| PRODUCTION TEAM | College of Architecture  
<table>
<thead>
<tr>
<th></th>
<th>UNC - Charlotte</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Director</td>
<td>David Thaddeus, AIA</td>
</tr>
<tr>
<td>Slide Design &amp; Graphics</td>
<td>Deborah J. Arbes, RA</td>
</tr>
</tbody>
</table>
| Modeling & Animations | Joe Corsi  
|                   | Dave Mayo |
| Production Assistants | Jennifer August  
|                     | Brittany Eaker  
|                     | Kathy Phillips |
| IT Coordination | Matt Parker |
| Photography | David Thaddeus, AIA |
| Software | PowerPoint  
|         | Photoshop  
|         | Cinema 4D (Mac) |

For additional information, please contact:  
David Thaddeus, AIA, Associate Professor  
Thaddeus@email.uncc.edu
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  - Lawrence Kruth, PE, Engineering & Safety Manager, Douglas Steel, Lansing, MI
  - David McKenzie, PE, Vice President - Engineering, SP International, North Kansas City, MO
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- We hope that you and your students will find this information useful.

- Please contact Fromy Rosenberg (rosenberg@aisc.org) for further information on AISC or for feedback on this teaching / learning product.

- Please contact David Thaddeus (thaddeus@email.uncc.edu) for questions or comments on the content of this project.
Steel Structures | Open Web Joists / Girders

- Lightweight structure, capable of long spans.
- Repetitive members that are closely spaced and that support uniform loads.
- Support members may be beams, girders, or load-bearing walls.
- Shop fabricated, welded very quickly.
- Bar joists have standardized span, depth, member size, dead and live load capacity.
- Span of bar joists depends on: depth, top and bottom chord areas, web areas, configuration, and deck load.
- Spacing of bar joists depends on the span capability of the deck (gauge of deck, spacing, and depth of corrugations).
- Ceiling may be hung from bottom chord.
- Integration with HVAC - could run parallel, in between, or perpendicular to bar joists.
- Closer spacing allows shallower floor / roof thickness
- Fire rating depends on floor / ceiling material.
- Bearing length varies with type and size of open web joist
- Open web joist types: Standard (K)  
  Longspan (DL)  
  Deep Longspan (DLH)
- Horizontal or diagonal bridging to prevent lateral movement of top and bottom chords.
- Joist span and chord size determine bridging requirements (10’-15’ o.c. max).
- Horizontal bridging must be top and bottom.
- Top chord overhangs are possible.
- Open Web joists are usually manufactured with Grade 50 KSI Steel.
<table>
<thead>
<tr>
<th>Series</th>
<th>Description</th>
<th>Typical Web</th>
<th>Web Options</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>K - SERIES</strong></td>
<td>Shortspans</td>
<td>Top and bottom chords for all bar joists in all series are a pair of angles.</td>
<td>8 - 24” Deep</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Typical Web:</td>
</tr>
<tr>
<td></td>
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<td></td>
<td>a Round Bar (Rod) may also be Crimped Angle</td>
</tr>
<tr>
<td><strong>LH &amp; DLH SERIES</strong></td>
<td>Longspans</td>
<td></td>
<td>32 - 36” Deep</td>
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<tr>
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<tr>
<td><strong>G - SERIES</strong></td>
<td>Supports other joists</td>
<td></td>
<td></td>
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</tbody>
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**Structural Steel Members and Systems**