



## PROJECT OVERVIEW

Beddington Zero Energy Development (BedZED) comprises a development of 82 homes in the London Borough of Sutton and is the UK's largest mixed use sustainable community. It was designed to create a thriving community in which ordinary people could enjoy a high quality of life, while living within their fair share of the Earth's resources. The sustainable features of this 'carbon-neutral' development include excellent insulation, south facing terraces to maximise heat gain from the sun (passive solar gain) and structures built from natural, recycled and reclaimed materials, all sourced from within a 50 mile radius.

**SECTOR**  
Residential

**ROOF AREA (M<sup>2</sup>)**  
6,100

**PROJECT DATE**  
2002

**ARCHITECT**  
Zed Factory Ltd

**CLIENT**  
Peabody Trust

**AXTERSFIELD INSTALLER**  
RAM Roofgarden Ltd (M & J Roofing Ltd)

# LIVING ROOF WATERPROOFING FOR ONE OF THE UK'S BEST KNOWN SUSTAINABLE DEVELOPMENTS

## SYSTEMS USED:

- CITYFLOR® multi layer warm roof living roof system, comprising air and vapour control layer (AVCL), Hytherm insulation, self-adhesive underlayer and robust self finished capsheet with anti-root technology, providing proven long term resistance to root penetration, fertilisers and insecticides.
- HYDROLITE extensive living roof low maintenance system combining drainage, water retention and geotextile filtration layers with an ultra-lightweight growing substrate engineered from graded recycled material proven to sustain pre grown green roof vegetation blankets that are cultivated in the United Kingdom with a carefully selected mix of 12 sedum species.



## CHALLENGES:

Axter were tasked with providing a waterproofing and living roof solution for the garden terraces and higher level roof areas. As this was an environmentally-friendly housing development, careful consideration had to be taken to adhere to the sustainability requirements of the project. The thermal efficiency of the development was an essential design consideration with all roof areas needing to meet demanding thermal performance criteria. Lightweight extensive green roof systems were chosen for curved and sloping sections of the building due to their low maintenance characteristics, combined with high efficiency Solar PV renewable energy (BioSolar) systems on the roofs. Combining roof top planting with Solar PV improved the system performance and provided a positive visual impact.



## SOLUTIONS:

CITYFLOR® multi-layer warm roof waterproofing system was designed and specified by Axter to meet the project's demanding sustainability requirements. The use of a robust air and vapour control layer (AVCL) low permeability membrane, was installed to ensure the building was quickly made watertight during construction, whilst performing the critical technical function of controlling the movement of air, water vapour and heat leakage from within the building.

The ideal capsheet choice for the development was our BBA accredited Force 4000 Traffic membrane, due to its anti-root technology and long term proven compatibility with living roofs. The installation of Force 4000 Traffic provided a robust waterproofing surface upon which the extensive living roof could be installed without risk of damage to the waterproofing by follow on trades.

Extensive living roofs typically have thin (80mm) growing medium/substrate layers to keep the system depth and saturated load imposed on the building to a minimum. The Hydrolite extensive living roof system was specified because of its ultra lightweight growing medium as this weight reduction was ideal for the project's unconventional structure. The Hydrolite living roof system was completed with a low maintenance planting design, utilising hardier, more drought tolerant plant species. The planting style was naturalistic with the aim of establishing self-sustaining plant ecology on the roof.

**"Axter worked closely with the project design and construction team to ensure that we were able to deliver a truly stunning and successful project"**

- RAM ROOFGARDEN LTD

**AXTER**

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