

# Roles of consulting engineer and fabricator engineer

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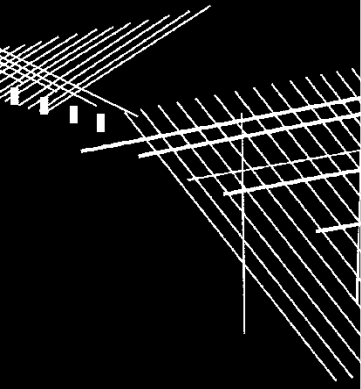
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# Introduction



As the industry does more complex projects, more projects will have a Project Consulting Engineer as well as a Steel Fabricator Engineer



# What's the issue?



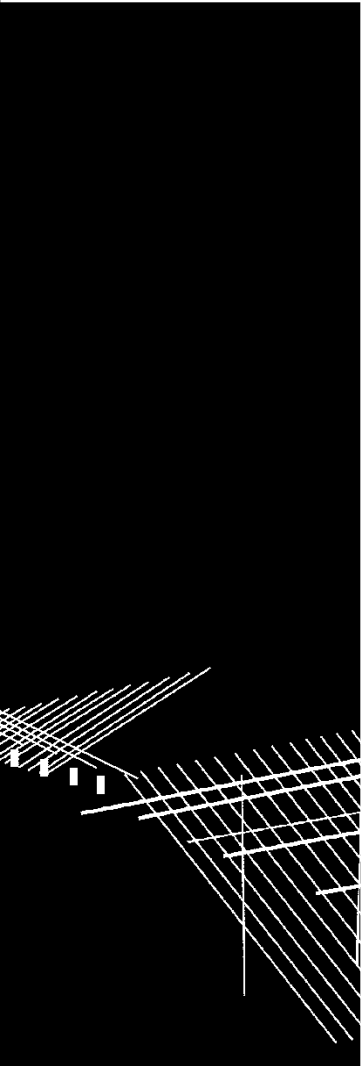
The cross over between the project consulting engineer and the fabricator engineer can cause issues with projects.

- Who is responsible for what?
- Disputes between the two engineers.
- Frustration for the builders / stakeholders involved in the project.

# Detailed issues



- Actual modelling the load paths to foundations and to other structural elements on the structure so they can be designed correctly. eg foundations
- Who is responsible for lateral stability of the whole structure?
- Who is responsible for nominating the design loads?
- Site changes to the framing.



# Detailed issues



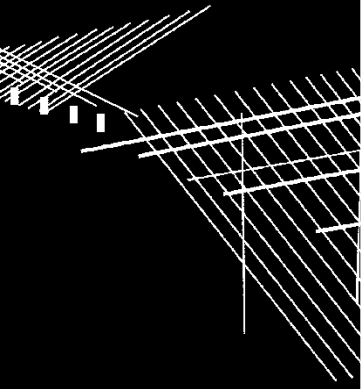
- Connections between components designed by different engineers. Fasteners, hold downs etc
- Engineering and installation certifications
- Designs completed for timber framing systems which are different to light gauge steel framing systems.



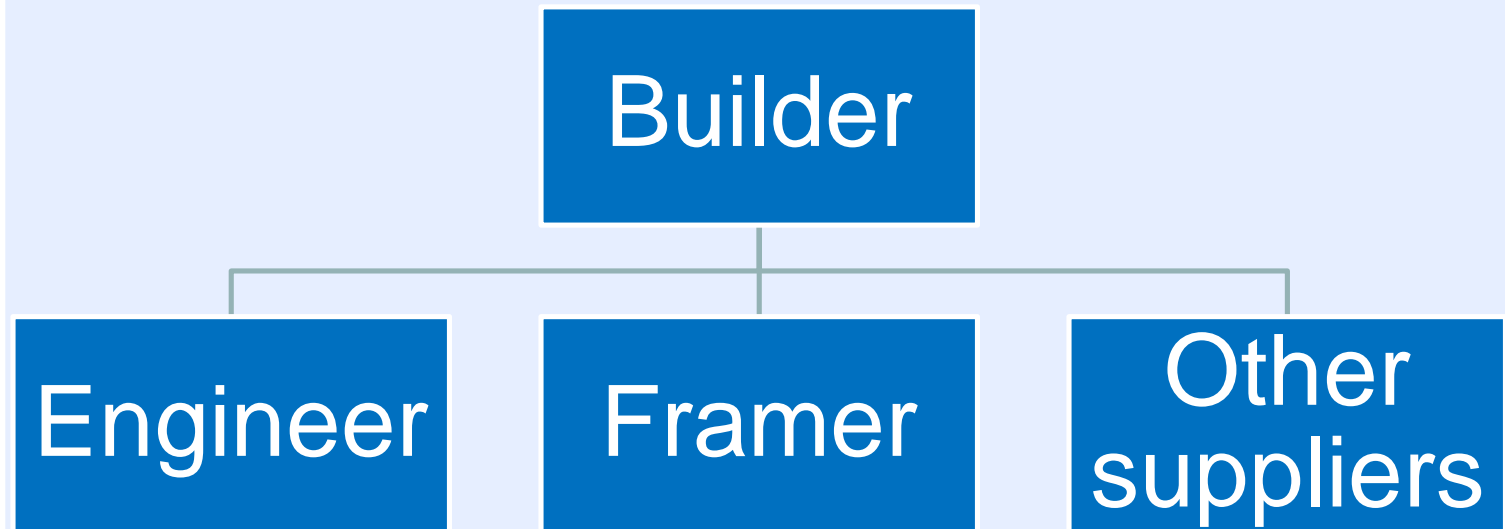
# Traditional housing situation



- Engineer responsible for slab and structural steelwork
- Steel framer responsible for steel design, detailing, supply and possibly installation



# Typical housing relationship





# Issues



- Wind design speed and other loads?
- Accuracy of dimensions?
- Who coordinates the roof frame, wall design (where applicable) and the slab/foundation design
- Who is responsible for frame design?



# Custom design home



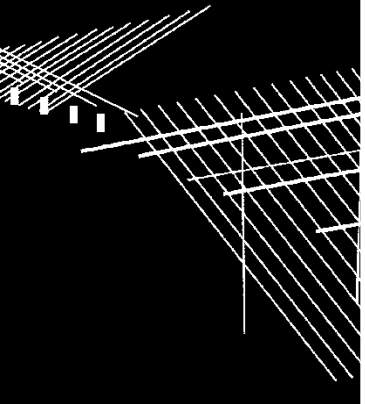
- Preliminary structural design concept completed by the project engineer
- Final structural design completed by the project engineer together with design certification.
- Builder engaged
- Fabricator appointed by builder and proprietary design completed by fabricator engineer.



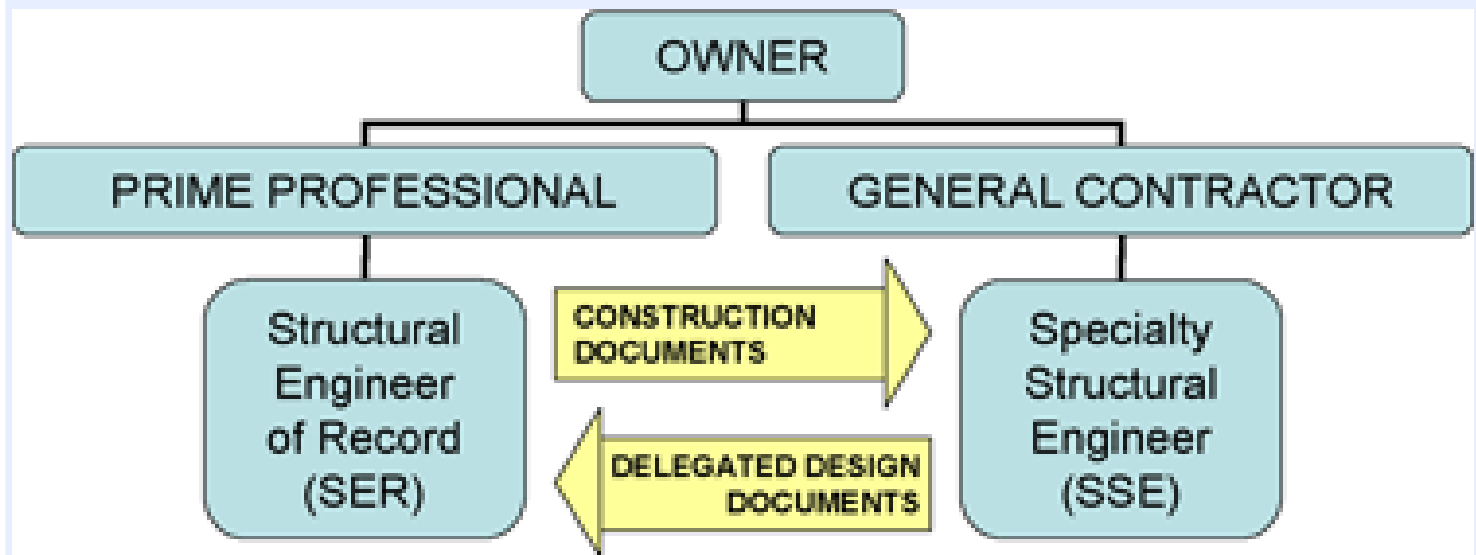
# Commercial buildings



As the steel framing industry moves from domestic markets into commercial markets, the role of project and fabricator engineers becomes increasingly important.



# Commercial relationships

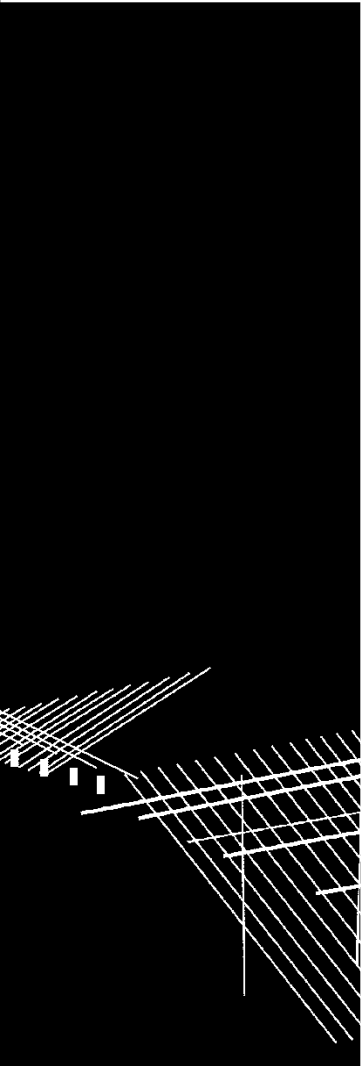


*Ref: Council of American Structural Engineers (CASE) Guidelines*

# Other specialists contractors



- Precast concrete panels
- Post-tensioned concrete slabs
- Structural floor systems
- Windows
- Facades
- Air conditioning



# Issues with the current arrangement



- Steel framing systems are typically proprietary and hence geometry and load paths can be different between systems.
- The structural capability of the different proprietary systems vary affecting the design of large structural elements. ie floor spans can be different.
- Structural design changes at a late stage in the project adding extra cost and time.



# What is the ideal scenario?



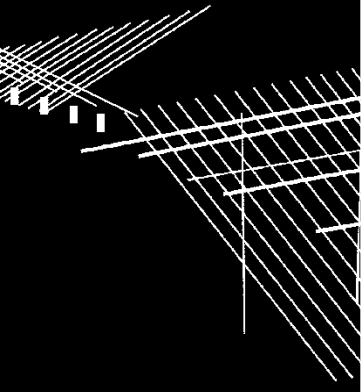
1. The engineers are one and the same; or
2. The fabricator engineer and project engineer work together from an early stage in the project; or
3. Project engineer does a concept design using the NASH Standard. Once the proprietary design is completed by the fabricator engineer, there is very little variation in the design.



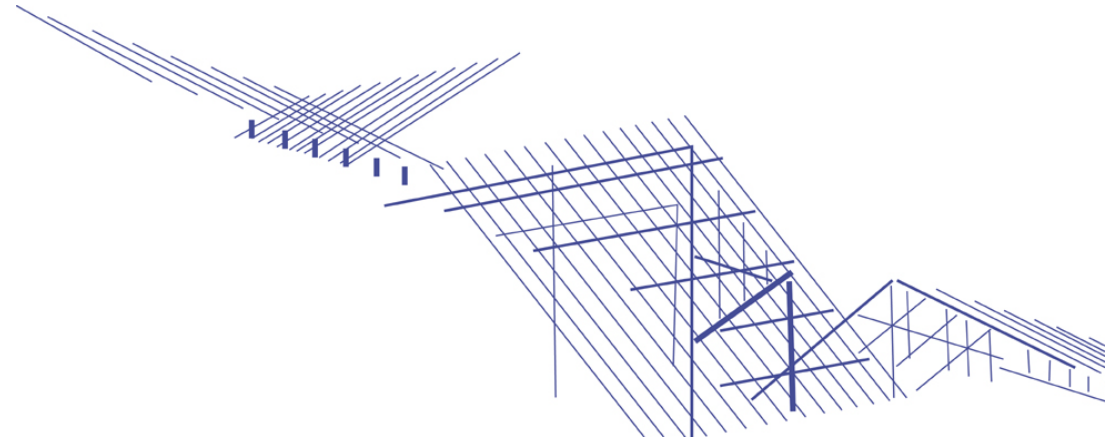
# What can we do to achieve the ideal scenario?



- Education of consulting engineers and industry professionals on light gauge steel framing systems and how they work.
- Education of consulting engineers and industry professionals about the industry standards for light gauge steel framing - AS/NZS 4600 and NASH Standards.







# Discussion