

Highland spring clean



More than 100 years' worth of clutter has been swept away to transform the congested and under-used Scottish National Portrait Gallery into a light and spacious 21st century art attraction. Stephen Cousins reports.
Photography by Graeme Duncan

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When it opened in 1889, the Scottish National Portrait Gallery must have been quite a spectacle. Located on a hill overlooking Edinburgh, the building's grand, neo-gothic façades of red sandstone dwarfed the street below. Inside, the spacious and handsomely decorated galleries rivalled the most advanced art galleries in Europe and America, and crowds flocked to see them.

A hundred years later and the gallery's fortunes had changed considerably. Visitor numbers had dwindled, with many people put off by the dimly lit, enclosed galleries, endless rows of portraits hung against now outdated dark fabric walls, and ill thought out circulation that forced visitors to either cram into a tiny lift, or climb to the upper floors via several flights of stairs. Things deteriorated so badly that by the mid-1990s the gallery tottered on the brink of closure, until plans to transfer key artworks to another gallery sparked outrage among local people.

Fast forward to today, and the Scottish National Portrait Gallery is in the final stages of a £18.6 million overhaul intended to strip out the decades of architectural clutter, increase gallery space by around 60 per cent and ultimately boost annual visitor numbers by half, from 200,000 to 300,000.

To complete the work, main contractor BAM Construct has effectively switched professions to become a hi-tech removal company, clearing out antiquities stores and stripping out unsightly 20th century additions such as M&E services and false ceilings to create brand new gallery spaces, even dismantling and transferring an entire double-height mahogany library to the opposite side of the building.

BAM construction manager Jeff Thornton explains the strategy: "The main aim was to open up large areas of the building that had been left unused... It's a heavily serviced building and prior to our involvement all the services were on show; cables, conduits, cable trays, visible pipes in galleries etc. It was pretty utilitarian. We've put in a totally new M&E kit, virtually every single cable was changed."

The Scottish National Portrait Gallery is the brainchild of architect Sir Robert Rowand Anderson, who designed it to mimic the beautiful Doge's palace in Venice. Symmetrical in layout, the building is accessed via a central entrance on the main thoroughfare of Queen Street. Upon entering, visitors face a grand double-height Main Hall located at the centre of the building, which features a famous processional frieze depicting many famous Scots including Robert Burns, David Hume and Robert the Bruce. The rest of the building stretches out symmetrically on either side of the Main Hall and is arranged over three floors.

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The entire mahogany-paneled library was cut up and reassembled on the opposite side of the building

'Many of the rooms in the east wing had been used for storage, yet had the most potential as public galleries'



Before renovation work began in 2009, all the main gallery spaces were located in the west wing, while antiquities stores, administrative areas and a ground floor public café were situated in the east wing.

This layout didn't work for the gallery at all, explains Justin Fenton, project architect at Page \ Park: "For the first hundred years of its existence, the Portrait Gallery had shared the building with a number of learned societies, all of which have now left for other permanent locations. To a large extent, nothing was done with the spaces they left behind, or they were simply used as storage. By removing the clutter we were able to open up new spaces... simultaneously, we wanted to peel back all the features that had been added in to the building's detriment during the 20th century and let it breathe again," he says.

Many of the rooms in the east wing had been used for storage, yet had the most potential as public galleries. On the second floor, for example, the rooms were tall and very light, thanks to the 1930s addition of a cranked beam roof with large roof lights.

Conversely, second floor galleries on the west side had very low 3-4m ceiling heights due to the erection of a solid false ceiling designed to conceal the trussed roof (another later addition) and a plethora of snaking pipes and ducts. The windows had also been blocked or partitioned off in an effort to shield paintings from daylight.

"The largest gallery in the entire building is on the second floor, but it had no natural daylight and the other galleries were very dark and dingy, with their windows covered over," says BAM's Thornton, whose team was tasked with removing the entire trussed roof and false ceiling to replace it with a vaulted roof with roof lights, similar in design to the roof on the east wing.

Removing this huge, 30 m-long by 20 m-wide roof structure was a major engineering challenge because it provided structural stability to the external walls, and if removed, there was a threat of collapse as the wall heads would be left exposed to Edinburgh's windy conditions. It was also vital to keep the building completely watertight and prevent water damage to several historic murals painted on the walls in the Main Hall, directly adjacent to the west wing galleries.

Thornton explains the dilemma: "Many people would just build a scaffold over the top of the roof and cover it with tarpaulin, but we thought that this would still allow some rain water ingress and we had to ensure structural integrity."

The contractor's solution was to erect a load-bearing birdcage scaffold on the second floor, which was punched against the external walls to provide lateral restraint. Plywood decking was installed on top, sheeted with a self adhesive, heavy-duty vapour

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Above and below:
Many rooms previously used for storage had the most potential as gallery spaces, such as this second floor space in the west wing





A 48-person capacity lift made entirely of glass runs through the core of the building

'With its three sides and the roof made entirely of glass, the lift provides a great platform from which to view the building'



A mezzanine level was added to provide office space and improve disabled access

barrier, which effectively created a flexible flat roof. The team then erected further scaffolds on top, from which they could complete the roof's demolition and reconstruction. Meanwhile, a temporary internal rainwater pipe system collected any rain water and channelled it outside via a small window in the façade.

This single tiny 1.4 m-high by 1.2 m-wide window at the western-most end of the façade played a pivotal role in the project. Apart from providing an exit for rainwater pipes, it was the single main access point for materials for the second floor. "The site was very congested, access via the existing stairs was restricted and there was no space on site for a tower crane," explains Thornton. "The window was too small to get a man through and we had to be very careful to cut timber to short enough lengths to ensure that operatives could carry them along the scaffold and then turn them into the opening," he says.

In the original building, movement around galleries was very restricted so Page \ Park decided to transform circulation routes and improve access. Previously, visitors would often walk straight into the ground floor café, and then not bother to visit

the exhibitions on the upper floors because the only way to reach them was via the steep staircases or the small lift.

The architect's solution was to design a bespoke, 48-person capacity hydraulically powered glass lift, to run through the core of the building. This would deliver people to the top floor, allowing them to trickle down through all the galleries toward the ground floor. With its three sides and the roof made entirely of glass, the lift provides a great platform from which to view the building, and it also doubles as a goods lift able to transport even the gallery's largest paintings.

The lift car stands on a solid hydraulic ram that extends into a 15 m-deep, 90 cm wide borehole in the ground. Digging the borehole through solid rock proved difficult, especially as the 15-tonne piling rig used to do it could only gain access to the building by removing stonework to create an opening in the façade.

Meanwhile, horizontal circulation between each wing of the building has been vastly improved by knocking through two 3.5 m-wide doorways in the existing walls on either side of the central Main Hall area on the ground and second floors. A new

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mezzanine area was also added between the ground and first floors to accommodate offices and admin areas and boost overall gallery space.

Previous visitors to the Scottish National Portrait Gallery could today find themselves disoriented when entering the building's library, a mahogany-panelled room with an iron balcony running around it. In a Houdini-esque feat of illusion, the entire structure has been dismantled in sections and moved from its original room on the top floor of the east wing down to a room on the first floor of the west wing to be reassembled.

"For our team of joiners, the library has been their life for the past six months," says Thornton. "Every piece had to be removed, numbered, then moved piece by piece like a giant jigsaw puzzle."

Even more impressive is the fact that the new room was smaller than the original by approximately 0.5m in each direction, so the wood had to be cut to specific dimensions to ensure a good fit. Open to the public for the first time, the reinstated library will include an area for visitors to relax and read, plus a private area for researchers to explore the photography and

print collections.

With the building's revamp now complete, curators have begun the task of refilling its 17 new galleries with art, in preparation for a November 2011 opening. There will be lots to celebrate: gone are the dimly-lit, stuffy galleries replaced by large, light and airy spaces that interconnect to provide long uninterrupted views through the building.

In a subtle style somewhat reminiscent of London's St Pancras Station, the building is a mixture of exposed red brick, freshly painted pale green and grey gallery walls, light brown parquet wood floors and high exposed iron beams. A fine example of late-Victorian splendour with a modern twist.

Client – National Galleries of Scotland
 Architect – Page \ Park
 Main contractor – BAM Construct
 Project manager – Gardiner & Theobald
 Quantity surveyor – Davis Langdon
 M&E services – Harley Haddow
 Structural engineer – Will Rudd Davidson
 Lift consultant – Lerch Bates