

PDU / STU : TBA

36th Annual Lecture

Design and Construction of a 114m Long Span Aircraft Hangar at Seletar, Singapore

Event Date

**11 November 2020
Wednesday**

Event Time (SG Time)

6.30pm to 7.30pm

Platform **Zoom**

Programme

- 6.15pm: Registration**
- 6.30pm: Webinar Commences**
- 7.15pm: Discussion and Q&A**
- 7.30pm: End**

Synopsis

Located at Seletar Aerospace Park is the Bombardier Plot 1a Hangar. Bombardier Aerospace is currently operate on its full-scale factory-owned and operated service center for business aircraft at Singapore's Seletar Airport. This facility is used to carry out light to heavy maintenance work on all Learjet, Challenger and Global aircraft. In addition to the current facilities, Bombardier Aerospace has expanded its hangar and office space by constructing another two hangar building.

One of the key feature in this development is the Hangar Plot 1a, which has a column free clear span of 114 meter with a clear height of approximately 14 meter. The hangar structures is constructed by spaceframe, which is an efficient two way structural truss system that fit well in the current unique L-Shape hangar layout. The depths of the spaceframe truss at mid-section is 6m, given a span to depth ratio of 19.

This presentation will focus on the design and construction of the Hangar Plot 1a including the connection design, fabrication and installation aspects. It is proposed to assemble the hangar roof on the ground level before heavy lift to its final location with 6 number of hydraulic strand jacks. Roof erection methodology will be presented so that participants could understand the issues that need to be considered during the construction stages.

The main challenge of the Hangar construction is to design and construct a geometrically complex structures. High accuracy is required during steel fabrication so that the complex geometry of the hangar structure could be erected without tolerances problems. During the heavy lifting process, synchronization of hydraulic strand jacks movement is also very critical to ensure structure members do not exceed the allowable design stresses.

About the Speaker



Dr Ng Yiaw Heong is currently a general manager with TTJ Design and Engineering Pte. Ltd., a leading structural steel contractor in Singapore. His main specialty is on the design and construction of structural steelwork and has been involved in many major structural steel projects in Singapore. He is currently served as a council member in Singapore Structural Steel Society. Yiaw Heong graduated with a Bachelor Degree in Civil Engineering from University of Technology, Malaysia in 1994 and holds a Master degree and a Doctor of Philosophy degree in engineering from the National University of Singapore.

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