



Seven storey hotel in Light Gauge Steel

The structure is a seven storey hotel erected entirely as a light gauge steel structure – including lift shaft. Bathroom pods are modules that were ‘slid’ into place adjacent to the corridors in the centre of the building.

As the structure is made from Light Gauge Steel clad with insulation and rain screen the structure is very light and this meant that the foundations are also relatively small. This helped with the design of the transfer slab enabling the large open spaces required at ground floor.

Supplier of structural design services (Olympic Park) to the London 2012 Games

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The image below shows a bathroom pod ready for installation and the Lewis deck to take the



Givlon screed. Despite the increased weight, relative to a timber alternative – 22mm plywood – the stiffness gained and ‘improved feel’ of the finished floor with improved build speed are a significant factor in the project. In some cases, a combination of load and span, the Givlon screed and Lewis deck can also give increased clear spans of the lattice trusses for a given depth of floor construction.

It should also be noted that the site is able to kept clean and tidy and the vehicle movements is drastically reduced – a bonus to the existing hotel and residents next door. This is due to the pre manufactured nature of the panels and floor trusses. Though the bathroom pods were completely assembled and finished off site prior to delivery allowing them to be simply placed and connecting services plumbed in the walls and floor trusses were also largely assembled off site and simply craned into place. Typical panels are a storey high by four to six metres in length. Once the floor is positioned in terms of vertical plumb and on plan, it is simply screwed down to the wall below and braced to prevent sway. Once adjoining walls and the floor are in place the structure becomes inherently stable and temporary bracing can be removed.

Similar structures have been designed up-to fifteen stories using only light gauge steel and are regularly used for student accommodation in the UK. The structural system is designed and erected in accordance with the guidance of Steel Construction Institute for Light Gauge Steel Framing in Residential Construction, P301 (now P402). A design life of over 200 years can be achieved in a ‘warm frame’ construction highlighting that this is a permanent construction. This project highlights that Light steel framing can be used on sites with restricted access, party wall issues and is a clean, quick and sustainable solution to today’s requirement for reduced budgets.

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