

# CASE STUDY

## Roof Refurbishment

# MAKERS

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### PROJECT

Warwickshire University  
Arts Centre Building

### STRUCTURE

Roof

### CLIENT

Warwickshire University

### CONTRACT



Warwick Arts Centre is a multi-venue arts complex at the University of Warwick in Coventry. It attracts around 300,000 visitors a year to over 3,000 individual events. Warwick Arts Centre is the largest arts centre in the Midlands and the largest venue of its kind in the UK outside the Barbican Centre in London. Commissioned in 1970 and opened in October 1974 the Arts Centre was designed by architects Renton, Howard, Wood Associates and the building went on to win a RIBA award. Initially with a theatre, studio theatre, conference room and a music centre, the venue was expanded further with the larger Butterworth Hall in 1981 and Mead Gallery, along with a cinema, in 1986.

The centre was suffering from numerous leaks over the 30 separate roofs making up the entire roof space. The existing roofing system consisted of insulated slabs loose laid over a felt waterproofing layer, the felt was partially bonded to cork insulation which in turn was bonded to Wood Wool structural roof deck. Due to the slabs being in place the exact deck build up could not be ascertained at the time of tender, investigations were carried out once the slab stripping process began. Once it was identified that the felt waterproofing was only partially bonded the decision was made to strip the felt and install a fully bonded system to eliminate any wind uplift concerns.

Before the any work commenced Makers produced a full structural report to confirm the capabilities of the deck.



Before



Before

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During



During



During

Due to the highly unusual design of the building every one of the 30 roofs were on a different level, this caused huge logistical issues. Meticulous planning went in to edge protection and access points.

With the change in specification and need to now strip the existing felt and cork insulation this proved extremely challenging as whatever was stripped that day needed to be made watertight on the same day to protect the Wood Wool slab. If these structural slabs are exposed to high levels of moisture for prolonged periods it can cause them to lose their structural capabilities. The only option then is to fully strip the deck opening up the building below to the elements, which during the Autumn and Winter months when this project was carried out wasn't an option.

Makers selected the Danosa Polydan non-woven polyester 2 layer felt system installed over a designed tapered insulation system and a fully bonded VCL was installed over the existing stripped deck. The first area the Makers team tackled was the Fly Tower, this required its own access tower and hoist due to its height. Due to the logistical issues with this project the delivery team had to work from the highest roof down to the lowest as the extensive scaffolding edge protection was built off the roof below. The rooflights and glazing systems were also upgraded by the Makers team using Brett Martin Mardome and Xlok Ultra Mono Pitch Rooflights. The opportunity was taken to upgrade the drainage system, the roofs cascade rainwater down from roof to roof with the pipe work running with the roof deck, it was believed that this internal pipework was causing issues of water ingress. The pipe work was moved to the exterior of the building, capping off the existing pipe work. Makers also formed gutters within the insulation to help move the water off the roof.

As part of the works Makers installed a new collapsible edge protection system so when not in use it did not spoil the look of the building. Once completed and signed off Makers and Danosa issued a 20 year guarantee.



After



After



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