Preliminary Puchased on its board-
ing, "...the building..." the 20 Fenchurch Street is, indeed, a significant addition to London's skyline. Not only does it add to the city's architectural landscape, but it also represents a significant shift in how steel is used in construction.

The building is designed to be a sustainable and energy-efficient structure. Its steel frame is made up of approximately 8,500 major structural steel members, including 91 steel columns and 7,500 beams. The steel frame is designed to withstand the vertical and horizontal forces generated by the wind and earthquake, ensuring the safety and durability of the building.

The structural steel is carefully designed to minimize the use of steel, with the aim of reducing the building's carbon footprint. The steel columns are designed to be lightweight, with the beams and girders being used to support the floors and roof. The steel is also used to create a canopy over the entrance, providing a sheltered area for visitors.

The building is also designed to be energy-efficient, with a high-performance envelope that reduces heat loss and gains. The steel frame is used to support the insulation, which is installed between the steel beams and columns. This insulation helps to reduce the building's energy consumption, making it more sustainable.

In conclusion, the use of steel in the design and construction of 20 Fenchurch Street is a significant achievement. The building is a testament to the skill and expertise of the design team, and it serves as a reminder of the potential of steel in construction.

Development costs for 20 Fenchurch Street are estimated at £239 million, with office accommodation on the 34th floor as well as 1,200 sq m of retail space. The building will be the first to receive the BREEAM "Excellent" building certification, and the contractors are working on accelerated hours for completion. The steel installation is expected to be completed in just 36 weeks from May 2012 to September 2012.

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In conclusion, the use of steel in the design and construction of 20 Fenchurch Street is a significant achievement. The building is a testament to the skill and expertise of the design team, and it serves as a reminder of the potential of steel in construction.
Thirty pieces of silver

Design Engine’s new teaching block for the University of Winchester is dominated by a steel-and-timber portico inspired by Christian symbols.

Text by Pamela Buxton

With its right-angle and right-angled horizontal and vertical lines, the University of Winchester’s new Learning and Teaching Building, the University Centre, is dominated by a steel-and-timber portico inspired by Christian symbols. The portico is designed to provide the university with its Christian dimension, which is central to the university’s identity.

The building is constructed to provide 3,000 square metres of teaching space, the university decided to include a link building. The link building is in front of the existing structure, which contains existing student accommodation and a lecture theatre.

The architects have made the link building a significant feature of the new building. The link building is designed to provide eight flexible teaching spaces. The link building is designed to provide eight flexible teaching spaces, each of which is 120 square metres in size.

The construction of the link building is designed to be constructed in stages, with the first stage being completed in 2007 and the second stage being completed in 2008.

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Putting frames on a firm footing

Accurate costing from the outset is essential to choosing the right structural frame

Text by Pamela Burton

As a sector industry survey reveals, hundreds of architects identified the choice of structural framing material as the key step required to ensure that steel frame buildings are cost-effective. But as steel frame buildings have accounted for all new high-rise buildings over the last 10 years, another perspective of steel is not borne out by reality. What can be done to ensure that costing and design align at the earliest stages of the design process when the frame is chosen, and during detailed design stages?

Current costs are influenced by the frame material, as well as the cost of the concrete, the steel and associated elements, since it can be costly and difficult to find the most suitable choice of frame at a later stage.

However, it may lead to a project proceeding with a design that is not cost-optimised.

Recent trends

The trend towards composite beams and the preference for both structural steel and steel sandwich/concrete (infills to concrete frames)5 filleted from the second half of 2009 has been more clearly seen after the fall in domestic costs caused by the economic downturn. The frame cost is generally only 20% of the final cost (if not to the extent shown below). Output fall by all accounts (60%) means over 20% to 30% cost drivers are understood.

“Trends from steel material choices are often related to the design process without the benefit of full developed information, says G&T. ‘We acknowledge that it is important to review all the available material options to optimise project and site-specific factors on the design.”

BRIEFS OF COMBINED STRUCTURAL MATERIALS (2012-13)

<table>
<thead>
<tr>
<th>Frame: low-rise, short spans, repetitive grid</th>
<th>Portal frames: high eaves (10-13m)</th>
<th>Portal frames: low eaves (6-8m)</th>
<th>Fire protection (60-minute resistance)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Structural steel</td>
<td>45-60/m2</td>
<td>40-58/m2</td>
<td>7-14/m2</td>
</tr>
<tr>
<td>Concrete</td>
<td>30-40/m2</td>
<td>30-40/m2</td>
<td>7-14/m2</td>
</tr>
<tr>
<td>Composite</td>
<td>25-35/m2</td>
<td>23-33/m2</td>
<td>7-12/m2</td>
</tr>
<tr>
<td>Substructure £52</td>
<td>£55</td>
<td>£67</td>
<td>£62</td>
</tr>
<tr>
<td>Upper floors £140</td>
<td>£151</td>
<td>£153</td>
<td>£150</td>
</tr>
<tr>
<td>Total building £1,535</td>
<td>£1,561</td>
<td>£1,628</td>
<td>£1,610</td>
</tr>
</tbody>
</table>

INDICATIVE COST RANGES

- Fabricated (cost includes material, finishing and fabrication)
- In situ (cost includes material, finishing, fabrication and erected)