THE ROLE AND RESPONSIBILITIES OF PROFESSIONALS IN THE BUILT ENVIRONMENT IN CONTRIBUTING TO SUSTAINABLE DEVELOPMENT IN NIGERIA

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ABSTRACT
Since the end of United Nations Conference on Environment and Development, termed the Earth Summit in 1992 to the Bonne Agreement in 2001, all countries, people and particularly professionals whose activities impact the natural environment have been asked to re-consider issues related to environmental sustainability and adopt new ways of addressing such issues at global, regional and local scales. Despite increasing concern on the influence of human activities on the natural eco-system and global climate, professionals engaged in shaping the built environment in Nigeria appear to be oblivious of the demands of the sustainability agenda and the accompanying responsibilities it places on all. Shifting paradigms in contemporary thinking now emphasise the fact that professionals have to be accountable for the environmental effects of design decisions and developments. The purpose of this paper is to investigate the role and responsibilities of professionals in the built environment in promoting and contributing towards achieving sustainable development. Expectations of society from professionals remain the delivery of competent services based on specialized knowledge. For this reason, professionals need to constantly engage themselves in improving knowledge and developing relevant environmental skills. How knowledgeable are planners, architects and construction professionals in Nigeria today in the principles of sustainable development and how is such knowledge translated into design decisions and physical interventions in every day practice? The paper stresses the need for professionals to understand their roles and environmental responsibilities in society, and concludes by suggesting ethical approaches in engaging public awareness and participation.
Keywords: built environment, natural environment, sustainable development, environmental sustainability, professionals

INTRODUCTION
The built environment refers to everything that reflects man's intervention in the natural environment, in terms of the design, construction, management and operation of buildings and infrastructure (Hughes, 2010). Considerations of the role professionals in the built environment play in contributing to sustainable development are based on the recognition of the need for greater awareness and development of skills in good environmental practices. This need has become more critical in the light of increasing environmental consciousness and concerns with maintaining a balance between human interventions and development in the built environment, with that of natural eco-systems.

Recent shifts in attitudes encouraging greater awareness and sensitivity to environmental sustainability have been informed by significant changes in the global climate. Human activities in the built environment in terms of energy use for construction processes, and in

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green house gas emissions in completed buildings, have been indicated to be major contributors to climate change. Interestingly, some have suggested that, within the built environment, the architectural profession has more than any other professional group been responsible for the consumption of fossil fuels and the consequential global warming (Edwards, 1999). In the same vein, others have also warned of a likely situation where "buildings and goods production and utilisation that impose heavy stresses on environmental resources will attract heavy taxes in the near future" (Sa'ad, 2001). Such evidence underscores the need for all professionals engaged in the built environment to understand changing roles and responsibilities, and to embrace practices which improve, protect and conserve non-renewable resources in the natural environment. An appreciation of the enormity of current environmental problems, a realization that society expects us to offer practical solutions and a willingness to show greater commitment by taking steps to address the situation are ways professionals in the built environment may meaningfully contribute to achieving the goals of sustainable development.

There are many discussions as to what can be considered as 'sustainable development'. At one level, sustainability is considered as maintaining a balance between development, resource consumption and the natural environment. The discussion is further extended at another level to consider the long-term effects human development activities (buildings, infrastructure, transport) may likely have on the quality of life of future generations. The Brundtland Commission (WCED, 1987) however, provides a broad definition of sustainable development as that which *"meets the needs of the present without compromising the ability of future generations to meet their own needs"* (p.43). The question of how such a broad definition may be converted to a specific conceptual framework, from which principles can be drawn, is in some regards resolved when considered through the obligations involved in the definition. Edwards (1999) identifies four of such obligations to include the following issues:

Futurity	*a responsibility to leave future generations with both natural resources and scientific and cultural capital to allow them to meet their needs;*
Environment	*a responsibility to protect and manage effectively all environmental resources (land, water, air, bio-diversity);*
Equity	*a duty to share resources locally and globally on the basis of equality of access;*
Public participation	*recognition that environmental issues are best handled through participation and open access to information.*

The remaining part of the paper is structured into five parts. The first considers issues of futurity, environment, equity and public participation by analysing the principles that have been developed as guidelines to achieving sustainability goals at different levels of the built environment. The next section provides a discussion of specific cases where principles of sustainability have been used to affect legislation in terms of city planning, or have been consciously applied as energy-efficient building alternatives, with a view to suggesting that

approaches taken in different contexts do not need to be the same. Prior to outlining new roles that professionals in the built environment will find necessary to adopt in order to contribute to creating a future developed on principles of sustainable development, a subsequent section briefly examines issues of equitability and community participation as they relate to the current discourse on sustainability. The paper concludes by recommending strategies through which professionals may engage and contribute meaningfully in working towards sustainable futures.

PRINCIPLES IN ACHIEVING SUSTAINABILITY GOALS

The idea of sustainable development involves considerations of both the natural and the built environment; the former as having resources, which are non-renewable and thus need to be protected; and the latter consisting of buildings and infrastructure which were built up at high costs and using up natural resources in the process, and thus having a need to be maintained or adapted to new uses. The key aspects of the goals of sustainable development include those of protecting the bio-diversity of the natural environment, restoring environments degraded by past activities and using resources efficiently so as to minimise waste. It is also directed at reducing the impact of human activities in contributing to the emission of greenhouse gases into the atmosphere (Edwards, 1999; Thomas, 2002). Sustainable development can be pursued at different urban scales (Ilesanmi, 2004), and as such, the discussion that follows considers principles through which sustainability can be achieved at the city level, neighbourhood (community) and building level.

Considerations at the City Level

With respect to sustainability at the city level, Breheny (1992) draws attention to the fact that as much as cities may be considered as threats to the earth's eco-balance because they consume and degrade the resources of the natural environment, they must also be regarded as resource bases which sustain economic, social and cultural life. This means that sustainability at the scale of city concerns itself with two issues. The first, considers urban development in the light of efficiently using natural resources, and reducing pollution caused by human activities. The second considers urban development in the light of maintaining human-made resources, and enhancing the quality of life of urban dwellers.

Breheny (1992) furthermore identifies two broad areas by which energy efficiency in terms of resource consumption may be improved at the city level. Planning spatial urban forms to be compact would enhance energy-efficiency by reducing the distance people would have to travel, and therefore reduce fuel consumption. The other aspect involves a reduction of domestic and industrial energy consumption through strategic design of energy-efficient built environments.

 In considering sustainability in cities from the perspective of sustaining the development activities that occur within them and in which the objective is to enhance the people's quality of life, a different set of principles come to bear. Principles that have been used include finding creative ways of either recycling or managing urban waste, conserving buildings

which contribute to the historical character of the town and encouraging mixed-used development. Other principles involve integrating green spaces and landscape elements in developments to absorb pollutants present in the atmosphere and also serve in modifying the urban micro-climate.

Considerations at the Neighbourhood Level

Resource efficiency through encouraging open-ended zoning practices, which allow a mix-use of land at the neighbourhood level, represents an important principle of sustainable design. Other principles also considered as sustainable, favour designing with nature in terms of encouraging the 'greening' of open spaces, and converting to good use abandoned structures or derelict land. Inclusive also is the need for neighbourhoods to be 'human' in scale and also maintain a sense of local distinctiveness (Edwards, 1999; Phillips, 2003).

Considerations at the Building Level

Principles of sustainability at the building level encourage consideration to be given to issues of energy efficiency in the design and construction of buildings. With respect to design, suggested guidelines include designing buildings which are durable, and in harmony with the local climate. The essence of this is to reduce the dependence on energy resources for heating, cooling or lighting of buildings by allowing these processes to be carried out through natural means. Alternatives which promote self-sheltering layouts in building forms are also preferable. Building layouts which allow for mutual shading enhance cooling within the building interiors, and in this regard obviate the need for fans or air conditioners.

Strategies linked with sustainable construction at this scale aim at development which uses resources efficiently, exerting as little negative impact on the environment as possible. The goal is to minimise resource consumption in the processes involved in extracting, producing or transporting building materials to construction sites. Opportunities to maximise resource reuse by recycling the waste generated through construction activities, also reflect principles associated with sustainability.

Linkages have been established between buildings that incorporated energy-efficient principles and the physical and psychological sense of well being experienced by the building occupants (Edwards, 1999). Similarly, it has been discovered that architectural solutions which respect local traditions, and respond to the cultural needs of the people in a given locality, are more sustainable when considered long-term, than those which attempt to apply alternatives which of little social relevance to the people (Phillips, 2003).

FROM PRINCIPLES OF SUSTAINABILITY TO ACTUAL PRACTICE

Decisions taken to apply principles of environmental sustainability at the different scales of the built environment are the platform upon which the concept of sustainable development can be made practical in Nigeria. It is these decisions that will move the agenda of sustainability from mere rhetoric to actually taking-on the issues which pertain to one's local context. For the purposes of shedding light on how the general principles can be organised to

encourage new ways of thinking and approaching old problems, examples of experiences in two different countries are presented.

Thorns (2002), cites the example of how citizens in Aotearoa, New Zealand concerned about the sustainability of the environment influenced changes in planning practices through legislation. The Resource Management Act which was as a result of this effort stresses as its objective promoting the management of natural and physical resources in a sustainable way. The translation of this in practical terms has resulted in a situation where in conceiving regional development plans, the emphasis is in integrating social and community life to complement bio-physical eco-systems, so that urban and rural planning are no longer considered as separate activities

The Lloyd's building in London approached the issue of energy-efficiency at the building scale in a different manner. The stainless steel exterior cladding used in the building, at face value appears to be a resource-consuming and expensive choice. The architects (Roger Partnership), however chose to adopt a long-term approach to resource efficiency; which although had a high initial investment in structure, the energy-conserving measures integrated in the design would in the long run pay back for such investment.

In specific reference to this building Thomas (2002), noted that sometimes such decisions may reflect the best sustainable alternative:

> *Its contribution to energy efficiency lies in the internal storing of energy in the internal structure and the triple glazing, providing a highly insulative external skin. Heat generated by the sun is drawn out from within the window depth, and stored in the basement tanks and recycled when required. The high capital investment has been justified on the grounds of the permanence of the stainless steel and the recyclability of the material used in this landmark high-tech building.*

EQUITY AND COMMUNITY PARTICIPATION AS SUSTAINABLE ISSUES

Presently, evidence points to the fact that although developed countries are the major contributors to global carbon emission (UNFCC, 1988) the consequences are likely to be greater felt in sub-Saharan Africa. In this regards, the issue of sustainability has been linked by some to be one of morality and equitability (During, 2010). Although the idea of equity is good, achieving fairness and equal access to resources to people locally and globally, remains a completely different matter.

Associated with this is the realisation that it is important for everyone to be aware of current environmental problems, and actively participate in decisions which may affect (or threaten) their immediate environments. Such a position recognises that beyond being an environment-related problem, sustainability is also a social problem. According to Thorns (2002), *"what gets lost in the debate about sustainability as it has transposed itself into policy-making is often the 'social'. The existence of, and the role of, the community and collective actors in social life is generally denied".*

CHANGING ROLES AND RESPONSIBILITIES FOR PROFESSIONALS

Although not an exhaustive list, included among those considered as professionals in the built environment are urban planners, engineers, architects, landscape architects, surveyors, builders and facility managers. The general idea conveyed by the term 'professionals', relates to individuals involved in carrying out specific activities or rendering services, on the basis of having acquired specialised knowledge to do so, and sharing an understood code of ethical conduct. The fact that roles exist with accompanying responsibilities derives from the assumption that, those considered as professionals have developed competencies and skill to be involved in specific activities, and as such are in a position to either initiate action or offer technical advice.

Allowing for variations in specific job descriptions, the range of responsibilities and obligations professionals in the built environment deal with include, leading, managing human and economic resources, strategic planning, teaching and transference of skills, exercising professional judgement and offering technical advice. Such a scope of responsibilities not only reflects the multi-dimensional and interactive nature of problems professionals engaged in shaping aspects of the built environment are bound to expect, it also indicates the influence they have. Such an influence becomes a useful platform for contributing to the sustainability debate only when professionals themselves are aware environmental concerns. Such awareness ought to affect planning decisions, construction practices, design decisions in terms of incorporating energy-efficient features in buildings, making specifications that are eco-friendly or just by ensuring that buildings fit their purpose and fit the socio-cultural context.

Because at times certain practical planning, design or construction problems are not initially explicit but are discovered only when on the ground, the focus during training is based not only on transferring knowledge and skills, but also imparting of values, to assist in responding to context-specific situations. Reference is drawn to this, in order to make the point that professionals are not value-free; but exercise judgement and make decisions on the basis of the values which they bring into a given situation. This is another important direction in which professionals can contribute to sustainable development.

Ones effort to preserve non-renewable energy resources, or to conserve historical buildings or to maintain local identity in our neighbourhoods, basically derives from what one values and considers important. If for example, an architect believes in the pressing need for all in society to show greater concern to maintaining ecological balance, this value will not only influence how he develops a client's brief, it will also influence the professional advice he will offer, in terms of the alternatives that will in the long term be of greater environmental benefit.

In concluding this section on new roles and responsibilities of professionals in the built environment, the sum of the argument presented in this paper is that if professionals are

aware of the magnitude of current concerns, and have value for issues of environmental sustainability, they would then be in better positions to engage in traditional roles as well as adopt new advocacy roles. Educating society, raising public awareness and taking action concerning environmental problems are certainly not responsibilities exclusive to professionals in this field alone however, they play a vital part in promoting public participation in this crucial issue.

CONCLUSION AND RECOMMENDATIONS

 Decisions and activities of professionals in the built environment are important to the achievement of sustainability goals, and by extension sustainable futures. Accountability for decisions taken when shaping the built environment has become imperative. Emerging from a background of global and local concerns, this paper has examined changing roles and responsibilities for professionals in making a contribution to sustainable development. The idea of sustainable development as involving issues of futurity, environment, equity and public participation formed the framework for developing such an analysis. Recommended in this paper from an analysis of the current situation is the need for greater public awareness and participation in the sustainability debate in Nigeria. This will allow society to demand greater environmental accountability from professionals, with respect to the effects their design and development decisions have on overall long term benefits. Indicated by Cortese (2003), is the fact that the *'crises of global ecology is one of values, ideas, perspectives and knowledge'* (p.17), and as such he stressed the important place of education in effecting a shift in how sustainability is addressed. It is therefore recommended that, curriculums in faculties that deal with the environment in higher institutions be expanded to make such issues a central part of course content.

REFERENCES

Brehny, M. J. (1992). Towards Sustainable Urban Development. *In*: A.M. Mannnion and S.R. Bowlby (Eds.), *Environmental Issues in the 1990s.* West Sussex: John Wiley & Sons Ltd.

Cortese, A. D. (2003). The Role of Higher Education in Creating a Sustainable Future. http://academic.evergreen.edu/curricular/ecoag2005/EcoAg%20Winter/CorteseCritical RoleOfHE.pdf accessed April 3 2010.

During, S. (2010). Ethics of Sustainable Development in Sub-Saharan Africa. *In:* S. Laryea, R. Leringer and W. Hughes (Eds), *Proceedings of West Africa Built Environment Research (WABER) Conference*, 27 – 28 July 2010, Accra Ghana.

Edwards, B. (1999). *Sustainable Architecture: European Directives and Building Design*. Oxford: Architectural Press.

Phillips, C. (2003). *Sustainable Place: A Place of Sustainable Development.* West Sussex: Wiley Academy.

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Sa'ad, H. T. (2001). The Changing Role of the Architect and Architecture in the Context of the Everchanging, Technological, Socio-economic and Political Global Environment. *In*: U.O. Nkwogu (Ed), *Architects and Architecture in Nigeria* (pp 1-16). AARCHES.

Thomas, D. (2002). *Architecture and the Urban Environment.* Oxford: Architectural Press.

Thorns, D. C. (2002). *The Transformation of Cities*. New York: Palgrave Macmillan.

UNFCC (United Nations Framework Convention on Clmate Change). (1998). The Kyoto Protocol to the Convention on Climate Change. Climate Change Secretariat, Bonn Germany.

World Commission on Environment and Development (1987). *Our Common Future* (The Bruntland Commission). Oxford: Oxford University Press.