



**IAN HYMAS**  
*BSc (Hons) MEngSc*

- Structural engineer for over 40 years.
- Founding partner of the firm Henry and Hymas.
- Member of the current BD-066 Standards committee for the Tilt Up and Precast Concrete Code AS3850.



**Livestreamed via**

**PROGRAMME 8 hours of CPD**

*(8.30am Zoom invite will be emailed)*

**9.00 - 11.00 Session 1**  
**- PORTAL FRAME ANALYSIS AND DESIGN**

- Portal frame analysis and member sizing
- Elastic vs Plastic design
- Tapered members in frames
- Latticed portal frames
- Frames with central columns
- Economies of frame spacing
- Fixed vs Pinned bases
- Footing considerations



**11.00 - 11.15 Morning Break**

**11.15 - 1.00 Session 2**  
**- ROOF AND WALL SYSTEM**

- Roof structure layout & panel layout
- Alternative rafter designs
- Fly bracing
- Roof bracing systems.
- Economies of steelwork design
  - Portal frame vs load bearing panels
  - Various cladding systems that can be used for Industrial buildings such as steel sheeting (connected to purlins and girts)
- Design of purlins and girts, panels as cladding to portal frame and steel column buildings; fire ties.
- Advantages and disadvantages of cladding alternatives.

**1.00 - 1.30 Lunch Break**

**1.30 - 3.00 Session 3**  
**- CONNECTIONS IN INDUSTRIAL BUILDINGS**

- Connections that are used in portal frame building.
- Steel to steel connections, portal frame knee and apex moment connections, bracing connections and prying forces on plates.
- Steel to concrete connections, holding down bolts, steelwork to concrete panel connections, fixings into concrete cast-in, and mechanical (expansion anchors) chemical anchors.

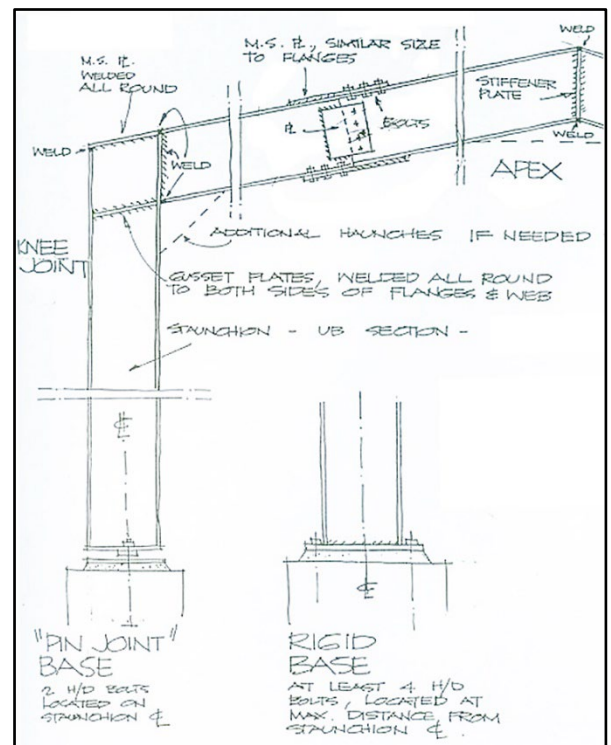
**3.00 - 3.15 Afternoon Break**



**3.15 - 5.00 Session 4**  
**- DEFLECTIONS, TOLERANCES, CASE STUDIES**

- Deflections of portal frames and concrete panel supported rafters as well as deflections in bracing systems. Consideration of 'bolt slip', effect of tolerances on design assumptions and erection methods.
- Problems that have occurred while erecting industrial buildings.
- Actual jobs will be shown (in keeping with client confidence).

**Certificate of Attendance will be emailed**



**CALCULATORS REQUIRED**

• One day course – **\$830 pp**

**FURTHER INFORMATION**

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- [registrations@etia.net.au](mailto:registrations@etia.net.au)

• To register, visit our website [www.etia.net.au](http://www.etia.net.au)

OR scan the QR Code.