

OSC (Offsite Construction; Sustain magazine)

Circulation: 7,500

Date: December/January 2008/9

● IMAGE: SCI has been involved in auditing and assessing the carbon footprint of pioneering steelwork contractors

## Tracking down the Construction industry's elusive **BIG FOOT**

Dr Michael Sansom, the Steel Construction Institute's (SCI) Senior Manager for Sustainability, illustrates some of the carbon footprinting issues facing the construction industry and how a special carbon calculator tool could help to calculate your company footprint as well as your individual 'product' footprints.

**T**he construction industry is the largest consumer of steel in the UK using around 2.5Mt of carbon steel annually. The versatility of steel is reflected in the range of products offered to the industry but this figure mainly comprises hot-rolled and hollow structural sections, light gauge and pre-finished flat steel products. All steel construction products are manufactured offsite with the inherent benefits of quality, reduced waste, speed and efficiency. Rebar and mesh used in reinforced concrete are not included in this figure.

The construction industry and the operation of buildings are significant contributors to the UK's carbon footprint and as such, are facing increasing pressure to reduce carbon emissions. To date, effort has largely focused on operational energy/carbon reduction in buildings with measures including the Code for Sustainable Homes, Energy performance certificates and revisions to Part L of the Building Regulations driving change. However as the operational energy efficiency of buildings is improved, the relative importance of energy/carbon embodied in construction products increases. The recent increase in carbon footprinting initiatives within the construction and property industries provides evidence of this.

There are also several private sector initiatives in which embodied carbon emissions from construction are being assessed and in some cases, emissions are being offset to deliver 'zero carbon' buildings. The large UK retailers and their construction supply chains are particularly active in these initiatives.

In view of the plethora of different schemes and methodologies that are being deployed throughout the sector, The SCI was commissioned by the British Constructional Steelwork Association (BCSA) to develop one robust methodology for measuring the carbon footprint that is tailored to the UK steel construction sector. Its deployment will avoid inconsistency and inaccuracy arising from variations

in scope, methodology and data between the different carbon foot-printing schemes being marketed to the sector. Furthermore, by offering a single tool and associated guidance and support, the cost to the sector is reduced compared to bespoke assessments by specialist consultants and therefore take-up should be increased. This is important to both SCI and BCSA so that the sustainability advantages of steel are clearly and widely appreciated and communicated.

#### The work was divided into four distinct phases:

- Development of a methodology for assessing the carbon footprint of UK steelwork contractors based on current guidance and best practice on carbon footprinting such as PAS 2050 and the Greenhouse gas protocol.
- Development of a user friendly spreadsheet tool to enable the carbon footprint to be easily and consistently calculated by BCSA members using the methodology.
- Provision of assistance to the evaluators of the BCSA Register of Qualified Steelwork Contractors scheme, to use the tool and to verify the inputs to the company's carbon footprint calculation.
- To provide, on an ongoing annual basis, updates to the methodology and spreadsheet tool as methodology develops and improves and as new and better data becomes available, such as CO<sub>2</sub> emissions factors.

BCSA chose SCI to undertake this work because of its long track record of lifecycle assessment (LCA) work within the steelwork sector, both at the product, whole building and company levels. In 1998 SCI published a state-of-the-art comparative assessment of the embodied energy/carbon of office buildings and in 2002 led a large European study developing whole life LCA data for generic steel construction products. SCI also undertook a mass

flow analysis of the UK steel construction sector in 2003. More recently SCI has been involved in auditing and assessing the carbon footprint of pioneering steelwork contractors.

The tool will enable BCSA members to calculate not only their company footprint but also the product footprint, ie footprint of one tonne of fabricated structural steel erected onsite. This information will enable BCSA members to benchmark their performance, identify and target areas for improvement and, going forward, measure progress. Furthermore the tool will enable members to provide carbon footprint information to clients and others within the supply chain. At a macro level, data provided by its members will enable the BCSA to collate information and develop KPIs for the sector.

This cutting edge initiative by the BCSA and SCI provides further evidence of the sector's commitment to measure and improve its sustainability performance. The tool will be completed and beta-tested in 2008 before being rolled out in 2009. ■