



SUSTAINABILITY

Trash to treasure: Recycling construction waste in Qatar

by:

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Qatar has set up a target of recycling 38 percent of the construction waste by 2030, from the current figure of four percent.

Since managing the construction waste has become a major challenge in the region, civic bodies and contractors are exploring innovative ways to get rid of this waste – cost-effectively.

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or challenge in innovative ways. The survey not only

make this into a viable business proposition but also save the environment, writes Syed Ameen Kader.

As the Gulf region undergoes massive development and urbanisation due to rapid population growth, the volume of waste generated at various construction sites has increased substantially. Since space is a major constraint for cities such as Doha, Dubai or Abu Dhabi, civic authorities are fast realising that prevailing practices for disposing construction and demolition (C&D) waste into landfills is not a long-term solution.

For Qatar, a country which is building a diverse range of infrastructure projects – executing close to QAR1 trillion worth of construction work – the problem of C&D waste is even more critical. According to the statistics available for the period of 2008 to 2012, as reported by the Ministry of Development Planning and Statistics in 2014, Qatar generates around 10 to 12 million tonnes of solid waste every year – almost 80 percent of which comes from C&D activities. This waste, however, can be turned into a revenue-generating source if recycled efficiently and effectively. The opportunity seems imperative for Qatar as the country relies heavily on imports for construction raw materials.

Nicola Maxwell, sales manager, Averda – a waste management company operating in Qatar – says, “It is understood that the quality of C&D in Qatar is fairly good, and certain projects are in the process of carrying out testing and quality of performance of such locally-sourced aggregate.”

Qatar has set up a target of recycling 38 percent of the country's total solid waste by 2030, from the current figure of four percent.

Referring to a report released by Qatar Development Bank a few years ago, she says that the revenue potential for the solid waste value chain in Qatar could be around USD663 million (QAR2.4 billion). “There are significant opportunities for revenue generation from C&D recycling (USD105 million or QAR382 million), household recycling (USD100 million or QAR364 million) and commercial collection and recycling (USD176 million or QAR641 million),” says Maxwell, who is also the chairperson of Solid Waste Interest Group – a part of Qatar Green Building Council (QGBC).

Qatar National Development Strategy 2011-2016 has set up a target of recycling 38 percent of the country’s total solid waste by 2030, up from the current figure of four percent. Explaining Qatar’s initiatives towards waste management, Matthew Kitson, regional director, Hilson Moran Qatar, says, “Qatar has already implemented a number of policies and frameworks to reduce C&D waste including the application of the Global Sustainability Assessment System (GSAS).” He adds that this local sustainability assessment system is currently being applied to a number of new construction projects across Qatar. “Part of the assessment focuses on promoting a high degree of recycled content in construction materials and responsible sourcing of materials from local supplies,” says Kitson.

Most large-scale projects in Qatar, such as those under Qatar Railways Company, QDVC, Qatar Foundation and Lusail Real Estate Development Company have construction waste management and recycling strategies, but the uptake level has been low among smaller construction companies as they are not fully aware of economic benefits of using recycled aggregates.

As the use of recycled aggregate is relatively new in Qatar, it is recommended to use specialised contractors who can process waste to meet different applications as per the Qatar Construction Specifications.

Dr. Khaled Hassan, country director, Transport Research Laboratory (TRL), Qatar Science Technology Park, says, "Despite the large quantities of construction waste generated, the use of recycled aggregate is still very limited. There is great potential to convert construction waste from a landfill material, harming the environment, into quality aggregate generating income."

In order to do so, experts feel that the country needs to create a complete ecosystem, towards which some progress has been made in the last few years. In 2011, Qatar National Research Foundation (QNRF) funded a project called 'Innovative use of recycled aggregate in construction', which was executed by TRL in collaboration with other government agencies such as Qatar Standards in the Ministry of Environment, Qatar University, and the Public Works Authority (Ashghal).

Dr. Hassan, who drove the project at the ground level, believes the experiment has been working. The outcome of this pilot project helped the government amend its latest version of Qatar Construction Specifications (QCS 2014), which now allows construction companies to use recycled aggregate in various construction applications in Qatar. "This specification has been developed based on local evidence for building trials constructed in 2013, that exhibited great performance over more than two years," says Dr. Hassan, who was responsible for testing the quality of recycled waste material in new construction projects.

The pilot project also helped the government develop Codes of Practice for sorting wastes at source before sending them to landfill sites. Now, Qatar has a government authority, Qatar Standards, which has been entrusted with the job of inspecting the product's conformity with specifications and certifications.

“You have to apply certain standards and specifications before a recycled material can be used in construction.” – Meshal Al Shamari, director, QGBC.

Meshal Al Shamari, director of QGBC, agrees the whole process needs to be regulated in order to meet certain quality standards. “You have to apply certain standards and specifications before a recycled material can be used in construction. Sure, we care about the environment, but we also care about the quality of construction,” he says, adding that developers can earn certain credits for green building certification based on how they manage dust or reuse materials onsite. “But even the rating systems give you a limit for using recycled materials. You cannot use 100 percent,” he adds.

Considering all these factors, efforts are currently being made to allow more types of recycled materials to be used for various construction applications. Following the success of the first project, QNRF has decided to fund another project entitled, ‘Implementation of recycled aggregate in construction projects’. “In this project, TRL and Qatar Standards will work jointly with government clients, consultants, contractors, and suppliers on implementing recycled aggregates in full-scale construction projects,” says Dr. Hassan, adding that the new project will mainly focus on government projects.

How to handle C&D waste?

Managing waste sustainably and profitably is a specialised job. Ideally, if the project is large, this process should start at the initial stage and on the site.

At present, almost all recycled aggregate production takes place at Qatar's Rawdat Rashid facility. However, it could be economically feasible to set up a recycled aggregate plant on a site which generates sufficient volume of feedstock. The obvious advantage of an onsite recycling is that the materials can be reused with minimum disposal to landfill. That also means one will have to extract less amount of virgin or raw materials for new construction. "Additionally, fewer materials are transported to and from site with savings in transportation and energy costs. This also results in reduced traffic congestion and project delay due to materials supply," points out Dr. Hassan.

Whether or not a company is able to create its own recycling system, it must allocate an area at its project site to stockpile all recyclable materials, collected during the course of construction. "At the end of the project, the finance team members of the construction company along with their site health and safety executive (HSE) officer should review the recyclable items to see if any of those can be reused in their next projects or should be returned to the supplier," says Salman Shaban, senior manager, Lucky Star Alloys – a scrap recycling company with operations in Qatar.

Thereafter, he adds, the site HSE officer or the site supervisor can choose any of the three methods of disposing their recyclables: (a) assign a professional waste management company to dispose of the recyclables to the respective recycling facilities; (b) make arrangements directly with the local recycling companies to collect the waste from their construction sites; or (c) deliver the materials themselves to the recycling facilities.

As the use of recycled aggregate is relatively new in Qatar, it is recommended to use specialised contractors who can separate different types of wastes on site and then process them to meet different applications as per the QCS 2014.

Maxwell of Averda says, "It is much less of a burden on any company, both logistically and financially, for a specialised waste management company to come in and manage the waste for them." She explains this would avoid the asset investments, logistical and manpower investments, environmental impacts and also potential permits and legal requirements. "It would also ensure that the waste is handled as per the environmental standards of Qatar and according to corporate responsibility ethos."

Cost implication

As recycled aggregates are generated from waste, there is common perception that these materials should be used in low-value applications. Dr. Hassan of TRL explains that "this perception is incorrect, especially in Qatar where there is a shortage of quality aggregate with great potential to convert waste into a high-value products generating income." Supporting his argument, he cites the example of the 2008 construction boom scenario when the price of imported gabbro climbed to QAR120 per tonne from the previous level of about QAR75 per tonne. "This scenario has been repeated in 2015 with the price of imported aggregate exceeding QAR150 per tonne."

By contrast, he points out, the cost of recycled aggregate for use in concrete is in the range of QAR40 to QAR50 per tonne, depending on the application. The current production of recycled materials at Rawdat Rashid landfill is around two million tonnes per year (mta), which is a small proportion of the total

demand for aggregates, but has the potential to reach over 10 mta. "In the long term, recycled aggregates could contribute over 20 percent of Qatar's aggregate supply," estimates Dr. Hassan.

As a prevailing practice, some companies in Qatar have set up their own temporary concrete crushers. They crush the concrete as per their needs and reuse it within their sites. Maxwell says, "Financially, it would not be easy to recover the costs by reusing or selling out the recycled products. This will become more feasible though when further legislation, codes of practices and/or landfill levies are put into place."

Shaban of Lucky Star Alloys points out that many companies still prefer to dispose waste into the landfill as it is a convenient and economical option for them. "However, on a positive note, we are also seeing that the awareness for recycling is increasing among individuals and companies," he says. As the awareness is increasing, he feels, companies are also getting monetary value for their recyclables to cover the cost of labour and transportation, Shaban adds.

With the implementation of stringent sustainability and environmental agenda's across all of the major infrastructure projects in Qatar, Kitson of Hilson Moran Qatar says more and more main contractors are turning to the employment of full-time environmental managers. The manager has a role to oversee the implementation of a whole host of project-specific environmental management plans and report back to the government on evidence-based compliance. "In essence, onsite sustainability and environmental management in Qatar has turned to the highest level of international standards and corporate responsibility," concludes Kitson.

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HUMAN RESOURCES

Your guide to finding a job in Qatar

by:

Bayt.com Research Team (<http://www.qatarconstructionnews.com/author/bayt-com>)
| 14 Jan 2016



⚠ When looking for a job in Qatar, the length of a typical job search can last from three to six months. (Image Flickr/ kate hiscock)

If you are looking for a job or planning to relocate to Qatar, now may be the best time to do that as the country was voted one of the best destinations to live and work in the Middle East and North Africa (MENA) in a recent survey by Bayt.com.

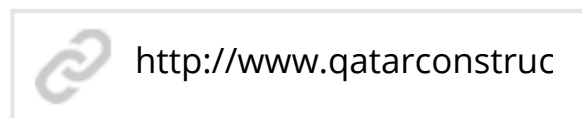
The survey shows that Doha consistently scored in the top 10 cities in the MENA across all considerations, and is the sixth top city in the MENA region. In fact, two out of three people living in Doha are happy living in their current city of residence. The Bayt.com Top Cities in the MENA survey, which was released in October 2015, shows that the availability of jobs in Doha is either good or excellent, according to four in 10 respondents, with only eight percent believing it is bad. Moreover, 40 percent of respondents in Doha believe that competitive salaries are either good or excellent.

Top city or not, relocating to any other place implies setting your job search in motion well ahead of time. When looking for a job in Qatar, the length of a typical job search can last from three to six months and will depend on several factors such as your target industry, job role, and career level, etcetera. To help you plan and organise your job search, here are a few steps to follow.

Research the market: Start your research before you make the move. Find out more about the local big players and where they are located. If you are interested in finding a job with a particular employer, see if they are hiring on their website or job board on leading job sites in the Middle East region.

Set a routine and stick to it: Apply regularly at least a month in advance before you come to Qatar, if you are relocating from another country. Once you are in Qatar, make it a point to update your contact information on your CV immediately. Keep applying for jobs and refreshing your online CV to ensure that it is always on top of your search results.

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PROJECT MANAGEMENT

Qatar – a country experiencing major civil engineering challenges and initiatives

by:

Farwa Zahra (<http://www.qatarconstructionnews.com/author/farwa-zahra/>) |
28 Dec 2015



Speaking with QCN, David Williams, lead director – Qatar, WSP | Parsons Brinckerhoff, says that the challenges of cutting-edge engineering are confronted every day in Qatar, and that's what makes the market so exciting.

David Williams, lead director – Qatar, WSP | Parsons Brinckerhoff, explains some factors that make projects more appealing to bid for, while also looking at some key features of project managers and consultants that clients look for before awarding contracts.

What are some of WSP | Parsons Brinckerhoff's key achievements during 2015?

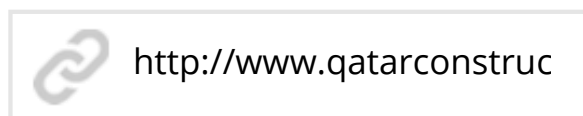
2015 has been an exciting year for us as it was the first year operating as one combined business – WSP | Parsons Brinckerhoff. We have doubled in size globally and regionally since this time last year, and our focus has been on identifying and delivering synergies as a result of our new combined capabilities. The combination of our businesses is a better proposition for our people and our clients, and we are already seeing the evidence of this in the

market, having won work that we could not have previously. Today, we are able to provide a full service offering across many sectors including property, transport, infrastructure, environment, power and water. Locally we have been involved in the delivery process of most of the major infrastructure projects in Qatar linked to Qatar Rail, Hamad International Airport, expressways, 2022 World Cup stadiums, local roads and drainage, and the People Mover System at Education City. Some of our most significant project highlights include:

The hosting of the Handball World Cup in the Lekhwiya Mixed Use Arena. We are proud to be associated with the fast-track delivery of the arena with Redco Construction Almana contractor on a design-and-build basis.

Integration of our Doha office employees into a single state-of-the-art office on the 16th floor of the Gate Mall in January 2016

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