



CASE STUDY

FUTURES INSTITUTE DOLLAR ACADEMY

**CLIENT: ROBERTSON
CONSTRUCTION CENTRAL
EAST**

**LOCATION: DOLLAR,
CLACKMANNANSHIRE**

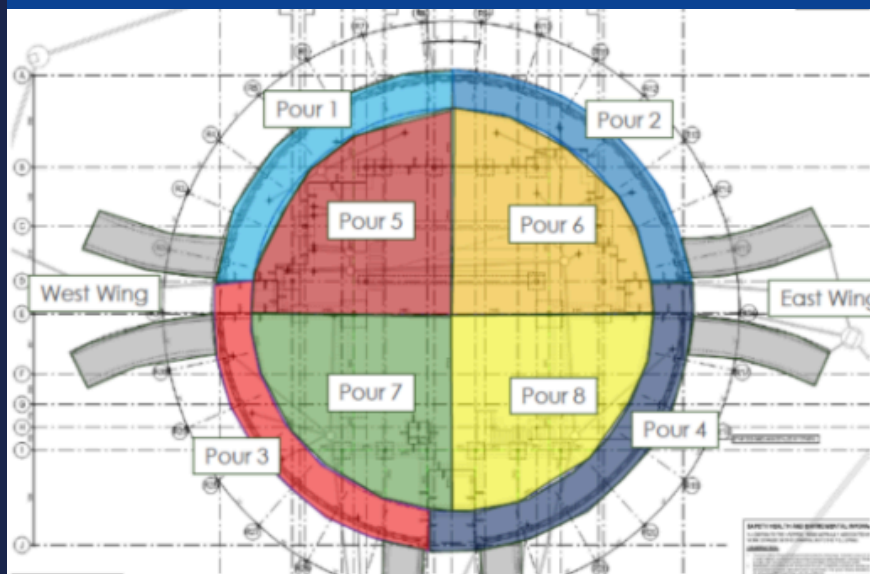
HIGHLIGHTS

- Temporary Works
- Haul Road Design

THE CHALLENGE

Dollar Academy is a prestigious Scottish school with a forward-looking plan to create the Futures Institute—a state-of-the-art learning facility focused on interdisciplinary education and sustainability. The FIDA building is centred around an innovative glulam (glued laminated timber) dome, designed and erected in collaboration with international timber specialists Wiehag.

The glulam dome poses a rare challenge in the UK education sector. Thanks to strong collaboration between Arthian and Robertson Construction Central East, temporary works were identified and discussed at an early stage to ensure the smooth delivery throughout enabling and construction phases.



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Given the live school environment, health and safety is absolutely critical in the delivery of the temporary works designs that are required. The importance of this was recognised by Arthian and the significant impact good working practice can have on future education at Dollar Academy.

THE SOLUTION

From the Pre-Construction Temporary Works Register and project logistics, Arthian was responsible for design and engineering oversight of:

- **Hoarding Assessments:** Arthian were required to adapt an existing design to ensure the existing trees or their roots were not compromised
- **Cabin Foundations:** To confirm the stability of the double stacked cabins which were to be located on site for the duration of the project, Arthian provided a design to reutilise sustainable Wysebase pads for the cabins, spreading any anticipated loads sufficiently before they are imposed on the existing ground.
- **Haul Road Design:** As the site is based on existing fields, a haul road design was required to permit vehicular access onto the site to laydown areas and the new glulam dome structure.
- **Stockpile Design:** With sustainability at the heart of this project, it was key to minimise off site waste as much as possible. By carrying out stockpile designs for both the topsoil and sub-strata, this will allow for the soils to be reinstated on completion of the project.
- **Slab Assessment:** To allow for the construction of the dome, MEWPs will be required to operate on the newly formed slabs. Arthian were responsible for carrying out assessments of the slabs to establish whether spreader mats or back-propping would be required. By establishing exclusion zones, Arthian were able to remove the requirements for back-propping, providing efficiency in design.



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Further temporary works designs which will be required for this site will include:

- **Temporary support of Glulam structure:** Assessment of the construction sequence and working collaboratively with Wiehag to ensure the structure is stable throughout the construction of the dome structure. Where required temporary propping will be designed.
- **Excavations:** Including trench boxes and edge protection during bulk earthworks and drainage diversion.
- **Retaining Wall Formwork Stability:** Sequencing and design of temporary bracing and formwork for the curved in-situ walls forming the ring beam of the dome.
- **Working Platforms:** Temporary platforms for:
 - Groundworks machinery
 - Glulam superstructure installation
 - ETFE roof fitting
- **Backpropping:** For in-situ concrete floor slab pours and load transfer to substructure during curing stages.
- **Temporary Edge Protection:** Installation of compliant guardrails and barriers across staged working zones.
- **Dome Safety Netting Support:** Integration of temporary netting frames on the internal face of the timber dome, to enable safe ETFE and solid panel installation.



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