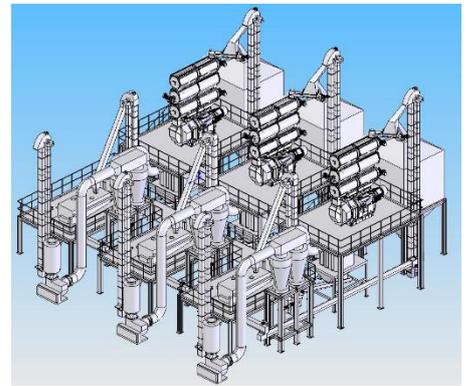
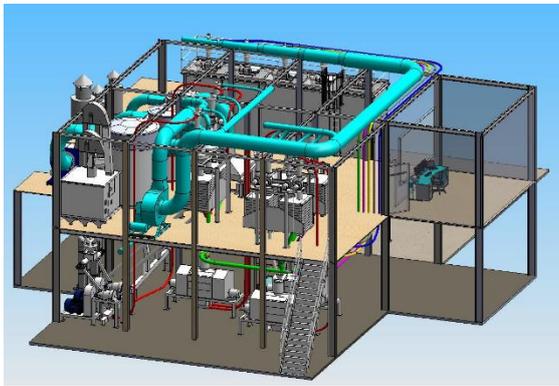




## STRUCTURAL STEEL ENGINEERING CONCEPT TO COMPLETION



DESIGN & PRECONSTRUCTION  
ENGINEERING & DETAILING  
PROJECT MANAGEMENT & PROCUREMENT  
FIELD CONSTRUCTION & START UP

Grain Tech structural steel engineering service fabricates and supplies a wide range of either In-house or Contractor fabricated structures, from individual machine stands through to complete portal frame structures.

This service has been operating for more than 30 years and has completed an impressive range of installations during this time. These structures are built for a range of owners and finished applications either as stand-alone assemblies or for integration within Grain Tech's complete supply, processing and material handling projects.

The service has developed a range of designs to meet varying process applications from simple machine module installation through to complex multi-level tower assemblies, either as a stand-alone application or as part of a complete project supply contract.

All structures are designed using the latest 3D draughting facilities and experienced design engineering project management personnel with a strong emphasis being placed on full co-ordination with the client's project management members to ensure a seamless supply and installation arrangement.

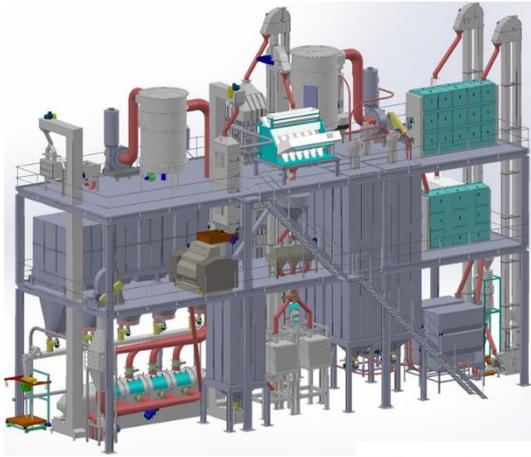
Structural steel assemblies are designed for easy containerization for shipping and enable quick local site erection through having a bolt together assembly design, with a minimum of site welding being required. Machine support stands and mezzanine assemblies are all designed for bolt together assembly and are pre-assembled and checked against design drawings at the manufacturing stage before being disassembled for shipment. Assemblies are often supplied with the processing equipment supply items, and the necessary penetrations, stiffening members, and support requirements, etc, are built into the structure.

These prefabricated designed steel structural assemblies offer a very economical and quick way to complete process application installations.

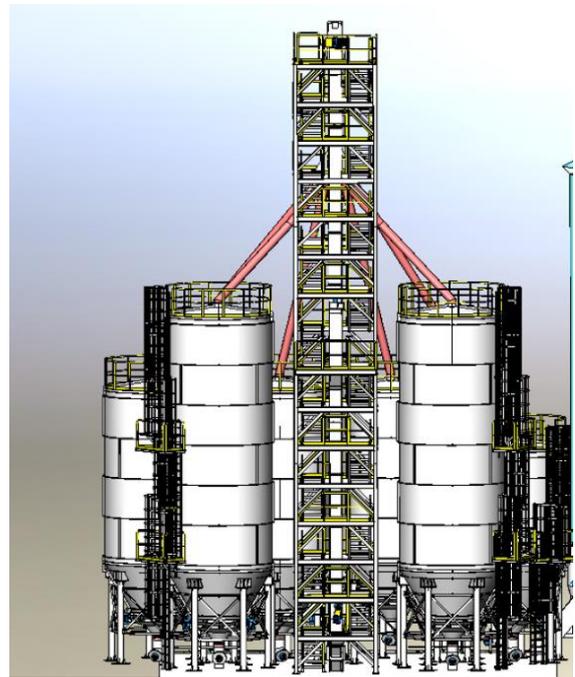
#### **Stages undertaken in completing Structural Steel Assembly supply:**

1. Detailing application requirements:
  - Completing site measurements where required.
  - Discussing installation needs.
  - Determining materials to be used, standard of finish called for and special features needed.
  - Preparing supply Specification & Tender.
2. Completion of 3D design draughting:
  - Detailing structural member requirements and loading calculations.
  - Preparation of assembly general arrangement showing side, end and plan views.
  - Detailing separate fabrication shop copy drawings including component items and supply Bill of Materials.
  - Quality control practices and procedures for Engineering NZAS and Safety Design Standards NZAS code compliance.
3. Submitting detailed design engineering drawings for PS1 certification.
4. Arranging steel component supply complete with certification and report issued.
5. At pre-determined milestones and on completion of fabrication, having SGS inspection undertaken with detailed reports being issued.
6. On completion of erection and installation on site, arranging for PS4 sign-off to be completed.

7. Example projects and design:



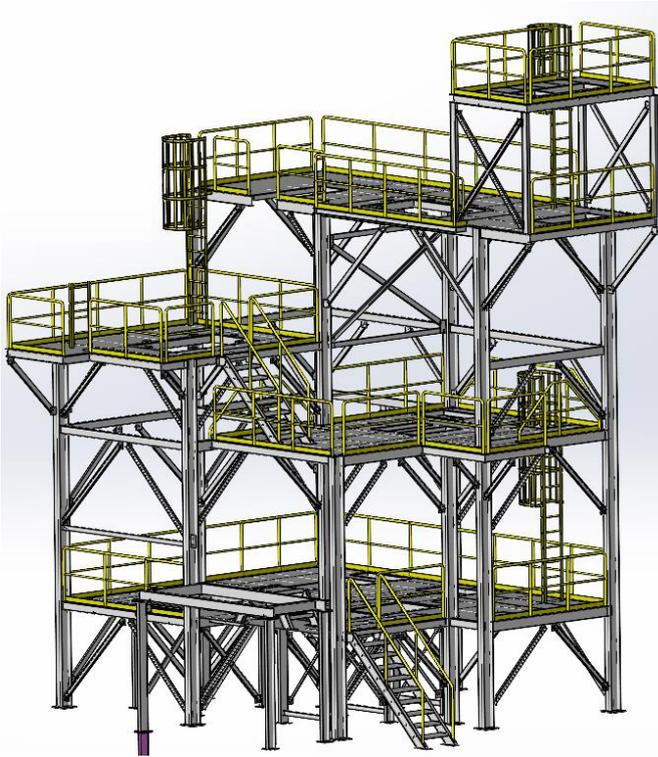
***Complete Process Assemblies***



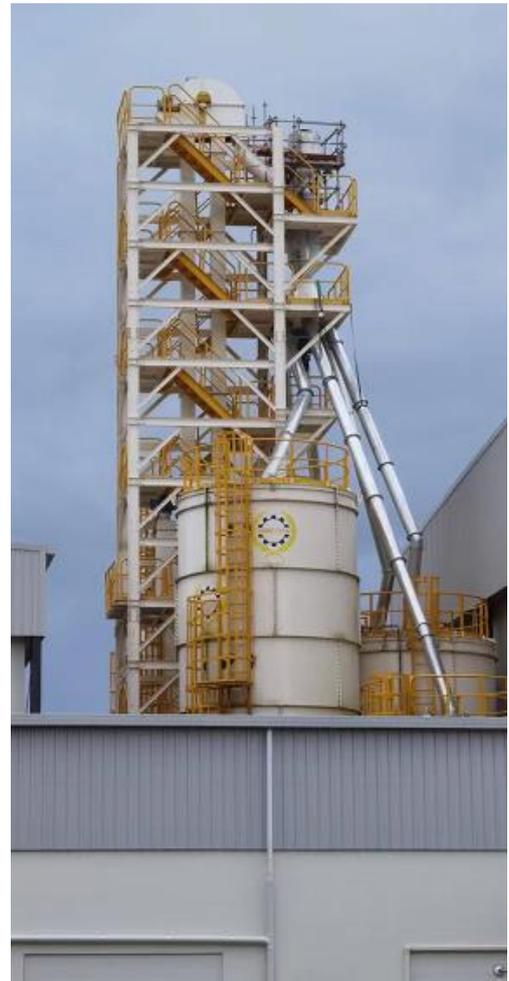
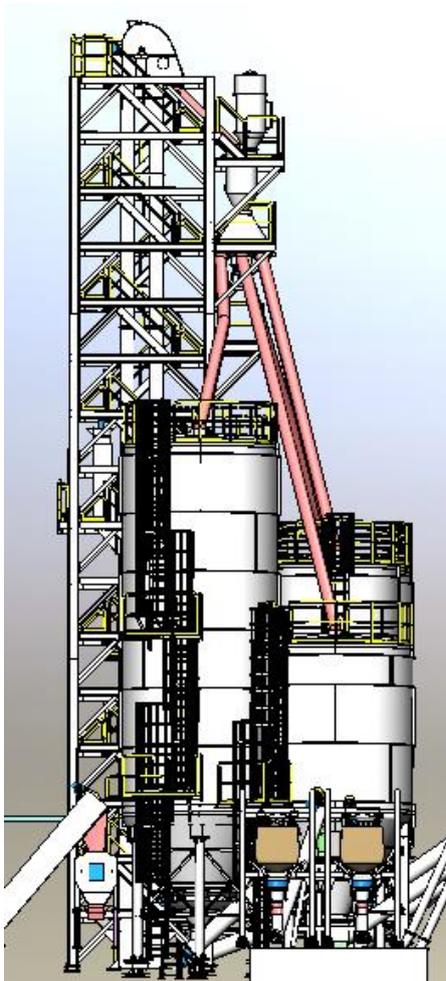
***Bulk Storage and Handling Arrangements***



***Process Equipment Entabletures***



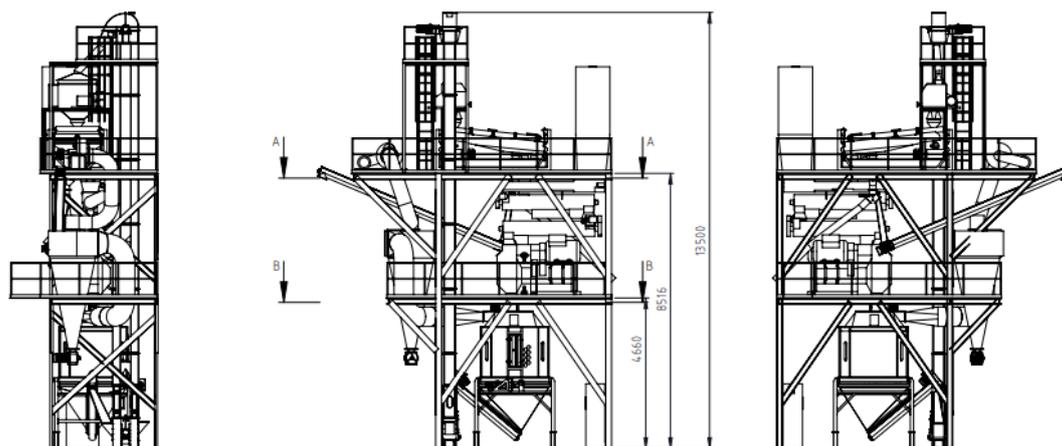
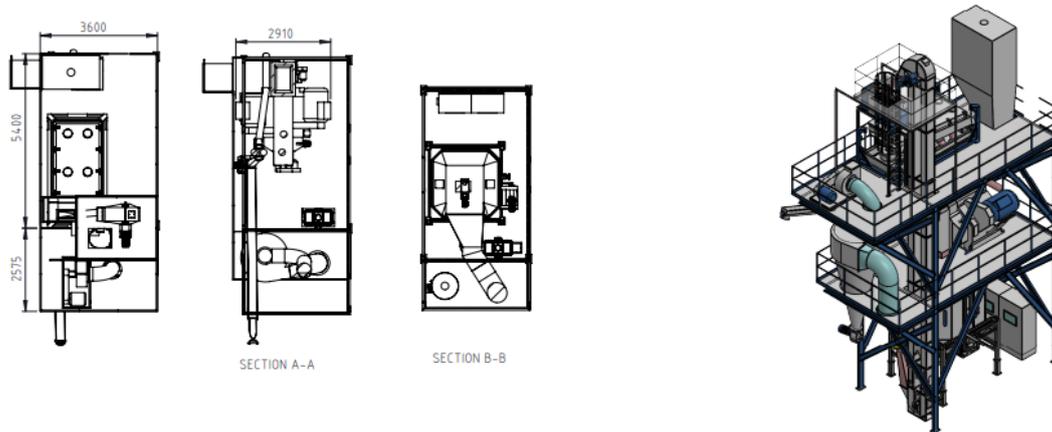
***Stand-alone Equipment Support Structures***



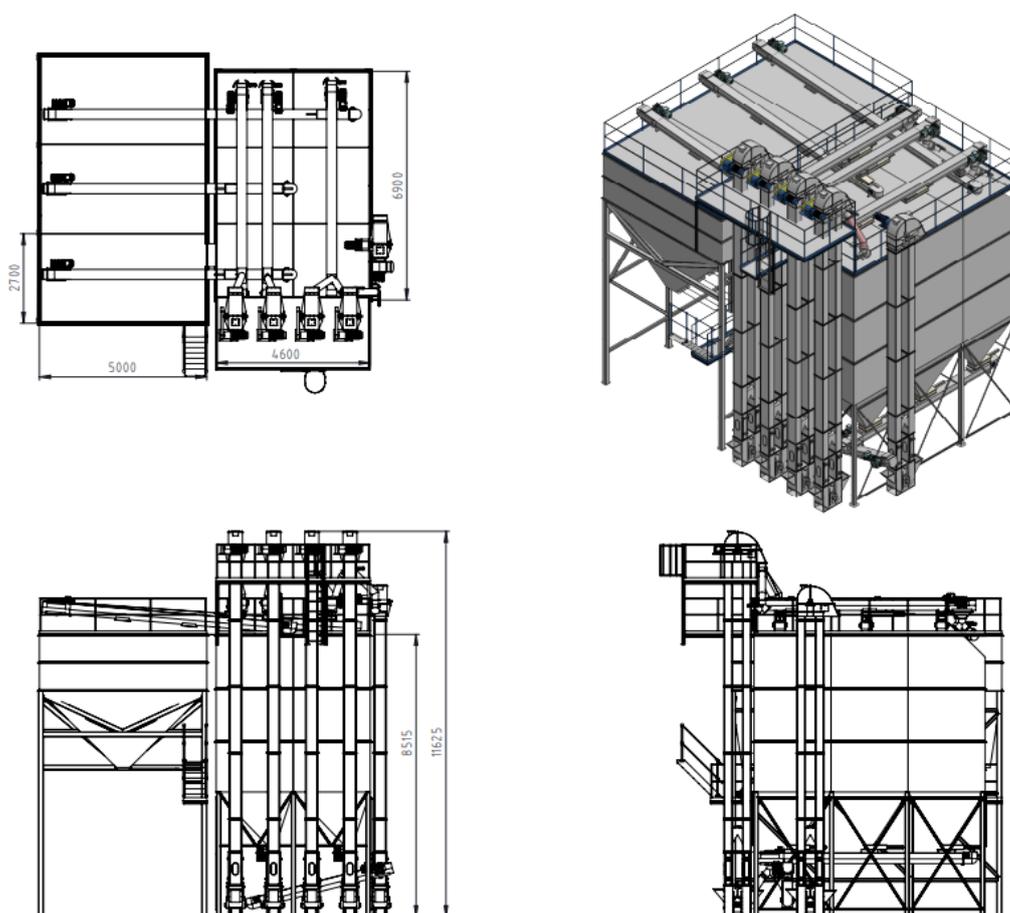
***Material Handling and Bulk Storage Tower Structures***



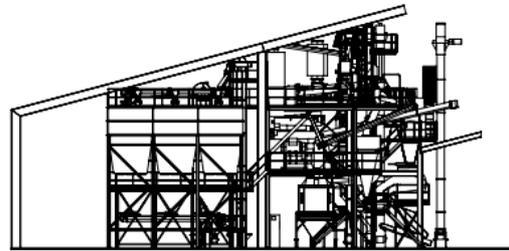
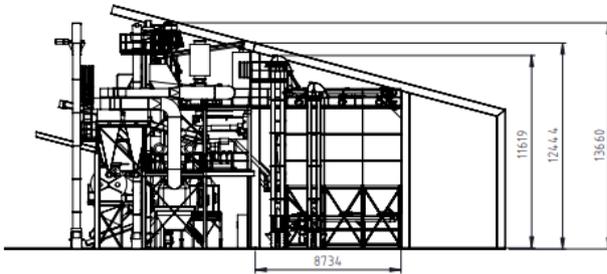
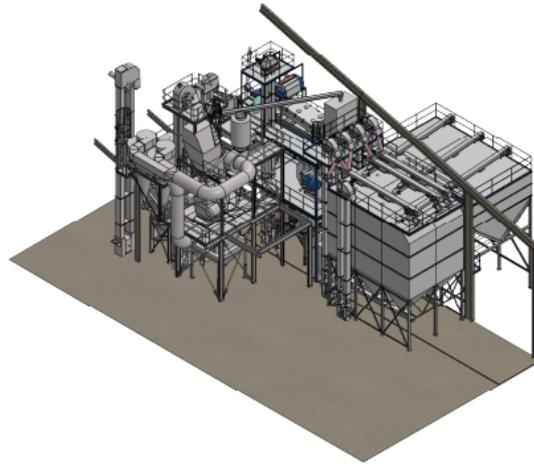
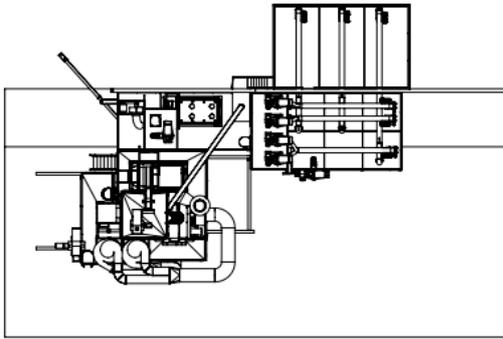
***Complete Process Support Assemblies for Speciality Applications***



**Typical Planning-In Arrangement to suit Process Design**



**Material Handling and Storage Installation Design and Planning-In Detail**



***Building and Processes Enclosures***



***Individual Process Equipment Support and Working Access Platforms***



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 Classifying, Mixing, Pelleting, Agglomeration,  
 Extruding, Bulk Material Handling, Drying,  
 Cooling, Conveying & Packaging