

# The Role of Culture in a Sustainable Built Environment

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**Abstract** The issue of the role of culture in a sustainable built environment is becoming more important due to the growing impact of the built environment in achieving society's sustainable development. Society faces environmental challenges, including climate change and urban population growth and responding to these interconnected challenges is at the centre of society's concerns for its future. This chapter aims to examine literature to advance this emerging area of research by mapping the linkages between the concept of culture, sustainable development and the built environment. A review of a wide-range of relevant literature relating to culture, sustainability and the built environment is presented. This review focused on relevant publications in academic literature that provide evidence of the role of culture in a sustainable built environment. The review of literature highlights the increasing recognition of culture as powerful and important aspect in fostering economic, social and environmental dimensions of development. Culture is a key element in the concept of sustainable development as it frames people's relationships and attitudes towards the built and the natural environment. Sustainable development is an integral part of the society and culture; affecting all aspects of operations in the built environment. This Chapter provides an in-depth insight into the contribution of culture and places culture as the possible fourth dimension of sustainability and an integral part of environmental, economic and social dimensions of sustainable development.

**Keywords** Culture · Cultural sustainability · Sustainable development · Sustainable built environment

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## 1 Introduction

Cultural sustainability examines ways to improve human lives and how to leave a practical legacy for future generations. Society cannot continue with the current attitude towards resource exploitation if we have the aspiration to provide future generations with the ability to meet their own needs. Cultural value shape the society's way of life and therefore has the potential to bring about the change of attitudes needed to ensure the achievement of sustainable development. Culture contributes to the building of lively cities and communities where people can live, work and play a major role in supporting social and economic well-being. Hawkes (2001) argue that a sustainable society depends upon the vitality of a sustainable culture and cultural action arising from the communities as a result of their well-being and shared sense of meaning and purpose of its members. Cultural sustainability involves efforts to preserve the tangible and intangible cultural elements of society in ways that promote environmental, economic, and social sustainability (NZMCH 2006; Duxbury 2012). There is currently a paradigm shift in the worldview toward sustainability to include cultural sustainability in ways that do not damage our ecosystem, environment, and social well-being. Hawkes (2001) recognises that, the three dimensions of economic growth, social inclusion and environmental balance no longer reflect all the dimensions of our global societies.

The world is not only facing economic, social, or environmental challenges: creativity, knowledge, diversity, and beauty are the unavoidable basis for dialogue for peace and progress as these values are intrinsically connected to human development and freedoms (UCLG 2010). Culture and values are significant components of society, but each culture's values are not static; they evolve over time, thus first shifting society's view of what defines sustainability and then creating paradigm shifts in the worldview on sustainability (Fithian and Powell 2009). The Director-General of UNESCO (*Irina Bokova*) declared in 2012 that culture is what makes us who we are, providing answers to many of the challenges we face today and that we must do far more to place culture at the heart of the global sustainability agenda (UNESCO 2012a; Hayashi et al. 2013). The introduction and the integration of culture into the social, environmental, and economic dimensions of sustainability are vital in delivering a more holistic approach to sustainable development (Scammon 2012). Culture supports and connects with the other three pillars of sustainability; social, economic, environmental. For instance economic sustainability includes the evaluation of maintenance and operational costs of buildings in specific cultures while environmental sustainability supports the continuous use of historic buildings; avoiding demolition of historic buildings means waste materials to landfills are eliminated.

The cultural dimension of sustainability creates solid bridges with the other three dimensions of development and is compatible with each of them (UCLG 2010). The application of cultural sustainability can minimize the use of natural capital through resource management; improve tangible social capital such as public facilities and infrastructure; and strengthen economic capital by getting more out of

renewable resources. The global built environment requires urgent improvement in energy and environmental performance (Grierson 2009) and this could only be achieved through a cultural change. The rest of the chapter is structured as follows; literature review on culture and sustainable development is described next. Then the literature on the contribution of culture on sustainable built environment is presented. Finally, literature findings and conclusions on the role of culture on a sustainable built environment are discussed.

## **2 Research Approach**

A research approach is underpinned and bounded by the understanding and perspective of the researcher. Creswell (2007) stressed the importance of illustrating the research approach as an effective strategy to increase the validity of social research. Mackenzie and Knipe (2006) argue that methodology is the overall approach to the proposed research linked to the paradigm or theoretical framework to be used while the method refers to systematic modes, procedures or tools used for collection and analysis of data. The literature review provides a comprehensive critical analysis of the current thinking, from both an industrial and an academic perspective in the field of culture and sustainability in the built environment. The literature was considered in the context of theory so that objective evaluation could take place (Fellows and Liu 2003). The literature review examined literature on culture, sustainable development and the link between culture and sustainability in the built environment. This literature review aims to clearly identify the knowledge gap on the role of culture in a sustainable built environment. A critical review of literature developed an understanding of the structure of the subject, identifying what is known from what is unknown, establishing the significance of the problem under study, seeking new lines of enquiry and ascertaining the key variables essential to the issue (Randolph 2009). The chapter therefore presents a review of literature on the role of culture in a sustainable built environment.

## **3 Culture and Sustainable Development**

Cultural sustainability is equally as important as economic, social and environmental dimensions of sustainable development and should be included as one of the dimensions supporting sustainability in a holistic approach. Sustainable development and culture are connected as culture describes society's understanding and appreciation of the natural resources and therefore plays an essential role in the promotion of economic progress in a fair society. A desired sustainable society's focuses on the three dimension of social equity and justice, environmental responsibility, and economic viability are essential but inadequate to support the future survival and well-being of humankind and therefore a fourth dimension

(cultural development) is required (Hawkes 2001). Cultural heritage acts as a possible source of employment, social capital, energy savings and cultural diversity in attempt to pursue social, environmental and economic issues of sustainability. Continuous cultural heritage can be achieved when it is used as a tool for economic development because the acquired development will in turn ensure the sustainable development (Gunay 2008).

### ***3.1 Sustainable Development***

Sustainable development has been defined in many ways but the most commonly accepted definition of sustainable development is:

Meeting the needs of the present without compromising the ability of future generations to meet their own needs... A process of change in which the exploitation of resources, the direction of investments, the orientation of technological development, and institutional change are all in harmony and enhance both current and future potential to meet human needs and aspirations (Brundtland 1987: 43).

However, Opoku and Ahmed (2013: 141) provide an alternative definition that addresses the concept of need and human behaviour as:

The adjustment of human behaviour to address the needs of the present, without compromising the ability of future generations to meet their own needs.

The definition of Brundtland (1987) aims to be more comprehensive and addresses the key concept of needs while Opoku and Ahmed (2013) put emphasis on human behaviour in an attempt to meets their needs. The transition towards achieving sustainable development require changes in human behaviour, values and attitudes that will meet human needs.

Sustainable development balances environmental resource protection, social progress and economic growth and stability now and for the future. A vision of sustainable development with three dimensions namely: economic growth, social inclusion and environmental balance was consolidated at the Rio de Janeiro Earth Summit of 1992 as the paradigm of sustainable development (UCLG 2010). However, it is believed that these dimensions alone cannot possibly reflect the complexity of current society. There is now a call from agencies/institutions such as UNESCO, the World Summit on Sustainable Development, and researchers to include culture in the sustainable development model, since culture ultimately shapes what we mean by development and determines how people act in the world (Fithian and Powell 2009; UCLG 2010). Over the past decade, voices from different parts of society, from international institutions to academia, began to question the validity of the current definition of sustainable development. They state that economic growth, social inclusion and environmental balance, no longer reflect all the dimensions of our global societies and propose the addition of the dimension of culture to policies aiming at sustainable development (UCLG 2010). A Culture of

peace fosters development and social cohesion and sustainable development could easily be achieved when there is the involvement of the local population at the centre of the development efforts. Culture is emerging as the fourth pillar of the sustainability model (Sustainable Development = Environment + Economy + Social + Culture). Integrating culture within development efforts is crucial to tackle a large number of these global challenges more effectively and sustainably. This model recognizes that a community's vitality and quality of life is closely related to the vitality and quality of its cultural engagement, expression, dialogue, and celebration (Fithian and Powell 2009). There is more to sustainability than environmental practices, economic growth, and equitable social services. Sustainability also includes a community's values and cultural heritage.

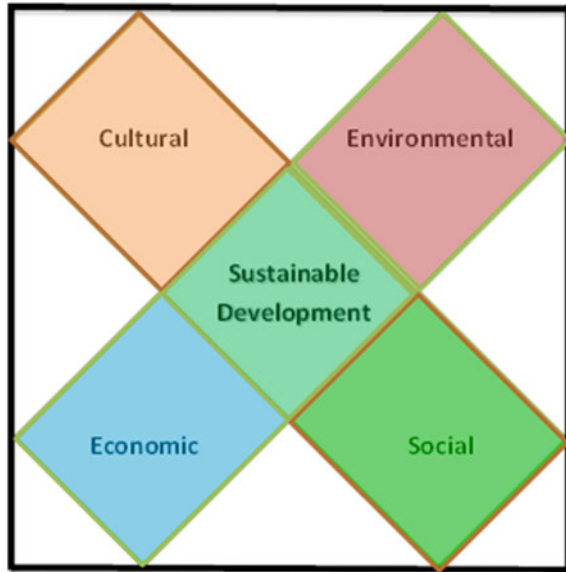
### 3.2 Cultural Sustainability

Culture play a role in defining human needs and interest making it critical to sustainable development. Cortese (2003) argues that a cultural shift is required to achieve a more sustainable society. Culture is central to society and defines people's attitudes and goals. It informs our understanding of development and controls our behaviour in the communities in particular and society in general. Agenda 21 for Culture (2004) places culture at the heart of the sustainable development processes. Parodi (2011) describes culture as an aim and a condition of sustainable development while Hauser and Banse (2011) believe that the relation between culture and sustainability is very rich. Whiles Opoku and Fortune (2011) believe that organizational leadership plays a vital role towards achieving sustainability, Taylor (2009) argues that efforts to change individual organizational leadership behaviour and attitude towards a more sustainable organization, without a parallel effort to change the culture within these organizations in which they operate will achieve little or no results. We need to develop a society where sustainable behaviour is a culture of the people.

There has been a growing recognition that culture and the environment function as parts of a single system and that they cannot be understood separately. Culture can be seen as acting driver of sustainable development since culture-related initiatives have direct impact in achieving sustainable development (NZMCH 2006; Fithian and Powell 2009). Culturally embedded processes in diverse settings play a significant role in sustainable Development efforts. Whenever cultural issues are considered in sustainability, it has been niched under the umbrella of social sustainability, however Hawkes (2001) advocates for a sustainability model that incorporates four interlinked dimensions of environmental responsibility, economic health, social equity, and cultural vitality (well-being, creativity, diversity and innovation) as illustrated in Fig. 1.

The four-dimension model of sustainability provides a cultural lens in evaluating the impacts of the environmental, economic, and social strategies being implemented (Fithian and Powell 2009). Nurse (2006) goes further by arguing that

**Fig. 1** Proposed four-dimension model of sustainability (Source Author 2014)



culture should be the central dimension of sustainable development and should be integrated fully into the economic, social, and environmental dimensions. He believes that people's identities and signifying systems shape how the environment is viewed. Cultural sustainability supports the other three dimensions of sustainability; social, economic, environmental through the re-use and recycling of resources on which energy has already been spent (NZMCH 2006).

Culture should be viewed not just as an additional dimension of sustainable development along with environmental, economic and social objectives because peoples' identities, signifying systems, cosmologies and epistemic frameworks shape how the environment is viewed and lived in (Fithian and Powell 2009).

The cultural dimension of sustainability is becoming increasingly present in the deliberations on sustainable development, but there are still some confusion regarding the definition of the term culture (Dallaire and Colbert 2012). Culture shapes what we mean by development and determines how people act in the world. Culture shapes what we mean by development and determines how people act in the world (Nurse 2006). Culture has been described as a set of unique spiritual, material, intellectual and emotional features of a society or a social group (Hayashi et al. 2013). Culture is both an instrument for decision-making and implementation as well as the end result of those policies and of the decisions implemented. Culture is about creativity, heritage, knowledge and diversity. These values are intrinsically connected to human development and freedoms (UCLG 2013). Integrating cultural aspects into research, decision-making and policy frameworks for environmental sustainability is an important challenge when addressing the cultural and social consequences of ecosystem change. Culture as a sector embraces tangible and

intangible heritage, cultural and creative industries and cultural infrastructures, has made towards achieving sustainable development, as evidenced in terms of poverty alleviation, social inclusion and environmental sustainability (UNESCO 2012a).

Culture is a dynamic reality and constantly shifting process that plays an important role in sustainable development (Hawkes 2001). Local and indigenous knowledge systems and environmental management practices provide valuable insight and tools for tackling ecological challenges, preventing biodiversity loss, reducing land degradation, and mitigating the effects of climate change (UNESCO 2012a). Culture fosters economic growth, helps individuals and communities to expand their life choices, improving the resilience of social-ecological systems and adaptation to change. Duxbury and Jeannotte (2010) describe culture as capital (both tangible and intangible), a way of life (a system of social relations), a vehicle for sustainable values and creative expression providing insights on sustainability. The integration of culture into sustainable development strategies and policies advances a human-centered and inclusive approach to development in addition to serving as a powerful socio-economic resource. Culture is transversal and cross-cutting concern and, as such, affects all the dimensions of development (UNESCO 2012a). Culture is linked to the economy through income generation and employment, to social programs that deal with poverty, equal rights, and civic engagement; and culture is linked to the environment through the use of cultural capital to raise environmental awareness and responsibility (UCLG 2013). The contribution of culture to a sustainable built environment is discussed in the next section.

## **4 Culture and Sustainable Built Environment**

Achieving a more sustainable society requires the redefinition of the relationship between the built and natural environments. The built environment consumes lots of energy and resources while generating large amount of waste. The solution to this challenge is the design and construction of improved built asset supported by appropriate management tools and regulatory frameworks that addresses sustainable development issues (Grierson 2009). A typical example of such tool or regulatory framework is the adoption of BRE Environmental Assessment Method (BREEAM) which sets the standard for best practice in sustainable building design and measure building's environmental performance. BREEAM is most widely used method of assessing, rating and certifying the sustainability of buildings and provides clients, developers, designers etc. a prove of the environmental credentials of their built assets.

## 4.1 *The Built Environment*

The built environment is literally a hub of economic activities, individuals and families, as well as society's cultural heritage. The built environment host economic activities, protects life and health, psychological and social welfare of its inhabitants, and sustain aesthetic and cultural values (Holm 2003). According to Bartuska (2007: 5), the Built Environment is defined as:

Everything humanly made, arranged or maintained to fulfil human purpose (needs, wants and values) to mediate the overall environment with results that affect the environmental context.

However, Moffatt and Kohler (2008: 249) describe the Built Environment as:

The manmade surroundings that provide the setting for human activity, ranging from the large-scale civic surroundings to the personal places.

The built environment involves human and cultural issues (why people build), environmental issues (natural and built context) and technological issues (materials, energy and financial resources, methods, and systems required to establish inter-relationships and construct the built environment (Bartuska 2007). Building for sustainable development involves using design and construction methods and practices, which strive for integral quality (including economic, social and environmental performance) in a very broad (or holistic) way (Grierson 2009). The built environment is not just about buildings, infrastructure and transport but it also includes the interaction of people in the local communities and their cultural experiences (New Zealand Ministry for Environment 2009). An efficient sustainable built environment that includes economic and socio-cultural sustainability supports local economy (Allen 2009).

Hallsal (2011) explains that, the built environment is the physical human created surroundings such as roads, bridges, and building structures, contrasting that of the natural environment. The connections between components of the built environment, such as individual buildings, transport systems, urban landscapes and other infrastructure are important. The built environment revolves around communities full of cultural experiences that connect with people and the interaction of these factors creates a stronger and a more sustainable community with increased psychological well-being Jenkin and Pedersen (2009) believe that the built environment does not only consist of buildings, infrastructure and transport but it also includes human community, cultural experiences and interactions of people. The scope of the built environment consists of the following interrelated components: products, interiors, structures, landscapes, cities, regions, and Earth (Bartuska 2007). A sustainable built environment should aim at reducing environmental impacts in terms of energy, carbon, waste or water; this will involve creating a built environment that produces more than it consumes with environmental, social, cultural and economic benefits (Jenkin and Pedersen 2009). Cultural aspect of sustainability should be considered when formulating policies, developing and implementing development plans and programs for the built environment



(Jeannotte and Andrew 2012). Local and community needs (cultural environment) should be assessed and properly linked to the built asset project objectives to achieve a sustainable society (CIDA 1997).

## ***4.2 The Role of Culture in a Sustainable Built Environment***

Cultural sustainability and the connection with the built environment involves the development of building forms, materials and construction methods resonant with the local culture and expertise (Williamson et al. 2003). Organizations can contribute to achieving sustainability by reducing their negative impact on the natural environment while increasing the whole life of built asset in the built environment (Poston et al. 2010). Culture plays an important role as a non-renewable resource that is a vital part of our cities; the adaptive re-using of the historic urban environment adds to the quality of life of their inhabitants by strengthening their sense of belonging, social cohesion and providing a pleasant environment that mitigates excessive urbanization (UNESCO 2012b). The problem of climate change and the impact on a sustainable built environment is no more a question of science but rather a global issue and dealing with these issues involves different stakeholders of different socio-cultural perspectives (Holm 2003). This means that tackling the problem of climate change and the effects on the built environment require the integration of sustainable development education that can improve society's behaviours and attitudes to resources. Culture enables environmental sustainability at various levels; through the intrinsic links between cultural diversity and biodiversity, its influence on consumption patterns, and its contribution to sustainable environmental management practices as a result of local and traditional knowledge. Grierson (2009) explain that respect for all people, demonstrated through the provision of a healthy, functional, accessible and attractive built environment, is vital in promoting social sustainability. Culture can be an influential driver for sustainable development with broader social, economic and environmental impacts on the society as cultural heritage and cultural infrastructure can serve as strategic tools for revenue generation. Many cities across the world today use cultural heritage to encourage sustainable urban development and communities.

Culture contributes to environmental sustainability by conserving the historic environment and promoting creative design. Cultural heritage and creativity play a supporting role in achieving urban sustainability and facilitate a better fit between goals and processes and local conditions in development projects from health to education and infrastructure (Hosagrahar 2013). For example, Beynon (2010) observed that cultural sustainability can support the other dimensions of sustainability when buildings get used for new purposes, perhaps offering a socially sustainable benefit to low-income residents. Using a building for new purposes may offer an economic benefit because funds are not needed to build new; and it may also offer environmental benefits because building materials are not disposed as waste to landfills. Lewis (2012) argues that it takes 35–50 years for an

energy-efficient new home to recover the carbon expended in its construction. Historic houses are built from brick, plaster, concrete and timber, or even from mud-brick, which are among the least energy-consuming materials.

The built environment is an integral part of spatial construction, and the history of building is a history of identity and therefore any alterations to buildings, involve elements and forms that relate to particular cultural and societal patterns (Beynon 2010). The cultural heritage is a powerful asset for inclusive economic development, since it attracts investment and ensures green, locally-based, stable and decent jobs relating to a wide range of sustainable activities in areas such as conservation, construction, (Hosagrahar 2013). It is therefore important that culture is placed at the centre of our development strategies because of the role culture plays in framing human behaviour and their relationship to others (UNESCO 2012b). Culture contributes to sustainable built environment through the protection of historic buildings, sustainable urban retrofit schemes, regeneration/urban renewal programmes, sustainable architecture and smart/sustainable cities within the realms of the community’s identity. A model of the role of culture in a sustainable built environment developed from the literature review is presented in Fig. 2.

Culture therefore has an essential role to play in the development of a sustainable built environment that includes infrastructure that supports neighbourhoods and cities. Sustainable building design should meet the end users social and cultural needs while preserving the environment for future generation (Al-Jamea 2014).

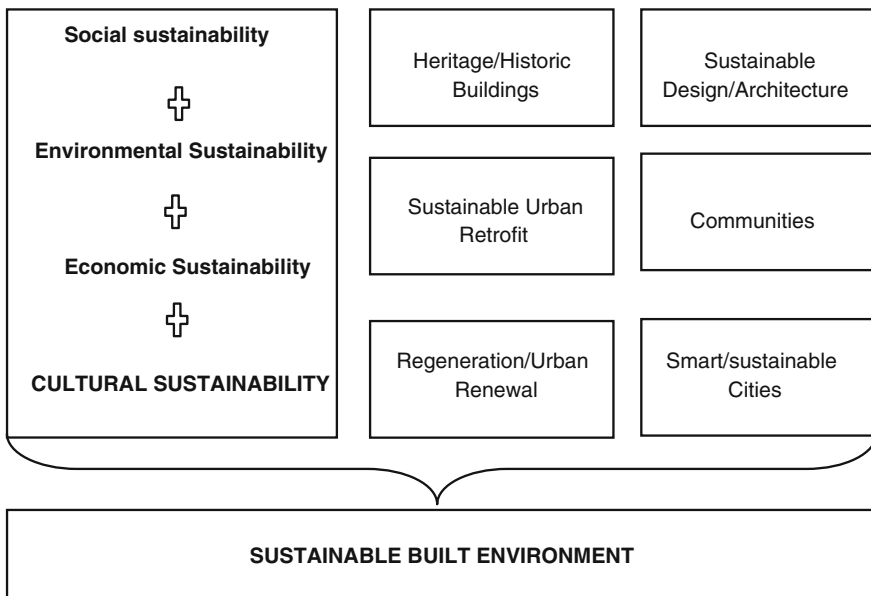


Fig. 2 Culture and sustainable built environment framework (Source Author 2014)

### ***4.3 Cities, Culture and Sustainable Development***

Culture has been the underdeveloped component of both conceptual and planning frameworks for long-term community well-being and sustainability. Historic towns and the historic parts of cities are valuable for their uniqueness and identity (Duxbury 2012). Creativity in urban areas has increasingly become part of the culture-led redevelopment of urban areas in order to bring about improved economic returns and increased competitiveness between cities (Hosagrahar 2013). Landscapes and the components of them have always strongly influenced local cultural practices, values and beliefs. In urban areas, initiatives such as sustainable architecture, ecological design, and eco-arts can stimulate creativity and innovation by linking ecological concerns, well-being and aesthetics (Duxbury et al. 2012). Cultural considerations should be integrated into sustainable urban and community planning through strong cultural programs that link intercultural realities and the local environment. Andrew et al. (2011) argue that, more research is needed to increase the understanding of the concept of integrating culture into sustainability planning and policy development.

Today, many cities use cultural heritage and cultural events and institutions to improve their image, stimulate urban development, and attract visitors as well as investments (UNESCO 2012a). The cultural heritage is linked to the lives of communities and is fully integrated into social, economic and environmental processes, making it an integral part of people's daily experience (Hosagrahar 2013). Maintaining the cultural heritage is also important in addressing risks relating to natural and human-made disasters. While recent city planning paradigms are focusing on achieving sustainable cities through sustainability planning initiatives such as the adoption of sustainability goals for individual communities and regions, cultural considerations has not been integrated generally into planning; even though culture has been recognized in urban and community planning contexts (Duxbury and Jeannotte 2010; Duxbury 2012). When urban development policies and strategies are driven by heritage (culture), it helps contribute to alleviating and adapting to climate change. For example, in UK, the embodied energy in the construction of a building is estimated at 15–30 times the annual energy use; which means that it is more sustainable to conserve the existing fabric of our built environment constructed with traditional methods, local materials and skills than demolishing and reconstructing (Lewis 2012; UNESCO 2012b). Current urbanization policies often ignore the importance of cultural heritage preservation and promotion and the great potential of creativity in addressing social, environmental and economic urbanization challenges (Hosagrahar 2013; Duxbury et al. 2012).

Cultural heritage, particularly cultural landscapes and historic cities, can make a significant contribution to environmental sustainability. Lewis (2012) argues that replacing a historic building with a new one involves the higher consumption of energy. Demolishing a historic building means wasting the energy incorporated into that building, and it requires further energy to take the materials to a landfill and even more to reconstruct a new building. Cultural knowledge in dealing with the

risks of floods, mudslides, droughts, as well as earthquakes, is valuable in helping to make communities resilient. In addition, local building technologies and the use of local materials in heritage structures and the knowledge of ecosystem management that is inherent in their responsiveness to climate, topography, and available natural resources are all significant as sources of knowledge and offer a diversity of solutions for particular conditions (Duxbury 2012; Hosagrahar 2013).

The conservation of historic cities is an effective strategy in reducing CO<sub>2</sub> emissions when compared to their replacement by new buildings. New construction projects have more damaging impacts in short to mid-term, however conserving an existing building rather than demolishing and reconstructing reduces the demand for new and saves original energy and CO<sub>2</sub> investment (Lewis 2012). Historical preservation and reuse of old buildings is the most sustainable practice in the built environment today and a crucial strategy towards encouraging cultural sustainability and counter the effects of global warming.

## 5 Discussions

The protection, promotion and maintenance of cultural sustainability is vital for sustainable development that benefit present as well as future generations. Culture is integral part of sustainable development; however the key challenge is the understanding of the relationships between culture, sustainability and development. Culture indeed has role to play towards achieving a sustainable built environment because culture is a key element in the concept of sustainable development as it frames people's relationships and attitudes towards both the built and the natural environment. Cultural value shape peoples way of life and therefore has the potential to bring about the change in behaviour and attitude needed to ensure the achievement of sustainable development. It is argued that economic growth, social inclusion and environmental balance, no longer reflect all the dimensions of our current world and a sustainable society could not be achieved without a cultural dimension. Sustainable development and culture are connected; cultural sustainability is equally as important as the economic, social and environmental pillars of sustainable development and should be included as one of the pillars of sustainability. Despite the above essential role of culture in a sustainable society, the cultural dimension of sustainability has not been fully accepted in the academic. Especially in construction management research, little or nothing has been written on the link between culture, sustainability and the built environment. Currently there is a growing recognition that culture and the environment function as parts of a single system and that they cannot be understood separately. Cultural sustainability also supports the other three dimensions of sustainability; social, economic, environmental and is becoming increasingly present in the discussions on sustainable development.

A sustainable built environment adopts design, construction methods and practices that make use of local expertise and experience. Our built environment

operates in a society and local communities full of cultural experiences that connect with people. Even though current urban policies often ignore the importance of preserving and promoting cultural heritage, it is important that cultural considerations are integrated into sustainable urban and community planning. Culture contributes to the building of lively cities and communities where people can live and work playing a major role in supporting social and economic well-being. Culture contributes to sustainable built environment through the protection of historic buildings, sustainable urban retrofit schemes, regeneration/urban renewal programmes, sustainable architecture and smart/sustainable cities within the realms of the community's identity. Cultural aspect of sustainability should therefore be considered when formulating policies towards sustainable the built environment. The development of policies towards sustainable development at all levels of organization and sustainability should integrate cultural beliefs and experiences. Culture should be placed at the centre of our development strategies because culture plays an important role in framing human behaviour and their relationship to others.

## 6 Conclusions

The cultural dimension of sustainability should be integrated into development policies and the idea of culture as the fourth dimension of sustainability should be promoted internationally. The chapter recognizes the increasing need to incorporate culture into sustainable development plans and strategies. Cultural sustainability projects benefit the environment through the preservation of cultural capital such as buildings that retain a community's heritage. The chapter argues that culture should be viewed not just as the fourth dimension but as the central dimension of sustainable development.

It is noted from the literature review that, the absence of culture from the core goals and methods used to effect sustainable development was due to the difficulties in measuring its concrete contribution to development; however this challenge has been resolved in recent years through the multidimensional measures of human well-being. This chapter therefore recommends that particular attention should be paid to measuring the quantitative and qualitative contributions of culture to sustainable development by establishing clear indicators. Cultural well-being occurs when society and individuals are provided social activities that promote cultural capital. Cultural sustainability involves efforts to preserve the tangible and intangible cultural elements of society in ways that promote economic sustainability. The development and the promotion of a sustainable built environment should be carried out in an environmentally, economically, and socially beneficial manner with culture as the overarching dimension of sustainable development. Cultural sustainability supports and connects the other three dimensions of social, economic and environmental sustainability. The integration of the cultural dimension of sustainability should therefore be promoted through education and public policies towards a sustainable built environment. The implementation of policies,

development plans, and strategies for sustainable cities and communities around the globe should consider cultural issues because cultural content shapes and communicates the identity, values and hopes of a society.

In conclusion, sustainability efforts that once were characterized by environmental, social, and economic issues only now see the inclusion of culture as a holistic benefit to sustainable development. Finally, the literature review provides the opportunity from an academic perspective to empirically further investigate the contribution of culture to the understanding of sustainable development and the built environment in future research.

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