

ARM/006

Tuesday, 23 March 2010

ARMSTRONG CEILINGS' RECYCLING SCHEME DEBUTS AT BIRMINGHAM UNIVERSITY HOSPITAL

As part of a joint procurement initiative with main contractor Balfour Beatty, Armstrong Ceilings was asked to provide the ceiling systems for the University Hospital, Birmingham project - a £582million project providing both acute and adult psychiatric facilities for the University Hospital Birmingham NHS Foundation Trust.



Armstrong also worked very closely with Omega contractor Titan Ceilings, who will have been on site for more than four years when their work on literally thousands of rooms is complete later this year, so this project represented a real collaboration between all parties.

The University Hospital, Birmingham construction joint venture, comprising Balfour Beatty Construction and Balfour Beatty Engineering Services, was underpinned by a Sustainable

Construction Plan, emphasising a 'joined up' attitude to sustainability and the environment.

Some 117,000m² of Armstrong Bioguard Plain and 3,000m² of Bioguard Acoustic tiles were specified by BDP architects for wards and treatment rooms, and waiting rooms, restaurant and dining areas respectively to provide a combination of acoustic, anti-microbial, ISO 5 clean room performance solutions for the hospital environment.

One of the deciding factors in Armstrong being asked to collaborate on this project was the company's willingness to trial an off-cut-recycling scheme where Armstrong would collect the off-cuts from the ceilings as they were installed and recycle the waste materials to make new tiles.

One of the aims was to then use these new tiles on site – effectively making 'green rooms' within the building where all the building products used were 100% recycled. Armstrong set up a system that would enable all the waste to be captured and collected as it was generated. This was on a purely trial basis – a real learning exercise for all involved.

There were, of course, a number of logistical challenges. Armstrong provided Titan's workforce with large bags to put the off-cuts in and these were loaded onto pallets and moved down the seven stories by lift ... until internal doors started to be put in and the bags were too big to get through them!

The large bags were replaced by smaller bags but this did not prevent cross contamination of waste by other building contractors (electricity cables from M&E contractors and plasterboard from dry liners, not to mention coke cans) which meant that not all the waste could be recycled, even after a lengthy sorting process. This cost a small amount of recycled product, leaving a 90% rate of off-cuts being recycled from site.

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This was resolved when Balfour Beatty gave Titan access to their dedicated dry, covered recycling area where the bags were sorted, by two Titans working almost full-time, and then returned on 20-bag truck loads to Armstrong's plant in Gateshead for recycling.

Titan's contract manager John Maher said: "Although the logistics were challenging at the start, on a project of this size it is well worth it, and sooner or later it won't matter what size the project is, all building materials will have to be recycled to some extent.

"Balfour Beatty was very helpful and once they gave us the dedicated area to do the sorting, and access for transport in and out, the scheme really took off. It was the first time Titan has done anything like this and although the learning curve was steep at times we feel it has given us a unique perspective."

Jim Duffy, head of environment and quality, Balfour Beatty Construction Northern, anticipates that major building contractors and customers could soon make on-site recycling mandatory.

He said: "This major project identified ceiling tile cut offs as an item that would be unacceptable to send to landfill. The project pushed the boundaries with Armstrong and Titan and all three parties agreed to trial the recycling scheme.

"Having overcome some initial challenges in the first year, the trials success and failures have been reviewed and actions put in place to improve the volume of recycled material in the second year of the trial.

"Having the commitment to trial the scheme on a non-contractual basis was a great step forward. Committing to improve the recycling process is a great testimony to all three parties. The challenge for the future is making this the norm within the three businesses. "

BDP's architect director John Tinner said they had specified Armstrong Ceilings for their acoustic and Infection control properties, unaware the recycling scheme was in its infancy. Now however, materials recycling would be something they bore in mind when specifying ceiling systems.

"It is very forward thinking and anything we can do to ensure we are not using raw materials from scratch in every instance, is to be applauded. Every opportunity should be taken to do it," he said.

"We had been looking at specifying ceiling materials from purely a clinical point of view. The recycling element didn't influence our decision at the time but it will certainly be something we bear in mind in the future."

In the first year (2008) Armstrong took an average 1,844kg/432m² per collection. Then in 2009, when Balfour Beatty gave Titan the dedicated recycling area, takings increased greatly, averaging 2,910kg/728m². The scheme has continued to be more efficient as the contractors become used to the procedures employed and this is shown so far in 2010 with a taking of 3176kg/794m².

At the last count, some 42 tonnes (42,847kg or 10,665m²) of product has been returned for recycling and 100% of this material can be re-used once the "trash" content is removed.

The University Hospital, Birmingham construction joint venture was given an award by the Chartered Institute of Waste Management for outstanding site management of waste – a direct result and recognition of the hard work put in by all involved. It is certain that the practices that have been put in place will play a significant role in the future of waste management.

An additional environmental benefit of specifying Armstrong Bioguard ceilings is at the end of their life the tiles at Birmingham hospital can be fully recycled back into the Armstrong "End of Life" recycling scheme.

Consort Healthcare, Balfour Beatty's PPP healthcare vehicle, reached financial close for the PPP contract to design, construct, finance, maintain and manage the lifecycle replacement of the new facilities in June 2006.

The construction work is being carried out by a joint venture of Balfour Beatty Construction Northern and Balfour Beatty Engineering Services. Facilities management is being provided by Balfour Beatty Workplace.

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