

# CASE STUDY

## Built Up Roofing System

# MAKERS

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### Project

Applemore Leisure Centre

### STRUCTURE

Roofing

### CLIENT

New Forest District Council

### CONTRACT



Applemore Health & Leisure Centre, built in 1976, has seen several refurbishments to enhance its facilities and user experience. Major upgrades in 2006, 2008, and 2014 improved areas such as the sports hall, fitness studios, changing rooms, and pool hall. The 2014 renovation also introduced a low-chemical disinfection system for the pool and modern Life Fitness equipment, including a spin studio with a projection screen. Today, the centre offers a 25-meter pool, learner pool, gym, fitness studios, health suite and a range of programs for all ages, continuing to support community health and well-being.

The roof structure of the centre covering 2,400m<sup>2</sup>, had several issues identified during Makers Construction detailed survey. The existing roof system consisted of a bituminous vapour control layer, 25mm PIR insulation, 13mm fireboard, 60mm PIR insulation, and a BUR system. This topped with a cold applied liquid system. Despite previous upgrades, the roof only achieved a U-value of 0.36 W/m<sup>2</sup>K, which fell short of current energy efficiency standards. Further inspection revealed visible fibreglass matting through the coating, indicating that the coating had not been applied to the required thickness. The fibreglass matt, being UV unstable, had deteriorated over time, compromising the integrity of the system. In addition, water ponding on certain areas of the roof had caused the coating to wear down quicker in these sections, further weakening the structure. Additional challenges included the presence of ineffective mushroom vents installed in isolated areas by previous contractors. These vents were intended to help dry out the original roof build up but were not successful. Some areas of the roof had coatings applied directly over loose chippings, which caused cracking due to poor adhesion. Several upstands were found to be below the recommended 150mm height as per BS 6229:2018, creating a potential failure point for the waterproofing system.



Before



Before

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Strip up – Existing system



During – New system



During – New System

To address these challenges, Makers Construction devised a refurbishment strategy that delivered a high-performance roofing system in line with contemporary standards. First, the existing roof was stripped back to the steel deck, then overlaid with 160 mm of PIR insulation across the main field area and CTF insulation installed in the gutter zones. The CTF insulation created a gradual fall toward drainage points, vastly reducing ponding risk. Once completed, the upgraded roof now achieves a U-value of 0.15 W/m<sup>2</sup>K, this enhancing the building's thermal performance.

Demolition and installation were executed with strict safety and logistics co-ordination. The old waterproofing was removed in controlled sections, hoisted via a dedicated lift to the rear of the building, and stored in a secured compound. This keeping debris clear of public areas, the car park, and delivery zones. Makers Construction collaborated closely with the centre's management to optimise material storage and waste management, minimising disruption to daily operations and constant flow of visitors to the busy centre.

A key focus of the project was upgrading roof details to modern best practices. Several upstands initially fell short of the 150 mm minimum height specified in BS 6229:2018; these are being raised accordingly to ensure a watertight seal. New trims, flashings, and edge details were also fitted to guarantee effective water shedding and prevent future deterioration.

Makers Construction selected a leading BUR BROOF(t4)-rated system. This is one of the market's most advanced solutions for commercial roofs. BROOF(t4) under BS EN 13501-5, offers superior resistance to external fire exposure while providing long-term waterproofing durability. The entire system carries a 20-year manufacturer's warranty, ensuring reliable protection for decades. Makers were proud to hand over the new high performing roof system and give New Forest Council piece of mind for many years to come.



Safe removal of old system



Project Complete



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