

CASE STUDY

THE GRANGE UNIVERSITY HOSPITAL



THE GRANGE UNIVERSITY HOSPITAL FEATURES MODULAR WINDOWS BY KAWNEER

Architectural glazing systems by Kawneer that were installed off-site helped elements of the £350 million new Grange University Hospital at Llanfrechfa Grange in Gwent, South Wales to finish almost a year ahead of schedule and help with the Covid crisis.

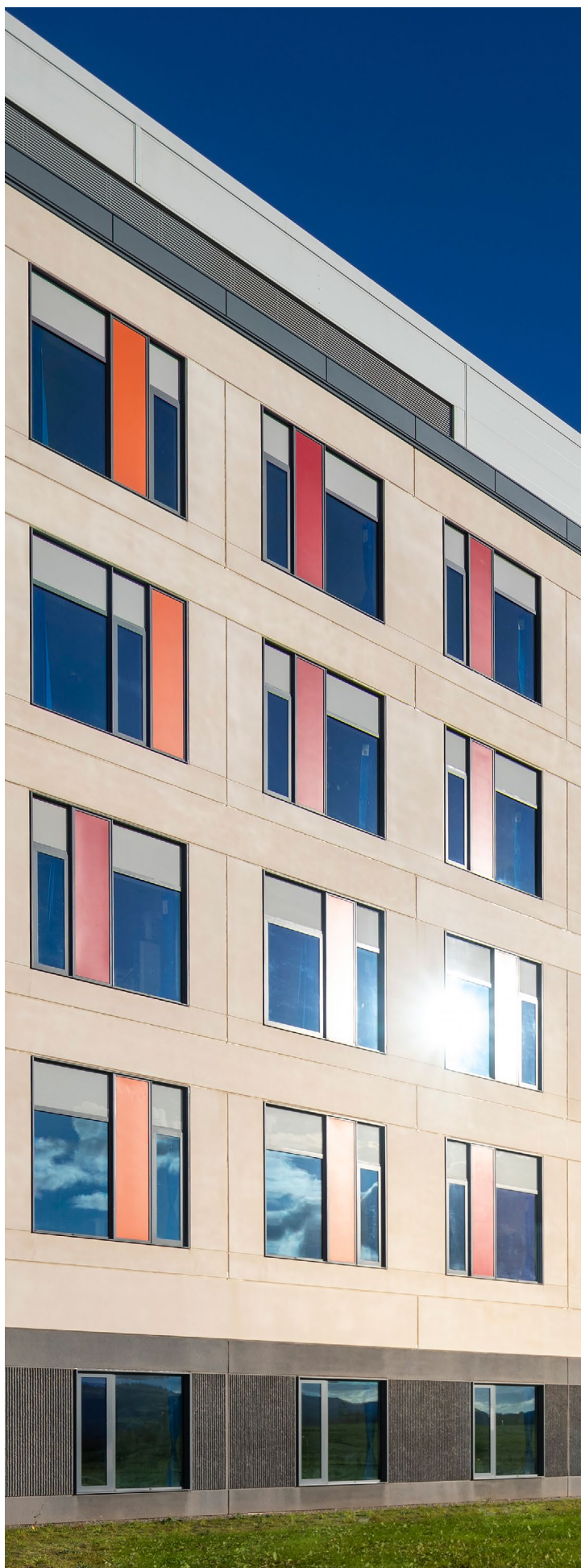
Kawneer's AA® 720 HI Reflex Plus windows were fabricated into precast sandwich panels at the main contractor's off-site factory for installation at The Grange University Hospital. The Kawneer windows were complemented by AA®100 zone-drained curtain walling with 50mm sightlines, and three types of entrance doors - AA®720s, AA®190 TBs and folding/sliding AA®3720s. The windows featured both glazed and spandrel panels which were

thermally enhanced to comply with the thermal model, using a mineral wool core to comply with Building Regulations as well as providing bright colours for the façade in the form of orange face caps. They also included feature pods designed by specialist sub-contractor and approved Kawneer installer/dealer Bennett Architectural Aluminium Solutions which were extruded by Kawneer at its factory in Runcorn, Cheshire.

Designed by architects BDP to BIM Level 4, the 560-bed Grange has already won two awards - Constructing Excellence Wales for Digital Construction and an Off-site Award. It comprises 11 operating theatres, one Cat 3 Laboratory, two MRI suites, two CT suites and an education block.

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Previously known as the Specialist and Critical Care Centre, it is the centre piece of a new model of healthcare delivery, serving more than 600,000 people, and will deal with all major emergencies, including the Covid pandemic, as well as 40 specialist services, with a helicopter pad for patients who need to arrive by air ambulance.

Careful modelling of staff and patient flows in the design phase allows early streaming to a point of care and access to timely and expert care. This is supported by dedicated circulation systems for front-of-house and back-of-house services, enhancing patient privacy.

Designed to be flexible, adaptable and expendable, the 55,000m² hospital's universal rooms allow operational flexibility and blurring of departmental boundaries to deal with changing demand.

Beds were released 30% earlier than the original programme through productivity efficiencies during the Covid crisis while the DfMA (MMC) approach saved 237,000 working hours - equivalent to a 23% overall planned programme saving.



Issue Number: 144

In addition, 821 precast columns and 1,200 precast wall modules were installed, representing 85% and 95% working hours savings respectively. Victoria Head, project director of project and cost managers Gleeds, said: "With the best will in the world, fundamentally, had this been a traditional build with the same start date [2017] we would not have been in a position to offer support to this national pandemic and the NHS. We've always been proud of the MMC involved at the Grange and the programme savings which it offered compared to a traditional build, but never have the benefits been more apparent than during this crisis." BDP lead designer Adrian Hitchcock said: "We have used Kawneer systems on multiple projects. Familiarity with their products from previous successful use is a positive. Demonstrating compliance is important and Kawneer do this."

Work on the build involved careful segregation fully endorsed by infection and building control and fire officers. Rob Bennett, pre-construction director for Bennett Architectural Aluminium Solutions, said: "The hospital was a compelling case for the use of DfMA in large-scale healthcare construction projects, even opening far ahead of schedule to treat patients during the pandemic. Kawneer products were specified due to the company's experience with Bennett's in delivering extensive offsite construction projects in the healthcare sector."

Judith Paget, chief executive of the Aneurin Bevan University Health Board, said: "It will help us to create a much improved care environment, timely access to emergency care, and ensure patients get the best outcomes from their care."



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