



Award

NATIONAL ASSEMBLY FOR WALES Cardiff Bay

Architect Richard Rogers Partnership Structural Engineer Arup Steelwork Contractor (Roof Steelwork) S H Structures Ltd
Steelwork Contractor (Ancillary Steelwork) Rowecord Engineering Ltd Main Contractor Taylor Woodrow Construction Ltd
Client Welsh Assembly Government

"It's almost impossible to find anyone with a bad word to say about the Senedd," reported the BBC when the new building opened on 7 February 2006 for business. "Almost everyone I've spoken to is gushing with praise."

The NAW's Senedd ("Senate" in English) houses the Members' debating chamber and committee rooms. The building's three levels also provide open and inviting public space, with a café and galleries overlooking the formal business areas and Cardiff Bay.

The brief was to:

- create a landmark building
- signal a new style of government and a turning point in Wales' history
- reflect the democratic values of openness and participation

The response is a building whose undulating floating roof, held up with minimal visible effort, is suspended over a transparent enclosure atop a solid plinth. The plinth rises in terraces from the water's edge, encouraging people in.

The plinth is a simple exposed concrete frame, wrapped in slate. Above the tall façades is the sculpted roof, its shape derived from the flow of forces within. This unique roof, with its beautiful cedar-clad soffit and the minimal tie-bars anchoring it to the plinth, will define the National Assembly for Wales for its users and electors.

As well as triumphantly meeting the client's basic brief, the project has achieved:

- delivery on time - £41M fixed-price Design and Build contract
- unique architecture - "a great example of inspired and intelligent design"
- maximum durability and flexibility for its minimum 100 year life
- exemplary integrated and sustainable design, driven by low energy systems
- a showcase for steel construction
- a model for constructor/designer dialogue in maximizing economy and buildability
- elegant steelwork detailing combined with fine workmanship

Steel showcase

Apart from the roof, exposed structural steelwork is used to exciting effect throughout: in the Members' Gallery, stairs, internal bridges, glazed lift towers, bridge links to the adjacent office building, internal and external canopies and in the main façade's mullions and transoms, in which steel's strength and ductility ensure blast resistance, as they do in the roof, which could not sensibly have been built with any other material.

Fine detailing and workmanship is evident in connections such as the column end castings and tie bar anchorages.

Value and buildability

The roof is divided into six repeating domed bays. An early meeting between client, contractor and designers led to refinements which reduced structural weight and improved buildability and services runs without compromising the architect's vision. Kalzip roofing sits directly on the structure, eliminating secondary steelwork.

The steelwork contractor pre-assembled the roof in the shop, minimizing space-take by building one bay at a time and using the common valley beams to ensure fit between bays. The roof comprises mostly short members, enabling the steelwork contractor to optimize sizes of prefabricated

Judges' Comment

Located in a prime position overlooking Cardiff Bay, this impressive building attains the quality and grandeur that is to be expected of a National Assembly. Yet it is the transparency and lightness that bring the local public closer to their elected delegates.

The roof appears to hover over the chamber, in an impressive display of steel structure and cedar cladding. These create a feeling of generous soaring space, with a sense of minimum structural effort.

Through the combination of excellent design, local materials and high construction skills, this landmark building is something of which the Welsh people can be justly proud.



sections for transport and then to combine these on site at ground level into the heaviest assemblies suitable for craneage, keeping lifts to a minimum.

Isometric drawings were created from the CAD model in order to illustrate the erection sequence and convey it to the site staff. Temporary works consisted only of sets of Tirdors. Access from MEWPS for erection was simple because the roof is a single layer structure. Despite apparently complex geometry, careful design and planning resulted in a roof which went together easily.

Durability and adaptability

The minimal internal vertical structure and loose fit design ensured future adaptability. The columns supporting the debating chamber are set back to enable expansion. Natural finishes including timber and slate were chosen for their low life cycle cost, durability and maintenance simplicity. The main enclosure is single glazed, avoiding double glazing systems' short lives.

Structural steel is used at all levels from the undercroft to the roof, with virtually no applied fire protection.

Sustainability and integration

The building, designed to achieve a BREEAM "Excellent" rating, lies on a brownfield site. Natural ventilation is the default mode. Cooling and heating is supplied by earth heat exchangers. Additional heating is provided by a wood-chip boiler. The exposed concrete frame moderates the environment, eliminating applied finishes. The rotating wind cowl ventilates the chamber via the funnel hung from the roof and admits daylight, reflected into the chamber by a conical mirror. The bulk of services are distributed in an undercroft which is roofed over with bespoke steel framed floors.

These systems will reduce running costs by up to 50%.

Conclusion

This building has raised the benchmark for public building procurement and for best practice in environmental design. At its formal opening on 1 March 2006, Her Majesty the Queen said to the Assembly Members: "The skill and imagination of those who've designed and constructed this remarkable example of modern architecture have given you a dramatic setting in which to work."