


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.



PROGRAMME (8.30 - 9.00 Registration)

9.00 - 10.30 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

10.30 - 11.00 Morning Tea

11.00 - 12.30 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.

12.30 - 1.30 Lunch (Provided at Venue)

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 - 3.30 Afternoon Tea

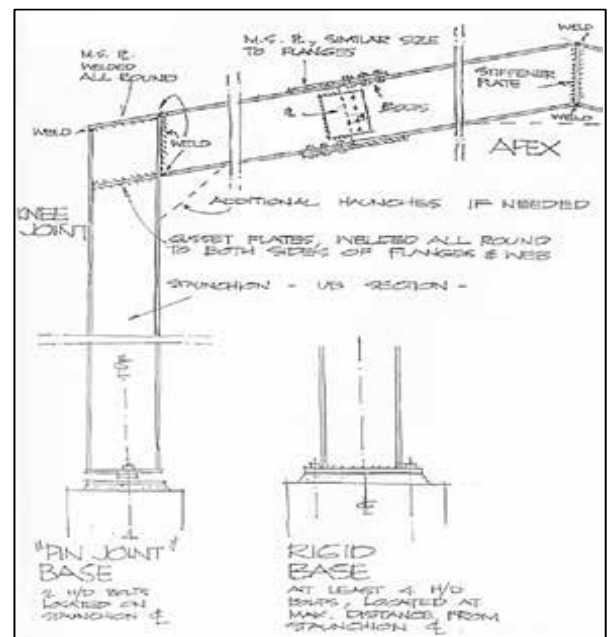


3.30 - 5.00 Session 4

- 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).

5.00 - 5.15 Certificate of Attendance & Feedback sheets



- **Class sizes limited to max.15**
- **Live streaming option available**
- **CALCULATORS REQUIRED**

COURSE COST

- 1 day course – **\$810 pp**

DATES, VENUES & REGISTRATION

- Registration form (back of catalogue)
- Visit our website www.etia.net.au

FURTHER INFORMATION

- Office (02) 9899 7447
- Mobile 0413 998 031
- Email registrations@etia.net.au