Ports, Custome & Free Zone (PCFC) spearheads urban sustainability through innovative best practices

Region	**Middle East and North Africa**
Award Scheme	**Dubai International Award**
Start Year	**2017**
Sustainable Development Goals	**Goal 11 - Make cities and human settlements inclusive, safe, resilient and sustainable**

Summary

Climate change is the most dreaded word in the current times and the fact that urban built environments contribute to over a third of GHG emissions makes it an extremely challenging while at the same time endearing task for regulatory authorities such as EHS. Protecting our only livable planet is no longer an option bu t a serious responsibility that none can afford to ignore.

Background and Objective

UAE in late 2007 was reported to have some of the highest environmental footprints in terms of energy consumption, CO2 emissions, water consumption as well as waste generation. This ostensibly was on the back of accelerated construction actives and urban sprawl… but most importantly the absence of a policy prescription surrounding green building was the dominant narrative requiring urgent intervention. The area covered was approximately 30 % to 40% of land bank of Dubai.

Actions and Implementation

Trakhees-EHS right through concerted and conscious deliberations decided to push the frontiers of sustainability through its policies and programs on Environmental management, Technical & international cooperation as well as urban governance as illustrated in figure-1. (see attached documents) The Keys drivers of best practices that influenced EHS are outlined in Annexeure-1 The policy chart illustration as well as Barrier Analysis is outlined in Annexure-2 The deployment mechanisms for the focus area of submission is presented in Annexure-3 PROBLEMS AND SOLUTIONS Needless to mention, EHS faced innumerable problems (barriers) that threatened to curtail urban sustainability. This was however handled in a very astute manner by deploying right policy levers. This was a comprehensive mechanism which is described under the following sections, which are explained in detail below a. Identifying the barriers b. Tools for overcoming the barriers GAPS AND BARRIER ANALYSIS EHS set on the task of analyzing the barriers for low carbon development and moved on to systematically address and fight those barriers with suitable policy instruments. Notwithstanding the fact that there are multitude of barriers globally that have curtailed sustainability, EHS was quick to recognize that two barriers that posed serious challenges were “Structural Barriers” and “Information / Knowledge Barriers” which together resulted in lack of commitment, green washing, and of course ;lack of required awareness. This was prevalent across the stakeholder community. EHS moved on swiftly to employ necessary policy tools. Although policies are innumerous globally, EHS felt appropriate to engage two major instruments namely “Regulatory & Control Instruments” and “Support, Informatory and Voluntary Instrument” as elaborated below: Regulatory & Control Instruments - Codes / Regulations - Focus on specific technologies - Focus on Minimum Energy Performance standards - Mandatory Audit / EB Regulations - Focus on Operational Sustainability - Energy certification / labeling - Demand side management (DSM) Support, Informatory and Voluntary Instrument - Promote EE in public / Government Buildings - Building Energy labeling - Display Energy Certificate - Benchmarking - Retrofit program - Training / Accreditation - Demonstration Lab - Guidelines / Tool Kits Summary of Tools The following are the list of tools EHS deployed in order to drive urban greening program and to achieve its broad and specific objectives: 1. Assessment of Sustainability Design Reports 2. Assessment of Sustainability Construction Reports 3. Sustainability Inspections 4. Carbon calculators 5. Energy Modeling Programs 6. Environmental Calculators for resources 7. Information and Communication technology Tools The figures below represent the approach and philosophy of Trakhees in relation to energy efficiency. (see Attachment) REVIEW MECHANISM / PROCESSES FOR SUSTAINABLE URBAN GREENING (see Attachment) Benchmarks for Assessing Performance (see Attachment) STAKEHOLDER INVOLVEMENT [COMMUNITIES & ORGANISATIONS] (see Attachment) PROBLEMS THAT REMAIN TO BE SOLVED • Policy levers for Green House Gas emissions from existing urban built environment • Harmonization of free zones for effective urban sustainability • City wise / regional Benchmarking • Eliminating Green washing • Adherence to commitments vide COP21 • Climate change adaptation • Capacity development across range of stakeholders • Employment generation across genders • Transparency framework on urban sustainability PERFORMANCE ASSESSMENT The impact of the policy measures are assessed through certain performance measures as below 1. Design assessment report 2. Progress report 3. Post

construction green compliance report 4. Certification inspection assessment 5. Commissioning reports 6. Measurement & verification reports

Outcomes and Impacts

ECONOMIC, SOCIAL & ENVIRONMENTAL IMPACT As a Regulatory Authority, Trakhees's commitment and allegiance to the environment and urban greening is unfaltering and its initiatives and actions have all along been directed towards the objective of gaining the triple bottom line i.e. environmental, economic and social benefits. It also firmly believes that any policy or initiative that is devoid of even one of the above would be unsuccessful and would not encourage compliance. Rather such an initiative would be looked upon as unnecessary compulsion. Trakhees adopted a multipronged approach exhibiting patience, conviction, commitment and perseverance in the process. ECONOMIC & SOCIAL IMPACT Trakhees EHS was very firmly of the view that Sustainability makes Economic sense if embraces in a genuine and sincere manner. This requires commitment, conviction, passion and perseverance from amongst the diverse group of stakeholders that form part of the movement. On the back of this faith, the department started enforcing the green building regulations in the year 2008 and from those humble beginnings it has risen to a formidable position where its jurisdiction holds more than 70% of the certified buildings of Dubai. The green buildings have been designed taking into consideration the regulatory requirements of EHS and accordingly have succeeded in earning the certifications from GBCI. In addition projects have also started obtaining EHS in house green building certification. These projects have the potential to save huge amounts of energy and water as represented by the table in the earlier section. Such a high level of savings makes enormous economic sense which is only bound to increase with increasing utility costs. In addition, green buildings and sustainability have also played a vital role in terms of the impact it had on the society. Increased awareness, greater appreciation of the underlying regulations, sincere compliance and overall capacity enhancement are some of the significant impacts. The stakeholders have also started considering the green building regulations as part of the CSR activities ENVIRONMENTAL IMPACT The Green Building regulations and programs of EHS have resulted in considerable energy savings, water savings and Green House Gas emission reductions. These are expected to play a crucial role in fighting climate change and protecting the earth from dangerous impacts resulting from global warming. These have been well illustrated in the tables in appropriate sections OTHERS All Regulations were devised keeping in mind the Environment, Ecology and Culture of the Region. Regulations laid strong focus on Energy, Water and Renewables, reflective of the region's needs. Consultation and coordination with stakeholders is a business-as-usual approach of Trakhees-EHS Awareness programs are conducted on regular basis either for Regulatory / process familiarization, sharing experiences or building knowledge capacity and base. Buildings are responsible for 40% of the energy consumptions and about a third of the emissions. The existing stock holds the key for Energy Efficiency. Trakhees designed programs for this subject and created a conducive platform comprising specialists to discuss, deliberate and share success stories on Economic Benefits with the owners of existing facilities . It interacted with academia to spread awareness to the student community; Participated in sustainability forums / events such as WETEX, Green Middle East, Dubai chambers as guest speakers so as to drive energy efficiency practices and increase social awareness on efficiency and profitability. Trakhees-EHS was invited by UNEP -SBCI to participate in the development of global metrics and protocol for the building sector in pursuit of greenhouse gas emission reductions Commenced the Accreditation program in order to enhance the capacity and maturity of the stakeholders in the area of green buildings, resources conservation and sustainability VALUE PROPOSITION and IMPACT of TRAKHEES-EHS APPROACH ON STAKEHOLDERS There are increased participations of CLIENTS /OWNERS/Other Stakeholders in their Sustainability projects. (They have started driving the project and demanding deliverables!) Realization / Awareness have dawned on the owners that it is in their BEST interest to embrace sustainability in their projects as they derive economic and environmental benefits. Projects are incorporating Sustainability right at the conceptual and design stages as opposed to earlier situations where it was embraced later in the project. Substantial improvements and professionalism in the quality of submissions by the consultants and stakeholders (An indicator of increasing maturity) Stakeholders have started looking at sustainability of their existing buildings after realizing that there are tangible and intangible benefits from their efforts.

Gender and Social Inclusivity

The strength of an initiative depends on how effectively it has reviewed the global best practices and explored the possibility of synergizing the teachings of such practices to close the gap in the local scenario. Since 2007, PCFC has rolled out several initiatives which not only capitalized the global developments but ended up reinventing itself on the back of each initiative. Each of them served to catalyze the succeeding ones. In the process all the initiatives were well received by the stakeholders and are continuing to this day. When uncontrolled emissions and climate change gained prominence in the global landscape, Dubai asserted its commitment through a landmark resolution which became the starting point for several futuristic policy frameworks. Given that Dubai and UAE has carved a niche for itself , it is only befitting that this rich experience guides other aspirants. PCFC initiatives have transformed the entity to a highly respected organization for its expertise in establishing policy instruments as well as developing the entire regulatory infrastructure for effective enforcements. This is an extremely valuable resource which we believe GCC and Middle East can capitalize and replicate. Few Regulatory bodies have already taken cognizance of this and have approached us for a broad level understanding. Dubai silicon oasis authority is an example of one such entity that has followed PCFC green building regulations.

Innovative Initiative

1. In the course of our spectacular sustainability journey, we were utterly convinced that any policy prescription that fails to address the needs of the specific region would be unsuccessful in its approach, delivery as well as impact. 2. It is always wise not to reinvent the wheel and waste resources; rather build on the existing to develop an advanced and robust framework to suit your needs. 3. It is extremely important to have an inclusive approach that embodies the whole community to achieve a very broad participation, an effective program development and administration. 4. While there is a great conviction and commitment, sustainability would be successful only if it makes a viable economic proposition for the stakeholders. Not withstanding the fact that protection of our only livable planet from the adversities of climate change is the top priority of the globe, any program that purports to achieve it should provide multiple economic benefits which would steer the community towards its top priority. The above have been dexterously woven into our strategies and programs as tabulated below: -Design and development of region specific urban greening assessment systems (labeling tool) which are also development specific -Enormous awareness and development programs such as establishment of green gallery, sustainability workshops and events -Capacity and technical competency building programs such as accreditation and prequalification -Building a robust regulatory infrastructure by assimilating the globally acclaimed best practices and building them on as evidenced by the development of several guidelines and regional / international cooperation and exchanges. Future strategy The seeds of sustainability are sown at home and educational institutions. It is these that grow and blossom to develop meaningful programs and policies. This is an area which we would VERY ACTIVELY CONSIDER in shaping our future programs. Avoid doing in Future Technologies as fascinating as they may be should be subject to scrutiny before putting them into practice, In other words, they should have successfully gone through research, development, demonstration, deployment and mass production. Trying an untested technology though exciting, is not a good practice and erodes credibility.

Resources devoted to delivery

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Conclusion

On October 24th, 2007 His Highness Sheikh Mohammed bin Rashid Al Maktoum, UAE Vice President, Prime Minister and Ruler of Dubai issued a landmark resolution and directive that effective January 1st, 2008, which was the beginning of at sustainability journey of Dubai in general and PCFC in particular.Other Key policies / legislation are as under Local Order No. 11 of 2003, Local Order No. 02 of 2004 - Public Health of Community MOL - Federal Law No. 8 - 1980 - Worker's Safety, Protection, Health and Social Care Ministerial Order No. 32 of 1982 - Practical Measures to Reduce or Prevent Health Risks Federal Law No. 24 1999 ,Ministerial Order No. 32 -1982 Art 3 - Risk Asessment / Environmental Impact Assessment Federal Law No. 24 of 1999 - Protection and Development of Environment Administrative Order No. 221 , Local Order No. 61/199 - Protection and Development of Environment Decree No. 22 of 2009 on the special development zones in the Emirate of Dubai ASHRAE - International standards for energy Unique green building regulations were developed fully in-house by PCFC for villas, warehouses, large buildings etc