ARTICLE

Corporate Social Responsibility of Architectural Design Firms Towards a Sustainable Built Environment in South Africa

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Abstract

The construction industry makes a vital contribution to the social and economic development of every country. Buildings provide their users with places for housing, education, culture, medication, business, leisure and entertainment. None of these buildings will perform its function unless supported with efficient road networks, superlative telecommunications facilities, water and electricity. On the other hand, the construction industry has major impacts on the environment. It is a very large consumer of non-renewable resources, a substantial source of waste, pollution, land dereliction and energy consumption. This highlights the responsibility of present generations to use the available resources in a way that enables them to meet their needs without compromising the ability of future generations to meet their own needs. Since architects are one of the main players in the construction industry, this research aims to investigate the corporate social responsibility (CSR) of South African architectural design firms (SAADF). This was achieved through a questionnaire and a small number of interviews with respondents. Combined, this provided a unique insight into an important aspect of sustainable design management.

■ *Keywords* – Corporate social responsibility; architectural design firms; sustainability; built environment; South Africa

INTRODUCTION

The construction industry, in terms of its activities and output, is an integral part of every country's economic growth and social development process. Economically, it contributes towards achieving national goals and basic needs as well as providing most of the country's fixed capital assets and infrastructure that enable other industrial sectors to develop. In addition, it helps to increase a country's gross domestic product (GDP), thereby stimulating further growth via its linkages with other industrial sectors and creating job opportunities (Field and Ofori, 1988; Mthalane *et al*, 2007). Socially, the construction industry plays a pivotal role through constructing projects that provide society with places for housing, education, culture, medication, business, leisure, entertainment as well as urban infrastructure such as water and power supply, sewerage, drainage, roads, ports, railways and telecommunications (Friends of the Earth, 1995; Roodman and Lenssen, 1995; Khan, 2008).

Construction also has a major impact on the environment. It is estimated that 3 billion tonnes of raw materials and 40% of the total flow into the global economy are used in manufacturing construction materials throughout the world (Roodman and Lenssen, 1995). The construction sector is responsible for 50% of the material resources taken from nature, 40% of energy consumption and 50% of total waste generated. Energy is an invisible resource that is consumed during the procurement of materials

doi:10.3763/aedm.2009.0904 ISSN: 1745-2007 (print), 1752-7589 (online) www.earthscanjournals.com

and construction activities. The former accounts for between 70 and 90% of the energy consumed in construction (Anink *et al*, 1996). Large amounts of materials and energy are also wasted in constructing and operating artificial heating and cooling systems.

Current generations have the right to use available resources to achieve their goals and meet their expectations. However, using these resources inefficiently compromises the ability of future generations to meet their own needs. As the first line of contact with clients in the construction industry, and being responsible for designing buildings and specifying construction materials (Othman, 2008), architects have an important role to play in corporate social responsibility (CSR). The work reported in this paper investigated the CSR of South African architectural design firms (SAADF) and provides a unique insight into an important aspect of sustainable design management.

THE CORPORATE SOCIAL RESPONSIBILITY CONCEPT

Charity and philanthropy are not new ideas (Rockey, 2004), although the field of CSR has grown considerably over the past decades and many businesses have become more active in contributing to society. CSR issues are now being integrated into all aspects of business operations and explicit commitment to CSR is made in the visions, missions and value statements of an increasing number of companies all over the world. CSR reports usually go beyond profit maximization to include the company's responsibilities to a broad range of stakeholders including employees, customers, community and the environment (Ofori and Hinson, 2007). In his speech in March 2006, Malcolm Wicks, the UK's energy minister with responsibility for CSR, stated that 'successful companies will be the ones that continually seek to raise their game and take a responsible approach to all their activities. These activities contribute to a kind of triple bottom line: ecological, financial and social' (Freshfields Bruckhaus Deringer, 2006).

A significant number of terms and definitions are used, including; corporate responsibility, corporate accountability, corporate ethics, corporate citizenship, sustainability, stewardship, triple bottom line and responsible business (Hopkins, 2004). CSR could be defined as the voluntary integration of environmental, social and human rights considerations into business operations, over and above legal requirements and contractual obligations (Freshfields Bruckhaus Deringer, 2006). CSR is the commitment of an organization to act in a manner that serves the interests of its stakeholders (Schermerhorn *et al*, 2005) and is concerned with the ways that companies generate profits and their impact on the broader community (Bradshaw and Vogel, 1981). It is about how companies manage their business processes to produce an overall positive impact on society (Baker, 2007). McAlister (2005) and Carroll (1993) mentioned that there is a widespread acceptance of the view that if a business is to prosper, then the environment in which it operates must prosper as well. This means that business must adopt approaches in which companies see themselves as part of a wider social system.

Over the years, CSR has been developed from the classical 'profit-centred model' to the modern 'socially responsible model' (see Carroll (1999) for a comprehensive overview). The classical model states that the management's only legitimate goal is to maximize profit. Milton Friedman (1962, cited in Ofori and Hinson, 2007), who has been recognized as an advocate of this view, believes that the primary responsibility of managers and directors is to operate in the best interests of the shareholders who are essentially the true owners of a corporation. The classical view perceives that corporate expenditure on social causes is a violation of management's responsibility to shareholders at least to the extent that these expenditures do not lead to higher shareholder wealth. On the other hand, Frank Abrams (1954, cited in Ofori and Hinson, 2007) stated that a firm's management is responsible for maintaining an equitable and working balance among the claims of the various directly interested groups such as stockholders, employees, customers and the public at large.

The World Business Council for Sustainable Development (WBCSD, 1999) viewed CSR as a continuous commitment by business to behave ethically and contribute to economic development while improving the quality of life of the workforce, their families and society at large. CSR means

different things to different stakeholders, and Baker (2007) highlighted that in different countries there will be different priorities and values that will shape how business undertakes its CSR. The WBCSD in its publication *Making Good Business Sense* also highlighted some evidence of the different perceptions of CSR from a number of different societies across the world. Recently, Othman and Mia (2008) investigated the practical application of CSR and developed an innovative framework that integrated CSR into the quantity surveying profession as an approach to support the government initiatives for housing the poor in South Africa.

SUSTAINABILITY

The existence of more than 70 different definitions for sustainability (Pearce *et al*, 1989; Holmberg and Sandbrook, 1992) highlighted its importance and showed the efforts made by different academic and practical disciplines to define and understand its implications to their fields. Nevertheless, all definitions agree that it is essential to consider the future of the planet and find creative ways to protect and enhance the Earth while satisfying various stakeholders' needs (Boyko *et al*, 2006). The most commonly used definition is derived from the Brundtland Commission, which defined sustainability as development that meets the needs of the present without compromising the ability of future generations to meet their own needs (WCED, 1987). This people-centred definition focused on three main quality-of-life objectives. These have become known as the three dimensions of sustainability (social, environmental and economic), comprising:

- social progress that addresses the need for all people
- the effective protection of the environment and prudent use of natural resources
- the maintenance of stable levels of economic growth and development (DETR, 2000).

Sustainable architecture aims to reduce the negative environmental impacts of the constructed buildings throughout the project life cycle. It is about using the architect's talent and technical knowledge to design and build in harmony with the environment. The challenge is about finding the balance between environmental considerations, society requirements and economic constraints (Hui, 2002).

Sustainable design, and sustainable design management, aims to deliver sustainable architecture. It is the art of designing physical objects that comply with the principles of environment, society and economy. It is a growing trend within the fields of architecture, landscape architecture, engineering, industrial and interior design. Sustainable design aims to produce products and services in a way that reduces the use of non-renewable resources, minimizes environmental impact and relates people with the natural environment (Levin, 1995). Sustainable design is a general reaction to the global environmental crisis, i.e. rapid growth of economic activity and human population, depletion of natural resources, damage to ecosystems and loss of biodiversity (Shu-Yang *et al*, 2004).

There are three principles of sustainable design, namely:

- economy of resources
- life cycle design
- humane design.

Each principle embodies a unique set of strategies that can help architects perceive architecture's interaction with the environment and hence enable specific methods to be developed that could be applied to reduce the environmental impact of our built environment.

ARCHITECTURAL DESIGN FIRMS, CSR AND SUSTAINABILITY

In spite of their important role as the first line of contact with clients in the construction industry and being responsible for designing buildings and specifying construction materials, architects have a duty not only to their clients, but also to society and the environment at large. Architects play a significant role towards producing buildings and facilities that save the environment, enhance society and prosper the economy. Hence, their role should not be confined to the technical aspects, but to cover other aspects that extend their role to improve the sustainability of the built environment. In order to

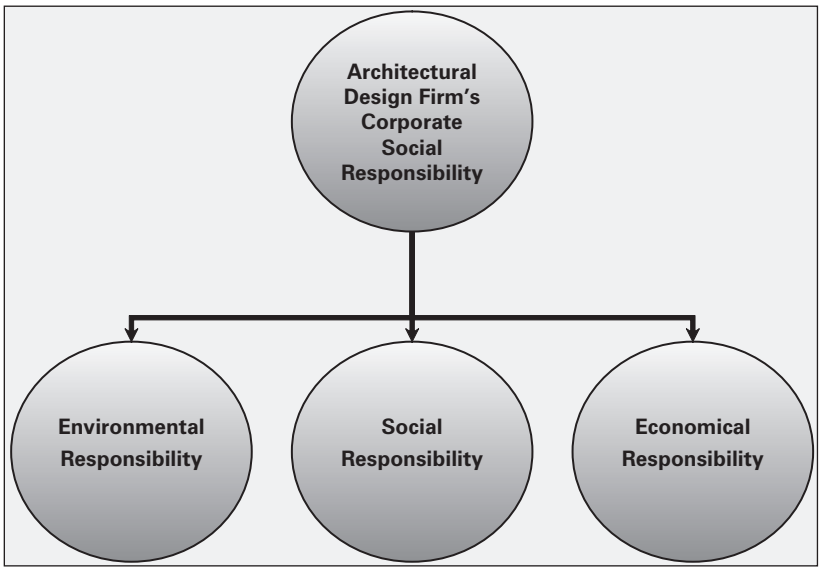

FIGURE 1 The CSR of architectural design firms

relate the CSR of design firms to sustainability, the social role of design firms will be discussed from three perspectives (Figure 1).

ARCHITECTURAL DESIGN FIRMS AND THE ENVIRONMENT

The construction process represents a major contributor to climate change, resources depletion, pollution and energy consumption at both local and global levels (Ofori et al, 2000; Addis and Talbot, 2001), hence, integrating environmental requirements into the design decision-making process is essential for producing buildings that save the environment. The CSR of architectural design firms towards the environment can be identified as:

- Escalating the awareness of the importance of saving the environment and encouraging the adoption and application of sustainability concepts in the architecture practice.
- Reducing the negative environmental impact of buildings through using durable, environment-friendly, non-toxic, easy to maintain, energy efficient and recyclable construction materials and equipment.
- Responding positively to the different environmental effects, forces and unexpected events (e.g. earthquakes, floods, climate constraints) through developing designs that cope with these constraints.
- Encouraging design firms and other construction professionals to be proactive in taking their responsibilities within their supply chains.

ARCHITECTURAL DESIGN FIRMS AND THE SOCIETY

Architecture is an integral part of human activities. It affects everyday experiences and actions. Architects are facing a challenge that is characterized by creating an environment that supports, enhances and celebrates human activities. Cities, towns and buildings have always been the result of cultural, social and economic factors. This requires the architect to be responsible towards these factors which support the design of a responsive environment. The CSR of architectural design firms towards society can be identified as:

- Raising the awareness of the important role that design firms can perform towards improving the society.

- Perceiving stakeholders' requirements and involving them in the design decision-making process to ensure that the developed facilities meet their needs, fulfil their expectations and reduce the cost and implications of later modifications.
- Equipping buildings with facilities for people with special needs as well as health and safety requirements.
- Seeking feedback from people who are affected by the built environment, providing support and adding value to communities and the supply chain.
- Including CSR in the architectural education programmes and providing expert advice to non-experts through offering volunteer services.
- Promoting positive partnerships between the public sector and SAADF to support government initiatives, improve collaboration and experience exchanges.
- Offering training programmes and jobs for recently graduated architects and engineers as well as sponsoring students.

ARCHITECTURAL DESIGN FIRMS AND THE ECONOMY

The economic dimension of sustainable architecture can be seen from two perspectives. First, stimulating growth in the construction industry which increases the percentage of GDP and provides more job opportunities. Second, increasing clients' profit and investment returns. The CSR of design firms towards the economy can be identified as:

- Highlighting the importance of the role that architectural design firms can play to improve the economy.
- Ensuring that society's funds and resources are used sparingly.
- Promoting and supporting purchasing from supply chains that are committed to sustainability requirements in their products.
- Considering the life cycle cost of the project and minimizing the cost of operation and maintenance.
- Creating innovative ideas and using sustainable materials and technology which can perform the same function or even better at lower cost.
- Specifying locally manufactured materials to encourage the national economy and reduce the cost of importing materials.
- Using demolition materials in manufacturing new construction materials.
- Creating job opportunities to reduce the unemployment rate and enhance families' economic status.

RESEARCH METHODS

A field study comprising a survey questionnaire and interviews was carried out on a sample of South African architectural design firms. A total population of 1354 firms, which are registered as members of the South African Institute of Architects (SAIA, 2008), were identified. These firms are distributed in 11 branches throughout South Africa, as shown in Table 1. A systematic random sample using a sample factor of (1:10) was applied to get a reasonable sample size and ensure that the study sample is distributed in the same proportion as the population in terms of the different branches (Bernard, 2000; Bryman, 2001). This resulted in producing 137 units to be surveyed. The survey questionnaire was then faxed and e-mailed to these firms. The sample size suits the population taking into account a 95% confidence level and 7.94 sampling error (Creative Research Systems, 2008). Design firms that responded to the survey questionnaire were then invited to participate in interviews.

Two approaches were used for data analysis. First, the quantitative approach adopted the measure of central tendency and dispersion to analyse the questionnaires and interview responses. The measure of central tendency was used to get an overview of the typical value for each variable by calculating the mean, median and mode. The measure of dispersion was used to assess the homogenous or heterogeneous nature of the collected data by calculating the variance and the standard deviation (Bernard, 2000). Second, since there is no quantification without qualification and no statistical analysis without interpretation (Bauer and Gaskell, 2000), during the course of this research qualitative data analysis was employed. Analysis of the collected data showed close values of means, medians and modes, indicated typical central values and showed also low values of variance and standard

TABLE 1 Population and sample size of surveyed institutes of architects in South Africa

INSTITUTE BRANCH	NO. OF REGISTERED FIRMS	SAMPLE SIZE (1:10)
Border Kei Institute of Architects (BKIA)	46	5
Cape Institute for Architecture (CIA)	412	41
Eastern Cape Institute of Architects (ECIA)	46	5
Free State Institute of Architects (FIA)	56	6
Gauteng Institute for Architecture (GIFA)	302	30
KwaZulu-Natal Institute of Architecture (KZNIA)	203	20
Mpumalanga Institute of Architects (MPIA)	29	3
Northern Cape Institute of Architects (NCAI)	9	1
Limpopo Institute of Architects (LIA)	26	3
Northwest Province Institute of Architects (NWPIA)	10	1
Pretoria Institute of Architecture (PIA)	215	22
Total	1354	137

deviation. This confirmed the quality and the homogeneity of the collected data as well as the reliability of the research findings.

RESULTS

137 questionnaires were sent to architectural design firms throughout South Africa, of which 45 were completed and returned, providing a response rate of 33%. The response rate is typical for a survey questionnaire, lying within the 30–40% range which is usually deemed acceptable because so few people respond to questionnaires (Fellows and Liu, 1997). Although 45 is a small sample it does give a unique insight into the perceptions of architects in South Africa towards CSR and sustainability.

QUESTIONNAIRE RESPONSES

The questionnaire was divided into three sections. The first section collected general information about the firm. It included the organization name, contact details and designation of the respondents. All respondents were either heads of architectural departments, senior architects or architects. This ensured the consistency and relevance of the received information. The second section was about CSR. It focused on investigating the perception and application of CSR as well as the internal governance of design firms. In addition, it was designed to identify the reasons that encourage/hinder design firms from adopting CSR and the form of their CSR practices (if any). Furthermore, on a scale of 5, design firms were asked to rank their awareness of CSR and to identify the use of an ethics officer. The third section was concerned with sustainability. It covered the understanding of the concept of sustainability and the awareness of SAADF towards developing sustainable built environment in South Africa. Findings of the survey questionnaires showed that:

- 34 out of 45 respondents to the survey questionnaire stated that they recognize the CSR concept and implement it in performing their daily business functioning. 50% of these firms mentioned that CSR is reflected in their companies' visions for the future, and the remaining firms stated that it is reflected in their mission statements.
- With reference to the reasons that encourage SAADF to adopt CSR, 75% of respondents stated that CSR is the right thing to do, and the remaining 25% of respondents added that CSR is a marketing tool that could be used to promote design firms.
- Figure 2 shows the form of CSR practices carried out by SAADF. The firms that mentioned 'others' stated that their community liaison officer works with local schools on a number of activities and their firms set targets for employing homeless people.
- Respondents who indicated that their firms do not adopt CSR attributed that to the lack of knowledge of the concept and understanding of

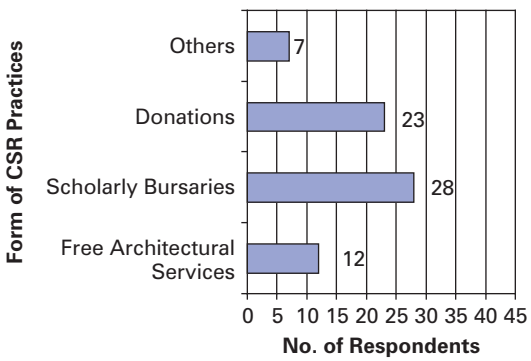

FIGURE 2 Responses of forms of CSR practices carried out by SAADF

their social role as well as the time, money and energy constraints incurred when adopting CSR.

- On a scale of 5, 18 out of 45 respondents to the survey questionnaire rated their awareness of CSR as 5 out of 5. 22 design firms rated their awareness as 4 out of 5, and the remaining firms rated their awareness as 3 out of 5.
- In order to investigate the use of ethics officers in design firms, 10 respondents out of 45 stated that they appoint an ethics officer as a liaison between the firm and the community.
- All SAADF indicated that they perceive and use the concept of sustainability in their business. 44.44 per cent of respondents rated the importance of their role towards developing a sustainable built environment as 5 out of 5, 53.33% rated their role as 4 out of 5, while the rest rated their role as 3 out of 5.

FINDINGS OF THE INTERVIEWS

Respondents were asked to attend a follow-up interview. Out of 45 design firms invited, five agreed to participate. Analysis of the interview responses showed that limited government incentives for supporting CSR as well as the partial evidence of successful sustainable projects hindered the adoption and application of CSR and sustainability in South Africa. In addition, interviewees stated that beyond the traditional role of SAADF, they can play a social role towards developing a sustainable built environment throughout the project life cycle as explained below.

During the feasibility stage

- Educating clients and explaining the importance of sustainability and its benefits to their projects, stakeholders and community in general.
- Integrating the different dimensions of sustainability during the briefing stage through understanding the client business case and value system and locating them in a sustainable context.

During the pre-construction period

- Incorporating sustainability requirements in the design process through critically analysing design elements and eliminating any item that does not add value to the project and may affect the final product and surrounding environment.
- Simplifying design to ease construction, reduce cost and facilitate maintenance.
- Specifying construction materials and equipment that comply and adhere to sustainability requirements.
- Providing equal opportunity and transparency in the selection process of contractors through comparisons between contractors based on their expertise and records of delivering sustainable products rather than lowest price.
- Obligating contractors to use sustainable materials and support suppliers that deal with such materials as well as automating the tender process and reducing paper work.

During the construction and after practical completion period

- Assisting contractors through finding creative solutions and alternative construction methods.
- Reducing energy consumption and wastage as well as applying health and safety regulations.
- Conducting post-occupancy evaluation to assess building performance and identify design errors and construction defects.
- Recording stakeholders' feedback for improving performance in future projects.

In addition, design firms identified a number of social roles that they can play in governmental, legal and

technological spheres towards developing a sustainable built environment in South Africa. More specifically:

In the governmental sphere

- Creating partnerships with government authorities and supporting initiatives for housing the poor in South Africa through developing sustainable, affordable and quality housing projects.
- Explaining the benefits of sustainability to decision makers to get ownership of the concept and facilitate its adoption.
- Assisting government authorities in reviewing its regulations periodically to make sure that they are in line with sustainability requirements (Abdellatif and Othman, 2006).

In the legal sphere

- Proposing mandatory laws for implementing sustainability requirements, by all construction professionals, in the built environment.

In the technological sphere

- Ensuring that technology does not increase the unemployment rate.
- Employing new advanced and successful technology in building design to enhance the performance and reduce the consumption of materials and energy.
- Utilizing the benefits of information management and information technology to facilitate the procurement process and improve communications between concerned parties.

CONCLUSIONS AND THE WAY FORWARD

The development of CSR over the years and the increasing demand for integrating the environmental, social and economic considerations into the design decision-making process called for activating the social role of design firms to create innovative and value-added solutions towards developing a sustainable built environment in South Africa. In the research reported above, it was found that the concept of CSR is perceived and applied by most of the respondents, although different forms of CSR practices are reportedly being implemented. The obstacles that hindered some design firms from adopting CSR and appointing ethics officers are attributed to a number of reasons such as lack of integrating CSR in the internal governance of design firms, limited government incentives for supporting CSR and the negative perception of time, cost and energy constraints when CSR is adopted.

The way forward to overcome these barriers and activate the CSR of SAADF towards a sustainable built environment in South Africa could be achieved by addressing the issues on two levels, namely the government and the design firm.

AT THE GOVERNMENT LEVEL

- Raising the awareness of CSR and educating the public and private sectors of the importance of CSR, as well as explaining its benefits towards developing a sustainable built environment in South Africa, are essential. This needs to be integrated with the establishment of appropriate rules and regulations that save the environment and encourage current generations to use natural resources sparingly to enable future generations to achieve their goals and meet their expectations.
- Supporting the private sector and creating partnerships with the SAADF to utilize their expertise and CSR towards developing sustainable projects could also be a positive development.

AT THE ARCHITECTURAL DESIGN FIRM LEVEL

Design managers clearly have a role to play in implementing the appropriate policies and providing the support and encouragement to carry through the initiatives. Some of those initiatives could include:

- Highlighting the importance of CSR and sustainability within the architecture profession and playing a proactive role beyond donations and scholarly bursaries and free architectural services.
- Integrating CSR in the internal governance of design firms and developing action plans and appropriate tools for implementing and

measuring its success as well as corrective actions required.
- Appointing ethics officers to manage the implementation of CSR in design firms and liaise between them and the community at large.
- Publicizing success stories and providing solid evidence that sustainability can be achieved within the client's budget and avoiding treating sustainability as a discrete problem.
- Integrating the concept of sustainability at the different stages of the project life cycle and particularly at early stages to obtain optimum advantages.

Although the research was limited to a small number of responses in comparison with the total population of architectural design firms in South Africa, the findings provide a valuable insight into how architects perceive and implement CSR towards achieving a sustainable built environment. More research is needed into this emergent aspect of design management to better understand the motives and drivers behind the issues revealed by this research.

ACKNOWLEDGEMENT

The author is grateful to the anonymous referees and the editorial board for their valuable suggestions.

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