

cheltenham art gallery RIBA competition



172 Architects

Ramboll Whitbybird Ltd

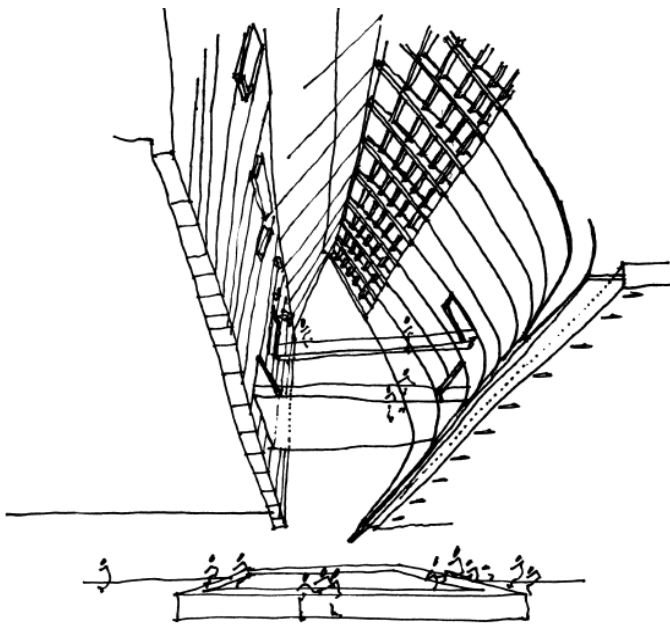
Simon Fenton Partnership

introduction

This report states the progression and elaboration from the original submission for the redevelopment of Cheltenham Art Gallery and Museum, based on design development and feedback received from the first stage.

The team involved in the project are brought together as a collaboration of likeminded companies who also share the same passion for design excellence: Ramboll Whitbybird Structural and Building services engineers; 172 architects and Simon Fenton Partnership quantity surveyors form this partnership.

The scheme presented shows a new building defined by a striking timber atrium cathedral, pouring vast quantities of light and air into the heart of the building.



Initial development of the central cathedral void

circulation

The circulation has been improved to provide a clear flow and purpose through the gallery. The scheme has 3 primary vertical movement cores.

new staircase and lift core

This provides primary access from the main entrances and starts the journey through the museum.

existing lift

This facility has been opened to the public on all levels of the museum's gallery floors.

service lift and staircase core

This provides a facility for back of house operation of the day to day activities of the museum.

The two primary public cores enable horizontal movement through the gallery spaces creating flow between each other, with the cathedral void form giving orientation and connection, binding the two cores together.

Movement throughout the existing exhibition spaces has been enhanced by forming openings in the walls, which guide visitors around a clearly defined path and journey through them.

Glass tunnels crossing the void give connection and linkages to gallery spaces, whilst maintaining internal environmental control. These structures are made of pure glass giving a different perspective and senses of the interior cathedral space. Each tunnel within the laminated glass has digital printed artwork to create a vibrant colour, form and privacy.

configuration of space

temporary exhibition gallery

This space has been linked together and re-organised into one open space to avoid concerns of segregation and lack of flexibility for different exhibitions visiting the museum.

education / storage space + preparation

These spaces have been linked together on the ground floor areas to enable connection with the community display gallery and outreach facilities of the museum.

corporate hospitality

Located on the upper floor of the museum to gain segregation from the public function. This position enables movement through the core void gaining views upon the museum activities, giving a sense of arrival. A private terrace deck with panoramic views of the historic setting of the Museum can be gained from this level.

technical workshop space

Located on the ground floor area for ease of access. A large glazed wall to this space gives the museum the opportunity, if desired, to show the back of house working. Parents and children can see for themselves how artefacts are prepared before an exhibition.

the structure

existing structure

The existing building appears to be in a relatively good condition structurally. Structural works to the existing superstructure of the gallery would be minimal, mainly concentrating on forming openings in existing walls with pre-cast lintels to improve the flow of visitors through the gallery.

Load onto the existing 1989 structure must be considered. The floor slabs will put an additional load on the foundations that were not originally designed for, therefore additional piles can be added to the 1989 buildings foundations. In addition, the columns to the side of the 1989 extension would be supplemented to give additional load carrying capacity.

For works to Number 51, the façade would be retained but the interior will be completely redesigned to suit the rest of the new build segment. To avoid any issues with surcharging or undermining the foundations to No. 49, a cantilevered pile cap solution can be used mobilising the piles in a 'push-pull' configuration. This will support a continuous wall along the side that will in turn provide support for floor slabs.

new build

The structural form of the new build section has been considered carefully. It requires:

- a large column free space at ground floor to give an expansive lobby area
- a flat soffit to aid fixing of lighting tracks
- minimal structural depth to allow for in floor gallery ventilation
- exposed thermal mass to minimise peak temperatures
- lightweight to ensure minimal additional load onto the existing structure

A traditional reinforced concrete flat slab would be the most efficient option that fulfils the criteria. However, given the desire to make the structure as light as possible it could place a large amount of load on the existing structure. In addition to this the amount of concrete used in a traditional flat slab solution may not be considered ideal. To counter this, we have proposed to use proprietary bubbledeck slabs.

These include recycled plastic void forming balls in the slab to reduce the total amount of concrete used whilst retaining all the strength and stiffness of a traditional concrete flat slab. Effectively it replaces 100kg of concrete with 1kg of recycled plastic.

As well as concrete saved in the actual slab, it also reduces the size of foundations and columns accordingly, and therefore the embedded energy of the structure.

By minimising the amount of raw materials used in the first place, a significant reduction of the life cycle costs (both financial and environmental) can be achieved up front.

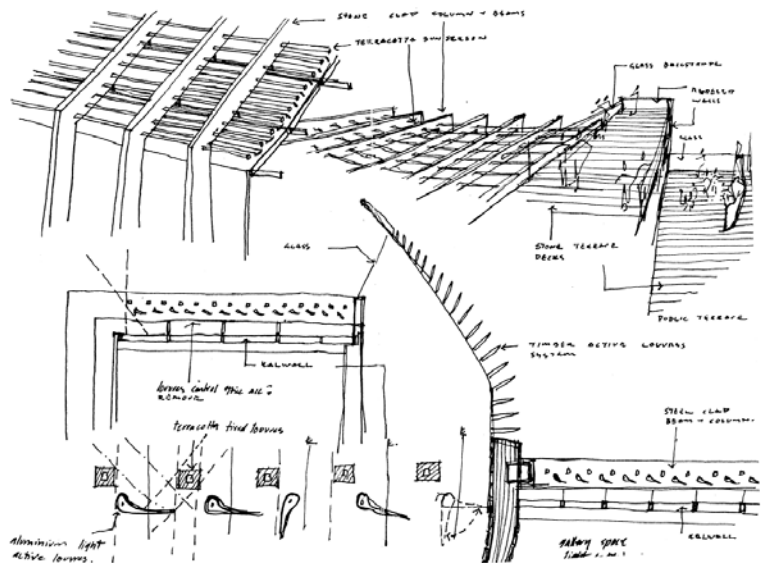
Glass and timber will be used structurally and aesthetically throughout. The link bridges at high level will take the form of glazed tunnels, using a combination of glass and steel to provide a lightweight structure that retains views over the galleries atrium. The central louvre will take the form of a timber truss, concealing hidden ductwork within the spine beams and supported off the floor slabs.

In addition, small pockets of translucent concrete are used in the central atrium to provide additional natural light within the gallery spaces, whilst giving a unique look and feel.

Example of mechanical louvers to control solar gain



Design development of timber louvre



the delivery

As a project team we have extensive experience of the delivery of all building forms, including specific experience of galleries and the redevelopment of historic buildings. We would bring our knowledge from these projects to ensure a seamless transition from the design to construction process.

The specialist experience of the contractor would be brought to the design at an early stage, effectively imbedding the contractor within the design team through a process of collaborative working. This would enable the testing of construction detailing for issues such as buildability and erection to ensure that the most cost effective and deliverable solution is evolved.

It is essential to share the underlying principles of our design solutions with other members of the construction team and to specialist contractors in order to fully benefit from their specialist skills, but also to ensure that everyone is clear on strategy, space planning, clash detection and sequencing.

Our approach to adding value starts with the input from our most senior and experienced members of the company, supplemented by our on-line knowledge management systems allowing us to incorporate the lessons from previous projects.

We understand that adding value is often most beneficial when we cross traditional interfaces.

ability to deliver on time

Delivering on time and to cost is one of the biggest challenges the construction industry faces. It is something we take very seriously at Ramboll Whitbybird.

We have made, and continue to make, a significant investment in business tools and processes, training and risk management to ensure continuous improvement. Our structural design on commercial projects shows how a creative and systematic approach can lead to reducing costs and minimising project risk. At the outset, a detailed knowledge of client requirements and constraints is essential to allow this process to start.

the team

The team is a collaboration of architecture and engineering. All practices have researched and developed in partnership the development form which is presented to you. The collaborative working ethos of the project team will ensure that the design proposal presented is an elegant combination of architectural aspiration and engineering delivery.

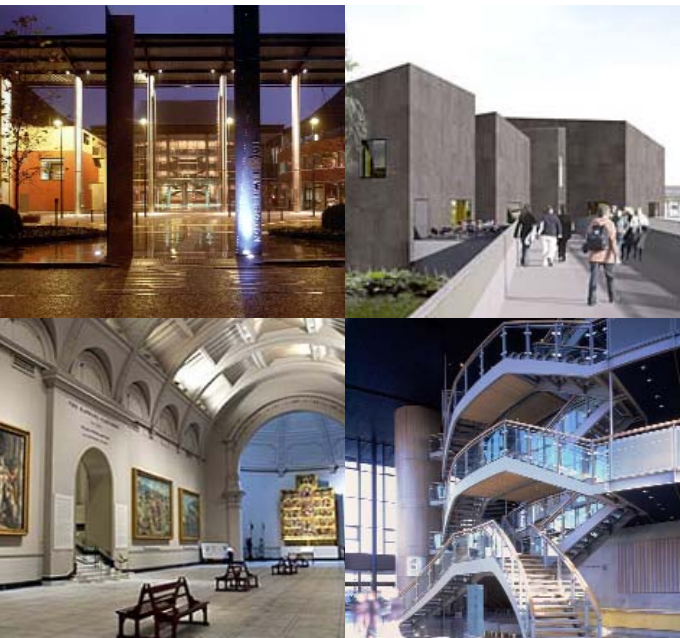
If the team is selected to procure the project, the team will develop the scheme with you in partnership together to deliver the product on time and to cost. We would look to bring practical industry experience to the design through embedment of the supply chain within the design process to deliver best value.

the cost

We initially developed costs based on benchmarking against similar projects currently under construction, where these have been adjusted to reflect the specific design attributes of this project and the balance between new-build and refurbishment works.

Further to this a full cost model has been compiled, and reference should be made to the attached Simon Fenton Partnership cost model No. 1, 04.01.2008.

These costs are based on current construction costs, assuming traditional competitive tendering, and make no allowance for abnormal ground conditions. The costs currently exclude site acquisition, VAT, fees and any financial fees associated with the development.



Gallery projects completed by Ramboll Whitbybird

delivering value

For us, delivering value is about understanding the client's and stakeholders' objectives and delivering these.

We recognise that what constitutes value may alter with changing circumstances and that our approach to delivering value therefore needs to be flexible and continuous. In our experience, successful value driven projects are founded on the approach of people and their attitude to co-operative working; individuals that can communicate openly and translate their client's and team's aspirations into the required end result are the key to project success.

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