

## How a mega sized mezzanine floor installation doubled production – Prestige and Homeseeker Park and Leisure Homes



### Project included:

- Project Management
- Building Control Communication
- Design of Works

### Who's the customer?

Prestige and Homeseeker Park and Leisure Homes, fabricate complete static homes. Their production facility, in Rushden, houses two production lines, one each running down each side of their facility, mirroring each other. The production process involves a static home chassis starting one end of the line, moving down in stages. At each stage fittings, including plumbing, electrics, carpentry, furniture, the roof etc are installed until a complete home reaches the far end of the line, where quite literally a house pops out! The finished home is then stored ready for customer delivery.

### What was the brief?

The roof is the final element for the house and is built in two sections that are two sides, craned up onto the house and bolted together and a ridge tile applied to the join.

The customer was restricted in the volume of roofs they were able to produce, and they were anxious to increase production capacity. The roofs are fabricated in 2 pieces, complete with trusses, struts, tiles and then bolted together, fixed to the house with the use of a crane and then a ridge tile applied. The biggest challenge was that the roof fabrication was taking up a huge amount of floor space and it was thought that the addition of a mezzanine floor would enable them to produce twice the amount of roofs and therefore accelerate the total production process.



This customer was anxious to increase their production



Our initial conversations with the customer highlighted that:

- The production space on the floor could not be encroached upon by any supporting mezzanine columns
- A specific clearance needed to be maintained so that the roofs could be craned over the mezzanine handrail and fixed to the homes, due to the height of the facility ceiling, the mezzanine could not be more than 3.6m high, giving a tolerance of just 10cm!
- The use of a forklift truck during the production process, servicing both production lines with materials meant that, due to the height mast on the truck being 3m, the underside of the floor needed to have at least a 3m channel running down the centre to allow the forklift access;
- The customer's landlord's insurance company insisted upon having sprinklers fitted to the underside of the Mezzanine, meaning that the void between the underside of the new mezzanine and the ceiling had to accommodate this, as did the fire protected bulkhead
- The customer used compressed air during their production process that also needed to be housed within this void along with a 110V electricity supply;
- The finished height of the Mezzanine needed to be much higher at one end to enable the finished house, complete with roofing to be despatched from the production facility

- The whole Mezzanine floor, fire rated suspended ceiling, fire rated bulkheads, electrics, column casements, sprinkler system, electrics and compressed air pipes needed to be installed during a two week factory holiday.

### What did we propose?

Our design team got their heads together; (drank quite a lot of coffee!) and produced several different design drafts until the perfect solution was found! The new floor design included:

- 1200 square metres of additional floor space in the form a mezzanine floor!
- A Cantilever deck design to allow for maximum deck space, but with no columns impacting on the production area;
- A higher mezzanine area at the end of the production line to allow for the product to be dispatched out of the production facility and on to transportation;
- A 6m gate on the mezzanine to allow for the easy storage of roofing materials;
- A 3m channel down the centre of the underside of the floor to allow for forklift access
- A specially designed fire rated bulkhead to allow for the Sprinkler system pipework
- A network of pipes carrying compressed air to aid with the production process
- The inclusion of four general access and three part M staircases to ensure there were adequate means of escape for employees working on the mezzanine
- A 2 week program of works that meant the floor could be installed by 9 mezzanine floor installers along with 6 ceiling fitters, and the customer's contractors; a further 5 sprinkler fitters, 5 electricians and 2 compressed air fitters!



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### What happened before the project got started

To ensure the final installation was perfect for the customer, met every objective we'd agreed, would be installed on time to a very tight deadline, satisfied Building Control, and the customer's insurance company's requirements we completed a total of four design revisions.

### About the project

The project was completed on August 15th 2016, over a period of only 2 weeks. An extensive team of highly skilled contractors included mezzanine installers, suspended ceiling fitters and fire rated bulkhead installers, and third party sprinkler system team.

A "hold your breath" moment came on the day the steel work for the mezzanine was delivered. Due to the tight height restrictions the floor design had to be modified, and the bulk head and ceiling design could not be finalized until the sprinkler system design had been completed by an outside contractor – this was done the morning the steel work arrived – nothing quite like cutting it fine! The sprinkler did allow us, however, with a little consultation with Building Control, to reduce the fire rating on the floor to 30 minutes as opposed to 60 minutes, saving the customer a little extra money.

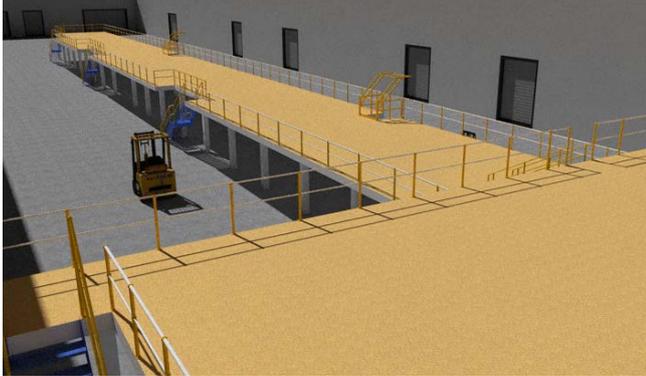


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3D drawings showing the proposed mezzanine installation.



Before: The production facility at Prestige and Homeseeker Park and Leisure Homes in Rushden before the industrial mezzanine was installed.



After: View of the industrial mezzanine installed at Prestige and Homeseeker Park and Leisure Homes Rushden by Cubex Contracts



Roofs being craned in on top of industrial mezzanine at Prestige and Homeseeker Park and Leisure Homes Rushden – project by Cubex Contracts Northants



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