

PEBBLES (PVT) Ltd.:

“Building Hopes”



Syeda Nazish Zahra Bukhari

Completion Date: 21st August, 2015

Case Approved By: Dr. Bettina Palazzo, Business School Lausanne

THE CONTEXT

“Man everywhere is a disturbing agent. Wherever he plants his foot, the harmonies of nature are turned to discord” (Marsh, 1864).

While driving on the 64 km long, partly broken down road, of the Lahore-Sheikhupura industrial area I suddenly thought I saw a mirage. But as I took a closer look I realized that it was not an illusion, rather the green walled residential community housed in the middle of the highly polluted Sheikhupura industrial estate was a reality. This residential community called the “ECommunity” is a project of Pebbles (Pvt) Ltd, located in Sheikhupura; which is an industrial city of the province Punjab of Pakistan. The city shares one of its borders with Lahore, the provincial capital of Punjab. The Sheikhupura industrial estate was developed in 1969 for the purpose of increasing the industrial development of the surrounding regions. The area houses several industrial units ranging from paper, seed, leather, steel, stainless steel, chemical, pharmaceutical, rice, stone and marble grinding, textile, poultry and animal feed, flour, soap and many other industries (Gilani, et al., 2013). The industrial estate did serve the purpose it was established for, but at what cost, one may wonder. Various researches done on the region’s environmental condition, reveal that the ceramics, steel, leather, textile, pharmaceuticals and the fertilizer industry are causing severe pollution in the area. According to the official Environmental Protection Agency (EPA) of the country out of 482 industrial units present in and around this area, only seven are observing the National Environmental Quality Standard (NEQS). Several industrial units have been termed “dangerous” for both human and animal life and a major reason behind the local crop destruction. A growing rate of tuberculosis, chest infection, hepatitis, lungs, eyes, liver, skin and respiratory diseases have been reported among the residents of this area. However, when the factory owners or management are asked about why they are indulging in such unsustainable practices, they say that the treatment plants for the hazardous wastes are very costly and they cannot afford them (Dawn, 2004). A research conducted in the industrial area of Sheikhupura revealed a positive relationship between the increased rate of Hepatitis C among the locals and the heavily growing pollution in the area (Sohail, Mughal, Arshad, & Arshad, 2010). Given the extreme unsustainable condition of the region, it can be understood why an outside observer may believe “Ecommunity” to be a hallucination. The context in which Pebbles (Pvt.) Ltd’s sustainable housing community is situated was what attracted me to explore this organization more deeply through a case study analysis.

INTRODUCTION

Pebbles (Pvt) Ltd is a “sustainable project management and development company”, started under the “Dawood Hercules Corporation (DH Corp)” in 2008. It is the first and the only sustainable real estate development company in Pakistan (About DH Corp, 2015). The company was selected for the Business School Lausanne’s (BSL) sustainability case study research after measuring its sustainable validity against the following measures.

1. The company is a recognized and verified sustainability leader in its particular industry, having proof of third-party verification.
2. The company has been pursuing significant initiatives in addressing and contributing to resolve important societal and/or environmental issues in its geographical region.

Once it was verified that Pebbles (Pvt) Ltd fulfilled the qualifying criteria, for the BSL case study, the company’s journey of sustainability and its current position on the continuum of true business sustainability was analyzed using a qualitative research approach. Qualitative research is a term used for

various investigative methodologies that emphasize the importance of looking at different variables in their natural setting, in which observing and analyzing the interaction between the multiple variables is the key to obtaining diverse data patterns (Jacob, 1988). The technique of data triangulation was adopted for the collection of data; which is the convergence of multiple data sources in order to provide a more detailed and balanced picture of a situation, in addition to validating the data involved through cross verification from two or more sources (Denzin, 1978). The following tools of qualitative research were adopted for the collection, analysis, and interpretation of the case study data:

1. Archive (all external and internal company information, including company websites, internal documents, videos, articles, media reports and various other case studies related secondary data)
2. Interview (with current employees and external stakeholders)
3. Survey
4. Personal Observation of the company's sustainable housing community. This is a type of observational research in which the researcher personally interacts with the subjects or observes from a distance, thereby obtaining data directly from the source (Kawulich, 2005). The researcher in the case study visited the housing community and interacted with the residents so as to get a true picture about their living experience.

The objective of the case study was to embark on a journey of learning and discovery with the company in such a way that the following research questions are answered:

1. What is the company's Business Sustainability (BST) position based on the Dyllick/Muff business sustainability typology grid?
2. How did the company get to their current BST position? What were the major milestones or challenges in the organization's sustainability journey that shaped the company's historical timeline? What are the company's current ambitions, aspiration and plans in the relevant societal/ecological issue and externalities is the company facing?
3. How did the company approach and resolve sustainability issues on both organizational and employee levels?

The structure of the case study is as follows: First, the meaning, origin and history of "sustainable real estate" is understood through a review of literature. The concept of sustainable real estate development is studied at both a global and a regional (Pakistan) level in order to gain a better understanding of the context in which the Pebbles (Pvt) Ltd is operating. After gaining comprehension about the industry, in which our research partner company is operating, the methodology of the case study is explained. Third, the journey of the company, on the path of business sustainability, is discussed chronologically. In order to add another perspective about the organization's sustainability performance, the next section describes and analyzes the results of "The Sustainability Culture and Leadership Assessment" (SCALA) survey. The survey adds richness to the case study by providing us with the employee's perspective of the company's sustainable culture and the role of leadership in adopting business sustainability within the organization. Building on the data gathered by the previous sections, the next section of the case study will determine the company's business sustainability position in the light of the Dyllick/Muff Business Sustainability Typology. Based upon the patterns identified throughout the case study, the sustainability journey of Pebbles Pvt. Ltd is analyzed on the basis of how far has the company travelled upon embracing the spirit of true business sustainability. The data in the case study has been discussed, analyzed and explained by reviewing it through a contextual lens, deciphering the data in reference to the specific geographic conditions the company is operating in.

A contextual approach is used while analyzing an organization's commitment towards business sustainability and its sustainability performance because research reveals that the business environment of the developing nations itself poses numerous difficulties for the companies in the adoption of business sustainability (Wilfried & Vanhonacker & Pan, 1997). Country specific studies done by Munoz (2009), Asteriou & Price (2001) and Ahmed & Pulok (2013) concluded that the political instability of a country negatively impacts the economic growth of that country. According to research, this relationship is more evident in the case of developing countries. Developing countries, as classified by the International Statistical Institute (2015) are "countries with a GNI (Gross National Income) per capita of US\$ 11,905 (approx. € 10749.87) or less." Furthermore, Hofstede (1980) stated that countries vary greatly with respect to culture and that culture is one of the major forces impacting the performance of a business. Therefore, if the business environment, the national culture and the political stability of a country is different from other countries, the organizations operating within that country will be facing unique challenges in the adoption and incorporation of corporate sustainability.

Pakistan is an example of a developing country (ISI, 2013) which, according to World Bank (2013):

Is facing significant economic, governance and security challenges in achieving durable development outcomes. The persistence of conflict in the border areas and security challenges throughout the country is a reality that affects all aspects of life in Pakistan and impedes development. Pakistan's economy continues to underperform. There is no improvement in the security situation; political tensions have grown; there is no abatement in energy crisis, which continues to dampen the growth prospects and impacts the fiscal situation.

The organizations operating in Pakistan have to face all the above quoted adversities in addition to various other corporate challenges. Therefore, for a business the journey of sustainability is not just a process of internal evolution, it is the story of a battle fought on numerous fronts. The World Resources Institute report (1994-95) on sustainable development states that "the most pressing environmental challenges in developing countries in the next few decades will be health hazards created by lack of access to clean water and sanitation, indoor air pollution from biomass stoves, rapid urbanization, and deforestation." (Bruce, Albalak, & Rachel, 2000). A survey conducted by the United Nations revealed three key challenges to the sustainable development in the world, i.e. "the absence of sustainable cities, scarcity of food and nutrition security and the lack of energy transformation." Rapid urbanization, in almost all parts of the world, has caused a rise in the real estate sector. This boom has resulted in the development of highly unsustainable living communities. According to research "urbanization causes an increase in the emission of pollutants into the atmosphere, a higher need to clear lands, and a loss of biodiversity in virgin forests on a global scale." Studies reveal that in most cases indoor air of a building may be more polluted than the outside air. The indoor air pollution can be caused by solvents from paints, plywood adhesives, finishes and backing materials, certain construction materials such as Asbestos, Formaldehyde and Lead and production of excess heat inside the building. The indoor air pollution can cause irritation of the eyes, nose and throat, headaches, dizziness and in worse cases may also be a reason for the development of respiratory diseases or cancer. (UN World Economic and Social Survey, 2013).

These challenges highlight the need for sustainable living within the developing countries. We will review the concept of sustainable living in more detail in the next section.

LITERATURE REVIEW

Human population is growing both in term of number and need. Researchers as early as Malthus (1798), realized that the growth of human population is of an unsustainable nature. Malthus wrote that *“human population grew exponentially while resources grew arithmetically”*, which will cause the human population to outgrow the resources in a very short interval of time. He concluded that this disequilibrium will lead to famines, wars and plagues. This, however, did not happen as was predicted by Malthus because of the advent and advancement in various technologies, the improvement of health and sanitation facilities and the slowing down of the growth of human population (Kelly, 2009). In 1968 Garret Hardins again analyzed the unsustainable use of natural resources, in his book *“The Tragedy of the Commons”*. He wrote that *“the tragedy of the commons evolves when individuals use a public good, but do not pay for the full cost of it.”* Hardins, however, took a moral stance on the resolution of this issue and observed that it has become imperative for societies to educate their citizens about the moral obligation of protecting the natural environment, since modern technology will soon become an inadequate savior for mankind. Widespread public concern, in the 1960s, over the degradation of natural resources has been reported as the main reason behind the 1972 United Nations conference on the Human Environment in Stockholm. At this conference it was agreed that *“the capacity of the earth to produce vital renewable resources must be maintained and, wherever practicable, restored or improved.”* In 1980 the United Nations Environment Programme (UNEP) formulated the *“World Conservation Strategy”*, in which the concept of *“development that is sustainable”* was discussed formally for the first time. The strategy stated that:

This is the kind of development that provides real improvements in the quality of human life and at the same time conserves the vitality and diversity of the Earth. The goal is development that will be sustainable. Today it may seem visionary, but it is attainable. To more and more people it also appears our only rational option (Kelly, 2009).

The concept of sustainable development was elaborated further, in the Brundtland Report *“our common future”*. Sustainable development was defined in the Brundtland Commission of the United Nations on March 20, 1987 as: *“development that meets the needs of the present without compromising the ability of future generations to meet their own needs”* (WCED, 1987). One of the major objections to the Brundtland Commission report was that it stated sustainable development as a hypothetical goal which still needed to be defined in practical terms. The UK government stated: *“There can be no quarrel with the [the Brundtland principles] as a general definition. The key point is how to translate it into practice, how to measure it and to assess progress towards its achievement”* (Whitby & Ward, 1994). The 1992 Rio Earth Summit on environment and development provided the basis for the practical application of sustainable development. Following this summit, sustainable development was applied to a diverse range of areas, including sustainable living.

Sustainable living is defined as a *“lifestyle that attempts to reduce an individual's or society's use of the Earth's natural resources and personal resources”* (Ainoa, et al., 2009). Globally the concept of sustainable living started in the 19th century, in geographic regions where rapid industrialization was taking place. In some regions people had started to realize that advancements in technology was causing a great harm to the environment and rapid urbanization was adversely impacting both the quantity and quality of various natural resources. In the early 1800s, some of the people in America started developing personal lifestyles or ways of living that took into consideration the protection of the environment in which they were living. Henry David Thoreau; an American author and naturalist, is considered to be the first person to write about sustainable living in 1854 (Sustainable Development, 2012).

Sustainable real estate development can be traced back to the concept of sustainable living. Sustainable real estate is also called “green real estate”. The concept of sustainability has gained importance in the real estate and construction sector, in the past decade. Real estate developers, all around the world, are facing numerous challenges, including the need to use sustainable energy resources, the need for sustainable urban development within existing neighborhoods, reduction of pollution, ensuring lower maintenance cost and lowering greenhouse gas emissions (Apanavičienė, Daugėlienė, Baltramonaitis & Maliene, 2015). A research conducted in the United States (U.S) states that sustainability is becoming imperative for the real estate market of the country because “*buildings, both residential and commercial, consume 40% of the energy used in the U.S and are responsible for more than one third of the U.S total carbon dioxide emissions*” (Goering, 2009). According to the “green building facts” report by the U.S Green Building Council (2015) buildings account for 38% of the total carbon dioxide emission, 73% of electricity consumption and 13.6% of water consumption in the Country. Similar research done in Singapore reveals that commercial and industrial buildings alone are contributing approx. 15% of the total carbon dioxide emission in the country. It is further observed that despite the government’s efforts to promote green buildings, the private sector is not very proactive in these countries (Dapaah, Hiang, Shi & Sharon, 2015). Just a slight overview of the situation reveals that the need for nations to adopt sustainable living practices is becoming more and more pressing, with each passing day.

Sustainable real estate development provides a solution to many of the above mentioned problems. According to research, compared to an average commercial building, a certified green building will exhibit 25% less energy consumption, 11% less water consumption, 34% less greenhouse gas emission, 27% higher occupation satisfaction and 19% lower maintenance costs. It has been estimated that in 2015, 40-48% of the new non-residential construction will be green in U.S and the figure will reach 84% by 2018. Currently, 83% of the commercial buildings in Brazil, 73% of institutional projects in the U.A.E and 65% of building renovation projects in the U.K are being developed according to green building standards (U.S Green Building Council, 2015).

According to the definition given by the World Green Building Congress, a “green building” has the following features:

A green building uses energy-efficient and eco-friendly equipment, recycled and environmentally friendly building material. It offers quality indoor air for human safety and comfort. The building has a system of generating renewable energy, efficient use of water, effective control and building management system along with effective use of the existing landscape. (Dapaah, Hiang, Shi, & Sharon, 2015).

The World Green Building Council (WGBC) was established in 2002, as a network of green building councils from all across the globe. It has more than a hundred member countries. The WGBC provides the member countries with the sustainable tools and strategies through which they can promote local green buildings and address global issues such as climate change, indoor air pollution and sustainable utilization of natural resources (WGBC, 2015). Currently, there are five major national certification formats for green building in the U.S, which are being followed in other parts of the world as well. These include ASHRAE (American Society of Heating, Refrigeration, and Air-Conditioning Engineers), ENERGY STAR, LEED (Leadership in Energy and Environmental Design), Green Globes and NAHB (Northern Arizona Home Builders) Model Home Building Guidelines. The ASHRAE standards were developed in the 1970s and are considered to be the first and the oldest building sustainability standards. The LEED certification is the most complex and the most recognized and accepted sustainable building or green building certification (Goering, 2009).

Pakistan, like the rest of the world, is also facing the various threats caused by rapid industrialization and unsustainable growth of the real estate sector. In Pakistan, the real estate sector is the second largest employer, contributing over 2% to the GDP (Gross Domestic Product) of the country, having an asset value of approx. \$700 billion. One of the main reasons behind the growth of the real estate sector in Pakistan is that the entire 190 million population of the country dream of owning a house. This large population of the country invests heavily in the real estate sector (Pakistan Real Estate News, 2015). This robust, but unsustainable growth has created a severe energy shortage in the country. Pakistan depends almost entirely on fossil fuels for the generation of energy. The burning of fossil fuels causes heavy emission of the Greenhouse Gases (GHG), which traps heat from the atmosphere and emits ultraviolet radiation back into the atmosphere. In an interview to a newspaper, Mr. Azher Abbas, a member of the Pakistan Council of Architects and Town Planners (PCATP), and Institute of Architects Pakistan (IAP) said:

The increasing energy demand is not only a result of the population growth, but also a result of the concrete jungle our cities have turned into. Considering the current and future energy forecasts in Pakistan, green buildings offer the only way out. The west has repositioned its strategies towards a green revolution; we also have no other choice. (Dawn, 2009).

According to research, the journey of sustainable construction started in Pakistan much later than the rest of the world. In 2005, an earthquake having an intensity of 7.8 on the Richter scale hit the northern areas of the country. It caused great destruction in the area and the government started looking for ways through which it can ensure speedy construction of the destroyed communities without depleting the critical natural resources of the country. At that time various industry experts suggested the use of sustainable building practices, like the use of recycled building material and renewable energy sources (Asghar, 2014). In November 2009, the World Green Building Council accepted the formation of the Pakistan Green Building Council (PGBC) and after three years, in 2012, the PGBC was accepted as a prospective member of the WGBC. The council covered the areas of construction that can affect the environment, including:

Subsoil water levels, water consumption and usage, climate change, deforestation, carbon footprints, air quality, transportation, agriculture, industry, renewable and alternative energy/fuel, energy/fuel consumption and usage, design of buildings, living patterns, green product/building certification system and environmental education at grass root level. (Rana, 2013).

The chairman of the PGBC states:

Most of Pakistan's energy, water and air quality problems can be solved if we all make a conscious effort. Sustainable development was a major consideration in many nations. Unfortunately, Pakistan is behind the curve in this area. The problem is that we failed to make good energy bylaws and implement them. (Naqvi, 2013).

Pebbles (Pvt) Ltd was the first residential society of Pakistan to gain membership of the U.S Green Building Council, in 2009. Currently, 14 construction projects have U.SGBC membership in Pakistan, among which Pebbles (Pvt) Ltd is the only residential housing society project. How did the Dawood Hercules Corporation (DH Corp) come up with the unprecedented concept of sustainable urban development in Pakistan? We will travel upon and analyze the historical timeline of the company in order to better understand its sustainability journey.

METHODOLOGY

In addition to secondary data, three primary data gathering instruments were used in the case study, i.e. employee survey, employee interviews and customer observation. A Sustainability Culture and Leadership Assessment (SCALA) survey was conducted to gauge how much sustainability is embedded within the leadership and culture of the organization. The research instrument was designed by the Miller consultants in 2012. The survey focuses on various elements of the company's leadership and culture that contribute to the successful implementation of business sustainability within the organization. The purpose of this patented research instrument is to provide *"the company, information about their organization's current capacity for executing sustainability strategies."* (SCALA, 2014). The questions pertain to the following elements of business sustainability:

1. Organizational Leadership
2. Organizational Systems
3. Organizational Climate
4. Change Readiness
5. Internal Stakeholders
6. External Stakeholders

The survey consisted of 4 sections and 43 questions. The survey was a blend of open-ended and closed-ended questions. The closed ended questions generated responses on the Likert scale, with the answer choices ranging from "Strongly Agree" to Strongly Disagree". The first 4 questions, gathered demographic data about the respondents. The next 32 questions were closed ended, generating data about the organization's culture and leadership, developed by Miller Consultants from the cumulative results of numerous sustainability researches. 5 open ended questions were added to the survey instrument by Business School Lausanne (BSL), in order to assess the true business sustainability position of the company. The last 2 open ended questions were included by the researcher, as a filter, to verify the responses to the closed ended questions of the survey. The questionnaires were provided to the respondents in hard copy form. Pebbles (Pvt) Ltd has a total of 15 managerial and non-managerial employees. Since, only the managerial level employees were aware of the concept of business sustainability and the vision of the company, only they were taken as the survey sample. The survey was filled by all the managerial level staff of the organization, i.e. 8 employees. It was administered by the researcher at the head office of the organization, generating a 100% response rate. The results were analyzed and documented by Miller Consultants, Inc. The survey respondents were equally divided between the two genders, i.e. 4 females and 4 males. 3 respondents belonged to the senior management level, 3 to the middle management level, and 2 were first line managers. Age wise 5 respondents fell within the 20-30 years bracket and 1 respondent from the 31-40 years, 41-50 years, and 51-60 years bracket each.

Based on various patterns identified through the secondary research and the survey analysis, a series of interviews were conducted with the management of the company. The interviews were semi-structured, in which the interview protocol was shared with the respondents prior to the interview. This was done to ensure maximum generation of relevant information during the interview. The interviewees were selected jointly by the researcher and the CEO of Pebbles (Pvt) Ltd, based upon their involvement in the Ecommunity housing project. The interviews took place in the head office of the company. All the respondents were engaged with the company's first sustainable housing community project, Ecommunity and were able to provide valuable information regarding the organization's sustainability perspective and

the journey it took to transform the dream of Mr. Samad Dawood, the CEO of Dawood Hercules Corporation, into a reality. The third data gathering technique used by the researcher was the personal observation of the sustainable housing community, through a series of visits. During the visits the researcher communicated with the residents of the housing community in order to gather data regarding customer satisfaction and the authentication of sustainable living claims made by the organization. Furthermore, the external environment and its impact on the housing community was also observed by the researcher. These techniques combined with the story of the organization's sustainable journey were used to accomplish the research objectives of the case study.

Name	Title	Years of Association with Pebbles Pvt. Ltd
Mr. Abdullah Yousaf	Chief Executive Officer	7 Years
Ms. Farida Razzak	Finance Officer	6 Years
Ms. Ayesha Bajwa	Manager Finance	3 Years
Ms. Zunaira Nadeem	Business Controller	2 Years
Mr. Amir Zaidi	Ex-CEO	6 Years

Table 4.1: Interviewee list and years of association with the company

PEBBLES (PVT) LTD.

The Dawood Hercules Corporation traces back its roots to the 1920s, during which the founding member of the company Mr. Ahmed Dawood opened his first shop of cotton yarn in the subcontinent (the name given to Pakistan and India jointly under the British rule, before the two countries separated and became independent nations in 1947). In 1948, Mr. Dawood expanded his business interests further and created the Dawood Hercules Group. Today the Dawood Hercules Corporation, has the following business divisions:

1. Engro Corporation Limited
2. The Hub Power Company Limited
3. Dawood Lawrencepur Limited
4. Tenaga Generasi Limited
5. Inbox Business Technologies (Pvt.) Limited
6. Pebbles (Pvt.) Limited
7. Cyan Limited
8. e2e Business Enterprises (Pvt.) Limited
9. Bubber Sher (Pvt.) Ltd

In 1964, the DH Corp entered the real estate market of Pakistan. The company constructed the Dawood Center in Karachi, Pakistan. It was a commercial project undertaken by the company, on an individual basis. In 2008, the DH Corp decided to formally enter the real estate business through the formation of a separate business entity (DH Corp, 2015). The reason behind entering the real estate sector was the attractive growth patterns of the industry during that time period. Pakistan, has one of the highest urbanization rates, i.e. 3.2%, in South-East Asia. This provides a lot of opportunities for the real estate companies (Zaheer, 2015). According, to a report issued by the World Bank:

The housing demand in urban centers, of Pakistan, is increasing at an annual rate of 8%. The total shortfall, which in 2009 was recorded at 7.57 million units, has now touched the 10-million mark. Market experts say that the total number of houses built every year in Pakistan is somewhere between 0.15 – 0.2 million, whereas the country needs 1 million new houses annually (0.7 million for the population growth and 0.3 million for replacing old houses and to cover the existing shortage). (Haq, 2015).

Mr. Samad Dawood, the CEO of DH Corp, was greatly interested in the real estate sector. However, he was aware that the great boom in the country's real estate market was highly unsustainable and contributing to the country's energy and resource scarcity problems. His vision was to offer a solution to the problem rather than adding to it by creating yet another commercially run, profit oriented real estate development company (A. Yousaf, personal communication, December 10, 2014). Mr. Aamir Raza, the first CEO of Pebbles, states:

It is increasingly evident that our present day living structures are being challenged by a host of factors, particularly in relation to the design intent, space optimization, effective energy usage, water wastage, pollution, landscape, parking spaces, ventilation, natural light, fire fighting, garbage disposal and above all safety and security of the occupants. The growing environmental pollution was a painful reality in my younger days. After decades, I feel that it has taken the form of crisis in our country.

As a result of this vision, Pebbles (Pvt) Ltd started in September 2008, as Pakistan's first sustainable project development and management company. The top management at DH Corp realized that in order to become a solution provider, they had to think and act sustainably. The Ex-CEO of the company, Mr. Amir, says:

It is only the carefully planned ideas and designs that can help save further deterioration of the environment and our lifestyles. Conservation of resources and sustainability is the call of the day and intelligent use of resources needs to be realized as the real pivotal focus of construction. Conservation of resources and their smart, sensible use is a beauty that's more realistic than a natural surrounding. (Raza, 2014).

At that point in time there was no concept of sustainable construction in Pakistan and therefore, no industry standards or rules for the company to follow. Pebbles started its journey with the following vision: *"To penetrate the up-and-coming real estate market by encouraging sustainable business practices, efficient building concepts and to demonstrate a strong awareness about preservation, recycling of resources and reliable energy sources."* (Pebbles, 2015). Since, Pakistan had no local green building council Pebbles joined the membership of U.S Green Building Council, in 2009. It was the first construction company in Pakistan to have the membership of U.SGBC. The company started functioning under the standards of U.SGBC. The top management of the company also started working towards the development of the "Pakistan Green Building Council (PGBC)" (A. Bajwa, personal communication, December 10, 2014). In 2009, a number of industry experts applied to the WGBC for the formation of the PGBC. Mr. Aqrab Ali Rana, a LEED certified architect, states:

In Pakistan, the environment is not high in the list of issues. Transforming the vision and mission of a few into a mass movement proved to be a tough job. After three years of dedicated work and meeting strict requirements, in 2012, the World GBC accepted Pakistan GBC membership as a prospective member. In parallel the Security Exchange Commission of Pakistan (SECP) also

accepted the Pakistan GBC application. Pakistan GBC was licensed to run as a non-profit organization in November 2012. (Rana, 2013).

Pebbles Pvt. Ltd was one of the founding members of the Pakistan Green Building Council. In 2010, Pebbles started working on its first sustainable housing community project. It was initially named “Sheikhu Garden Housing Society”, but in 2011, the name was changed to “Ecommunity”. The name symbolized the sustainable nature of the housing community. The first step was the selection of the location for the housing community. The company had a number of economically and aesthetically attractive options. However, Mr. Samad Dawood, had the vision of developing a sustainable housing community that would prove the benefits of sustainable development within an unsustainable environment. He wanted the adversities of the location to be the challenge that would be solved through sustainable development and management of the housing community (A. Yousaf, personal communication, December 10, 2014). Ultimately, the top management of the company selected a 222,577 square meter piece of land on the main Lahore- Sheikhpura road. The location, which was in the middle of the highly polluted industrial area, was the first sustainability challenge for the company. It was believed by the company’s management that the advantages of sustainable living would be best highlighted against the contrasting unsustainable background and Ecommunity would prove to be the green haven that the adversely affected local population was looking for. The project was designed on the basis of LEED building standards, in which it is continuously measured and monitored how well a building performs across the metrics of: energy savings, water efficiency, CO2 emissions reduction, improved indoor environmental quality, and sustainable utilization of resources.

Ecommunity

Ecommunity is the first ever housing scheme of Pakistan that is built upon green building practices. Based upon the green building guidelines of LEED, the housing community has about 36% of the area for residential purpose, 15% of the community is green (parks and gardens) and 40% of the area is covered by wide and spacious roads, by roads and avenues with tree lined walkways. The rest of the space consists of aesthetically and sustainably planned commercial areas and community centers. The housing society offers four types of residential options with varying sizes and features. The houses were designed keeping in mind the individual requirements, preferences and resource availability of various customers. (ecomunity, 2015). The four types of houses, available for the customer, are:

1. A 126.47 sq meter house with 4 design options
2. A 177.05 sq meter house with 4 design options
3. A 252.93 sq meter house with 4 design options
4. A 505.86 sq meter house with 2 design options

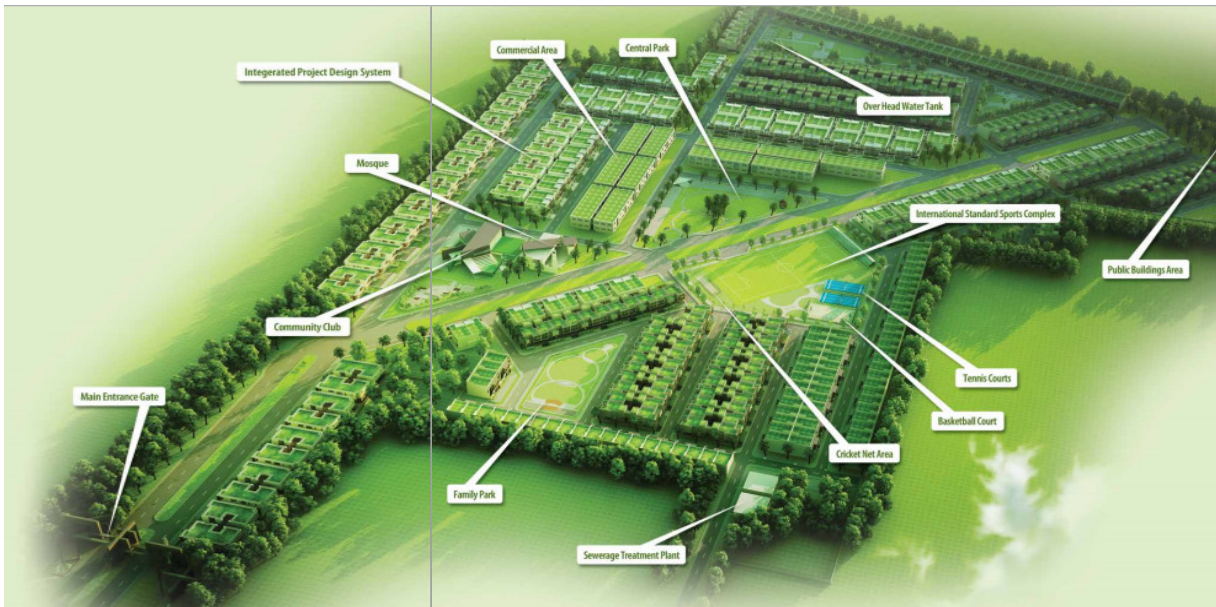


Figure 5.1: An ariel blueprint of Ecommunity.

All the houses are built to fulfill the following “green targets”:

1. Water use reduction up-to 40%;
2. Energy reduction up-to 50%;
3. Renewable energy usage up-to 2.5%;
4. HVAC (Heating, Ventilation, and Air Conditioning) requirement reduction up-to 30%;
5. Material re-use, up-to 20%;
6. Usage of construction materials which could be procured within 500km radius of the site up-to 50%;
7. Usage of rapidly renewable material up-to 5%;
8. Improved indoor environmental quality & providing extra ventilation in all living spaces;
9. Reduction in carbon dioxide concentration inside the house;
10. Consideration for healthier neighborhood and privacy factor.

When Pebbles Pvt Ltd started the construction of Ecommunity, one of the biggest challenges faced by the company was the neighboring industries. As previously discussed, the surrounding area is heavily polluted because of the environmentally unsustainable activities of the various industries. Ecommunity was being developed on the values of conservation and preservation of nature, which were in contradiction to the practices being followed by the other actors operating in the area. However, Pebbles stepped forward to fight the battle for the thousands of lives being threatened and damaged by the greatly rising and uncontrolled pollution in the area. The Ex-CEO of the company, Mr. Amir, stated during his interview:

We did face some resistance from the neighboring industries, but with the support of local public and the concerned government bodies, we were able to start and successfully complete the Ecommunity project. The people of the area were sick and tired of environmental pollution created by the factories. The administration was very helpful since they thought that our green practices would not only beautify the general area rather it would act as a wonderful source of learning for other people to follow. You have seen yourself that how the factories have ruined the environment and the natural habitat in the general area. So, where else would we need a project like Ecommunity? (A. Zaidi, personal communication, August 13, 2015).

The company served legal notices to a number of surrounding industries against their hazardous waste emission practices. A legal notice was sent to a neighboring paper mill, in order to stop the hazardous gas emission. The various gases were not only a severe health hazard to the surrounding areas, but also served as a source of bad smell in the vicinity. Along with taking legal action the company planted numerous fragrance producing trees along the boundary walls of the community to counter the adverse effects of air pollution (A. Bajwa, personal communication, 10 December, 2014). The master planning and infrastructure design of Ecommunity were developed by an international consulting firm, Unicorn Consulting Services Pvt. Ltd. The construction work was carried out by one of the top 10 construction companies of the world, China Metallurgical Group Corporation (MCC). In 2013, MCC ranked 302th among the world's Fortune 500 companies. Since the company was a member of the US Green Building Council the supply chain processes and all the construction procedures were adopted in line with the systems promulgated by the council. In order to bring sustainability within the supply chain the company used local construction materials from sources within 500km of the site for at least half of the project. This ensured increased earnings for the surrounding communities and businesses (A. Zaidi, personal communication, August 13, 2015). For the designing of sustainable houses, Ecommunity hired a LEED certified architect, Mr. Aqrab Ali Rana. He is among the very first architect, in Pakistan, to gain an internationally recognized certification in sustainable architecture. At the time the Ecommunity project was started, Mr. Rana was working in U.A.E (United Arab Emirates). The CEO personally contacted him and requested him to come to Pakistan and work with Pebbles on the Ecommunity project. The main gate of the society was especially designed by another architect, Ms. Atika Waheed. The concept of green walls was used in the designing of the main gate of the society. The whole society is surrounded by walls covered with green creepers (plants), giving the image of a beautiful green walled community (A. Yousaf, Personal Communication, 10 December, 2015). Green walls have been identified as a symbol of the green building movement in the U.S. Research reveals that air that circulates within a green walled building is cleaner. In addition, the green walls offer natural resistance to both hot and cold weather, removes airborne pollutants such as Toluene, Ethyl Benzene, Xylene, and other volatile organic compounds, and can also block low frequency noises (Green Walls, 2015). The interior of the houses was designed by Ms. Sadia Rasheed, who was also nominated for the "Asia Pacific Property Awards 2014-15" for her designs in the Ecommunity project.



Figure 5.2: Green walled entrance of Ecommunity.

A sewerage treatment plant was built in the housing society which resulted in a 40% reduction of fresh water usage in the community; greatly saving this scarce and vital natural resource. The developers came

up with the concept of introducing green roofs of the houses. A green roof is a roof that is partially or completely covered with vegetation along with a maintenance system. According, to the U.S green roofs organization the benefits of green roofs include thermal insulation for buildings, thereby reducing the energy consumption and hazardous emission of by-products by various temperature regulating devices, captures airborne pollution and atmospheric deposition, filters noxious gases, and decreases+ the amount of carbon dioxide emission in the atmosphere (Green Roofs, 2015). According, to the bylaws of Ecommunity the residents are required to have at least 14.7% green area in their houses. In Pakistan, the government requires only 7% of the residential space to be green and even that is not being actively enforced by the officials or followed by the housing societies. But Pebbles made this a rule in their housing community to promote environmental sustainability. A waterproof roof top material for the houses was specially imported from Italy; which was designed in the shape of small cups that could store water. As the water evaporated from the small cups a cooling effect was created. This greatly reduced the need to use HVAC (Heating, Ventilation, and Air Conditioning) equipment. The residents were provided with the option of installing solar panels which would result in the decrease of energy usage and cost. The houses were designed to provide extra ventilation, thus reducing the electricity usage and indoor pollution (ecomunity, 2015). Ecommunity is a residential society built for the middle class families earning their livelihood from surrounding areas. It offered the public a chance of sustainable living at affordable rates. This was evident from the comparative data collected on the prices of the residential plots in Ecommunity and various other housing societies existing within a 5 KM radius (Zameen, 2014).

Size of land in sq. ft (approx.)	Prices of Ecommunity (approx.)	Prices of surrounding housing societies (approx.)
126	€ 10,982/-	€ 15,814/-
252	€ 21,964/-	€ 48,524/-
505	€ 43,928/-	€ 79,403/-

Table 5.1: Land cost comparative table

The figures show that the cost of land in Ecommunity is less than the cost of land in surrounding commercially built residential societies. Research reveals that sustainable houses cost less in the long term as well because of decreased life-cycle costs, lower utility expense, lesser maintenance needs, and improved occupant health (Balogh, 2015). The residential community also offers numerous facilities for residents well being:

- A central community swimming pool and spa (with steam, jacuzzi and sauna)
- Amphitheatre
- Squash courts
- Tennis courts
- A basketball field
- Indoor games in the community center like snooker, gymnasium
- A football Stadium distinctively designed at par with international standards

- Pollution free green environs featuring Jogging / Walking Tracks and tree-lined paved Walkways for pleasure walks.

In 2012, the company formally announced the sale of houses or plots in Ecommunity. Initially, 14 model houses were constructed. By the end of 2014, 9 of these model houses were sold along with the sale of more than 25 residential plots. In 2014, the company entered the Ecommunity project in the “Asia Pacific Retail Property Awards” and it was the first residential community in Pakistan to win this award. The company was termed as a “Highly Commended Residential Development in Pakistan” by the awarding body. This was the first time, in Pakistan, that a residential community won such an award. Before this a number of real estate developers had won the award, but on individual units only (house/building).

Currently, approx. 80% of the residential plots in the housing society have been sold. This reveals positive sales figures for Ecommunity, depicting an above average occupancy rate in the residential community market. The company’s accounts are prepared annually and duly audited by the external auditors. However, the financial reports are not shared with the public since Pebbles is a private limited company. A CEO’s monthly newsletter is submitted to the corporate office for the parent company’s (DH Corp) monitoring and reporting purposes. Quarterly board meetings are held to gauge performance of the management and to take strategic policy decisions to improve performance of the company.

SUSTAINABLE CULTURE AND LEADERSHIP

According to Hils & Jones (2012) a culture is *“the specific collection of values and norms that are shared by people and groups in an organization and that control the way they interact with each other and with stakeholders outside the organization.”* A culture of sustainability is one in which the organization’s environmental and social performance is given importance along with financial performance. Research reveals that the leadership style and values along with the corporate culture of sustainable organizations differ from their traditional counterparts in various ways (Eccles, Ioannou, & Serafeim, 2011). In this section the SCALA results are used to describe the cultural and leadership values of Pebbles (Pvt) Ltd.

Organizational Leadership

“What standards were to the 1990s, leadership is to the future. This shift depicts awareness that standards and strategies by themselves are not powerful enough to accomplish large-scale, sustainable reforms.” (Fullan, 2002). Research reveals that it is not possible for an organization to travel on the path of sustainable development without the vision and active engagement of the leadership (Fullan, 2005). This is supported by the data gathered through SCALA where, 5 out of 8 respondents strongly agreed that the leadership of the company has a clear vision of sustainability and the remaining 3 respondents agreed with the statement. 3 respondents strongly agreed and 5 agreed that the leaders of the company have a clear business case for pursuing sustainability. 4 respondents strongly agreed and 4 agreed that sustainability is integrated within the decision making of the organization and the leaders inspire others about sustainability. 3 respondents strongly agreed and 4 agreed that the leaders are knowledgeable about sustainability and are personally committed to achieving true business sustainability.

The reason behind the greatly favorable perception of employees about the leadership is the strongly visible commitment of the owners towards sustainability. As discussed earlier, Pebbles was formed with the vision of sustainability and the leaders demonstrated their personal commitment by choosing the sustainable options even if it meant greater challenges. The Ex-CEO of the company stated:

Sheikhupura, the city where Ecommunity is built, is very special to me. Not only has the Dawood Hercules group had an association with the city and its people for over four decades, it is also my hometown. It is an honor for me to be able to contribute to the beauty and quality of life of this historic city (ecomunity, 2015).

The current CEO of the company, who has been a part of Pebbles since the very beginning, says that

When we started the project “Ecommunity” many of the stakeholders we contacted discouraged us. They said that such a project cannot be economically or commercially viable. Even the industry experts had little awareness of sustainable real estate development. But our leadership was committed to sustainability. Now after the success of our project, people are starting to realize the importance of sustainable development in the construction industry.” (A. Yousaf, Personal communication, December 10, 2014).

Organizational Systems

Out of 8 respondents 3 strongly agreed and 4 agreed that Pebbles has embedded sustainability into the organization’s operating system and policies. All the respondents were aware of the enterprise wide management system for sustainability, showing the integration of sustainability within the working boundaries of the respondents. 2 respondents strongly agreed and 6 agreed that the company has integrated sustainability goals into the performance management system while 3 strongly agreed and 4 agreed to the statement that the rewards and compensation are clearly linked to the organization’s sustainability goals. These results are supported by the implementation of the “Integrated Project Delivery (IPD)” system during the planning and construction of Ecommunity. The IPD is a methodology in which all stakeholders are involved and integrated in the project life cycle, in order to optimize project results, increase value to the owner, reduce waste, and maximize efficiency. The IPD system developed in Pebbles connected the company to the project engineers, architects, planners, construction professionals, designer and clients and all the stakeholders with each other.

Organizational Climate

Pebbles Pvt. Ltd is a small company having a small group of people working on similar goals. All the employees are aware of and passionate about the need for sustainable development in Pakistan. This similarity of ideology and coherence of ideas has created a bond between the workforce of this company. This was observed during the interviews and was also evident in the survey findings, in which 2 respondents strongly agreed and 5 agreed that the level of trust within the organization is high and continual learning is the core focus of the organization. 5 respondents strongly agreed and 3 agreed that the organization rewards innovation.

Change Readiness

The company is the pioneer of sustainable real estate development in Pakistan. It is one of the founding members of the sustainability real estate council in the country. The employees of the company also perceive their organization as an agent of change, with 3 respondents strongly agreeing and 5 agreeing to the statement that the company has a strong track record of implementing large and small scale change successfully. 1 respondent strongly agreed and 4 agreed that the company actively challenges the status quo.

Internal Stakeholders

An employee of the company said:

I had no idea about what sustainable development and sustainable living meant, before I joined Pebbles. Here, I not only learned what true sustainability means, I saw it being implemented practically. Now I try to bring elements of sustainable living, which I learned from my company, in my own home.” (F. Razzak, Personal Communication, 10 December, 2014).

This viewpoint is also supported by the SCALA results, in which 4 out of 8 respondents strongly agreed and 3 agreed that the company has a clear policy for engaging the internal stakeholder in its sustainability efforts. 4 respondents strongly agreed and the remaining 4 agreed that all the employees are engaged in sustainability related work. 1 employee strongly agreed and 7 agreed that they feel valued by the organization. The positive feedback, regarding the involvement and engagement of internal stakeholder is reinforced by the responses generated through the series of open ended questions in the survey. The employees were asked about the various sustainability initiatives the company was taking, their involvement and feelings about them. All the respondents, of SCALA survey, shared positive experiences of being involved in various sustainable activities and narrated the feelings of being proud and happy about making a difference and a positive contribution to the society.

5 out of 8 employees surveyed, feel that the company and its leadership are better than the other companies in the industry, with respect to their commitment towards sustainability. 5 respondents perceive that the company has a proactive approach to sustainability and the remaining 3 believed the approach to be active. 3 of the internal stakeholders surveyed thought the company to be “very engaged” in sustainability and 5 believed it to be “engaged”.

External Stakeholders

Pebbles introduced the concept of sustainable real estate development in Pakistan. Since, it was the first mover in the field; it had to start from the beginning. Firstly, there was no central body to set the rules or guidelines and no supply chain partners having experience of sustainable construction. The company along with developing the country’s first sustainable housing community also laid down the foundation and precedence for others to follow. In SCALA, 2 of the respondents strongly agreed and 6 agreed that the company has a mechanism in place to actively engage its external stakeholders in the sustainability initiative 3 respondents strongly agreed and 5 agreed that the company encourages sustainability in its supply chain. 4 out of 8 respondents strongly agreed and the remaining 4 agreed that the company sends out a clear and consistent message to its external stakeholders about its commitment to sustainability. During the personal interaction with the residents of Ecommunity, I met with the first resident of the housing community Mr. Shahid who stated that the company had delivered upon their promise and commitment of a greener, healthier and happier living community. He said that he was given legal possession of his house before the promised time and now he is living a more secure, healthier and happy life with his family in Ecommunity. Most of the families living in this residential colony belong to the middle class families. The CEO of the company, Mr. Abdullah, stated in his interview that the company discouraged bulk buying of residential plots by various intermediaries because they wanted to make sure that the living environment of the community does not get compromised by unsustainable commercial activity (A. Yousuf, personal communication, December 10, 2014).

The CEO of Unicorn consulting services, Mr. Pervaiz feels that:

Ecommunity is a unique project which was visualized for the first time in Pakistan. Its tree lined avenues, wide roads, underground electricity network, water recycling plant and segregation of pedestrian and vehicular traffic are features that cannot be found in other residential societies in our country and add to the sustainable development of communities.

The overall analysis of the employee survey reveals a positive and supportive leadership and culture with respect to sustainability. The employees feel that their company is working as a solution provider in the real estate industry and making a positive contribution to the current unsustainable environment of the country. The results of the survey reinforce the feedback generated through the interviews, observation and review of literature. All the employees surveyed narrated their personal efforts and contributions to the Ecommunity project and recorded a feeling of being proud of their work and their company.

Synergizing all the information collected and adopting the methodology of data triangulation, we will analyze Pebbles Pvt. Ltd's sustainability position through the use of the Dyllick/Muff Business Sustainability Typology in the next section.

BUSINESS SUSTAINABILITY 3.0: TRULY SUSTAINABLE BUSINESS

Dyllick & Muff (2015) have developed a typology of true business sustainability (BST). In this typology an organization is analyzed on the basis of a typical business process model, consisting of:

1. **Inputs:** the relevant concerns considered by the organization (the drivers of sustainability),
2. **Outputs:** the values created by the organization, and
3. **Process:** the organizational perspectives applied (starting with societal challenges (outside-in) vs. starting with an existing business or product-lines (inside-out)).

On the basis of the company's performance on the three elements, it is placed in one of the following positions in the business sustainability typology:

1. Business-as-Usual 0.0 (The Current Economic Paradigm)
2. Business Sustainability (BST) 1.0 (Redefined Shareholder Value Management)
3. Business Sustainability (BST) 2.0 (Managing for the Triple Bottom Line)
4. Business Sustainability (BST) 3.0 (True Sustainability)

On the basis of the information gathered from the various data sources, Pebbles (Pvt) Ltd has been placed at the BST 3.0 level of the Dyllick/Muff business sustainability typology. In the typology BST 3.0 signifies a truly sustainable business. According to Dyllick & Muff (2015), a BST 3.0 company functions by:

"Shifting its perspective from seeking to minimize its negative impacts to understanding how it can create a significant positive impact in critical and relevant areas for society and the planet. A Business Sustainability 3.0 firm looks first at the external environment within which it operates and then asks itself what it can do to help overcome critical challenges that demand the resources and competencies it has at its disposal."

We will analyze the BST position of Pebbles using the three elements of the business process model.

BUSINESS SUSTAINABILITY TYPOLOGY (BST)	Concerns (What?)	Values created (What for?)	Organizational perspective (How?)
Business-as-usual	Economic concerns	Shareholder value	Inside-out
Business Sustainability 1.0	Three-dimensional concerns	Refined shareholder value	Inside-out
Business Sustainability 2.0	Three-dimensional concerns	Triple bottom line	Inside-out
Business Sustainability 3.0	Starting with sustainability challenges	Creating value for the common good	Outside-in
The key shifts involved:			
	1 st shift: broadening the business concern	2 nd shift: expanding the value created	3 rd shift: changing the perspective

Figure 7.1: A framework for considering different approaches of business sustainability

Organizational Perspective

Two organizational perspectives have been discussed in the Dyllick & Muff (2015) typology:

- Inside-Out perspective: *“in which an organization usually starts off with its existing business, strategy or product-lines and work on making them more sustainable.”*
- Outside-In perspective: *“in which an organization starts out by reviewing pressing sustainability challenges that society faces, and then engages in developing new strategies and business models that overcome these.”*

A BST 3.0 company follows the outside-in perspective and *“the potential for contributing positively will vary largely between companies, their resources, strategies and purposes, and it will vary between different industry sectors and societal contexts.”* Pebbles Pvt. Ltd follows the outside-in organizational perspective of a BST 3.0 level company. The company started with the ideology of working towards a solution to the greatly damaging and unsustainable growth of the country’s real estate sector. This is evident from the fact that the company is the first sustainable real estate developer in the country. According to an industry expert:

Pebbles (Pvt) Ltd, is a unique real estate development company providing astute solutions based on the principles of sustainable development. By considering the health and well-being of the residents alongside the long-term sustainability of the environment. Pebbles (Pvt) Ltd has created an outstanding and aptly named community.

The company’s Ex-CEO, Mr. Amir, states:

I take a great deal of pride to be the first to have developed a sustainable housing scheme in the country. Such projects are commercially viable and if handled correctly, could bring lot of commercial success to the developers. The environmental and energy challenges are the main reasons due to which market for such projects is growing faster than before.

He said that several industry experts said that the Ecommunity project cannot succeed commercially. However, the company stuck to its ideology of creating a greener, cleaner and happier living place for the people of Pakistan. A BST 3.0 company *“starts out by reviewing pressing sustainability challenges that a society faces, and then engages in developing new strategies and business models to overcome these challenges.”* The story of the Pebbles sustainability journey starts off in a similar manner. The owners wanted to enter the real estate sector as a solution provider. As discussed in the earlier sections, the real estate sector of Pakistan is rapidly growing, but this growth is causing a severe energy crisis within the country along with an unsustainable burden on the already diminishing natural resource base of the country. Pebbles entered the real estate industry with the following vision of sustainability: *“we at Pebbles very consciously shoulder the responsibility about the invaluable (and fast shrinking) natural resources of our country and hence strive to conserve and preserve all that Mother nature has bestowed upon us.”* The mission statement of the company is *“encouraging sustainable business practices, efficient building concepts and demonstrating a strong awareness about preservation, recycling of resources and reliable energy sources in the real estate market of Pakistan.”* The mission of the company is well captured in its claim of a *“Greener, Cleaner, Happier Pakistan”*. One of the residents of the company’s sustainable housing community stated that: *“Ecommunity is one of the best residential communities in Pakistan. Living within the green walls of this society we forget about the adverse external environment and enjoy the pleasures of nature.”* A respondent in SCALA survey stated: *“we are fighting industrial pollution and providing a cleaner and greener living environment. The company owns the responsibility of creating awareness about energy conservation and the protection of our environment to ensure the sustainable development of our society.”*

Values Created

In the business sustainability typology (Dyllick & Muff, 2015) the output of a BST 3.0 company is explained as: *“the ‘values created’ change from the triple bottom line to creating value for the common good, defined as that which benefits society and the planet as a whole.”* The values created at Pebbles have been defined by the CEO as:

Our company is a reflection of our earnest desire for a better quality of life for the people of this country. The fundamental intent behind our concept was to develop a society where the health and happiness of our inhabitants and their families was taken as the key measure of success for community's development.

In the sustainability survey 6 out of 8 respondents termed *“awareness of our responsibility to the environment”* as the reason behind the adoption of business sustainability and the remaining 2 respondents termed the main reason as *“recognition of how our company could address societal needs.”* When the employees were asked in a survey what they thought the company was trying to achieve through its sustainability initiatives, 5 out of 8 respondents selected *“making a positive contribution to solving critical societal challenges.”* The sustainable houses in Ecommunity are achieving the following outputs, in comparison to similar sized conventional houses:

- Reduction in the use of fresh water by 40%,
- Reduction in the use of energy by 50%;
- Increase in usage of renewable energy sources by 2.5%,
- Reduction in the usage of HVAC (Heating, Ventilation, and Air Conditioning) equipment, resulting in lesser indoor and outdoor pollution and efficient energy utilization,
- Increased recycling or reuse of building material,

- Usage of local construction materials from within a 500 mile radius, aimed at promoting economic activity in the surrounding areas and creating earning opportunities for the locals.
- Improved indoor environmental quality and provision of extra ventilation in all living spaces to reduce electricity utilization.
- Reduction in carbon dioxide concentration in the community and houses through the use of green walls and green rooftops;
- Consideration for safety and privacy factor for the residents. This value is being delivered by 24-hour surveillance of the society by an external security agency.

All these features have been observed by the researcher in the architectural and interior design of the sustainable houses within the community.

Concerns

In the typology of business sustainability, “concerns” highlight the issues addressed by a company. A truly sustainable business (BST 3.0) moves beyond the triple bottom line concerns (economic, social and environmental) towards solving critical sustainability challenges faced by society.

Economic: A BST 3.0 company is operating to overcome a major sustainability challenge in the country, i.e. unsustainable real estate development and resolving it through the adoption of green building practices. The company places sustainable concerns before its economic concerns. This is evident through the selection of the company’s housing community location. Although, the company had a number of financially viable options, the top management chose the environmentally unsustainable industrial estate area for the development of “Ecommunity”. The reason behind this was that the owners and the top management wanted to prove that sustainable real estate development is the solution that can make the difference in our country. In comparison to a commercial real estate project the sale rate of community was slow in the beginning, but has rapidly increased up to almost 80% of the residential plots being sold off by the end of 2015. The reason for this has been attributed to a lack of awareness regarding sustainable living among the customers. However, the management is committed towards creating awareness and acceptance of sustainable living among all the stakeholders as they consider it the only path towards a sustainable nation.

Environmental: Pebbles (Pvt) Ltd is a member of the U.S Green Building Council and one of the founding of Pakistan Green Building Council. The company has successfully created Pakistan’s first sustainable residential housing community, which has been awarded the “Best Urban Development” award by the International property award, UK. The Ecommunity project of Pebbles is a solution offered to the residents of an environmentally unsustainable industrial area. The residential community is built according to green building standards, offering sustainability features like green rooftops, green walls, architecture and interior of houses designed to control and decrease indoor air pollution and excessive use of energy dependent appliances for controlling the temperature, water recycling plant and use of renewable building materials. The company’s BST 3.0 level concerns are also evident from the company’s plan to start the development of two new sustainable housing communities in environmentally unsustainable areas of the country. When the employees were asked about the major concerns that the company was addressing with its business model, most of the respondents stated the preservation and restoration of the environment as the primary concern.

Social: For the greater good of the society, the company has taken legal action against a number of polluting industrial units without any legal or social obligation to do so. The company procured most of

the building material, for the Ecommunity project, from within a 500 mile radius of the construction site. The purpose behind this company policy was to boost economic activity within the surrounding areas and create earning and employment opportunities for the neighbouring businesses and public.

A GREEN FUTURE?

Pebbles (Pvt) Ltd started its sustainable housing project with the slogan of “*Towards a Greener Pakistan*”. The company started off by trying to bring together the apparently contradicting goals of commercial and sustainable success. The Ecommunity project is a success story in terms of sustainability, but can it be termed a commercial success? The occupancy rate of the housing community is increasing, the sales rate has reached almost 80%, but when compared to various commercial real estate projects in the region industry experts think it could have been much greater and faster. So, does the story of Pebbles reveal that sustainable success and economic success are trade-offs in the Pakistani real estate sector? The answer to this question may have been a “yes” five years ago, but today it is a “no”. The consumer market is not the same as was available to Pebbles back in 2008, when the company started. Now in 2015, research reveals that “*Pakistan has the most eco-friendly homes for sale and for rent among the 30-plus countries in Asia, Africa, the Middle East and Latin America the site examined — for the second year in a row.*” (Inman, 2015). It shows that:

The supply of sustainable houses in Asia and Latin America is rapidly increasing, which indicates the shift in attitudes towards green living that is occurring in these regions. With the fast-paced economic development now underway in these countries, it is just a matter of time before they outgrow their neighbors in terms of the supply of sustainable homes. (Nichols, 2014).

Further studies show that a growth is being observed in the demand for green housing and commercial property in emerging markets such as Pakistan, Mexico and Bangladesh (Naqvi, 2013). The consumers are becoming aware of the benefits of sustainable living. It is now time for the business to understand that sustainable development should not be viewed as a tradeoff between profits and planet, rather it is “*a different market approach that is the perfect synthesis between 'for profit' and 'non-profit' which represents an interest that goes beyond the financial to encompass the environmental as well social benefits, to prove there is a sustainable future.*” (Rana, 2013). Pebbles (Pvt) Ltd is the first building block, put down by the Dawood Hercules Corporation for the development of sustainable living in Pakistan. Literally, a pebble is a small stone that has been made smooth by the impact of wind or sand on its surface. Pebbles (Pvt) Ltd has also taken the shape of a truly sustainable business in the face of numerous unsustainable adversities. The vision of this company is fast becoming a reality, as the people of this country are becoming increasingly aware and appreciative of the concept of sustainable living. The top management is still committed towards the ideology of a “*Greener, Cleaner and Happier Pakistan*”. The company is planning to start two more sustainable housing projects in the near future. They want the people of Pakistan to realize, that:

“The Earth has rights, too, to live without pollution. What mankind must know is that human beings cannot live without Mother Earth, but the planet can live without humans.” (Morales, 2010).

BIBLIOGRAPHY

- About DH Corp (2015, April 10). Retrieved June 8, 2015, from Dawood Hercules:
http://www.dawoodhercules.com/about_our-heritage.php
- World Business Council for Sustainable Development (2015). Retrieved June 9, 2015, from wbcscd:
<http://www.wbcscd.org/newsroom/key-messages.aspx>
- Ahmed,A (2014, July 14). *Pakistan's urban air pollution off the charts: World Bank*. Retrieved May 2, 2015, from Dawn: <http://www.dawn.com/news/1119031>
- Ainoa,J. K., Lahti,L., Saarikosk,N., Sivunen,A., Storgårds,J., & Zhang, & H (2009). *Future of living*. Helsinki, Finland: Helsinki University of Technology, Helsinki University Print.
- Apanavičienė,R., Daugėlienė,A., Baltramonaitis,T., & Maliene,V (2015, May 26). Sustainability Aspects of Real Estate Development: Lithuanian Case Study of Sports and Entertainment Arenas. *Sustainability*, 7, 6497-6522.
- Asghar,Z (2014). The Need For Eco-Friendly Buildings In Pakistan. Retrieved July 19, 2015, from Amer Adnan Associates: <http://www.ameradnan.com/blog/the-need-for-eco-friendly-buildings-in-pakistan/>
- Asteriou,D., & Price,S (2001, September). Political Instability and Economic Growth: UK Time Series Evidence. *Scottish Journal of Political Economy*, 48(4), 383-399.
- Balogh,A (2015). DO SUSTAINABLE HOMES COST MORE? Retrieved August 12, 2015, from ConcreteNetwork.com: http://www.concretenetwork.com/concrete/greenbuildinginformation/do_sustainable.html
- Bank,W (2013). Pakistan. Retrieved April 23, 2015, from World Bank: <http://data.worldbank.org/country/pakistan>
- Bruce,N., Albalak,R.P., & Rachel,P (2000). Indoor air pollution in developing countries: a major environmental and public health challenge. *Bull World Health Organ*, 78(9), 1078-1092.
- Brundtland,H (1987). Report of the World Commission on Environment and Development: Our Common Future. Retrieved November 28, 2014, from UN Documents: www.un-documents.net/wced-ocf.htm.
- Dapaah,K.A., Hiang,L. K., Shi,N.Y., & Sharon (2015). Sustainability of Sustainable Real Property Development. *The Journal of Sustainable Real Estate*, 1(1), 204-225.
- Dawn (2004, August 30). SHEIKHUPURA: 190 industrial units get notices - Environment rules violation. Retrieved July 15, 2015, from <http://www.dawn.com/news/368907/sheikhupura-190-industrial-units-get-notice-environment-rules-violation>
- Dawn (2009, March 29). Interview: Green buildings offer the only way out. Retrieved July 16, 2015, from <http://www.dawn.com/news/860033/interview-green-buildings-offer-the-only-way-out>
- Denzin,N.K (1978). *The research act: A theoretical introduction to sociological methods*. New York, USA: McGraw-Hill.
- Development Sustainable (2012). What Is Sustainable Living? Retrieved June 15, 2015, from Sustainable Development Information: <http://www.sustainabledevelopmentinfo.com/what-is-sustainable-living/>
- DH Corp (2015, April 29). Business Interests. Retrieved July 20, 2015, from Dawood Hercules:
http://www.dawoodhercules.com/business-interests_pebbles.php
- Dyllick,T., & Muff,K (2015). Clarifying the Meaning of Sustainable Business: Introducing a Typology From Business-as-Usual to True Business Sustainability. *Organization & Environment*, 1-9.
- Eccles,R.G., Ioannou,I., & Serafeim,G (2011). The Impact of a Corporate Culture of Sustainability on Corporate Behavior and Performance. Harvard Business School.
- ecomcommunity (2015). Living Options. Retrieved July 23, 2015, from ecommunity: <http://ecomcommunity.pk/inside.php>
- Fullan,M (2002, December). Leadership and Sustainability. *Principal Leadership*, 3(4).
- Fullan,M (2005). Leadership & sustainability: System thinkers in action. *Corwin Press*.

- Gilani,S.R., Mahmood,Z., Hussain,M., Baig,Y., Abbas,Z., & Batool,S (2013, July). A Study of Drinking Water of Industrial Area of Sheikhpura with Special Concern to Arsenic, Manganese and Chromium. *Pakistan Journal of Engineering & Applied Science*, 13, 118-126.
- Goering,J (2009). Sustainable Real Estate Development:The Dynamics of Market Penetration. *The Journal of Sustainable Real Estate*, 1(1), 167-201.
- Green Roofs (2015). Green Roofs Benefits. Retrieved July 22, 2015, from Green Roofs: <http://www.greenroofs.org/index.php/about/greenroofbenefits>
- Green Walls (2015). Green Walls Benefits. Retrieved July 25, 2015, from Green Walls Systems: <http://www.greenwalls.co.uk/>
- Haq,S (2015, March 1). Real estate sector picking up in Punjab. Retrieved July 20, 2015, from The Express Tribune: <http://tribune.com.pk/story/845846/real-estate-sector-picking-up-in-punjab/>
- Hardin,G (1968, December 13). The Tragedy of the Commons. *Science*, 162(3859), 1243-1248.
- Hills,C.W., & Jones,G.R (2012). *Strategic Management: an integrated approach* (Vol. 10). Cengage Learning.
- Inman (2015, April 29). Among emerging markets, Pakistan ranks No. 1 for eco-friendly housing. Retrieved August 13, 2015, from Philly Weekly: http://www.philadelphiaweekly.com/real-estate/among_emerging_markets_pakistan_ranks_no_1_for_eco-friendly_housing-301740371.html
- Jacob,E (1988). Clarifying qualitative research: A focus on traditions. *Educational researcher*, 1, 16-24.
- Kawulich,B.B (2005, May). Participant Observation as a Data Collection Method. *Forum: Qualitative Social Research*, 6(2).
- Kelly,C (2009). Origins of Sustainability. Institute for Transport Studies, University of Leeds.
- Khwaja,M.A (2012, November). Environmental Challenges and Constraints to Policy issues for Sustainable Industrial Development in Pakistan. *Sustainable Development Policy Institute*, p. 31.
- Lifshitz,I (2010, May 28). Balancing Sustainability with Economic Development in Developing Countries – The Case Study of Indonesia. *Environmental Leader*, pp. 8-9.
- Malthus,T.R (1798). *An Essay on the Principle of Population* (1 ed.). London, England: J. Johnson.
- Marsh,G.P (1864). *Man and Nature*. New York, USA: C. Scribner & co.
- Morales,E (2010, December 11). Bolivia's defiant leader sets radical tone at Cancún climate talks . Retrieved July 27, 2015, from The Guardian: <http://www.theguardian.com/environment/2010/dec/11/cancun-talks-evo-morales>
- Naqvi,H (2013, August 22). Go Green: 'Pakistan needs sustainable development'. Retrieved July 20, 2015, from Tribune: <http://tribune.com.pk/story/593460/go-green-pakistan-needs-sustainable-development/>
- Nichols,W (2014, August 13). Green buildings spring up in Asia and Latin America. Retrieved July 26, 2015, from Business Green: <http://www.businessgreen.com/bg/analysis/2359958/green-buildings-spring-up-in-asia-and-latin-america>
- Pakistan Real Estate News (2015). Magnitude of Real Estate Sector in Pakistan. Retrieved July 16, 2015, from ABN AMRO: <http://www.abnamro.com.pk/2015/02/03/magnitude-real-estate-sector-pakistan/>
- Pebbles (2015). Our vision. Retrieved July 20, 2015, from Pebbles Pvt. Ltd: <http://www.pebbles.com.pk/ourvision.html>
- Rana,A.A (2013). PAKISTAN GREEN BUILDING COUNCIL LAUNCHES MEMBERSHIP. Retrieved July 19, 2015, from Archi Times: <http://archipresspk.com/new-version/Pakistan-green-building-council.html>
- Raza,A (2014). CEO's Message. Retrieved July 20, 2015, from Pebbles Pvt. Ltd: <http://www.pebbles.com.pk/pebbles.html>

- SCALA (2014). The Sustainability Culture and Leadership Assessment Survey Pebbles Pvt. Ltd. Louisville: Miller Consultants Inc.
- Sohail,M.I., Mughal,M.S., Arshad,N., & Arshad,M (2010). Incidence of Hepatitis B and C in Industrial Areas of Sheikhpura. *Pakistan Journal of Zoology*, 42(6), 673-677.
- Sustainable Development (2012). What Is Sustainable Living? Retrieved June 15, 2015, from Sustainable Development Information: <http://www.sustainabledevelopmentinfo.com/what-is-sustainable-living/>
- The International Statistical Institute (2013). Developing Countries. Retrieved July 13, 2015, from <http://www.isi-web.org/component/content/article/5-root/root/81-developing>
- The World Bank (2013, April 26). Pakistan: Achieving Results in a Challenging Environment. Retrieved July 13, 2015, from <http://www.worldbank.org/en/results/2013/04/26/pakistan-achieving-results-in-a-challenging-environment>
- U.S Green Building Council (2015). Green Building Facts. U.S Green building Council, Washington, DC.
- UN World Economic and Social Survey (2013, July 2). Rapid urbanization threatens sustainable development. Retrieved August 9, 2015, from UN Department of Economic and Social Affairs: <http://www.un.org/en/development/desa/news/policy/wess.html>
- United Nations General Assembly (1987). Report of the World Commission on Environment and Development: Our Common Future. *United Nations General Assembly, Chapter Two: Towards Sustainable Development; Paragraph 1*", p. Transmitted to the General Assembly as an Annex to document A/42/427.
- WGBC (World Green Building Council) (2015). About WorldGBC. Retrieved July 19, 2015, from World Green Building Council: <http://www.worldgbc.org/worldgbc/about/>
- Whitby,M., & Ward, N (1994). THE UK STRATEGY FOR SUSTAINABLE AGRICULTURE: A CRITICAL ANALYSIS. University of Newcastle.
- Wilfried,R., & Vanhonacker & Pan,Y (1997). The Impact of National Culture, Business Scope, and Geographic Location on Joint Venture Operations in China. *Journal of International Marketing*, 5(3), 11-30.
- Zaheer,F (2015, March 27). Real estate - sit ins' effects still being felt. Retrieved July 22, 2015, from The Express Tribune: <http://tribune.com.pk/story/849102/real-estate-sit-ins-effect-still-being-felt/>
- Zameen (2014, September 18). ECommunity Housing Scheme Sheikhpura – A green dream finally come true. Retrieved August 12, 2015, from Zameen.com: <http://www.zameen.com/blog/ecomunity-housing-scheme-sheikhpura-a-green-dream-finally-come-true.html>
- Zeeshan,M., & Ahmed,V (2013). Energy, environment and growth nexus in South Asia. *Environ Dev Sustain*, 1465–1475.