

BIM – SIGNALLING A SHIFT



Newport Railway Station.

All images used BIM in the construction process. All courtesy of Kalzip Limited

The roof and wall envelope of metal clad industrial and commercial buildings have to perform a number of important functions to ensure, or sometimes guarantee, that the building meets its design parameters. Individual components within proprietary systems have a set of key attributes which enable them to function in the manner in which they were intended to and also operate collectively to ensure that the complete system performs to the highest standard.

The Metal Cladding and Roofing Manufacturers Association (MCRMA) welcomes the introduction of Building Information Modelling (BIM) into the design stage as it will enable all members of the supply chain to work collaboratively through the access and sharing of information about components, systems and their in-service use.

BIM has quickly entered the vocabulary of the construction industry but what exactly is BIM? It is a process of collaboration using computer models for a project in replace of separate drawings. Essentially there are two sides to BIM; 3D modelling and central information storage. Each product or system for the 3D model is referred to as an object; an insulation manufacturer for example, will have one object for each thickness of each product that they choose to include. These objects are then hosted on the web and allow designers to specify them in their models.

Construction Operations Building Information Exchange (COBie) is a data format for storing information on products and systems. This is the heart of the concept allowing for all useful data on individual products, ranging from material thickness and fire rating to service intervals and replacement costs. This will allow designers to see the characteristics of the products that they are specifying along with assisting in the commissioning, operating and maintenance.

At present it has been predicted that less than 5% of construction projects have adopted BIM; and estimates believe that this figure will leap to 50% by 2016. The advantages of adopting BIM are cost savings through sharing resources, i.e. the building model, the identification of conflicts at design stage, reduction in wastage and, with a greater visual emphasis, it allows a much clearer walk through of the building prior to construction allowing design and site issues to be identified along with safety considerations.

As with the adoption of any new technology there can be disadvantages; for example, the software and training costs in order to start working with BIM compliant software. There are also costs (financial and time) for both manufacturers and fabricators in order to produce BIM objects and COBie data for their products and systems.



Aintree Racecourse

BIM represents both an opportunity and a potential threat to how manufacturers sell their products. Manufacturers that do not embrace BIM risk not being considered or specified for projects where BIM collaboration is a must. Manufacturer data is also a key driver to the overall success of BIM; the success of the model is dependent on the quality of the input information. Companies who produce BIM objects containing useful product information will position themselves to work on BIM projects from an early stage.

There are various challenges to producing objects that are of value to clients. Firstly, the most important consideration is what data to include with the object. The COBie sheet should contain relevant information for the product or system as too little data or unusable data will potentially put a product at a disadvantage.

The web site hosting of the BIM objects is also a consideration; NBS for example, has created the National BIM library which ensures maximum exposure to the industry. Hosting on individual company websites will be considered by many; however, when objects get updated it is imperative that procedures are in place to ensure all copies of the specific object are updated. Otherwise this can leave customers working with inaccurate product data.



South Bristol Skills Academy

Another consideration is the software version(s) you wish to cater for. Objects produced in accordance with the Industry Foundation Class (IFC) are not software specific and therefore can be imported into all BIM software.

However, this can lead to loss of functionality when compared to a BIM object that has been created specifically for a particular software package. Manufacturers need to be clear what software their customers use otherwise IFC files will be required if alternative software is used.

The UK government's binding commitment to adopt BIM means that BIM will signal a shift in working practices within the industry. The challenge will be for all areas of the industry to embrace this new approach whilst having to balance the financial and time commitments required for its implementation.

Companies within MCRMA provide backing for BIM-based design projects and provide expert advice about the specification of CE marked products. In support of these activities, the MCRMA's independent roofing and cladding inspectors group provide professional advice about the building envelope during the design, assembly and operating phase of construction.

This article was prepared on behalf of the MCRMA by Tim Vincent, senior technical consultant for ROCKWOOL UK. This article first appeared in RCi magazine October 2013

DISCLAIMER

Whilst the information contained in this publication is believed to be correct at the time of publication, the Metal Cladding and Roofing Manufacturers Association Limited and its member companies cannot be held responsible for any errors or inaccuracies and, in particular, the specification for any application must be checked with the individual manufacturer concerned for a given installation.

Information provided by the MCRMA or contained within publications and articles which are made available in any form (mechanical, electronic, photocopying or otherwise) cannot be used or cited as a means of ensuring that a material, product, system or assembly is compliant with Building Regulations.