

Refurbishment resource efficiency case study: Somerset House, London

Restoration of a Grade I Listed building

Somerset House is an iconic Grade I Listed building in central London. Re-use and restoration in a sympathetic manner were driving forces in the refurbishment of the East Wing.

Business benefits

- 100% of the external facade and 90% of the structure retained.
- 100% of non-hazardous waste (2,326 tonnes) diverted from landfill.
- BREEAM Excellent targeted.

Project background

The East Wing of Somerset House was purchased on a 78year lease by King's College, London (King's College) from the landlord Somerset House Trust.

The refurbishment included converting the East Wing to provide high spec. seminar rooms, offices and a Cultural Institute – including gallery spaces for the public and King's College. The refurbished part of the building was officially opened by The Queen in February 2012.

Somerset House is an iconic 18th Century building designed by Sir William Chambers. It was built on the site of a Tudor Palace that was demolished in 1775. It was originally built to house the Royal Academy of Arts, the Royal Society, and the Society of Antiquaries and Government offices as well as be the headquarters of the Navy Board and a residential home to the King's Bargemaster. The House has been used by a number of different Government Offices' over its lifetime and is home to a variety of cultural and artistic organisations as well as being used as a major arts and cultural centre in Central London.

Project details

Landlord	Somerset House Trust
Client & tenant	King's College, London
Contractor	Wates Construction
Project cost	£9.3m
GIFA	7,000m ²



Somerset House: Front view of the 18th Century building

Planning for resource efficiency

The Sustainability Policy of the Somerset House Trust includes resource efficiency requirements.

- Actively reduce waste generation.
- Encouraging re-use, repair and re-cycling ahead of responsible waste disposal.
- Ensuring that specifiers, designers and suppliers develop the Estate using environmentally preferable materials and practices.
- Openly collaborating with other sector organisations to share sustainable experiences and knowledge.

King's College fully embraced the landlord's Sustainability Policy. Additionally the target was set for BREEAM Excellent and to use the refurbishment to educate students about the history of the building and how it was restored.

Materials quantity

- Structure – 90% retained
- External walls – 100% retained
- Stone cleaning – each flagstone was given a unique number, removed, cleaned off site and replaced to its original position.
- Lime/plaster ceilings were delaminating from the ceiling joists. Instead of removing the ceilings Wates designed a method to stabilise them.
- All sash windows were refurbished and reinstated and now have draft proofing and solar glazing.
- All fireplaces were repaired and restored.
- Cornices were restored to their original style.
- Historic brickwork in the basement was properly exposed rather than covered up with plasterwork.

Materials wastage

- All materials that were Listed (doors, floorboards, skirting) were labelled, removed and where restored. They were stored safely until required for reinstatement. None were wasted.
- Re-use of bricks as infill diverted 2 tonnes of waste.
- Wates had a very restricted site to work on while the campus was operational. 1,800 tonnes of waste was removed by wheelbarrow along a 100m shared fire escape passage into skips brought in via the embankment entrance. The site was so restricted that most waste was put into a mixed skip and segregated off site.

- 100% of non-hazardous waste (2,326 tonnes) was diverted from landfill.

Waste diverted from landfill	Tonnes
Inert & soil	136.54
Non Haz (non-inert) soil & stone	45.80
Segregated haz (non-inert) soil & stone	17.60
Inert – building rubble	1416.7
Metals	20.82
Wood	13.55
Packaging	0.02
Mixed waste	646.42
Mixed hazardous	27.58
Segregated haz waste	1.00
TOTAL	2,326

Embodied carbon

All site staff were required to use public transport to reduce carbon emissions and traffic congestion.

Water use

Water efficient fixtures were procured based on their low flow rates and to achieve BREEAM credits:

- WCs – 4.5litre flush and delayed fill.
- Taps – low flow rate specified and lever taps.
- Showers – 9litre/min at 0.3Mpa and 37°C.

Resource scarcity and security

- 100% of timber used on the project was FSC Certified.

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