IMPACT OF GREEN CONCEPT ON BUSINESS OBJECTIVES OF AN ORGANISATION

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ABSTRACT

Today, the world is moving towards green concepts which focus on increasing efficiency of resources while reducing impact on human health, productivity and environment. As a result, many companies are incorporating the green practices into their daily operations. Whereas, the rest of the world moves towards sustainable development, a very few number of green buildings are functioning in Sri Lanka. Within this emerging culture, this research has addressed, how green building concept influences in achieving the business objectives of an organisation with many aspects than conventional buildings.

The research method used for this study was qualitative. Case studies were conducted to ascertain the research aim and objectives. Two green buildings were selected from apparel industries. Semi-structured interviews were conducted among a selected experts panel and mainly content analysis was used to analyse data. The results discussed compatibility of the green concept for Sri Lankan organisations and deliberated how the green process achieves the cooperative objectives of organisation and sub-objectives of individual departments. Moreover, it was found that there is a positive impact of green building concept to achieve business objectives of an organisation and discussed the benefits gained in terms of financial, social, environmental and technical aspects.

Key words: *Green building, Organisational Objectives, Sustainability.*

1. BACKGROUND TO THE RESEARCH

Global warming and depletion of natural resources cannot be ignored by any one because it affects to environmental degradation (Mezher, 2011). To response the society's growing expectations, organisations are increasingly revealing social, environmental, economic, safety and health performance (Fonseca *et al.*, 2011). The biggest challenge facing the world today is how to balance the economic growth and development with sustainable development (Mezher, 2011). The best definition of sustainable development was made in 'Our Common Future', the report of the World Commission on Environment and Development (1987) as 'the development that meets the needs of the present without compromising the ability of future generations to meet their own needs' which involves with environmental responsibility, economic profitability and social awareness and achieving the right balance between them (Smith and Pitt, 2011).

Green buildings are important for a sustainable development (Waheed, 2010) which use resources such as energy, water, materials, and land more efficiently than conventional buildings (Kats, 2003). In the last decade, attention on green buildings was mostly focused on ecological benefits, and to some extent cost savings associated it decreased the operational cost but now it is moving beyond its establishment stage by focusing on the benefits to occupiers working in a green workplace (Armitage *et al.*, 2011). Green buildings typically contribute to improve employee health, comfort and productivity (Kats, 2003) on the other hand it is linked to gaining success through improving quality of work life, enhancing relationships with stakeholders and community liability, and ability to market pro-environmental consumers (Brown *et al.*, 2010). Moreover, the same authors explained that organisational and green building objectives are highly interrelated. However, according to Kats (2003) green buildings are commonly perceived to be more expensive than conventional buildings.

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1.1. PROBLEM STATEMENT

Green Building Council Sri Lanka (GBCSL, 2010) stated that improper understanding and misinterpretation of different domains and aspects in different localities have created inadequate measure of sustainability, which would not reflect the magnitude of the local interpretation of sustainability. Apart from that still green concept has not become a major and pressing requirement for Sri Lanka especially in building construction. Therefore, in Sri Lankan context, there are only few buildings which have been applied the green building concept yet. Less awareness, lack of knowledge about the green building concept among the industry practitioners and insufficient funds can be considered as some preliminary reasons behind this scenario. On the other hand, many practitioners do not have enough confidence to implement the green concept, assuming that high risk involvement in recovering their investment. Therefore, this research will be addressing "how the green building concept impact on the business objectives of an organisation" and facilitate solutions for the above mentioned problems in Sri Lankan context. A brief foreword to the study was given in this section and next section explained the key literature findings.

2. LITERATURE REVIEW

2.1. SUSTAINABLE DEVELOPMENT IN AN ORGANISATION

Since the last quarter of the twentieth century, environmental issues have reached the status of a global problem (Faria *et al.*, 2009). According to Gandhi *et al.* (2006) the modern man started exploiting the natural resources and economic activities changed the status of natural resources, finally it led to the natural resources depletion on one hand and the environmental degradation by dumping pollutants on the other. Despite some improvements over the past decade, future generations will continue to face serious environmental problems unless significant attention is given, and investments are made to reverse the current state of environmental degradation (Hussein, 2008).

According to the Sigma Guidelines (2003) the adoption of sustainable development principles can result many benefits to the organisation including improved operational efficiency, enhanced reputation, customer attraction and retention, enhanced human and intellectual capital, building and sustaining shareholder value, improved management of risk, generating increased revenues, attracting and retaining talented staff and identification of new opportunities. Many managers have had difficulty in getting along with sustainable development requirements (Hall and Vredenburg, 2003). It is to be noted that failing to care about the community and organisational sustainable development roles will create a negative image of the organisational brand, and negatively affect in the long-term (Cruz *et al.*, 2006). According to Richardson and Lynes (2007), sustainability targets are important pre-requisites to the construction of green buildings. Today green building concept has become a main factor contributing to the sustainable development in this century that endures the responsibility of balancing long-term economic, environmental and social health (Ali and Nsairat, 2008).

2.2. THE CONCEPT OF GREEN BUILDING AND BENEFITS

Environment degradation has conspired to create an increasing awareness of sustainability issues and demand for green construction practices in general (Lavy and Ferna´ndez-Solis, 2009). Paumgartten (2003) stated that, buildings continue to have an enormous impact on resource use and the environment. It is pointed out that "green buildings" is a relative concept and not an absolute one. This is because even the best green buildings built today are not 100 per cent sustainable (Kats, 2003). Six fundamental principles concerning sustainable construction should persist in a green building (National Institute of Building Sciences (NIBS), 2009) which are needed to optimise site/existing structural potential, optimising energy use, protection and conservation of water, use of environmental friendly building materials, enhancing indoor environmental quality and optimising operational and maintenance practices.

According to Richardson and Lynes (2007) green buildings have four key benefits over to design and construction of conventional buildings. Such as environmental benefits, reduction of costs to the owner or

occupier over the operational life-cycle of the building, better indoor working environment and construction of green buildings provides benefits to contractor by presenting a positive image and reputation towards that company by practically demonstrating green approach. On the other hand, Kats (2003) pointed out that many of the benefits of the green approach cannot be easily expressed in dollar and cents. However, green buildings could yield up to 30 per cent savings in energy consumption through green features such as building envelope designs and use of more energy efficient air-conditioning systems and light fittings (Building and Construction Authority (BCA), 2009). Moreover, Heerwagen (2000) stated that benefits of both organisational and green building factors are more likely to occur when the building and organisation are treated as an integrated system from the outset.

2.3. OBJECTIVES AND FUNCTIONS OF AN ORGANISATION

Moynihan (1993) defined, organisation sets out to achieve certain objectives while interacting with the environment, people and resources to make products or to provide services. Moreover, the same author stated that, organisations are formed to pursue particular fundamental objectives of a business which are an essential starting point for all business planning and differed from organisation to organisation according to individual vision and mission statements and the main function of that organisation. According to Agarwal (1982), organisational objectives are survival in the market, growth of organisation, profit maximisation, efficiency and productivity, innovations, employee development and social responsibilities. Furthermore, Moynihan (1993) stated that main business functions of an organisation can be identified as finance, personnel, production, and marketing. In addition, information technology, administration, purchasing, engineering and maintenance, legal, research and development support the success of a business. Considering all the facts discussed by the various authors, organisational objectives can be grouped into financial, productivity, employee turnover and health, engineering and market value.

2.4. GREEN BUILDING CONCEPT IN AN ORGANISATION

Paumgartten (2003) explained that high performance green buildings effect on changing the direction of businesses. According to Arif *et al.*, (2009) the major drivers behind adaptation of green are regulations, cost savings through reduction in energy costs, waste minimisation, promotion of corporate green image, and corporate social responsibility. To achieve a competitive advantage in the global business environment, companies must have a capability for continuous adaptation to the markets and for renewal capability (Junell and Stahle, 2011). However, there is a trend towards achieving organisational growth by exploiting understanding of the relationships between an organisation and its environment (Holland and Salama, 2010) rather than continuing wasteful spending on inefficient buildings, owners and operators are looking at green buildings not just as an environmentally responsible alternative, but as a smart, financially responsible business strategy as well (Paumgartten, 2003). Richardson and Lynes (2007) mentioned that financial benefits are divided into two categories as result in money savings and result in money earnings. The National Canadian Energy Code states that life cycle costs of green buildings can be reduced by 25% at the very least using an integrated team (Paumgartten, 2003).

2.5. STATUS OF GREEN BUILDING IN SRI LANKA

Sri Lanka, like other countries around the world, is facing an immense challenge to build sustainable buildings for the future. The Green Building Council of Sri Lanka came into existence as a result of an emerging trend towards applying the greener concepts for built environment in November 2009 as a non-profit organisation that is committed to developing a sustainable building industry for Sri Lanka by encouraging the adoption of green building practices (GBCSL, 2010). Furthermore, the same report mentioned that the green building concept is quite new to the current Sri Lankan context but it is rapidly expanding all over different industries. Since Sri Lanka didn't have a clear framework and governing body for green rated buildings in the past there is an extreme necessity for such an institution for Sri Lanka and it was introduced as GREEN$^{SL®}$ Rating System in 2010 which encourages the design of buildings in an environmentally acceptable manner.

3. RESEARCH METHODOLOGY

The unit of analysis for this study was the organisations from apparel industry that already received the LEED (Leadership in energy and environmental design) green certification because today apparel industry moving towards the green concept. While selecting organisations, special concern was given for organisations which have separate departments for financial, productivity, human resource, marketing and engineering. A brief description about the selected cases was given in Table 3.

Table 1: Brief Description about the Selected Cases

Organisation	Organisation A	Organisation B
Area of the building	80,000 ft^2	96,000 ft^2
Number of Employees	1200	1200
Type of green certificate	LEED-NC - Platinum	LEED-NC - Gold
Products	Lingerie	Knit clothing

The interviews conducted among the professionals representing each department in both case. Therefore, all together ten professionals were interviewed. The professionals selected from the top management level employees who lead the organisation and have knowledge about how the organisation going to achieve their objectives towards sustainable approach. The data collection instrument used in this research was face to face semi-structured interviews. Code-based content analysis was used in this study to capture significant findings from the transcripts and for effective interpretation of those. The QSR.NVivo ® - version 7.0.281 computer software was used in this study to simplify the works relating to content analysis.

4. RESEARCH FINDINGS

4.1. BACKGROUND TO THE ORIGINATIONS

The organisations 'A' and 'B' had taken the LEED-NC certification in year 2008, from the United States Green Building Council. 'Organisation A' has 'platinum' award and 'Organisation B' has the 'gold' certification. According to the respondents, the green building concept plays a major role within a building to convert the building operation more towards the sustainable development. Organisations use different strategies to achieve the business objectives in the different stages. This research tries to identify the impact of green building concept on achieving organisational objectives. One of the interviewees of organisation 'A' stated that *"Objectives of any organisation changed by time to time since objectives based on SMART concept therefore objectives are built up with the time constrain. Moreover, those objectives are based on mission of the organisation and some objectives are pre-established and specified areas of the organisation"*. Table 2 shows the mission and some pre-established objectives of organisations 'A' and 'B'. Almost similar objectives could be seen from the both organisations and which are aligned with the mission of the organisation.

Table 2: Mission and Pre-Established Objectives of Organisations 'A' and 'B'

Mission of Organisation A	**Mission of Organisation B**
To provide an unparalleled range of industrial services, enabling investors the most feasible environment for seamless activity, within a climate promoting intra and inter-generational equity, based on the commitment for continuous growth for the company and its shareholders.	*To offer quality customer service through innovation, leadership and excellence while being responsive to change in a competitive global environment. Further, to instil professionalism by embracing a positive spirit of enterprise within the group, to increase global market share.*
Pre-established cooperate objectives	**Pre-established cooperate objectives**
• Earning profit from satisfying customers • Committed to principles of sustainable development • Dispense good quality products and business activities • Generate job opportunities	• Maximising profit • consistently provide meticulous, high quality products • Upholding the highest standard of customer service • Promote entrepreneurship

4.2. GREEN BUILDING PRACTICE IN SRI LANKA: POSITIVE AND NEGATIVE ASPECTS

As found from interviewees, since last five years, many organisations in Sri Lanka aware of the green building concept and try to implement it to their organisation and work for the green buildings. However, still a few organisations received the LEED- NC certification, and at present the green building council has been formed in Sri Lanka in 2010 as the legal body to issue green certificates.

Most of the respondents disclosed that green buildings provide many benefits to the organisation, its employees, and to the whole society over to its initial cost and which assists to achieve the organisational objectives clearly. One of those is financial benefits such as low operational cost, low energy bill, profit maximisation, low motivation cost for employees, low compensations for health issues of employees and low advertising cost. Another benefit highlighted was human resource related benefits such as high employee health, safety and satisfaction, self-motivated employees, attract, encourage and retain the best employees. On the other hand these increase the employees' productivity and the product quality. Moreover, the findings show that green building concept adds value to the building and its product. Other than that makes some competitive advantage within the market and increase the market value of the organisation as well as the product. At the end, this helps to increase the customer satisfaction, goodwill and image of the organisation which opened a way to new market opportunities. Perspective of employees, it provides comfortable environment to the employees within the work stations and it ensures health and safety of the employees.

Sri Lanka is a 3rd world country which undergoes through economic situation within the country and most of the construction projects inside the country use foreign loans which were provided by the funding organisation or foreign countries. According to the empirical evidence gathered from the interviews show that even there are many benefits over to its initial cost, many organisations specially in the private sector face on lack of funds and do not ready to take risk of payback of investment in green projects. Moreover, many respondents emphasised that in order to overcome some issues identified there is a big role for the green building council in Sri Lanka to assist organisation to ensure sustainable development towards the future generation.

4.3. THE IMPACT OF GREEN BUILDING CONCEPT ON ACHIEVING ORGANISATIONAL OBJECTIVES

In order to achieve the research aim, all the departments: financial, production, human resource, marketing and engineering departments were analysed separately. Main objectives of the selected case studies were achieved by incorporating all sections of the organisation towards the cooperate objectives and each department has their own sub objectives which have been broken up from main objectives. The following sub-sections elaborate the foremost findings revealed through the interviews conducted in the organisation 'A' and 'B'.

4.3.1. FINANCIAL DEPARTMENT

Financial benefit is one of the crucial and mostly concerned by any organisation. The financial executive of the organisation 'A' stated that *"This building had consumed 10% more initial cost than a conventional building, but it is gaining many financial benefits as a whole". Moreover, the respondent emphasised that* "*Now our company operates in profit margin and it takes only 4 and ½ years to recover the initial cost because of the special features of this building. Electricity consumption is considerably low since evaporator cooling system consumes low energy compared to the conventional system. If someone expends Rs.100 for the conventional A/C system, this system only consumes Rs.40. Other things are energy efficient lighting system, natural lighting system and electricity gaining from solar panel system which contributes 10% to the total electricity consumption. All above factors effect to reduce the energy bill of this organisation"*. On the other hand "w*ater consumption is also 50% less because this factory building has rainwater harvesting system and that water is used for the flushing system. Another thing is toilets have dual flushing system which reduces the water consumption*". Another significant fact stated by the financial manager of organisation 'B' was *"implementing green building concept, life time of the building cannot increase but easily we can achieve the expected life time"*. Furthermore, he explained that "t*he operation cost of this organisation is considerably low compared to the conventional buildings since building maintenance cost, energy bill, other garden maintenance cost are small amount compared to conventional buildings*". All above facts give the positive impression on the green building concept, which are some of the financial benefits mentioned by the interviewees.

4.3.2. PRODUCTION DEPARTMENT

The production executive of organisation 'B' stated that, *"production is the main function of any organisation in apparel industry and there is an indirect effect of green building concept on productivity of this organisation"*. Moreover, he specified "e*mployee productivity is the main fact that contributes to increase the total productivity. This building maintains comfortable air conditioning level, natural lighting level, and comfortable indoor air quality. Those factors effect on the productivity of employees because people like to work in comfortable environment"*. In addition, the production manager of organisation 'A' explained that *"in a conventional building, the work stresses of employees are high because they work in an environment which is fully covered from the building. But in this organisation all worksites are opened to the natural environment. The theme used here is "this building is for people not for machine". Every person can see the natural environment from their work station. Then they can work without any stress and increase individual productivity of the production flow"*. Moreover, he mentioned that *"workers in this factory are always motivated, they work without any stress and they are satisfied with this environment. Therefore, the quality of the product that they produce is very high because they can fully concentrate on their work because of this comfortable environment. Here employee productivity is 51%. But in the conventional factories in the Sri Lankan garment industry, productivity is around 40%*". This signs that green building concept indirectly effects on quality of the product through employee satisfaction.

Production executive of the organisation 'B' stated that "*employee attendance of the organisation is good and employee turnover rate is also in low level because of employee satisfaction and that ensures their high productivity and continuous operation of the production. Then that will affect to achievement of target on time and do the on time delivery for the buyers"*. That means the green building concept has an effect on the on time delivery to their buyers. And he further emphasised that "*There is no direct effect on machines of this building by the green concept, but it indirectly support to enhance the life time of machines*". All above mentioned facts give evidence to prove that green building concept assists to achieve production objectives of both organisations.

4.3.3. ENGINEERING DEPARTMENT

Many facts mentioned by the engineers of both organisations revealed that there are many direct impacts on achieving objectives of engineering department by incorporating green building concept. The plant engineer of the organisation 'A' stated that "*this building had built-up with bricks which are not burnt and*

it acts as the building envelope of this building which gives good appearance to the building as well and also no painting cost. Therefore, the maintenance cost of the building is very low compared to the other buildings and here all plants are native trees they are grownup by themselves". The above statement supports to show that green buildings contribute to reduce the maintenance cost some extent. Furthermore, he highlighted that *"use of bricks has some effect to keep inside the building coolness, therefore A/C consumption little bit less than other conventional buildings, on the other hand, orientation and height of the building also contribute to keep the building cool. Those facts help to reduce the energy consumption of the building"*.

Another significant factor mentioned by the executive engineer of organisation 'B' was *"there is a positive impact on the environment since there is no carbon dioxide emission to the environment from this building*. Plant engineer of organisation 'A' also stated that *"indoor air quality is good, because here CO_2 level is below the 600 ppm where work around 300 workers"*. All the factors highlighted by the interviewees of engineering department ensure that there is a positive impact of green building concept on engineering aspects of both organisations.

4.3.4. HUMAN RESOURCE MANAGEMENT DEPARTMENT

The executive HRM of organisation 'A' stated that *"Human resource is most critical factor which has influence on many sections of the organisation and it is very difficult to control. Specially, in garment industry has higher employee turnover rate and it is difficult to attract employees. Most of the people motivated from financial benefits and some motivated from recognition expect from other people"*. The information collected form interviewees of human resource departments in both organisations give evidence that the green building concept has direct impact on employee satisfaction and motivation, employee health and safety and employee attraction and turnover. The executive HRM of organisation 'A' mentioned that *"This is an environment friendly system and air quality of this building is high as well as CO_2 level is also below 600ppm and no harm to the employee health"*. Furthermore, Human Resource executive of organisation 'B' explained that *"all the employees in this factory are self-motivated and they do their work without any stress since the natural environment around their workstation assist to increase the employee satisfaction of this factory. Therefore, no issue with salary increments and motivation cost to retain employees because they are well motivated to work"*. Moreover, he mentioned that *"The employee turnover of this factory is less than other conventional buildings and it is easy to attract employees"*.

4.3.5. MARKETING DEPARTMENT

Marketing department which is market the products of the organisation and target to attract customers within the competitive environment. During the survey, it was identified that some factors contribute to achieve marketing targets especially in organisation which has implemented green building concept. Marketing executive of organisation 'A' explained that *"customer satisfaction of this organisation is 99.9% and there are no customer complaints against us. Nowadays people like to buy products from companies which have green certification. Therefore, demand for our products is very high and on the other hand there is a competitive advantage for the market having our products because of green concept.* Moreover, the respondent proudly mentioned that *"new opportunities are there in the foreign market for our products from some countries like Pakistan, Japan and China already came to visit this factory and they hope to buy our products in near future since the image and goodwill of our organisation in the foreign market is good"*. The interviewee of the organisation 'B' also stated that "*customer satisfaction of our organisation is very high because today people are more concerned about the environment and they are satisfied with our products. Therefore demand for our products is also higher than other garment factory products"*.

All the facts identified through the interviews conducted among the two case studies supported to prove that there is a positive impact of green building concept on achieving the objectives of both organisations. The summary of findings is depicted in a cognitive map as shown in Figure 1. It shows sub-objectives of each department which are supported by the green building concept. Apart from that some cross relationships between each department are also indicated in the Figure 1. Finally, all sub objectives support to achieve the main business objectives of an organisation.

5. CONCLUSIONS

The green building concept spreads all over the world as a positive approach to build up a sustainable environment for the present generation as well as for the future generation. This study mainly focused to identify the impact of green building concept on achieving organisational objectives which was conducted using two case studies in apparel industry. It can be assertively stated that there is a positive impact of green building concept to achieve the individual objectives of each department in an organisation. The findings supported to prove that the benefits of green concept directly and indirectly assist to achieve the organisational objectives. Important thing highlighted by the interviewees was green buildings provide many benefits to organisation, its employees and to the whole society over to its initial cost. The findings made through this research direct to think, it is time to awake and try to catch up the world new trends in this changing world and go for more green buildings in Sri Lanka to protect the natural resources and to build healthy and financially viable sustainable environment for future generation.

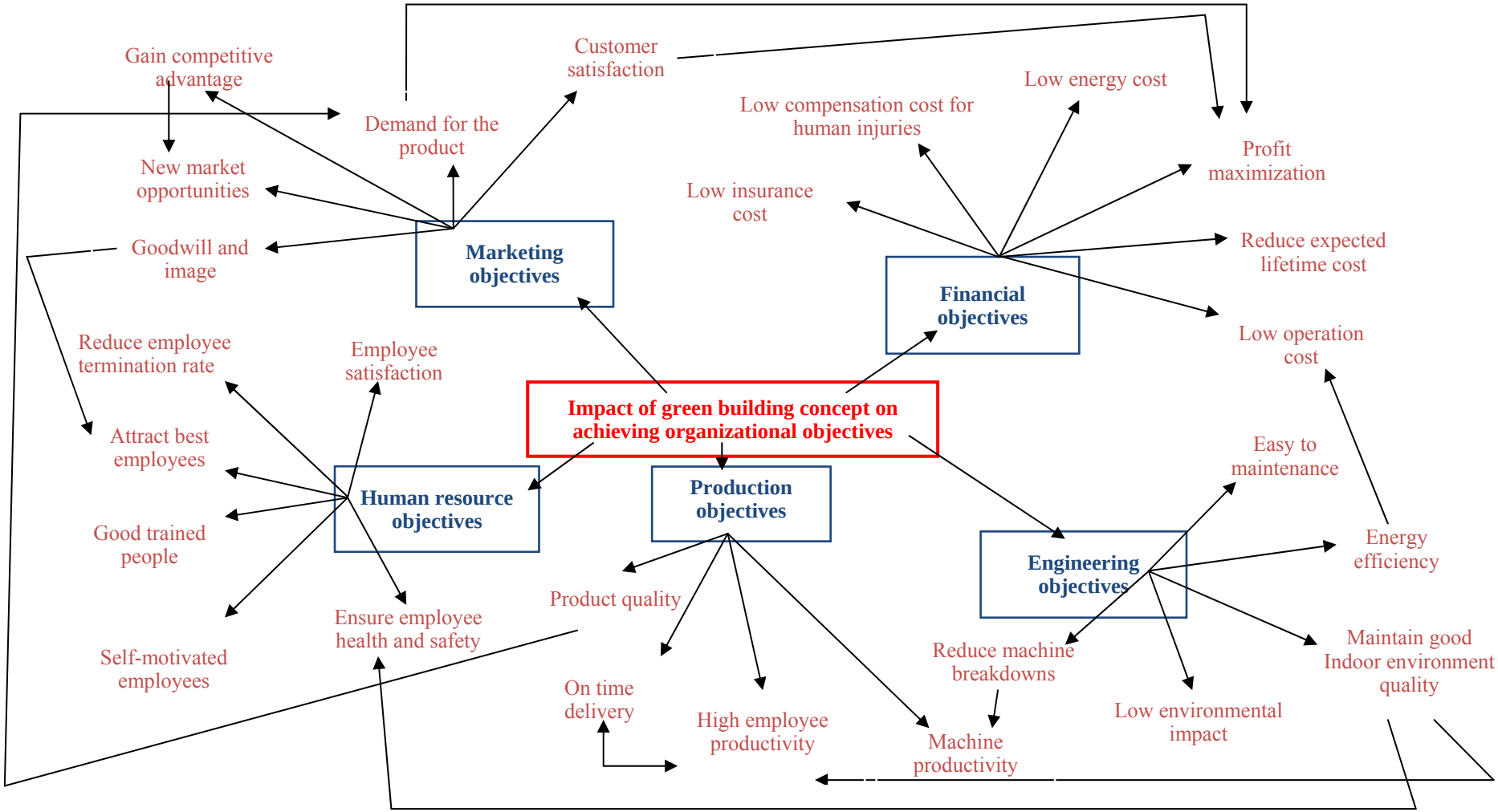

Figure 1: Cognitive Map of Impact of Green Building Concept on Achieving Organizational Objectives

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