KEY FACTS

Project name: Water Footprinting

Location: Nationwide

Client: Balfour Beatty

Project team details: Parsons Brinckerhoff

PROJECT SUMMARY

Balfour Beatty’s Sustainability Roadmap requires the company to “undertake assessments of our indirect water footprint across our supply chain to identify the most significant areas of water embodied in the products and materials…” Parsons Brinckerhoff’s Sustainability Team developed a robust methodology and toolset to support the client’s ambition.

PB applied leading thinking to develop a set of water footprint tools which allow:

- designers and construction contractors to estimate the volume of direct and indirect (‘embedded’) water used in construction projects; and
- suppliers to calculate the volume of direct and indirect (‘embedded’) water used in construction products.

Working collaboratively with the client, Balfour Beatty, and one of its main suppliers, Marshalls, PB’s team effectively transposed the Water Footprint Network’s approach into a suite of five user-friendly water footprinting tools. The project ran from January to December 2011.

ENVIRONMENTAL IMPACTS

Water Efficiency:
Our suite of water footprinting tools allows:

- Office and Construction Site Managers to estimate the water footprint impact of water consumed directly by their operations;
- Project Managers to estimate the water footprint impact of water associated, indirectly, with the materials procured for their project; and
- Materials suppliers to estimate the water footprint of their quarried and manufactured construction products.

Materials:
Our suite of water footprinting tools allows:

- Office and Construction Site Managers to estimate the water footprint impact of water consumed directly by their operations;
- Project Managers to estimate the water footprint impact of water associated, indirectly, with the materials procured for their project; and
- Materials suppliers to estimate the water footprint of their quarried and manufactured construction products.
OVERARCHING SUSTAINABILITY ACHIEVEMENTS

We applied an industry-leading methodology developed by the Water Footprint Network to our sector to develop a unique product in the construction and contracting arena; the first time a truly quantifiable system has been put in place to capture water consumption throughout the supply chain. The toolset considers direct and indirect water use as well as local water stress to estimate the overall impact of water consumption. The design and development team consulted with users (Balfour Beatty’s Environment Managers and one of their suppliers, Marshalls) throughout the project to ensure that the tools were fit for purpose.

Our innovation allows designers and construction contractors to estimate the water footprint and impact of the materials used in construction projects; suppliers to estimate the water footprint and impact of individual construction products; and Environment / Facilities managers to understand the water footprint and the impact of water used in their offices and construction sites.

WHAT LESSONS WERE LEARNED AND WHAT CONCLUSIONS CAN BE DRAWN FROM THIS PROJECT?

- There was currently no generally accepted methodology for water footprinting. After researching the subject we chose the Water Footprint Network’s methodology as representing the leading thinking on the subject.
- Figures for water stress across the globe was very hard to come by. In the end we sourced this from an academic paper, but we continue to work on identifying more up-to-date figures.
- Initial calculations suggest that the indirect water associated with procured materials greatly exceeds that used directly on construction sites. We hope to verify this during 2012.

PROJECT COMMENTS/PRESS/QUOTES:

“This technically challenging and pioneering project marks the start of our journey into an area which is likely to increase in importance as the combined challenges of climate change and population growth put water resources under increasing stress.”

Michael Hardisty - Principal Sustainability Consultant

CAMPAIGN FOR A SUSTAINABLE BUILT ENVIRONMENT