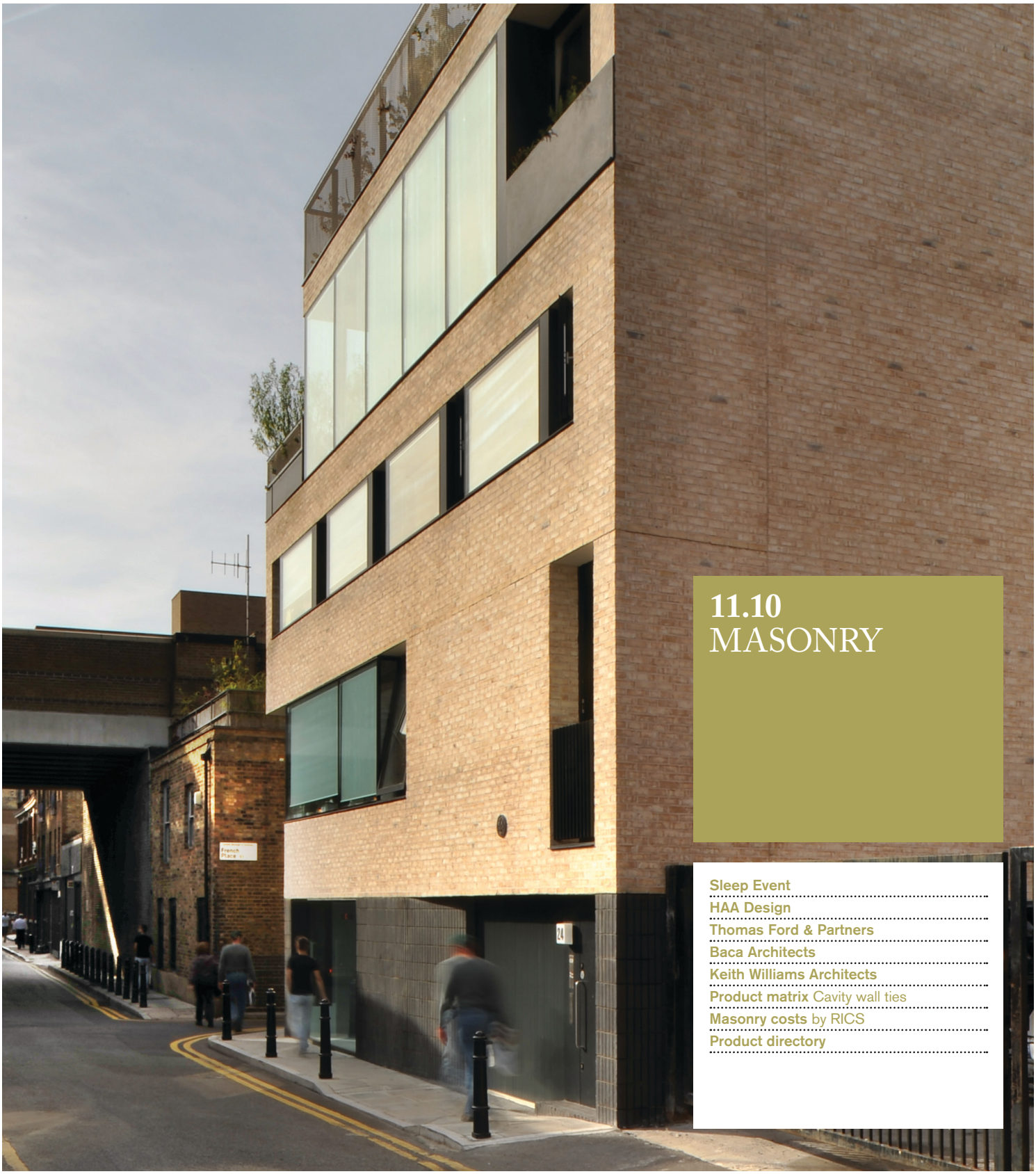
AJ specification



11.10 MASONRY


PAUL MCANEARY

Left and below Paul McAneary Architects' Tortoise Enclosure, Holywood, County Down, Northern Ireland, with rough local sandstone wall


PAUL MCANEARY

at the Brick Development Association (BDA) says that 'brick construction makes positive contributions to all relevant categories listed in the Code for Sustainable Homes, including thermal mass, passive solar design, dwelling emission rate, global warming potential of insulants, and acoustic properties.' He adds that in BRE's Green Guide to Specification, 'any wall construction that contains brick has an A+ rating. Brick improves with age, and can be recycled'.

Each BDA member has an environmental management system and 85 per cent of British brick output is certified to ISO 14001. Very little clay is wasted during manufacture. Unfired clay waste is reused and defective fired bricks are reused as aggregate. The average MARSS figure for brick production, the amount of material from alternative recycled and secondary sources such as ash and hydrocarbons and organics, is 12.8 per cent and a square metre of brickwork produces 28kg of CO_2 by the time it is delivered to site. The embodied energy of the clay brick is equal to 0.4 per cent of total domestic energy consumption over a 150-year lifespan.

Self-firing bricks, for example those made from the clay in the lower Oxford levels, contains an oil that fires Fletton bricks and stock bricks have ash mixed in the basic clay which burns and leaves the distinctive black flecks in the fired brick. In the high temperatures of the fuel-efficient kiln, the ash ignites and helps to bake the bricks, which also minimises the energy expended in the kiln. Unfired bricks go even further to save energy. Research indicates that they can be used in the construction of domestic load-bearing walls, and that many clays used in British brick manufacturing are suitable. These walls effectively control internal moisture and humidity and have high thermal mass.

Products

Perforated clay blocks, such Porothorm, manufactured by Wienerberger, have been available in Europe for 30 years and are now used more than ever for their speed of construction, high strength and thermal efficiency, although they are not self-finishing.

Other developments include thin joint masonry and low conductivity cavity wall ties, such as Ancon's TeploTie (see page 46). Also, on the sustainability front, bricks from Wienerberger's Warnham factory are accredited with the BES 6001 Responsible Sourcing Standard (made from locally sourced clay, using renewable energy with the whole supply chain also abiding by the same standards). Wienerberger is also increasing use of green energy, reusing heat from kiln dryers, harvesting rainwater and producing bricks made from 100 per cent recycled content, such as the Denton Smooth Cream.

Resources

Eurocode 6 website
www.eurocode6.org

Brick Development Association
www.brick.org.uk

Good Craftsmanship Guide Brickwork and Blockwork
www.nhbc.co.uk

Porotherm
www.porotherm.co.uk

Ancon Building Products
www.ancon.co.uk

Wienerberger
www.wienerberger.co.uk