



Green Vision

For a Green Future

Issue 2, June 2012

Dear Reader,

This is the second issue of the '**Green Vision**', a combined effort by **Green Building Academy** and **EcoMENA**. You are reading this newsletter either because you are a visitor to the Green Building Academy Website www.learning-green.com or to the EcoMENA website www.ecomena.org. We thank you for your support.

The objective of this news letter is to create awareness and spread knowledge on environmental issues in particular to Middle East & North Africa.

We hope it will be very useful to you and we welcome your feedback on the same.

Expecting your continued patronage.

Best Wishes,
Editor
Green Vision Newsletter

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Eco-friendly House Tips for Muscat Students

By Green Building Academy

An eco-friendly house competition is being organized by The Research Council (TRC) in Muscat which aims to promote sustainable development in the Sultanate. The Higher Colleges of Technology (HCT) is taking part in this competition. Talking about the contest, HCT's team leader Mona al Farsi said: "We see it as a big challenge in terms of involving the students. This has awakened a sense of environmentally-responsive design approach among both students and faculties. It also brings into focus lack of environmental data for design purposes. The contest encourages research work while practically integrating all disciplines and stakeholders from the early stage of design."



Panoramic View of Muscat
(Photo Credit: www.wikipedia.org)

Mona al Farsi added: The competition puts a great deal of emphasis on creating a balanced design approach that satisfies the occupant and at the same time improves the economy and quality of energy consumption while promoting proper use of space. She also pointed out that





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another challenge is to arrive at a delicate balance between the available new modern materials and methods of construction and their environmental impact on the land in Oman.

According to Mona Al Farsi, the key is to re-evaluate old techniques and design elements in its new and contemporary essence. Evolving traditional elements and specific Omani features and juxtaposing them into modern and functional elements is a prerequisite. She said: "this involves placing premium on the Omani cultural heritage; saving water and energy; avoiding wasteful consumption of materials; and yet following the scientific approach of the building industry.

This competition promotes the use of renewable solar energy and integration of air-conditioning, passive ventilation, and desiccant cooling in the built form, on the wider objective of the competition. It would go a long way in enhancing awareness and creating a paradigm shift in sustainable development".

Also, periodic visits by school students to understand the viability of eco-friendly houses help promote awareness about the efficacy of solar energy and also strengthen their conceptual understanding of nature.

These technologies need to be embraced by the Muscat Municipality, the Ministry of Housing, and Oman Tourism in terms of use of walling and roofing materials, standards and best practices, and eventually green building certifications.

Visits to eco-friendly house demonstrations by contractors and real estate developers from the private sector would go a long way in promoting the use of these technologies and also help in protecting environment.

Solar Energy in Jordan

By Salman Zafar, EcoMENA

The solar energy potential in Jordan is enormous as it lies within the solar belt of the world with average solar radiation ranging between 5 and 7 KWh/m², which implies a potential of at least 1000GWh per year annually. Solar energy, like other forms of renewable energy, remains underutilized in Jordan. Decentralized photovoltaic units in rural and remote villages are





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currently used for lighting, water pumping and other social services (1000KW of peak capacity). In addition, about 15% of all households are equipped with solar water heating systems.

Jordan has major plans for increasing the use of solar energy. As per the Energy Master Plan, 30 percent of all households are expected to be equipped with solar water heating system by the year 2020. The Government is hoping to construct the first Concentrated Solar Power (CSP) demonstration project in the short to medium term and is considering Aqaba and the south-eastern region for this purpose. It is also planning to have solar desalination plant. According to the national strategy the planned installed capacity will amount to 300MW – 600MW (CSP, PV and hybrid power plants) by 2020.



World's first electric charging plant using solar power has been set up in Jordan
(Photo Credit: www.utilities-me.com)

One of the most promising potential investments in renewable energy worldwide will be installing more than 250 MW of concentrated solar power (CSP) in Jordan's Ma'an development zone through different projects developed by the private sector. The upcoming CSP solar power plants in Ma'an would highlight Jordan's strategy of sustainable energy diversification. The Ma'an Development Area enjoys about 320 days of sunshine a year, with a high level of





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irradiance that allows over 2500 million kWh of primary energy to be harvested annually from each square kilometre. At full capacity, the planned flagship CSP plant could meet some 4% of the Kingdom's electricity needs, reducing the reliance on electricity imports from neighbouring countries. Surplus energy could in turn be sold to Syria, Egypt and Palestine, whose networks are connected to Jordan.

Qawar Energy in partnership with Maan Development Area (MDA) has recently announced the launch of its \$400 million Shams Ma'an Project, a 100MW photovoltaic (PV) power plant project to come up at the MDA industrial park in Jordan. The project, being undertaken in partnership with MDA, is spread across a two million m² area, and expected to be ready in 2012. On completion, it will be the largest PV plant in the world that will position Jordan on the global renewable energy map attracting investments, technologies and knowhow. It aims to utilize approximately 360,000 to 2 million PV/CPV panels and produce around 168 GWh per year

A series of local and international companies have started the development of the world's first electric charging plant using solar power in Jordan. The project aims to provide clean energy resources for the charging of electric vehicles to help the Kingdom reduce its carbon dioxide emissions, and a statement released by El Hassan Science City said that it will also help to develop Jordan's technology sector through the training of engineers. Financed by the USAID, the project was selected to be hosted by Jordan due to the country's abundant renewable energy resources, and also flexible governmental policies that encourage the development of renewable energy resources.

MoU Between Qatar and Albania on Environment Protection

By Green Building Academy

Qatar's Ministry of Environment and Albania's Ministry of Environment, Forestry and Water Management, signed a memorandum of understanding for environment protection. The memorandum was signed by HE the Minister of Environment Abdullah bin Mubarak bin Aaboud al-Midhadi and Albanian Minister of Environment, Forestry and Water Management Fatmir Mediu.

The MoU illustrates the understanding of the two countries on ensuring the environmental integrity of the present and future generations, and the respect and appreciation of





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international environmental protocols and agreements signed by the two countries. The MoU stated that the two parties will co-operate with each other in environmental issues on the basis of security, equal rights and mutual benefit within the framework of their related scope of practice and legislations.

Both parties shall work to create, promote and develop ties of co-operation between the various public and private authorities in issues relating to the protection of the environment and sustainability in order to achieve the objectives of the memorandum. The two parties shall co-operate in the field of environment and enhancement of closer relations between their enterprises in the framework of sustainable development and to ensure proper application of the provisions of the memorandum.



Qatar's Minister of Environment Abdullah bin Mubarak bin Aaboud al-Midhadi and Albanian Minister of Environment, Forestry and Water Management Fatmir Mediu

(Photo Credit: www.qnaol.net)

The ministries agreed to form a joint committee composed of officials from each party to implement areas of co-operation included in the memorandum. The committee aims to find ways and means to enhance environmental co-operation between the parties and to co-ordinate the approved bilateral projects. The committee is to meet periodically in Qatar and Albania alternately.





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Salient Features of Green Buildings

By Salman Zafar, EcoMENA

The 'green building' process incorporates environmental considerations into every stage of the building construction and focuses on the design, construction, operation and maintenance phases. The major considerations taken into account are the lot design and development efficiency, energy and water efficiency, resource efficiency, indoor environmental quality and the building's overall impact on the environment.

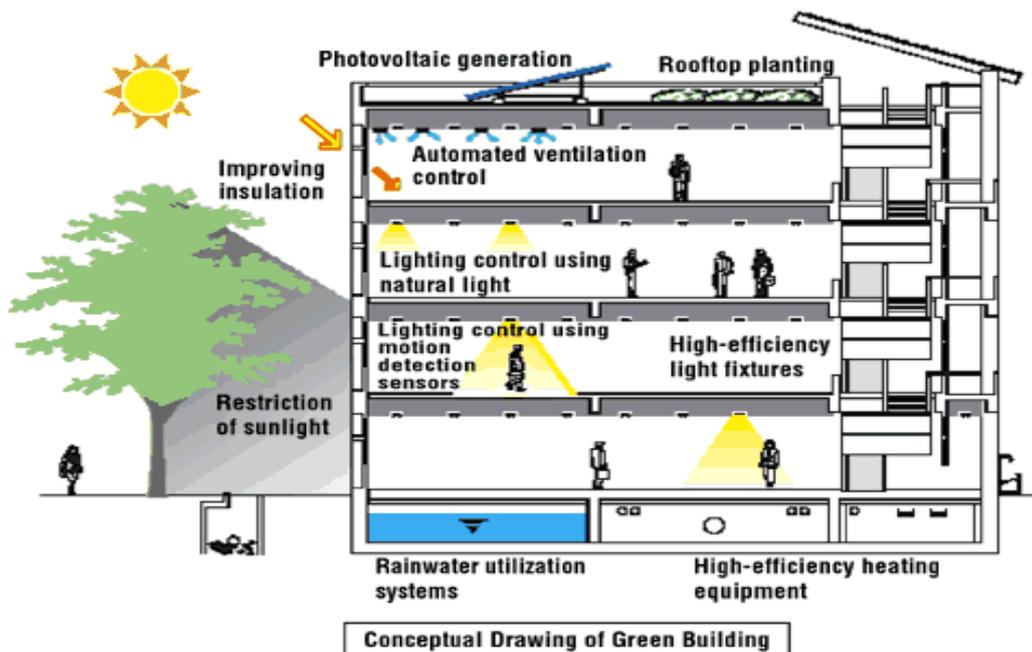


Photo Credit: www.ecomena.org

The key process difference between green and conventional buildings is the concept of integration, whereby a multi-disciplinary team of building professionals work together from the pre-design phase through post-occupancy to optimize the building for environmental sustainability, performance, and cost saving. Green buildings offer widespread benefits to a number of building industry stakeholders, including building occupants and society as a whole. Green buildings typically incorporate superior air quality, abundant natural light, access to views and noise control which benefits building occupants, making these building better places to work or live.





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An integral characteristic of a green building is its stress on protecting existing ecologies, and improving ecologies that may have been damaged in the past. Green buildings are usually constructed on environmentally sensitive lands or previously developed property, with measures taken to restore plant life. Green buildings also utilize fewer materials, through efficient design and elimination of unnecessary finish materials.

In addition, green building operations promote material as well as water recycling in their operation. Energy efficiency is one of the most important factors in almost all green building programs. Careful window selection, building envelope air sealing, duct sealing, proper placement of air and vapour barriers, use of clean energy-powered heating/cooling systems contribute towards an energy efficient building. Use of renewable energy, such as solar, wind or biomass energy, to meet energy requirements can significantly reduce carbon footprints of such buildings.

Green homes lay stress on water conservation by implementing more efficient water delivery and recycling system. Minimization of water use is another characteristic feature of a green building which helps in reducing the detrimental effects of water use and its effects on local ecologies, such as aquatic life. An increase in respiratory ailments and allergies and the use of chemicals that can give off gas from materials have greatly contributed to sensitive awareness of the air we breathe inside our homes.

The green building also focuses on reducing respiratory ailments and allergies by improving the quality of in-house air by controlling the contamination source, diluting the source, and capturing the source through filtration. To sum up, green buildings not only contribute towards a sustainable construction and environment but it also brings lots of benefits and advantages to building owners and users. Lower development costs, lower operating costs, increased comforts, healthier indoor environment quality, and enhanced durability and less maintenance costs are hallmarks of a typical green building.

Saudi Arabia to Make Solar Polysilicon from Desert Sands

By Green Building Academy

Saudi Arabia has lots of open land, and lots of sand that are rich in silicon which is an essential ingredient in the making of polysilicon for the solar industry. At present, the Kingdom has





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announced its second polysilicon manufacturing partnership, this time with Germany's Centrotherm Photovoltaics. The new partnership has already yielded its own website in the new Saudi-based company name: IDEA Polysilicon Company (IPC).

The new partnership agreement with Centrotherm to build a polysilicon plant in Saudi Arabia is in contrast with the previously proposed joint venture that was made a year ago with South Korea, to bring the first ever solar factory to Saudi Arabia to make polysilicon which is an essential ingredient of traditional solar cells. The Saudi - Based joint venture with Korea was supposed to be in production by 2014, however there were no further news announcements and after a year, IDEA Polysilicon Company was launched.



High-ranking officials of IDEA Polysilicon and Centrotherm Photovoltaic AG

(Photo Credit: www.greenprophet.com)

With the world's No #2 maker of solar equipment Centrotherm Photovoltaics the founders of IDEA would seem to have chosen wisely. IDEA International Investment and Development Company had put out a request for bids for building the polysilicon factory last 2010. The new company will build a \$1.06 billion industrial complex in Yanbu, the funding for the same would come from investors in the Gulf.





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The project will be the largest manufacturing facility in the Middle East for the production of highly-pure polysilicon with a total capacity of up to 10,000 tonnes per year, of which 2500 tonnes will be converted to solar wafers. With this move, Saudi Arabia, having oil as the only exportable commodity, is beginning to make some moves on branching out towards solar power and sand – based polysilicon manufacturing, the commodity that it is truly rich in. And since the Middle East and North Africa are expected to be among the major PV growth regions during next years, it's quite a smart move.

Dealing with Used Lead-Acid Batteries

By Mohammed Abdulaziz Khalil, EcoMENA

Lead-acid storage batteries are widely used on a mass-scale in all parts of the world. They act as power sources in a wide-range of equipment and appliances used by households, commerce and industry. Lead-acid batteries finds application in all modes of modern transport including cars, trucks, buses, boats, trains, rapid mass-transit systems, recreational vehicles etc. During power-cuts, lead-acid batteries provide emergency power for critical operations such as air-traffic control towers, hospitals, railroad crossings, military installations, submarines, and weapons systems. Every telephone company in the world, including mobile telephone service providers, uses lead-acid batteries as backup power to the telecommunications systems.



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Recycling of Lead-Acid Batteries is necessary to safeguard the environment

(Photo Credit: www.cleantechloops.com)

Lead-acid batteries contain sulphuric acid and large amounts of lead. The acid is extremely corrosive and is also a good carrier for soluble lead and lead particulate. Lead is a highly toxic metal that produces a range of adverse health effects particularly in young children. Exposure to excessive levels of lead can cause damage to brain and kidney, impair hearing; and lead to numerous other associated problems. On average, each automobile manufactured contains approximately 12 kilograms of lead. Around 96% lead is used in the common lead-acid battery, while the remaining 4% in other applications including wheel balance weights, protective coatings and vibration dampers.

Lead is highly toxic metal and once the battery becomes inoperative, it is necessary to ensure its proper collection and eco-friendly recycling. A single lead-acid battery disposed of incorrectly into a municipal solid waste collection system, and not removed prior to entering a resource recovery facility for mixed MSW, could contaminate 25 tonnes of MSW and prevent the recovery of the organic resources within this waste because of high lead level.

The most common and most efficient method for the collection of lead-acid batteries is through the battery retailer where a discount is given against the purchase price of a new battery provided the customer returns the used battery. In some countries a deposit has to be paid





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when a new battery is purchased and is only returned to the customer when the battery is returned to the retailer for recycling.

In several parts of the world, reconditioned lead-acid batteries are offered for sale. In the Caribbean islands there is a thriving second-hand auto trade and thousands of used Japanese cars are imported into the region every year to be broken up for spares. Many of these vehicles have a used lead acid battery, which is removed from the vehicle and shipped to Venezuela for recycling.

Another collection mechanism is through rag-pickers who scavenge for discarded materials that can be reused or recycled. Rag-pickers scour waste dumps, strip abandoned vehicles and wrecks and even collect batteries that have been used for standby power in domestic houses.

Recycling of lead-acid batteries, provided it is done in an environmentally sound manner, is important because it keeps the batteries out of the waste stream destined for final disposal. Lead from storage batteries placed in unlined landfills can even contaminate the groundwater. Recycling prevents the emission of lead into the environment and also avoids the energy usage associated with manufacturing lead from virgin resources.

Recycling also reduces dispersal of lead in the environment and conserves mineral resources for the future when undertaken in an environmentally and socially responsible manner. It needs to be mentioned that recycling of used lead acid batteries is not a simple process that can be undertaken in small scale enterprises. Certain control measures should to be taken to prevent adverse impacts to people and the environment.

Common Sense Approach to Green Rating System

By Romi Sebastian, Senior Architect and Environmental Designer

Somewhere along the line, organizations such as USGBC have realized it could profit of the LEED system. It has undoubtedly advertised LEED globally, when compared to other rating systems like Green Star (Australia) and BREEAM (UK). The USGBC charges high fees for commissioning and for becoming a LEED Accredited Professional (LEED AP). In my opinion, if the organization is really concerned about the environment and making buildings globally green, they should make it affordable.





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Additionally, LEED AP is being converted into an 'elite' profession – gradually intimidating the significance of trained professionals in the architectural and engineering green arena. I am forced to question the significance of paying for and passing this test; when all LEED APs - go back to referring the handbooks again, while commissioning all aspects of a project. So why have this costly and superfluous testing system in the first place? Orientation and training in LEED would more than suffice in this regard.

Instead of LEED APs judging buildings solely through paper and e-media submissions – regular visits to analyze project sites, inspections of materials/products should be conducted. Clients and consultants spend a lot of money and effort for LEED purposes. Analyzing a project through mere paperwork, does not justify the whole system at all.

Decisions can be made on project sites through discussions with clients, consultants and contractors collectively. This is how innovative and fresh LEED can evolve itself to be; rather than being a mundane system of compiled data on which buildings are rated on.

It is a fact that the development of Green/Sustainable buildings will initially cost more than a conventional building. We also have to add costs associated with procedures for LEED certification. I wonder why consultants break their heads making up fake reports and statistics to show clients otherwise. The hidden costs will show up as the project marches towards completion and will cause clients havoc. Let us be brave enough to acknowledge that they cost more and are definitely worth it.

Handbook for rating systems are not to be used as the encyclopaedias for Green and Sustainable designing. Architects and Engineers must possess prior knowledge on analyzing climatic data and geography, human comfort, passive design techniques, careful use of materials/resources and efficient building services. These basic principles should drive our design process. Useful rating systems such as LEED, BREEAM, can serve as a check list to our evolving design concepts.





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Masdar Institute Campus is one of the best examples of green architecture in the Middle East
(Photo Credit: www.e-architect.co.uk)

Targeting maximum LEED points especially in GCC countries requires more common sense and deeper understanding of the effect. I also urge clients/developers to be open minded pertaining to their LEED vision. Inappropriate implementation of add-on techniques has more often than not led to cumbersome processes.

Instead of this technocratic certification, the procedures should be more involving and subjective. Points should be granted for innovative approaches that are not included in the LEED handbook. USGBC professionals I suppose, are trained enough to make such judgments and subjective decisions proficiently. The handbook should be treated only as a useful guide and a rating manual.

There is no point in accommodating ample green ideas and techniques and ultimately end up with a building that's not comfortable to live or work in. Common sense is the key. Traditional Islamic architecture included many innovative, functional and ecological design principles, but none of them have been perpetuated by the new generation architects.

The Middle East needs green buildings a lot more than green buildings need LEED certification. If certifications such as LEED, BREEAM continue to cost too much money, time and effort — we will not stop building green projects; we will just stop certifying them.





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As architects, we have to convince Middle Eastern elites and ourselves that the optimistic concept of importing ideas of “progress” will only kill the character of a place and its public realm. The future of architecture in the Middle East desperately lies in logical design, controlled urban growth and in the acceptance of one’s own cultural roots.

Water-Taxis at The Pearl - Qatar

By Green Building Academy

The Pearl-Qatar, one of the largest real-estate developments in the Gulf region, is operating Doha’s first and only water taxi service, allowing residents and visitors to commute around the island in style. The water taxi is being operated by Ronautica Middle East (RME). This unique shuttle service operates within the Porto Arabia precinct and will later this year expand to connect all parts of the island.

The service is equipped with a fleet of 22ft boats, which are electrically propelled and as a result, environmentally-friendly. The boats have comfortable seating and are completely silent, which makes each trip a relaxing and enjoyable experience.

The Director of Corporate Communications at United Development Company, the master developer of The Pearl-Qatar, Roger Dagher said: “An efficient infrastructure to enable the movement of people around the island was a part of the master development plan for The Pearl-Qatar since its inception”.



Water taxis ferrying passengers at The Pearl-Qatar

(Photo Credit: www.gulf-times.com)





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“This is just one of the many services provided for the convenience of visitors and residents at The Pearl-Qatar, but it also allows people to explore the island and take full advantage of our first class shopping and dining outlets”. According to general manager of RME, Jaume Marco, the company will continue to offer a great option for passengers looking to enjoy water commutes around the different areas of Porto Arabia.

“As other precincts of The Pearl-Qatar open up for residents and visitors, the water taxi will become an even more valuable commute alternative for residents wanting to enjoy a relaxing sea ride on their way to their favourite shop or restaurant.”





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About Us

Green Building Academy

Green Building Academy is an online portal that acts as a gate way to LEED Credentials. The objective of this institution is to create awareness on Green Buildings and Green Building rating systems especially LEED. Green Building Academy strives to help construction professionals in the Middle East by providing them with basic information, free resources and comprehensive training on Green Buildings and LEED.

Please visit www.learning-green.com for more information.

EcoMENA

EcoMENA is a cleantech resource portal with a mission to disseminate information on renewable energy systems, waste management practices and energy efficiency measures in the Middle East and North Africa (MENA) region. It is an online information powerhouse freely accessible to anyone having an interest in renewable energy and waste management.

Please visit www.ecomena.org for more information.





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What did you like most about it?

What features would you like to see included in future issues?

Please send your comments.

Share your ideas, pictures and events with us. We will feature them in our upcoming issues.

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