustainability in built environment as related to planning and design.

The environment is a contested terrain and those implicit within alternative technological strategies are distinct philosophies of environmental place making which is time and space specific. Adopting a social constructivist perspective has a critical implication for planning and design practice, education and research rather than searching for a singular optimal technological pathway for sustainability in built environment. It is vital that we learn to recognize and listen to the number of voices striving to frame the debate and the visions they expressed in the context of planning and designing environmental places. In this sense rather than viewing the sustainable design and planning as implementation of a plan for action, it should be viewed that environment are met to change with inspiration and human creativity involving the concept of designing professionals within the concept of planning and design tools.

However, sustainability can furnish the sound "platform" of history as a meaningful guideline for the future. Sustainability creates an important bridge between disciplinary and inter-disciplinary activities. The complexity of problems that lie ahead of us can only be dealt with by the synergetic effect of interdisciplinary collaboration. Another aspect concerning sustainability, is the "permanence of change". If we analyze the focii of interests and chain of events of the last decades, we can surely state that permanent change has dominated our profession. Changes as seen in the shifting interest of the profession in such design issues as: the solar collectors of the 60's, the zero energy building of the 70's, the search for bioclimatic cities, and the sense of region and spirit of place of the 80's.

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