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Foundation for reuse

The construction industry must look beyond recycled content to achieve genuine sustainability, writes Steve Hemmings

→ Steve Hemmings is head of environment, health and safety, and sustainability at plasterboard manufacturer Siniat

In the built environment, where projects have especially long lifespans, it is easy to lose sight of how materials will be used once buildings are dismantled or demolished.

There is a tendency to rely on recycled content as an indicator of healthy performance for materials management. It is an approach that, in the short term, prevents waste from going to landfill and reduces resource depletion.

It also provides a simple metric for specification. Supplier assessments, for example, position recycled content as a key requirement for meeting project targets. But they rarely ask for details about how materials can be reused or recycled.

That is an unsustainable solution, delaying responsibility for tackling resource depletion until later generations have to confront it.

So what would a closed loop model for construction look like, and how could we get there? To develop a fully sustainable closed loop approach to building, specifiers must start to plan for the end of a building's life by laying the foundations for the reuse of its materials.

Gypsum in a closed loop system

A large amount rests on there being a supply chain in place that is capable of processing materials in an effective and efficient way.

At present, we face a significant obstacle in that buildings are currently demolished rather than dismantled across most of the EU. This leads to unsegregated waste going to landfill and removes the possibility of recovering valuable recyclable materials.

Selective deconstruction can make a massive contribution. It is imperative to make responsible demolition profitable, and there are projects afoot to better understand how this can be done.

Since January 2013, Siniat has been working as one of 16 industry partners on a three-year research project, called the Gypsum to Gypsum Project (GtoG), for improving how plasterboard elements can be reclaimed and recycled from buildings at the end of their life.

The project is funded by EU LIFE, and the delivery partners include manufacturers, universities, demolition companies (including Cantillon in the UK) and recycling companies.

The project recognises that closed loop recycling depends on three factors: systematic dismantling, source sorting of waste, and stringent specifications for recycled gypsum, so that it can be put back into the manufacturing process. This involves the full spectrum of the supply chain, which is why the project's membership is so broad.

Ultimately, industry will need to take a holistic approach to deconstruction. But plasterboard is an important place to start. Its principal material is infinitely recyclable as gypsum, and unlocking the potential to keep this material within a closed cycle should provide valuable insight for other parts of the industry.

Equally crucial is to involve the entire supply chain. Marshalling materials in our sector is a long-term task, and a shift in mindset and a maturing marketplace for post-consumer waste should make sustainable practice a more attractive option in construction.

→ More on the GtoG project can be found at: www.gypsumtogypsum.org

Buildings need to be designed for recyclability