Finite Element Analysis of Steel Structures – Reducing Risk and Optimising Design

Finite Element Analysis (FEA) can be a useful tool to determine stress levels in structures and optimize design. Common challenges faced by engineers include: pressure to rely wholly on FEA results; which FEA results can be trusted for assessment; and comparing fatigue Standards details with FEA details in real structures.

This seminar provides an overview of the positives and negatives of FEA with particular emphasis on fatigue & weld design and is of specific value for structural, mechanical and forensic engineers.

**Times**
12.00pm for 12.30pm start to 5.00pm finish

**Seminar Package**
- Seminar Notes (PDF)
- Light lunch on arrival
- Afternoon tea

**Seminar Content**
- When your FEA is responsible for deciding: “Will it work without us testing?”
- FEA stresses for fatigue: the good, the bad, the ugly.
- The value of test models to provide better information.
- Weld details: real world vs FEA vs Standards (e.g. AS 4100 Sec 11, EC 3, BS 7608).
- Solid vs Plate vs Beam models for assessment stress: “Should I model the weld?”
- Duty cycles and stress ranges: “What do I do without the fatigue software add-on?”
- Case studies from amongst mining, railway and industrial equipment. Wind fatigue analysis of Perth Stadium speaker frames.

**Presenter**
Vernon McKenzie – Vernon is the Managing Director with EnDuraSim
Vernon has 20 years hands-on experience in the application of FEA to real world engineering challenges. He has personally trained several hundreds of engineers in the practical application of FEA, and has conducted consulting projects - mainly associated with mining, transportation structures (planes, trains, automobiles, buses, ships, subs, trucks and tractors) and industrial equipment - on four continents.

Vernon has a First Class Honours Degree in Mechanical Engineering from the University of Technology, Sydney and a Graduate Certificate in Management Practice from the Australian Institute of Management.

**Seminar Fee (incl GST)**
- $375 ASI Member
- $455 EA Member
- $535 Non Member

Engineers attending this seminar may gain CPD points to meet Engineers Australia requirements. EA Members who are not ASI members should email membership@steel.org.au with proof of membership to obtain the promotion code to access the EA Member reduced fee.

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<thead>
<tr>
<th>Location</th>
<th>Date</th>
<th>Venue</th>
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<tbody>
<tr>
<td>Brisbane</td>
<td>Monday 11 November</td>
<td>Brisbane Convention &amp; Exhibition Centre, cnr of Merivale &amp; Glenelg Streets, South Bank</td>
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<tr>
<td>Sydney</td>
<td>Tuesday 12 November</td>
<td>Urban Hotel, 194 Pacific Hwy, Greenwich</td>
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<tr>
<td>Melbourne</td>
<td>Wednesday 13 November</td>
<td>Pullman Melbourne on the Park, 192 Wellington Parade, Melbourne</td>
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<tr>
<td>Adelaide</td>
<td>Monday 18 November</td>
<td>Education Development Centre, 4 Milner Street, Hindmarsh</td>
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<tr>
<td>Perth</td>
<td>Tuesday 19 November</td>
<td>The Geographe Room, State Library, Francis Street, Perth</td>
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Register online at: [https://www.steel.org.au/events-awards/events/](https://www.steel.org.au/events-awards/events/)

For further details, contact: **John Gardner** – ASI National Education Manager – Technical
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