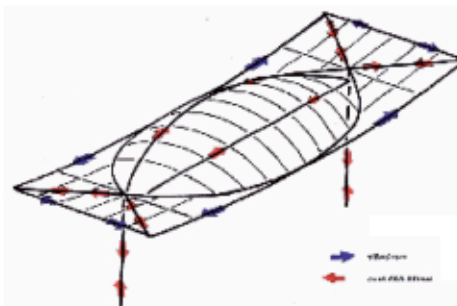


Unusual Steelwork Erection – Providing appropriate design information

The Problem / Challenge

A complex steelwork roof design needed a workable construction sequence from the structural engineers for the project. The sequence needed to be communicated to and understood by the contractor, specialist steelwork fabricator and the erector who would put the structure together.

A single bay of the steelwork roof is illustrated to the right.



Simple Drawing showing the forces acting within the structure

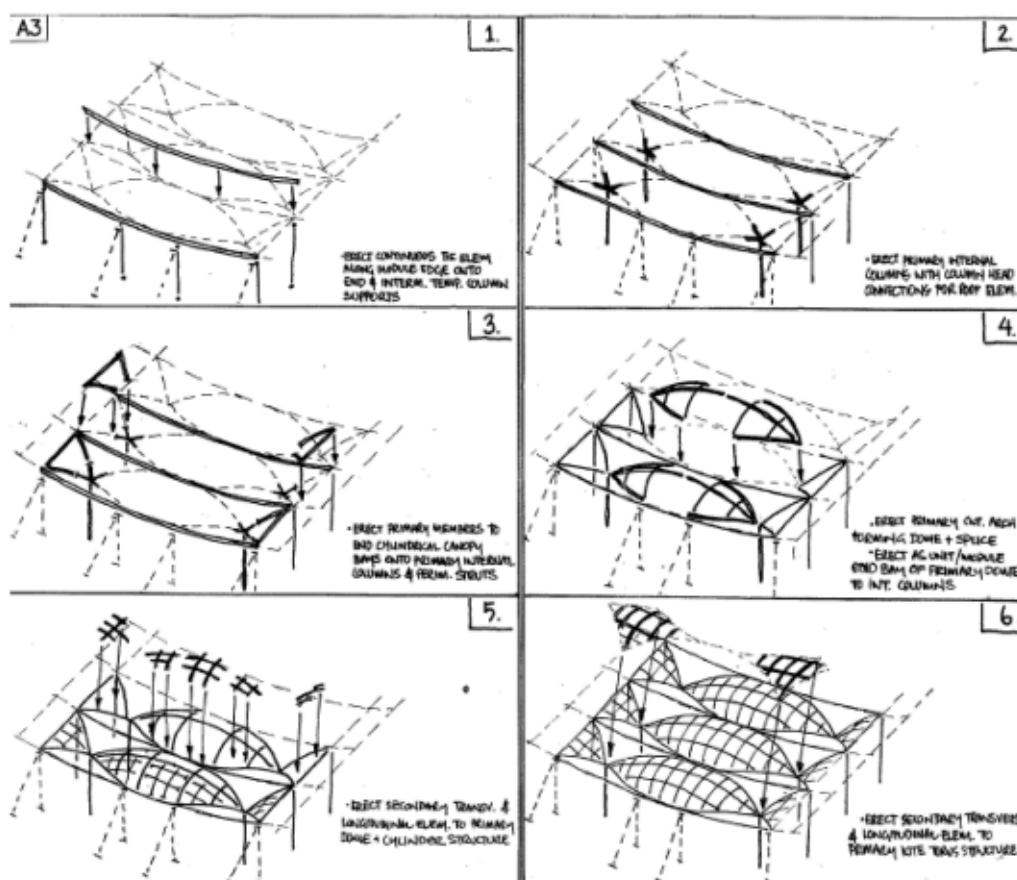
The Risks

A failure to understand the forces acting within the structure during the build could have led to errors in the construction sequence, resulting in dangerous temporary instability and potential collapse.

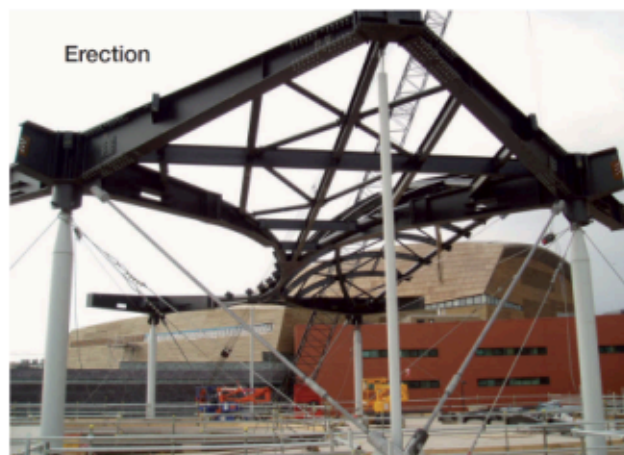
Confusion over the correct construction sequence would have caused significant programme delay.

The Solution

Sketches of a possible construction sequence were developed by the designer and included in the tender documentation. This meant that the contractor could manage the phased erection of the structure and understand where additional temporary support and restraint would be required.



Extract from the proposed construction sequence



The Benefits

- There was clear communication of the construction sequence, avoiding site "fire fighting" and improvisation.
- All of the contractor tenders were equally and fairly based as they understood the challenges that they faced.
- The proposed sequence provided a sound basis for the steelwork contractor's own designers to develop the final sequence and detailed method statements.

Key points

- It was recognised early in the project that there were significant challenges associated with the steelwork design, which allowed sufficient time and resources for planning
- The proposed sequence was conveyed simply and clearly through step by step drawings.