The first building in London, and only the third in the entire United Kingdom, to achieve the BREEAM ‘Outstanding’ sustainability accreditation, 7 More London provides a flexible, open-plan new headquarters building for PricewaterhouseCoopers (PwC) on the south bank of the River Thames near Tower Bridge.

PwC is one of the world’s largest professional services companies and one of the Big Four accountancy firms. “We wanted this building to dispel some of the myths in the real estate world that occupiers are not interested in sustainable buildings,” says Paul Harrington, real estate director at PwC. Sustainability was also seen as a differentiator between PwC and its competitors.

The 10 storey building incorporates 48,000m² of office space located above ground floor retail units. Designed by Foster + Partners to maximise the usable space from the relatively small footprint, 7 More London features glazed, symmetrical wings of offices which open out to embrace the river revealing a hollow circular drum which houses the reception at its core. Three curved bridges connect these two wings at levels two, five and eight, while at the rear the building’s southern elevation drops to seven storeys to respect the existing buildings along Tooley Street.

The building includes a range of carbon saving measures, renewable energy provisions and highly efficient building services systems. These include the use of 80% recycled aggregate within the concrete used, sculpted solar shading, solar hot water panels, green roofs and the installation of selectively sized, fired Combined Cooling Heating & Power (CCHP) Trigeneration system which has been used to provide a low carbon source of cooling, heat and power to the building.

This has resulted in 74% less CO2 emissions than mandated under the 2006 Part L2 Building Regulations. The fact that 7 More London has also been awarded an EIRating Energy Performance Certificate (EPC) is further testament to the sustainable credentials of this development.

The story of how 7 More London became such a sustainable landmark actually starts some years previously. At the time PwC leased the building it had a planning requirement to achieve a minimum environmental rating of BREEAM Very Good (2006). With that in mind, PwC pushed the developer and its design team along with PwC’s life-fit designer BDIP to target the highest level of environmental performance attainable at that time which was BREEAM Excellent. As work on the building’s engineering design started, however, details began to emerge of an upgrade to BREEAM and the release of BREEAM Offices 2008 and the addition of a new BREEAM Outstanding rating to the classification system. The result of which was that as it stood, PwC’s new building would no longer represent the sustainable differentiator it desired.

One of the design upgrades that this ambitious new goal heralded in was that the originally specified electric perimeter heating was replaced by a hot water trench heating system fed from heat recovery units added to the building’s engineering design started, however, details began to emerge of an upgrade to BREEAM and the release of BREEAM Offices 2008 and the addition of a new BREEAM Outstanding rating to the classification system. The result of which was that as it stood, PwC’s new building would no longer represent the sustainable differentiator it desired. PwC therefore upped the ante and set a target for the building to achieve BREEAM Outstanding (2008), under the revised criteria.

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After an exhaustive review of competitive trench heating systems, approximately 2,500 metres of Jaga Mini Canal trench heating was selected by building services systems contractor Michael J Lonsdale.

The Mini Canal is one of a comprehensive range of natural and dynamic trench heating systems marketed by Jaga and features the company’s ultra-responsive LowH2O heat exchanger for precise temperature control. The low mass, low water content LowH2O exchanger was also able to work far more efficiently than competitive trench heating systems and produce high heat outputs when fed with the relatively low 45° flow temperature of the water from the CHP system.

To make logistics easier on site, Jaga arranged split delivery of the Mini Canal trench units to 7 More London so each of the 10 floors received its own phased delivery. Every delivery was in turn split with products for each of the four core areas on its own pallet. To avoid damage during transit, the trench units were supplied without grilles, and protected by Jaga’s study cover boards. Each trench was supplied fully assembled, tested and ready for installation in front of the saw-tooth facade and to the internal curved areas on all ten floors of offices and around the central atrium. Simple yet elegant, black and polished stainless steel grilles sit perfectly flush with the floor. The size of the Jaga trench units for this project were supplied in four different sizes ranging from 60mm found over a 2,400mm length. The Mini Canal is probably the most versatile trench heating system available today and Jaga’s solution was to manufacture bespoke ducting units which were stepped in depth. The height adjustment brackets fitted to each trench unit then ensured that the trench grilles sit perfectly flush with the floor.

Demand on labour on-site during installation of the trenches were also reduced as Jaga custom made the elements to increase the length of the heat exchanger and consequently make it quicker to install the pipework. Perhaps the biggest challenge faced on site was the uneveness of the floor slab. The original design called for a trench 140mm deep but steel plates holding the façade to the slab had compromised that in places with variances in depth of up to 60mm found over a 2,400mm length. The Mini Canal is probably the most versatile trench heating system available today and Jaga’s solution was to manufacture bespoke ducting units which were stepped in depth. The height adjustment brackets fitted to each trench unit then ensured that the trench grilles sit perfectly flush with the floor.

The project has been critically acclaimed, not just by the architectural press and building services industry but by mainstream media, such as The Evening Standard, too. As Paul Harrington of PwC said: “This is shuddling for the future, a building that will last us for the next 20 years.”

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The great relationship we had at the design stages, the technical support we offered to the contractors, and ultimately the unrivalled versatility of Mini Canal meant that together we overcame every problem on site to deliver a superb project.”

Andy Williams, Technical Project Engineer, Jaga

Kaz Glander, project manager from Michael J Lonsdale: “We were very, very pleased with the Jaga Mini Canal – it is an effective solution which met the brief perfectly in terms of power and style.”

Michael J Lonsdale to mock-up grille options for the architects approval before eventually a roll-up stainless steel grille was chosen for use in the reception area and black. Designers: rigid anodised aluminium grilles were selected for use in the office areas. The copper and aluminium heat exchanger was itself made invisible below the grille by the application of a dark grey lacquer finish.

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PROJECT TEAM

SHELL & CORE
ARCHITECT Foster + Partners
M&E CONSULTANT Roger Preston & Partners
STRUCTURAL ENGINEER Arup
CONSTRUCTION MANAGER Mace Fit Out

FIT OUT
M&E AND INTERIOR DESIGN BDP
CONTRACTOR Overbury
M&E CONTRACTOR Michael J Lonsdale
TRENCH HEATING INSTALLATION Heatfit