



Mainer Associates

Sustainable and Environmental Considerations Summary

Manchester Museum

The University of Manchester

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Mainer Associates

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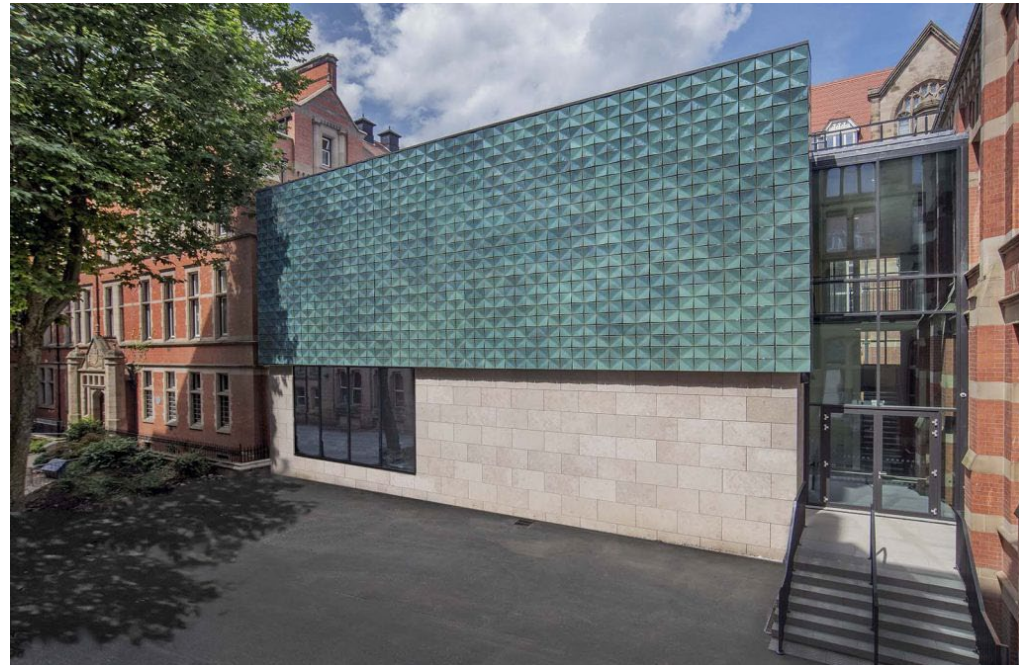
**MANCHESTER MUSEUM
COURTYARD PROJECT**

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Project Overview

The University of Manchester and the Manchester Museum has worked with Sustainability Consultancy Mainer Associates to successfully deliver a BREEAM Assessment to achieve a BREEAM Very Good Rating at Design stage. The post-contract team is in the process of again achieving BREEAM Very Good at Post construction assessment stage. This is to certify the buildings as built sustainability performance in relation to BREEAM criteria. BREEAM is a science based third party certification scheme that assesses an array of sustainability led criteria from design through to post construction stage. This covers 9 key sustainability categories: project management & commissioning, health and wellbeing, energy, transport and accessibility, water monitoring and consumption, materials and responsible sourcing, waste, land use and ecology and pollution.



The refurbishment elements of Manchester Museum have retained its original features whilst the new build extensions have integrated new façade elements such as terracotta tile rainscreen cladding, which add to the architectural language of the listed building. The selection of a terracotta rainscreen protects the building against impacts from future weather patterns and climatic scenarios, and future proof the building from material degradation. The specification does not discolour over time, preserving the system over the buildings life cycle and reducing the need for maintenance/replacement. Material procurement has been guided by a Sustainable Procurement Plan with Kier working with suppliers to raise environmental performance standards and ethical practices together. Kier also adhered to Pollution Prevention Principles for land, air, and water on site, to avoid causing harm to local environment.

Sustainable and Environmental Considerations

- 100% Timber Responsibly Sourced.
- Considerate Constructors Scheme Exemplary Score.
- Pollution prevention guidelines followed throughout construction.
- Commitment to Post Occupancy Evaluation.
- 20.7% improvement over a notional building emission rate.
- 100% of non-hazardous excavation waste and 83.94% of non-hazardous construction waste diverted from landfill reducing the projects overall impact on the environment.
- Public Transport Accessibility Index of 14.1.
- Install of Pulsed water meters with links to BMS and a permanent water leak detection system.
- High UV glass and terracotta tile rainscreen cladding which protects the building against weather. patterns and prevents discolouring preserving it for longer.
- Design aspects that facilitate ease of disassembly for aspects for the build that would require replacement within buildings life cycle.
- Timeclock and photocell installed on the roof to control the lights, so they do not operate during daylight hours.
- Integration of Sustainable Drainage Systems to reduce risk of flooding and delivered a 50% reduction in surface water runoff.
- All building fabric insulation is A or A+ rated and therefore they have low Global Warming Potential.
- Secondary steelwork and metalwork came to site premade so that waste and time spent installing was minimised.
- Materials and design were standardised where possible. As a result offcuts were repurposed for other phases of the project to reduce overall waste produced.
- The roller shutters that have been installed to allow for easy access for maintenance and are demountable should the landlord wish to reconfigure the building.
- The Steel frame connections have been detailed in such a way that the frame may be dismantled in the future (bolted rather than welded connections).
- The use of GGBS in the concrete foundation has been specified to increase longevity of the structure and reduce embodied carbon.
- The entrance link is designed to be demountable as part of the maintenance strategy, this is achieved by using lightweight modular components.
- Hemp crete blocks and CLT have also been specified in preference to cast-in place concrete to avoid material wastage and decrease construction time on site.
- Bins are provided to separate and recycle Glass, drinking cans, paper, plastic bottles, wood, metal, cardboard are all recycled.
- Furniture is collected by campus staff when not required for reuse elsewhere.
- The building is to large open flexible gallery spaces with a large column grid, the shell & interior has been designed to allow for change in use to accommodate varied exhibitions it could potentially hold.
- The total direct life cycle CO₂e emissions (DELCC) resulting from the refrigerant use is 484.42kgCO₂e/kw coolth capacity. This is below the 1000 kgCO₂e/kw benchmark required for Pol-01 credit.
- Kier operated sustainable procurement and supply chain policies which help to ensure, materials were sourced from a responsible supply chain, raised awareness on environmental performance with suppliers and championed ethical practices together.