UNIVERSITY OF PETROLEUM & ENERGY STUDIES
DEHRADUN
End Term Examination – September, 2017

Program/course: MBA Open elective **Semester – II**
Subject: Strategies for Sustainable Business **Max. Marks : 100**
Code : MBCG758 **Duration : 3 Hrs**
No. of page/s: 9

Section A: Write a short note on any FOUR of the following [5*4 = 20 Marks]

1. Eco-Effective vs Eco Efficient
2. Adaptive Management in Business
3. UN Global compact ten principles
4. Shore Bank Pacific system
5. Global Citizenship 360

Section B: Attempt all the questions [2x15 = 30 Marks]

Q6. What do we mean by "strategy for sustainability"?-and why is it essential to the survival of your business?

Q7. How a companies can innovate their sustainability practices by applying the concept of 'shared value'. Explain this with the help of suitable examples?

Section C: Analytical / Situational / Case based:

Q8. Attempt all the questions [5x10 = 50 Marks]

In October 2014, Faris Saeed, one of the founders of Diamond Developers, stared out of his office window. From the 15th floor of the Festival Tower in Dubai, United Arab Emirates, he watched the heavy traffic on the Business Bay Crossing as people drove home from work that afternoon. From Saeed's vantage point, it was clear that business activity in Dubai was again at an all-time high. The construction phase of Diamond Developers' Sustainable City project was in full swing, and sales were going well.[1] However, Saeed's ambitions were greater than just developing property projects for profit. Through the Sustainable City project, he wanted to set the standard for sustainable real estate development in the Middle East and beyond. His vision was to establish a set of standards that other property developers could learn from and make use of in order to make their property development projects more sustainable. Developing standards and measurements of sustainability had already proven to be no easy task. Existing sustainability indicators from the United States and Europe were not well suited to the Middle East, and creating new indicators specific to the region would require Diamond Developers to develop new frameworks and skills.

DIAMOND DEVELOPERS, DUBAI, AND SUSTAINABILITY

Saeed was a Jordanian national of Palestinian origin. In 1988, he graduated with a degree in civil engineering from Yarmouk University in Irbid, Jordan. After military service and a year's work at a local engineering consultancy, Saeed set up his own architecture and civil engineering company in 1991. In 1995, he moved to Dubai to establish a maintenance and interior design company. The next year, he started a contracting company and in 1999, he began developing real estate projects in partnership with his university friend and business partner, Wassim Adlouni. Adlouni was Lebanese, but had grown up in Kuwait and had studied in Jordan. He had worked in the real estate sector as an architect, engineering consultant, and a developer. Saeed and Adlouni's company, Diamond Developers, was growing in line with Dubai's real estate sector, which had experienced a frenzy of growth from 2000 to 2008. In a few hectic years, Diamond Developers had built six towers with more than 1,000 apartments in the new Dubai Marina district, 150 townhouses in Jumeirah Village, and four commercial buildings in the Arjan district. In addition to their property development activities, Saeed and Adlouni had set up Tadweer Waste Treatment LLC (Tadweer), a waste management and recycling company.

However, in 2008, the global economic crisis took the world and Dubai by storm. Property prices crashed, and news headlines all over the world were writing off Dubai's economy and its real estate sector. In the midst of such negativity, Saeed and Adlouni put their expansion plans on hold, but were confident that Dubai would bounce back one day and provide new opportunities. Besides continuing to develop their waste management company, Tadweer, they took the recession as an opportunity to consider the future of their real estate development activities. In their view, the real estate development sector in Dubai had been developing at breakneck speed without consideration for the impact on the environment. Partly as a result of unsustainable construction practices, Dubai's per capita carbon footprint and water consumption were among the highest in the world. Many of Dubai's residences built during the 2000s were large, poorly insulated, and overly exposed to the sun, resulting in high-energy demands (for air conditioning).

Saeed and Adlouni started to realize that more sustainable construction was necessary and feasible, without sacrificing either quality or profitability. In fact, they saw a number of important business benefits from sustainable real estate development, including lower lifetime ownership costs as a result of reduced energy and water consumption. Other business benefits of sustainable construction were expected in marketing, b sustainability would provide the company with a real element of differentiation in the Dubai market. Saeed believed that the costs of sustainable construction did not need to be significantly higher than the costs for other high-quality homes.

The two partners began to immerse themselves in the world of environmentally sustainable property development. Over time, they became self-educated experts on topics such as energy use in buildings, renewable energy, waste management, and water recycling. In May 2010, they visited the University of California, Davis (UC Davis), and learned about plans for a new sustainable community called the West Village. This residential community adjacent to the existing UC Davis campus was planned to be the largest net-zero energy development in the United States. The buildings were designed in such a way that energy demand would be cut by 50 per cent compared with conventional buildings, with the remaining energy requirement to be generated on site through a solar photovoltaic system. The West Village was intended to be a pioneering project, putting into practice cutting-edge sustainability know-how and new technologies from university faculty members, corporate partners, and funding agencies. Although the West Village was not yet complete when Saeed and Adlouni visited, the vision behind the development and the contacts they made at UC Davis inspired them to build a sustainable community in Dubai.

Meanwhile, Dubai's economy began to emerge from the recession as its traditional engines of growth in trade, tourism, travel, and logistics strengthened again in the context of strong growth in emerging markets. The infrastructure that Dubai had built up before the crisis provided an ideal platform for the city's renewed

development into a global business hub. By 2011, the real estate sector was also beginning to show signs of life, with steady price increases and new projects being planned.

Dubai's leaders also realized that environmental sustainability considerations were increasingly important in planning future growth. In 2012, Sheikh Mohammed Bin Rashid al Maktoum, vice-president and prime minister of the United Arab Emirates and Emir of Dubai, declared.

Our goal from this national initiative is clear — that is, to build an economy that protects the environment as well as an environment that supports the growth of the economy. We in the United Arab Emirates, [by] 2021, are striving to build a diversified economy based on knowledge and innovation, through which we can provide excellent employment opportunities to our citizens. Through this, we can protect our natural and environmental resources, and strengthen our competitive position in global markets, especially in the areas of renewable energy products and technologies on the green economy

In December 2013, Dubai won the right to host the World Expo in 2020. In its bid, Dubai differentiated itself from other candidate cities through its theme of "Connecting Minds, Creating the Future," and the subthemes of "Mobility, Sustainability, and Opportunity." The World Expo was expected to provide a major new impetus to Dubai's growth and to cement sustainability as a critical consideration in all of Dubai's growth initiatives. The Expo 2020 website clarified the city's ambition: "Expo 2020 Dubai will be a monument to the Green Economy, a landmark in sustainable development, and will contribute to the Bureau International des Expositions legacy as one of the most sustainable Expos in history."[3]

THE SUSTAINABLE CITY

Throughout 2011 and 2012, Diamond Developers worked out the details of the Sustainable City project. The company purchased a 5 million square foot plot of land (nearly 50 hectares) in the master development called Dubailand, near Dubai's ring road and adjacent to the Arabian Ranches community. The final plan for the project included 500 townhouses and villas, accommodating around 2,500 residents. A large model of the project was placed in the central hall at the company's offices. Walking around the large model, Adlouni described the project with enthusiasm to visitors:

The 500 homes are divided into five clusters, with car parking provided on the edge of each cluster and residents completing the last small stretch of their journey home on foot or in a solar-powered golf cart. In this way, residents emit less carbon dioxide, the air quality near the homes improves, and children can play outside safely. The homes consist of two floors plus a shaded rooftop. The shades on the rooftops and on top of the car parking places consist of solar panels. As a result of the solar power generation and the energy-efficient design of the homes, it is expected that the development will generate as much electricity as it consumes. These benefits are provided back to the residents, who will end up with extremely low electricity bills.

The water from the homes is recycled and reused within the project for various purposes, depending on the origin of the water. A large collection of native plants and 10,000 trees will help to keep the temperature relatively cool and the air fresh. The separation of waste is to take place at source and various types of waste recycling will be implemented, including the production of compost and energy from waste. Between the various clusters, a number of bio-domes will provide space for residents to grow organic food.

The vision to build a sustainable community did not stop at the construction of homes. The company was also planning an eco-hotel, a school with sustainability considerations embedded in the curriculum, a centre of excellence specializing in sustainable engineering and architecture, a science centre for children ages four to 12 to learn about science and sustainability in a playful way, a community centre, and a horseback riding facility. The centre of excellence was intended to be a major part of the overall project, contributing to sustainable property development practices in the region through education, training, and research.

As part of its effort to advance knowledge on sustainable development, Diamond Developers awarded US$3 million[4] in scientific research funding for projects to be carried out by UC Davis faculty. In March 2014, with the UC Davis West Village now fully operational, Chancellor Linda Katehi and senior administrators and professors from UC Davis visited Dubai to sign the Sustainability Research and Training Program (SRTP) agreement, and to witness the construction phase of the Sustainable City. Professor Suad Joseph of UC Davis had been working on the partnership since Saeed and Adlouni's initial visit to UC Davis. She commented, "This is an exciting project for UC Davis to promote collaborative research. With this, we get to do research on the ground while the sustainable city is being built."

Subsequent to the signing of the agreement, UC Davis and Diamond Developers agreed to invite four leading Arab universities to participate in the SRTP. These universities were already co-operating with UC Davis as part of the BCBCB Consortium.[5] As a result, the program became a truly interdisciplinary and international effort, bridging industry and academia. In 2014, the first research projects funded under the agreement dealt with water treatment, waste recycling, composting, and innovative methods for the generation of renewable energy through heat and solar sources

SUSTAINABILITY INDICATORS

The name "Sustainable City" naturally gave rise potential tenants, contractors, and authorities being interested in what Diamond Developers meant by the word *sustainability*, and how it measured the sustainability performance of the development. An initial answer to this question could already be found in the sustainability characteristics that were part of the city's design, including energy conservation and generation, water recycling, and waste management. However, Saeed and Adlouni felt a need to measure and report on the project's sustainability characteristics on an ongoing basis. For this purpose, a monitoring room was to be built in a prominent location in the Sustainable City's centre of excellence or in the science centre. There would also need to be visible data regarding the sustainability metrics, especially if the city was going to realize its ambition of becoming a living laboratory from which both the company and outside parties could learn.With global warming becoming an increasing concern, carbon dioxide emissions would be a key element of the measurement of the project's sustainability performance. Other obvious areas of attention were water, waste, and air quality. However, Saeed and Adlouni saw sustainability as a wider concept than just being "environmentally friendly," and believed the concept should include social and economic aspects as well. Saeed explained:

Social considerations need to include the actions that property developers can take to encourage environmentally friendly behaviours among residents, such as education and awareness campaigns in order to reduce waste of scarce resources such as energy and water. Social sustainability also includes

factors related to the wellbeing of the people living in the community, even though these can be difficult to measure and influence by a property developer.

Saeed also felt that for economic sustainability to be achieved, the community must be economically attractive for all the stakeholders in the project:One question that we are asked time and time again is how much more expensive it is to build sustainably versus more conventional building methods used in Dubai. For the Sustainable City project, the clear answer is that sustainability is not more expensive. Intelligent design and investments in energy- and water-saving technologies pay themselves back quickly. The homes are being sold bythe company at no premium to the ordinary market, while residents share in the benefits of solar power generation. Residents also receive a share of the rental income from outlets in the community centre, and therefore have an incentive to support and sustain retailers within the community.Translating these general ideas of sustainability into a coherent set of measures and targets was a major challenge. There was no clear set of principles or standards that could guide Diamond Developers in its realization of the Sustainable City and in its assessment of its own sustainability performance.

In the real estate industry, a number of sustainability indicators and rating schemes were already in existence, many of which were developed by national Green Building Councils. Some rating schemes were strictly national in focus, while others had global ambitions. A widely used sustainability assessment scheme that Diamond Developers considered was the Leadership in Energy and Environmental Design (LEED), developed by the U.S. Green Building Council. The LEED system was developed in the United States to give ratings to different types of buildings and to communities through its Neighbourhood Development classification. Each project could obtain a rating of certified, silver, gold, or platinum, depending on the number of points it earned on a wide range of criteria. LEED was actively promoted globally and had been applied in 147 countries.

The United Kingdom's Building Research Establishment Environmental Assessment Methodology (BREEAM) was the other rating scheme rooted in the origins of one country that had gained widespread international acceptance. Other well-known national schemes included Japan's Comprehensive Assessment System for Built Environment Efficiency and Singapore's Building and Construction Authority (BCA) Green Mark Scheme. In the United Arab Emirates, the Emirate of Abu Dhabi had launched the Estidama rating scheme to guide developments. Estidama meant "sustainability" in Arabic and referred to the sustainability initiatives of Abu Dhabi. It included elements of both LEED and BREEAM, but also had several adaptations to suit the environment of Abu Dhabi. In particular, the Estidama system was integrated with the emirate's regulatory environment and building codes. Consistency with the Abu Dhabi Plan 2030 was one of the evaluation criteria.

Although the rating schemes had succeeded in focusing attention on sustainability issues, they had come under intense criticism from a number of players in the industry. A research report by Deutsche Bank's RREEF Real Estate criticized the existing sustainability measurement systems:

The property sector is fixated on earning environmental plaques for good intentions — often at the expense of actually improving sustainability through informed capital planning. A lack of clear standard metrics is a key obstacle. Achieving consensus on simple sustainability metrics would be an important step to refocus the property sector on performance.The failure to reach consensus provides some

fleeting benefits by allowing almost everyone to claim some measure of sustainability, albeit with little accountability.[6]

Although there was no international consensus on how to measure sustainability, the LEED system had established itself as the most widely used sustainability rating scheme in the real estate industry worldwide. In 2013, Diamond Developers started to prepare an application for the LEED Neighbourhood Development rating. However, applying the U.S.-based LEED system to the Sustainable City in Dubai posed a number of challenges.

Several aspects of LEED's assessment methodology had a particular application to the conditions in the United States and less relevance to the desert climate of Dubai. For example, the Sustainable City in Dubai would not earn the full credit of four points for the treatment of stormwater because in a country where it rained only two days per year on average, extensive investment in stormwater treatment provided little environmental benefit. Saeed believed that money was better spent on solar energy or waste recycling. On the other hand, when it came to the use of renewable energy, the number of credits obtained was the same (three) for a development that generated only 20 per cent of its own energy through renewable sources onsite and for the Sustainable City that generated virtually all of its energy through solar technology. As a result of this design of the rating scheme, for the project to achieve a Platinum LEED rating, it would need to divert resources away from the generation of renewable energy toward stormwater treatment. In the case of the Sustainable City, such a decision would clearly have an adverse environmental impact.

Similarly, the BREEAM system's weightings did not reflect the sustainability priorities of the desert climate of Dubai. For instance, rainwater harvesting and flood risk assessment and management accounted for more credit points than a development's energy strategy. There was also significant weight attached to cycling facilities, even though the weather and urban layout of Dubai were unfavourable for cycling as a means of transport. The leading international sustainability measurement systems consisted of many of these apparent contradictions as a result of their roots in a particular country or region.

One potential way forward was for Diamond Developers to work with the LEED representatives in the Middle East to tailor the LEED Neighbourhood Development rating criteria to the conditions of the region. This approach would enable the company to help shape a sustainability measurement system that would combine global recognition and local relevance.

However, Mohammad Ghunaim, an engineer working on the development of sustainability measurements at Diamond Developers, explained that Diamond Developers had additional concerns with respect to LEED and other sustainability rating schemes:

Most sustainability rating schemes in the real estate sector are prescriptive in behaviour, rather than focusing on sustainable outcomes. For example, LEED credits can be obtained for the provision of bicycle storage on a site or the presence of home insulation. Although bicycle storage and home insulation are useful, for us it is more important to measure the actual impact on the environment of such measures. LEED and similar systems focus on the sustainability parameters of a development of

design aspects *before* it is completed, with little regard for what happens to a project afterwards. The Sustainable City and Diamond Developers' continuing role in it provide a great opportunity to carry out a continuous assessment of the community's real sustainability performance, even after residents have moved in.

An alternative approach had been proposed by the Global Report Initiative (GRI), a non-governmental effort to establish standards for sustainability reporting. In 2014, the GRI had published updated sustainability reporting guidelines for the construction and real estate sector. Although there were no specific targets or points to be obtained through the GRI framework, the GRI standards could provide useful input into the development of the Sustainable City's own measurement and reporting system (see Exhibit 1).

To address the issues of local relevance and to come to a true measure of environmental performance for the community once it was in operation, the company began to explore more fully the possibility of developing its own sustainability assessment method. Such a system would initially be specific to the Sustainable City and could then be used by developers and communities throughout the region, taking into account all the local conditions that made the U.S. or European rating systems less relevant in the MiddleEast. An ultimate ambition for such as system would be an ability to adapt the rating elements and their weights to different locations around the world, based on climatic conditions of the location of the development being rated.

One critical consideration for any new rating system was the extent to which the residents of a community should be involved in the development of any new rating system. According to Reed, Fraser, and Dougill,[7] there are two methodological paradigms for developing sustainability ratings. One is an expert-led, top- down approach using explicitly quantitative indicators. Another approach is bottom-up and participatory, which emphasizes the importance of first understanding the local context to set goals and establish priorities. Hybrid approaches were also possible. In the real estate sector, ratings for buildings were most likely to be expert-led, thereby promoting credibility and allowing for comparability across buildings. Community ratings may have more of a participatory approach, since communities may have unique circumstances and residents may have their own views on how to define and measure sustainability. Naturally, such bottom-up approaches would result in less comparability of sustainability indicators across communities

Developing a new sustainability assessment system for the property development industry posed a daunting challenge that the company was not afraid to take on. Saeed and Adlouni were weighing the consequences of using an existing system versus developing a new one. Should they use a system such as LEED or BREEAM in an effort to satisfy existing international standards? Instead, if they were to develop a new system, could UC Davis and the other partner universities from the Middle East be partners in the project? What sustainability indicators would be sensible to assess the Sustainable City, and how could they ensure that these measures would also be relevant to other property developers in the future? Was it realistic to think that indicators could be adapted to different climates? And how should social and economic sustainability be measured? These terms were still not well understood and lacked a consistent definition or meaning in the property development industry. With more than 200 nationalities represented in Dubai's population, there were most likely many different views on how to define and measure sustainability.

These were questions that the partners at Diamond Developers were seeking help on, as they were busy finalizing the construction of the first Sustainable City in Dubai and planning for new sustainable property developments elsewhere.

1. How can sustainability be defined for Diamond Developers?
2. What are the benefits and concerns of the different approaches that Diamond Developers can use to develop its sustainability indicators (i.e., in-house development versus adaptation and use of existing systems)?

3. How should Diamond Developers proceed with the development of sustainability indicators? Should it use or adapt an existing system, or develop its own? What are the potential benefits and risks of either approach? How might those risks be mitigated?

4. If the company decides to develop its own system, how should it go about doing this? What role could universities or other outside experts play? Who might be the other beneficiaries of such as system? What conditions would be necessary for an internally developed system to have value for other stakeholders?

5. Which measures (indicators) would you suggest to assess how sustainable the Sustainable City is in terms of environmental, economic, and social dimensions?