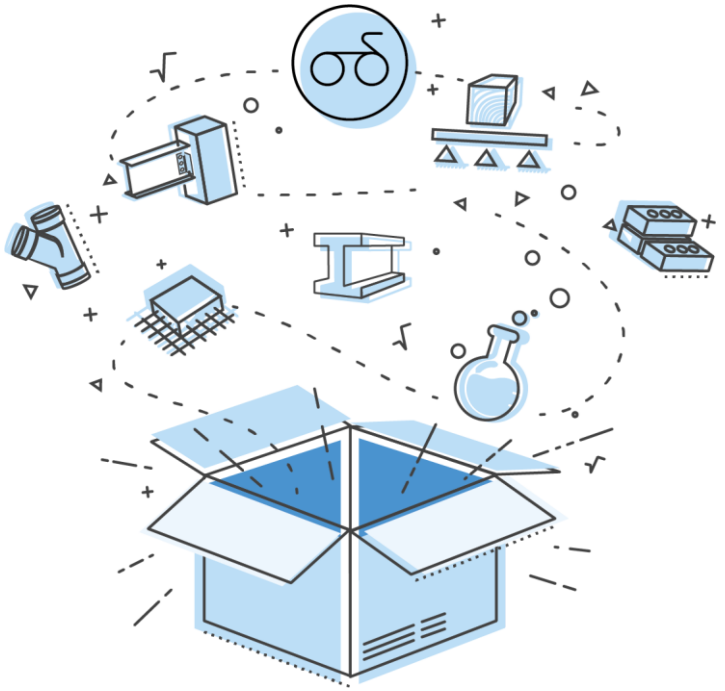
ClearCalcs

How to Build a House

Using ClearCalcs's Project Features

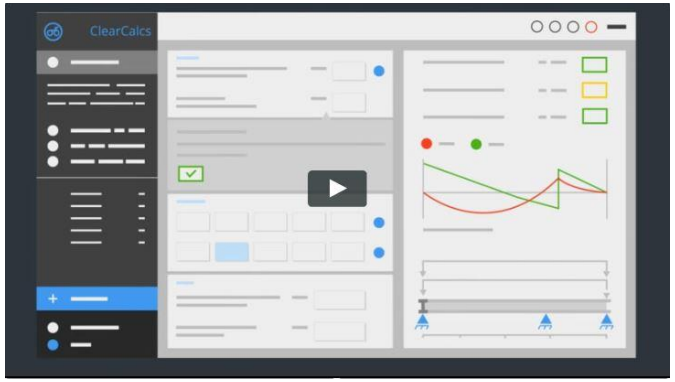


Brooks Smith, CPEng, P.E., NER
brooks@clearcalcs.com

About ClearCalcs.com

ClearCalcs helps engineers design without compromise by bringing together powerful FEA analysis with easy to use design tools for concrete, steel, cold-formed steel and timber.

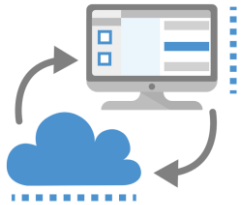
Explore our range at clearcalcs.com



Intro Video Hyperlink

More Accurate
Design more accurately with unrestricted and accessible FEA analysis

Eliminates Wasted Time
Eliminate time wasted using clunky methods or waiting for software licenses to free up



Available Everywhere
Empower engineers to work effectively from office, home, or site

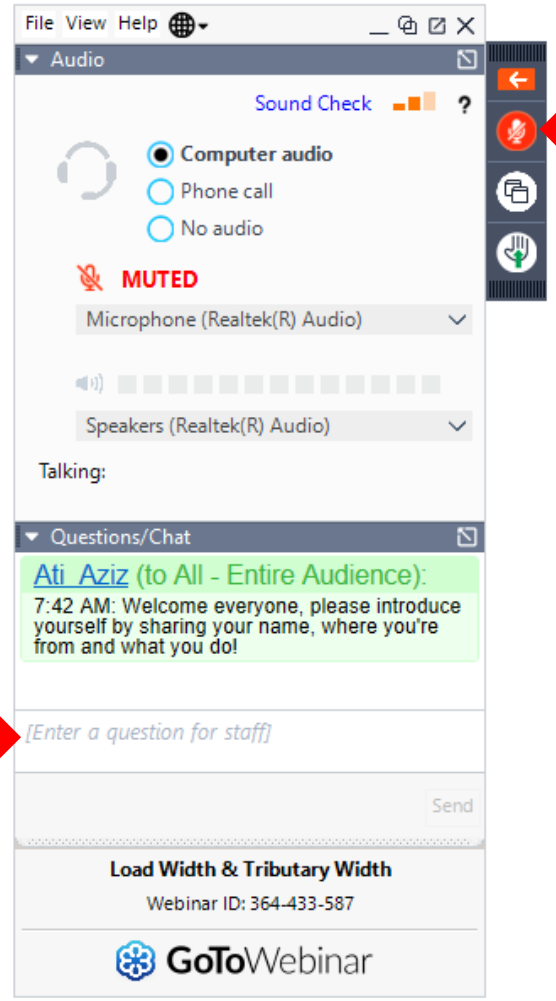
Meet the Presenter

- **Brooks H. Smith | Head of Engineering R&D**
  - Chartered Professional Engineer (AU) & P.E. (USA)
    - MCivE from University of Massachusetts
    - BEng from Dartmouth College
  - 8 years of previous experience in:
    - Structural engineering R&D consulting, specialising in cold-formed steel
    - Research fellowship in system behaviour of thin-walled steel
    - Forensic structural engineering, specialising in reinforced and PT concrete
  - ~4 years now with ClearCalcs
    - Head of Engineering -> Head of Engineering R&D

ClearCalcs

How to Ask Questions

- **Type your questions in the Questions/Chat tab on your GoTo panel and click Send**
  - We will address all questions in the second half of the webinar during the 30-minute Q&A session
  - We might invite you to unmute yourself to ask your question live!



Unmute yourself here

Ask your questions here

Agenda – Today's Goals

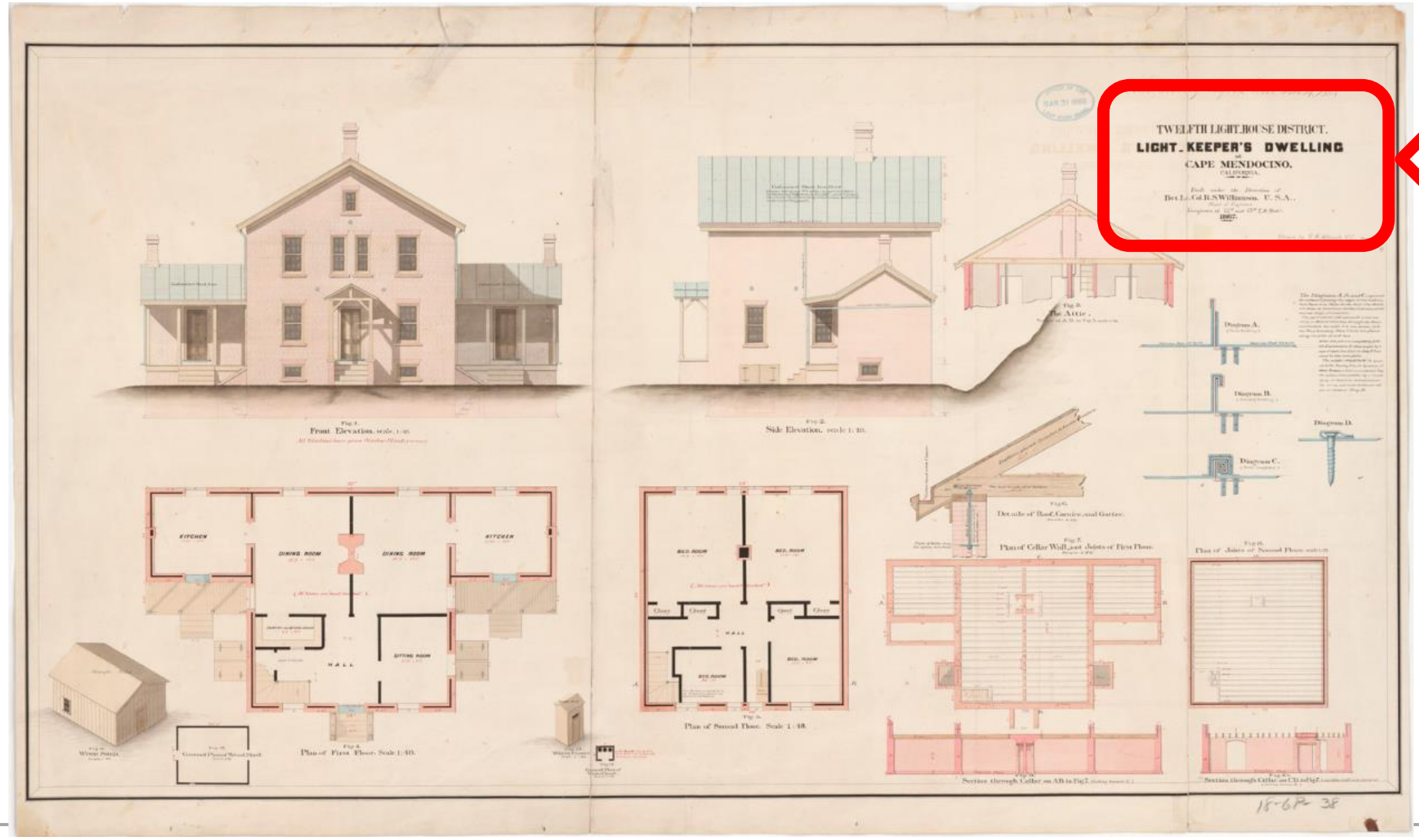
- **From Plans to Reports**
  - Project setup & sharing
  - Loads & overall geometry
  - Identifying members for design
  - Sizing members optimally
  - Following your load path
  - Submitting your work
- **Worked Examples**
  - Using ClearCalcs

ClearCalcs

From Plans to Reports

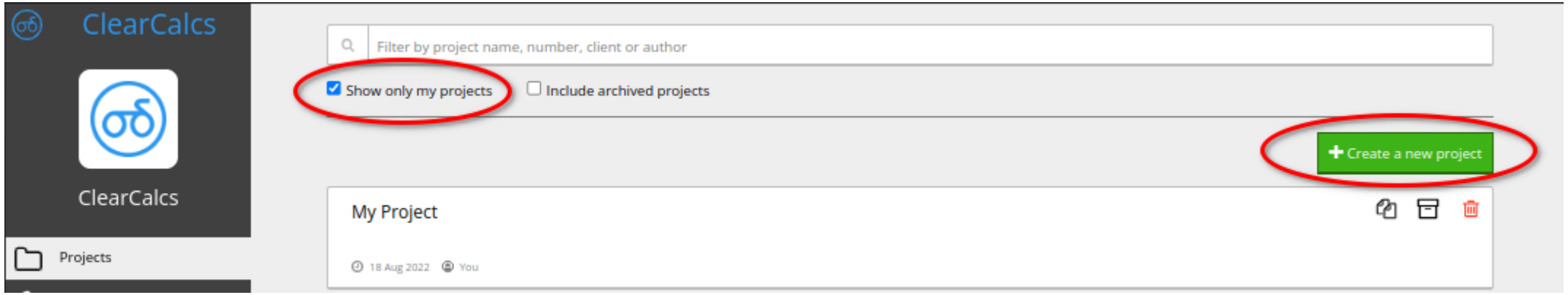
The design workflow in ClearCalcs

Project Setup



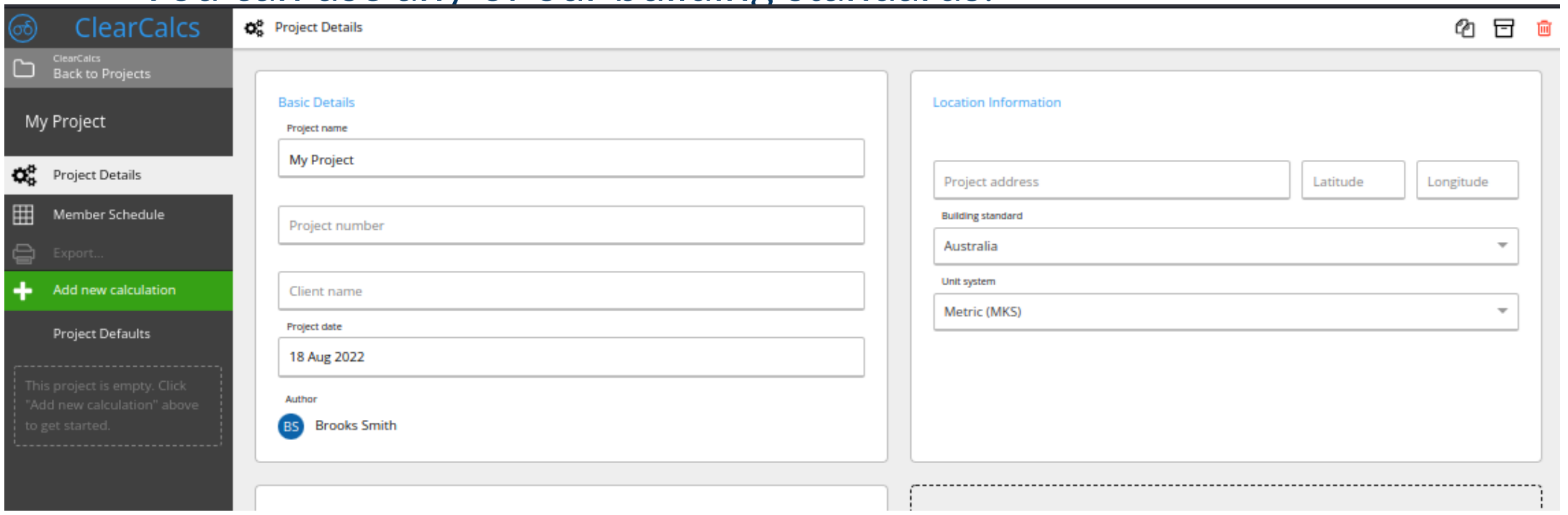
Project Setup: Overall

- ClearCalcs is structured around “projects”
  - Most commonly, 1 project = 1 building
- All projects are shared with everyone in your organisation
  - Just un-tick the “Show only my projects” box
- Power-up: Often work on similar buildings?
  - Create template projects that you can duplicate!

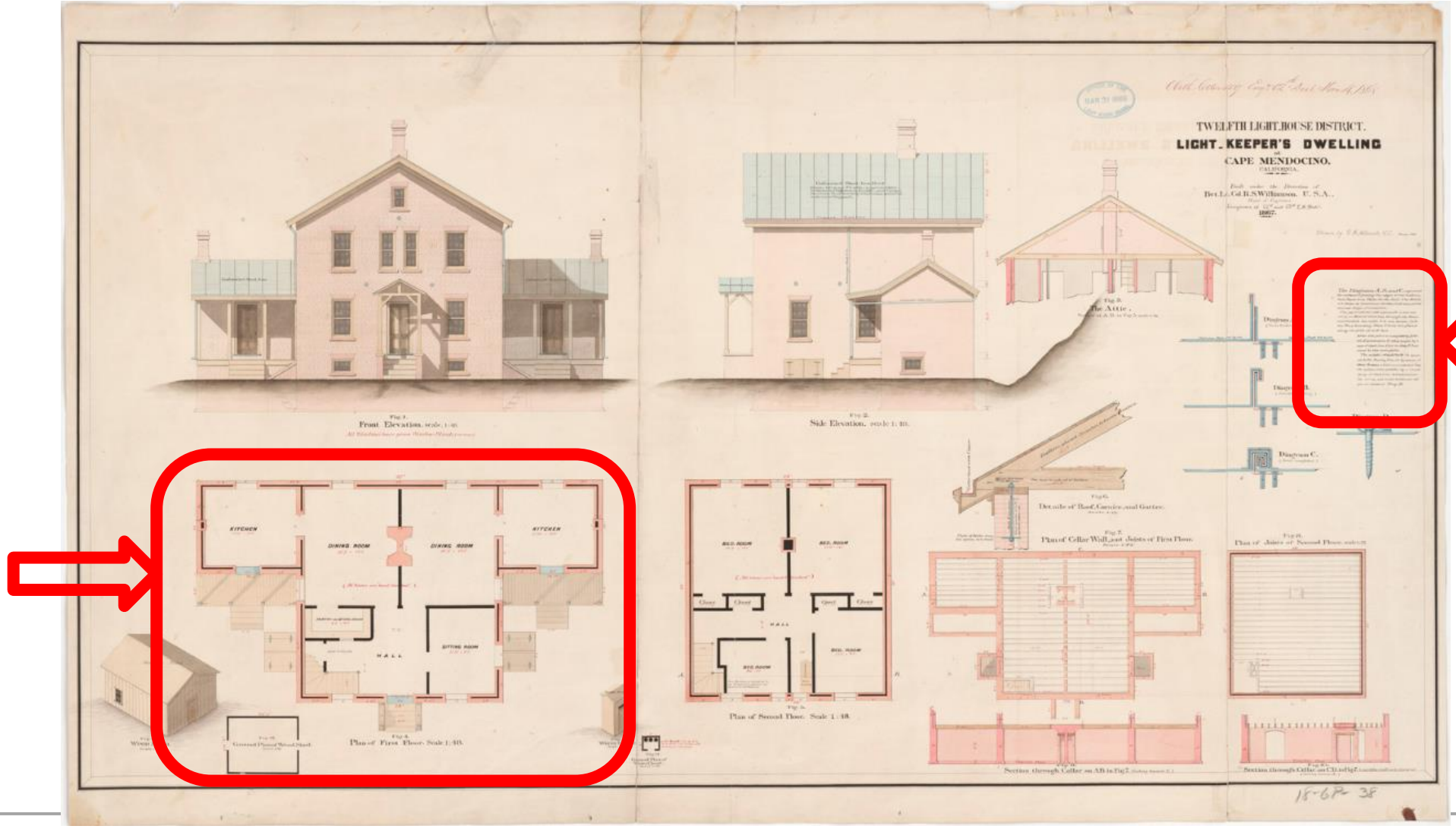


Project Setup: Details

- Project Details is your place for your information
  - Every field is optional!
- Power-up: Work internationally?
  - You can use any of our building standards!

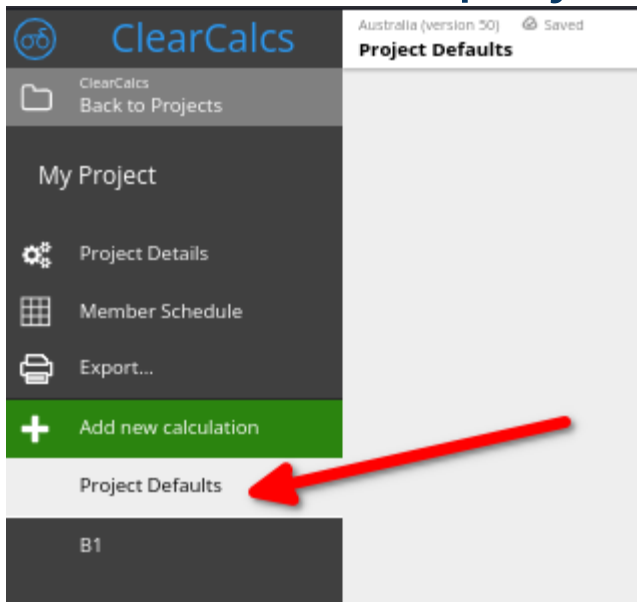


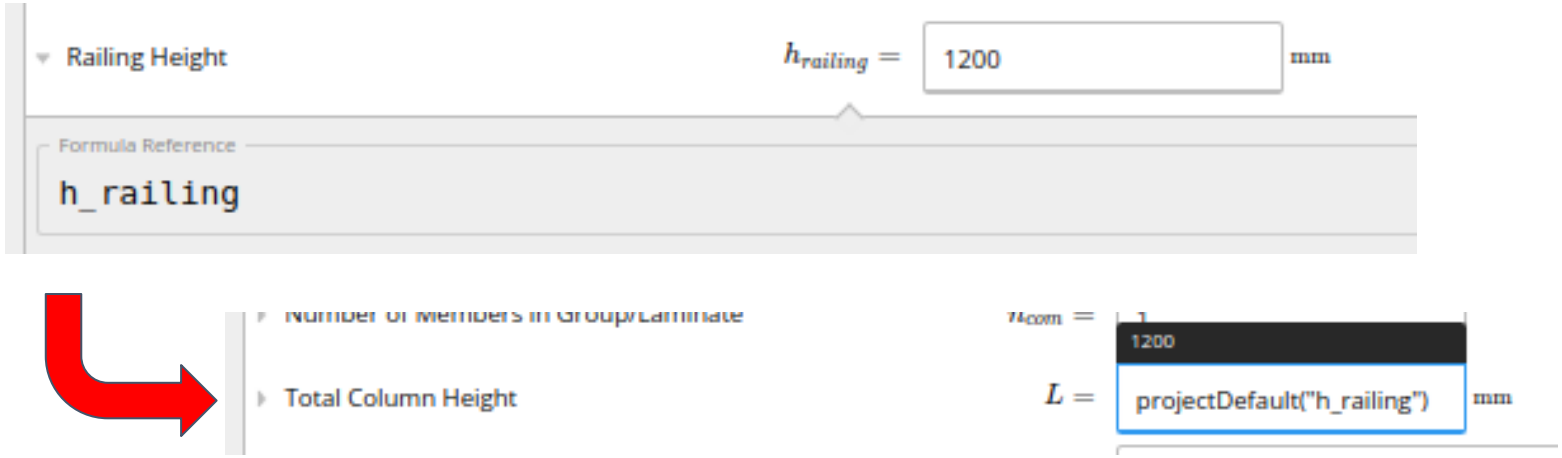
Loads & Overall Geometry



Loads & Geometry: Project Defaults

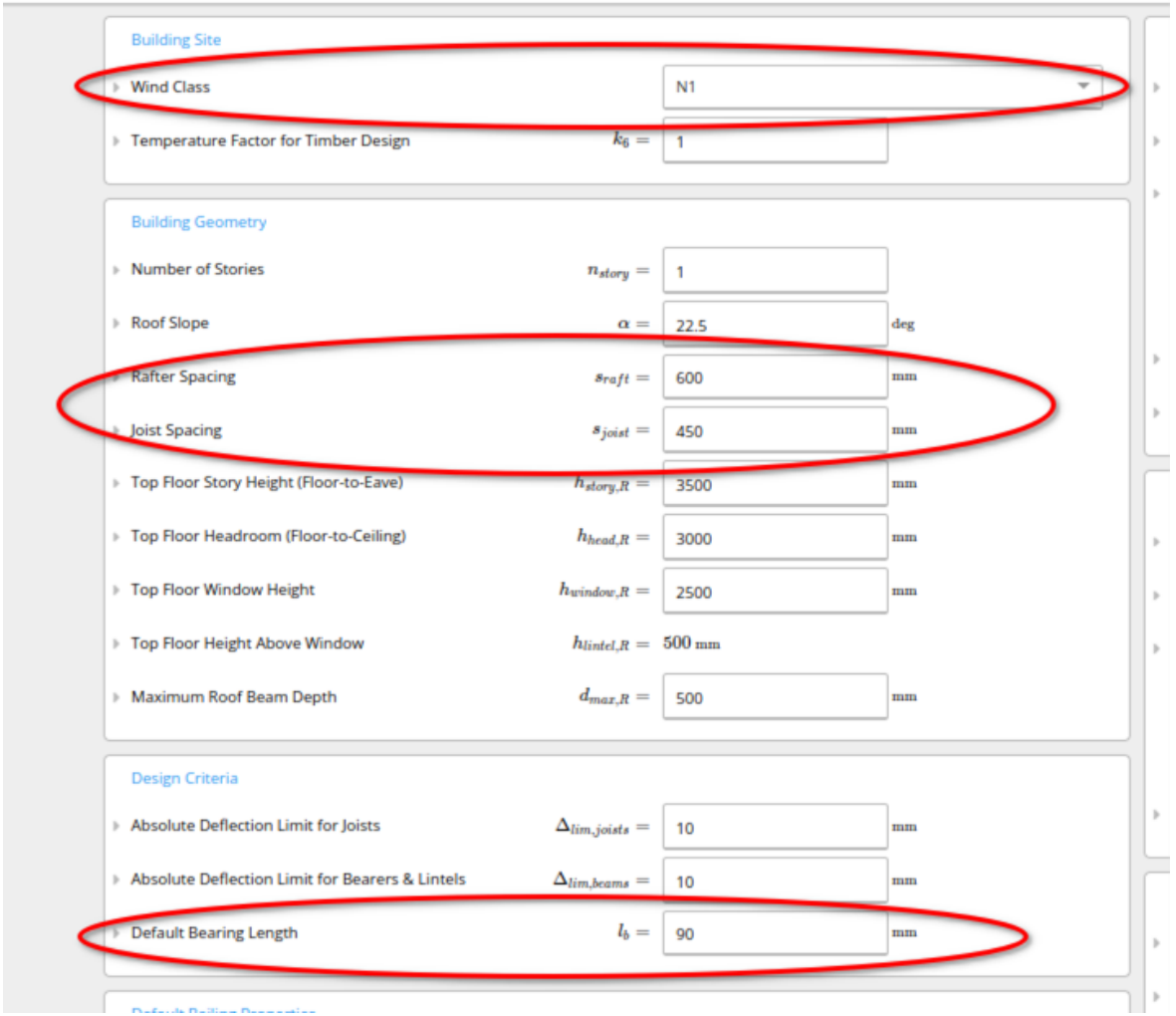
- Project Defaults is just that - defaults
  - Almost everything can be overridden
  - Makes your life easier to avoid re-entering the same numbers
- Power-up: Use any project default, anywhere in calcs
  - Use the projectDefault("*Formula Reference*") function





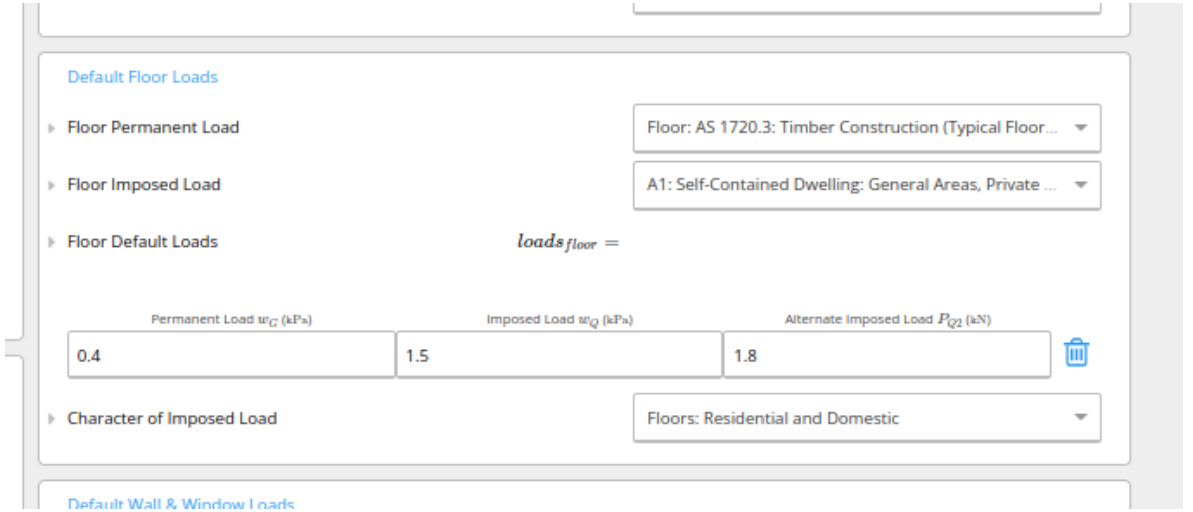
Loads & Geometry: Overall Geometry

- Rafter / Joist Spacing
  → load widths & restraints
- Bearing Length
  → all beam supports
- Headroom
  → stud height
- Height Above Window
  → lintel load width
- Power-up: Work in QLD?
  - Set you k_6 factor only once here!

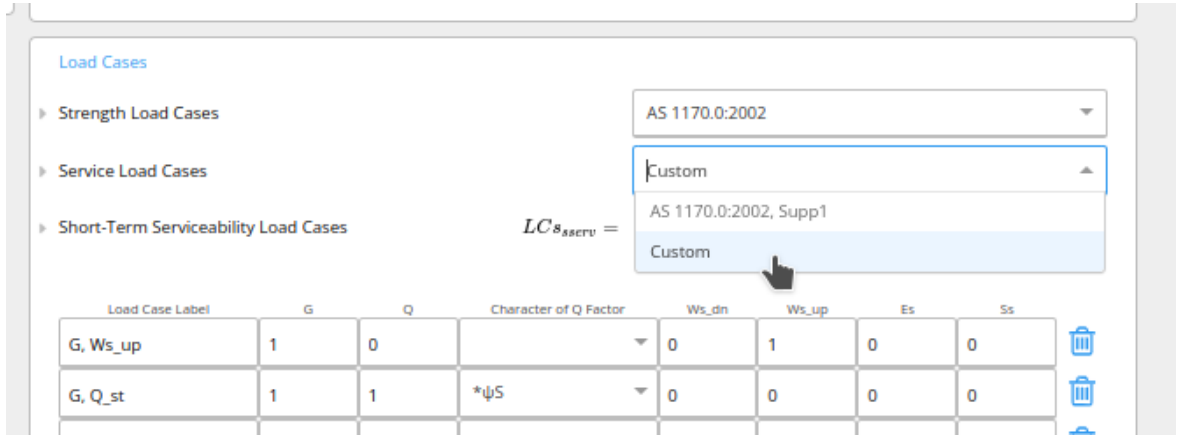


Loads & Geometry: Loads

- Default loads get passed on to new calculators you create
  - Roof, floor, and wall sections
  - Set *either* the dropdowns *or* the manual table

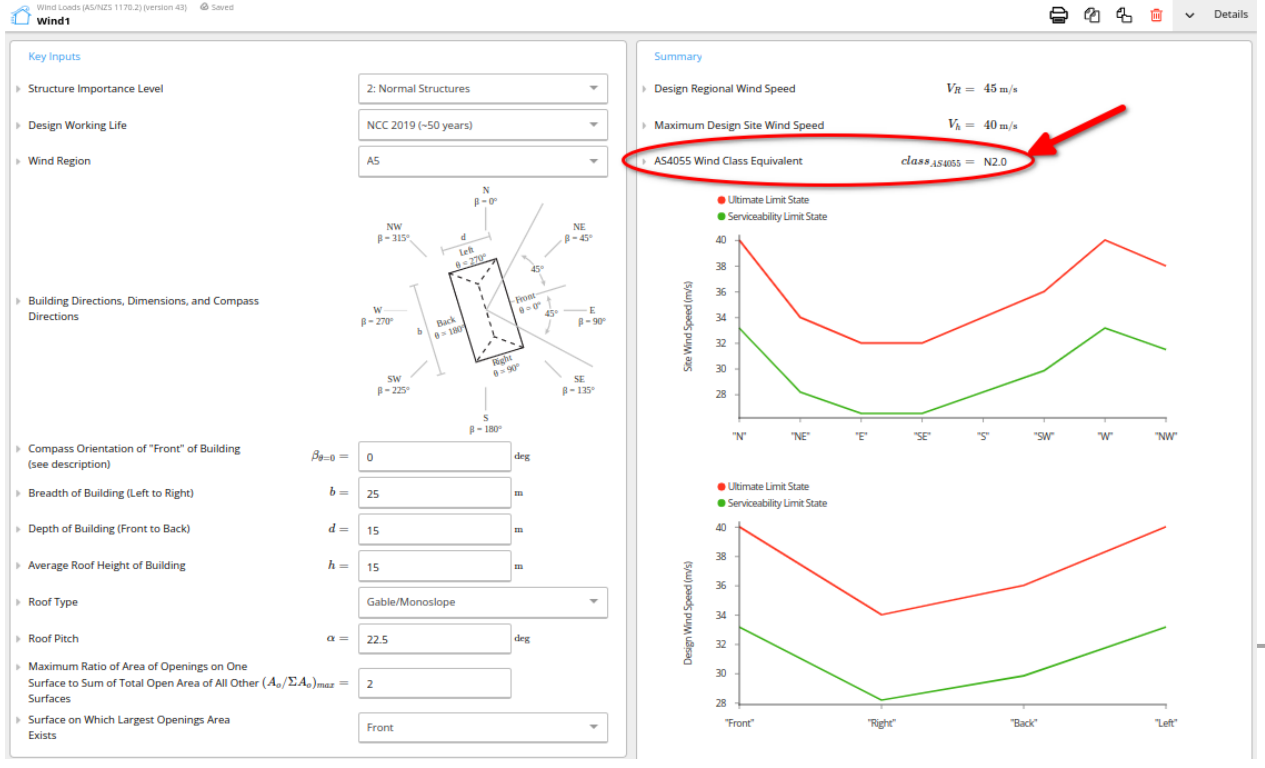


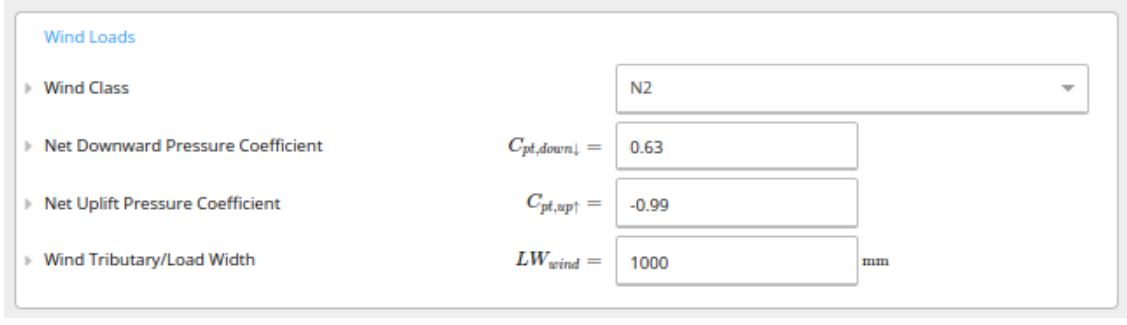
- Power-up: Have special serviceability checks?
  - Set custom load combinations!



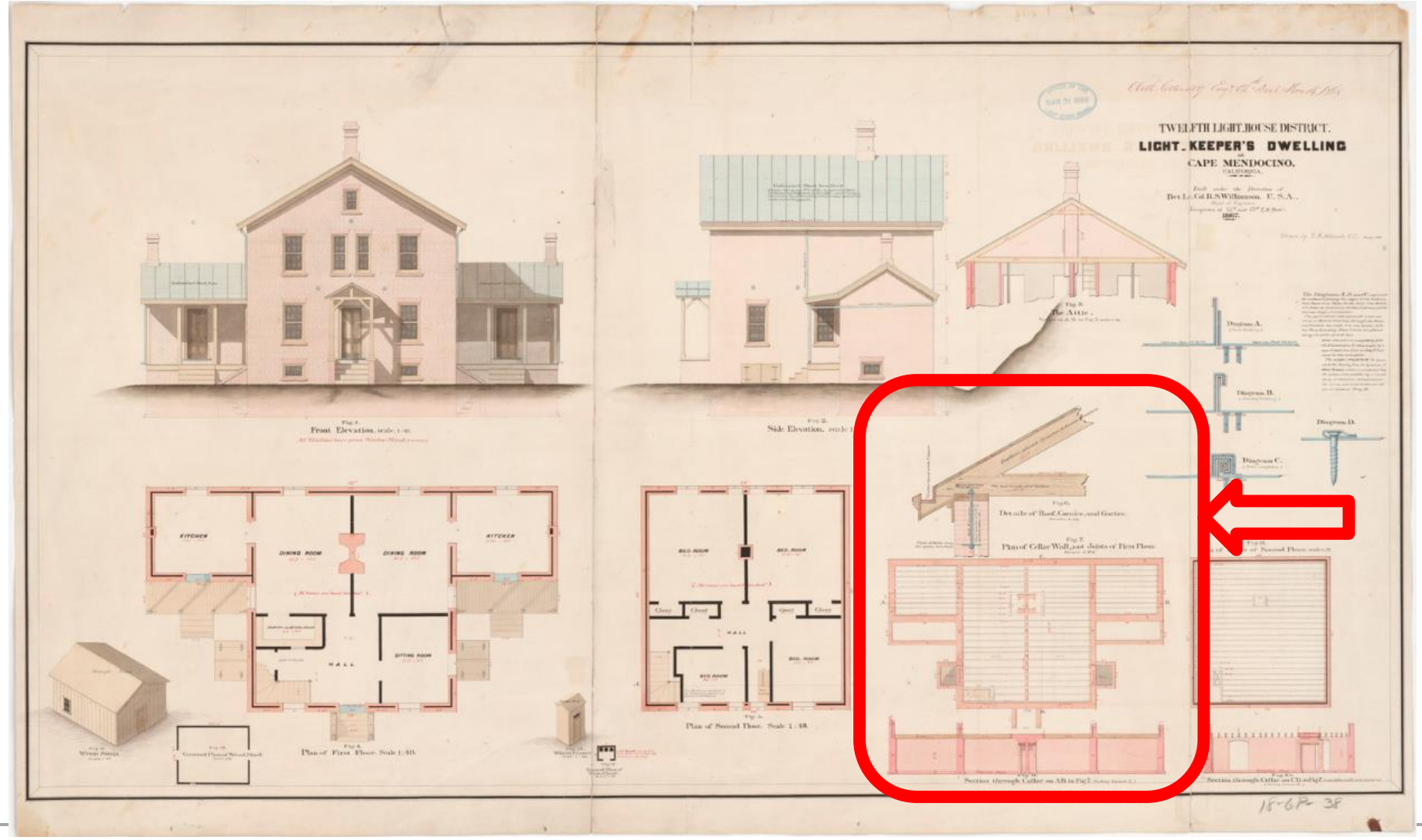
Loads & Geometry: Wind Load

- Two options:
  - 1. AS 4055 class
  - 2. Full AS 1170.2 calculation
- Power-up: Use 1170.2 for a more accurate 4055!
  - Refer to the “AS 4055 Equivalent”, set that in Project Defaults



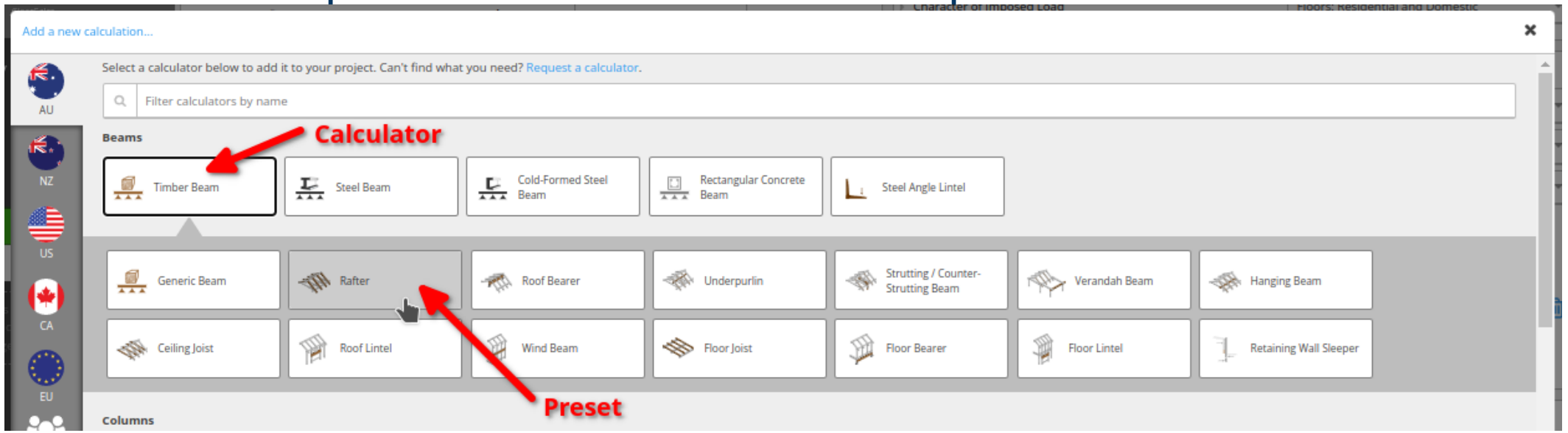


Identifying Members for Design

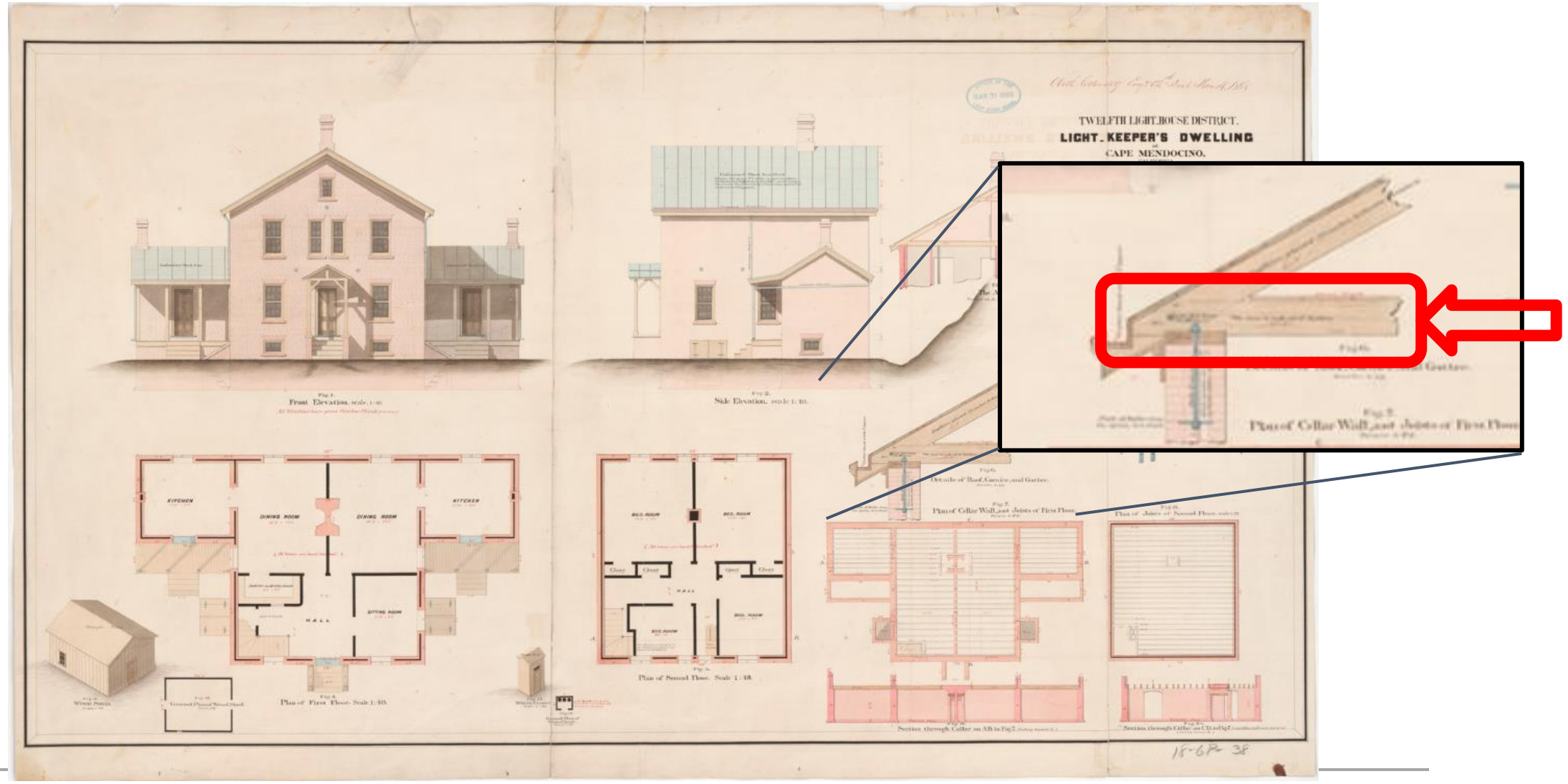


Identifying Members: Presets

- Most calculators in ClearCalcs have “presets”
  - It’s the same calculator - the engineering standard is the same
  - But preloaded with the most common inputs and your project defaults
- Power-up: Don’t see what you need?
  - Click “Request a calculator” and we can prioritise it!

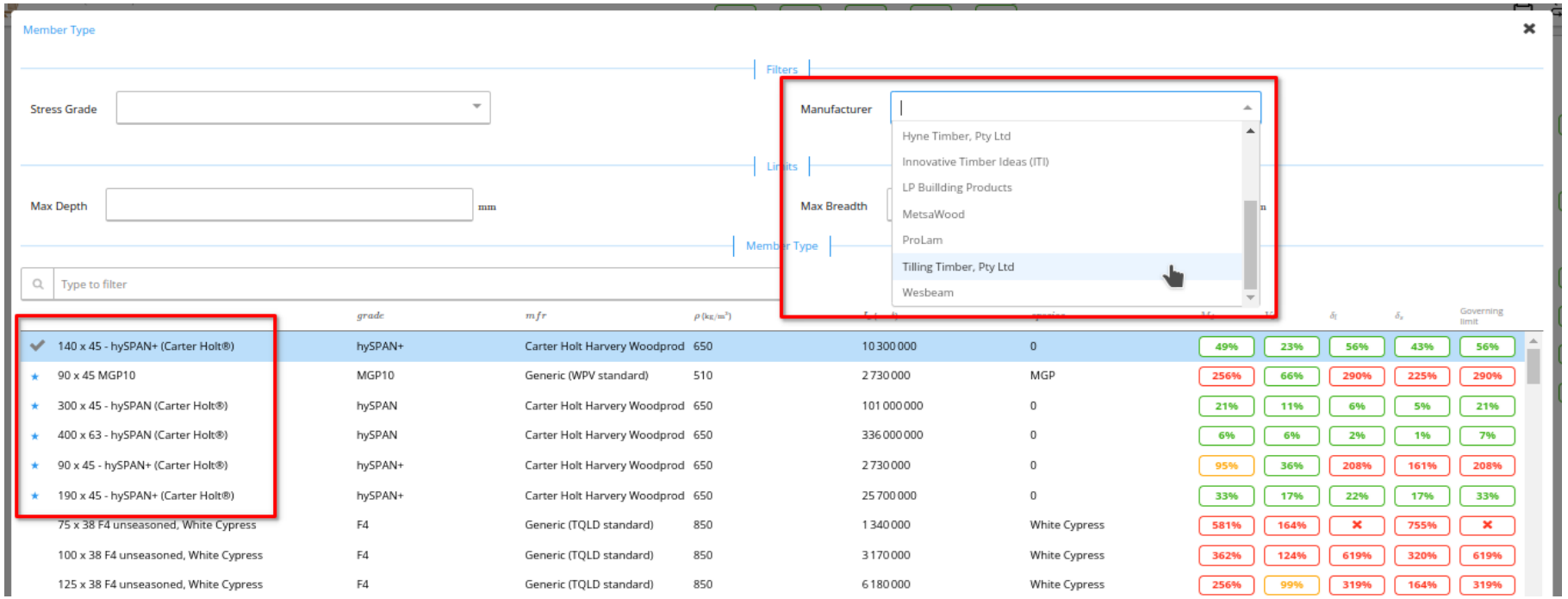


Sizing Members Optimally



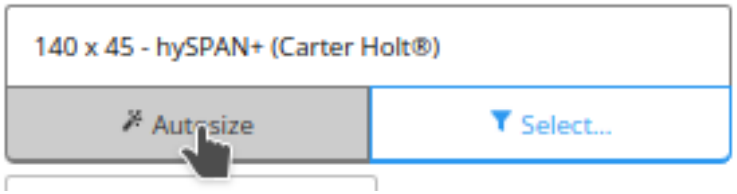
Sizing Members Optimally: Selector

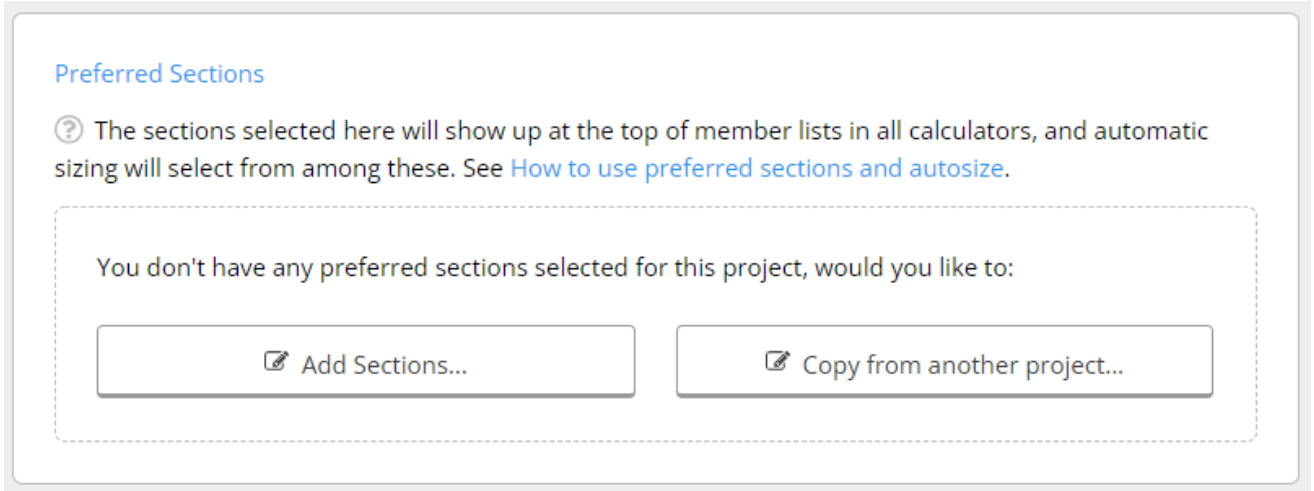
- Member Selector gives a quick view of every section
  - Filter it down by size, manufacturer, and more
- Power-up: Frequently use the same sections?
  - Set them as “Preferred Sections”, and they’ll be at the top of the list!



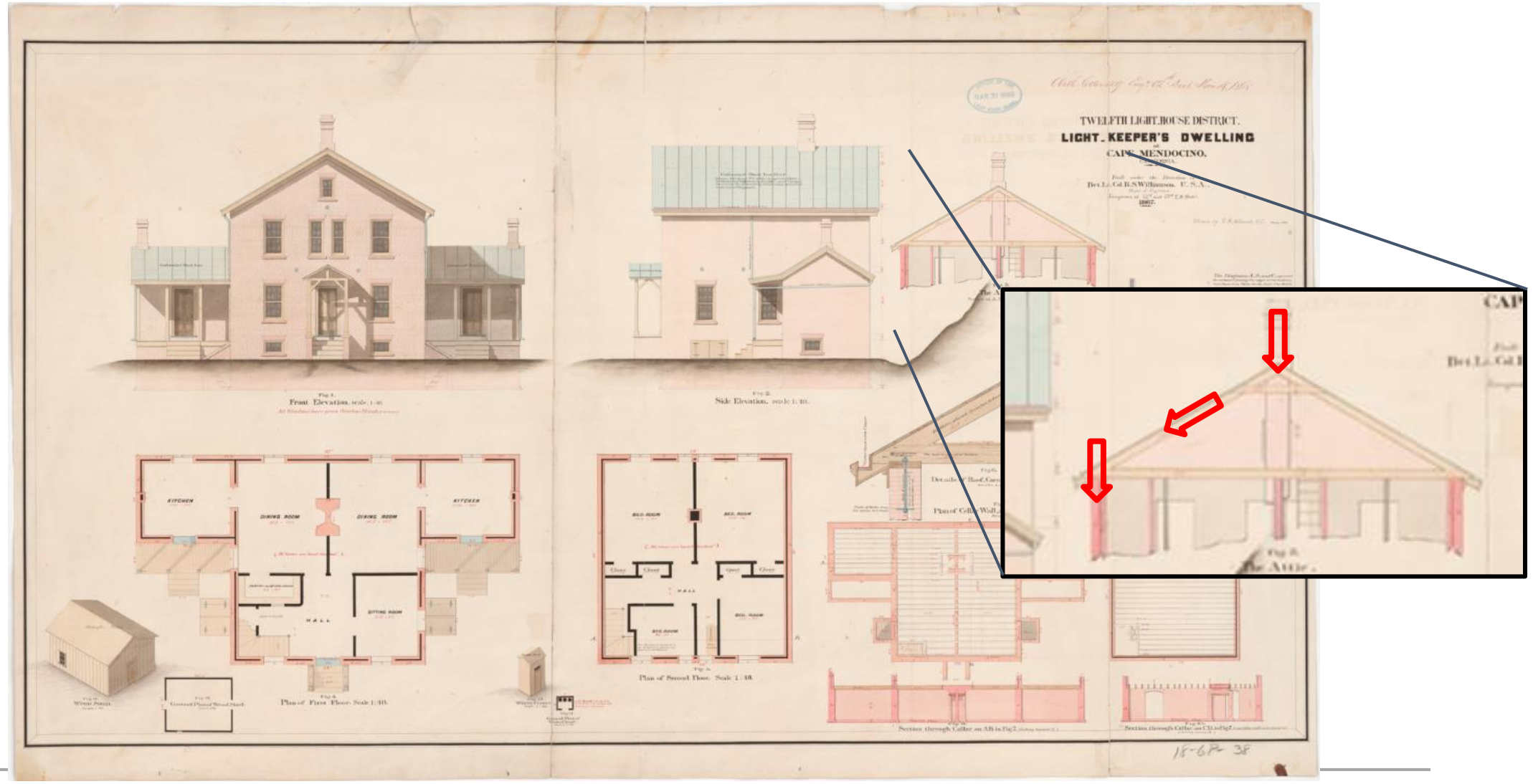
Sizing Members Optimally: Autosize

- Set your “Preferred Sections” on the Project Details page
- Skip the Member Selector entirely and one-click “Autosize”
  - ClearCalcs automatically selects the most structurally efficient section
    - = section closest to 100% utilisation without exceeding 100%
- Power-up: Same preferred sections as a previous project?
  - Just copy your preferred sections from it!



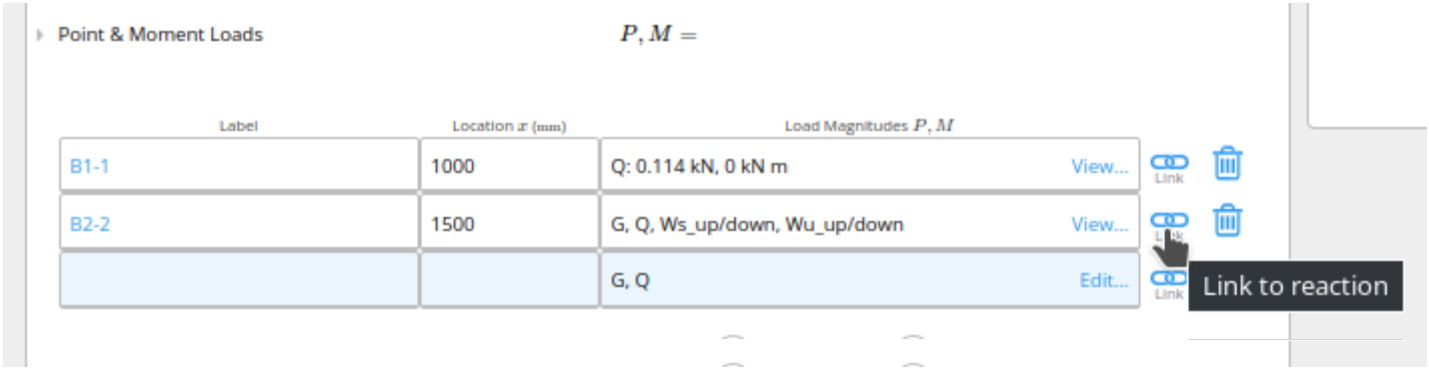


Following Your Load Path

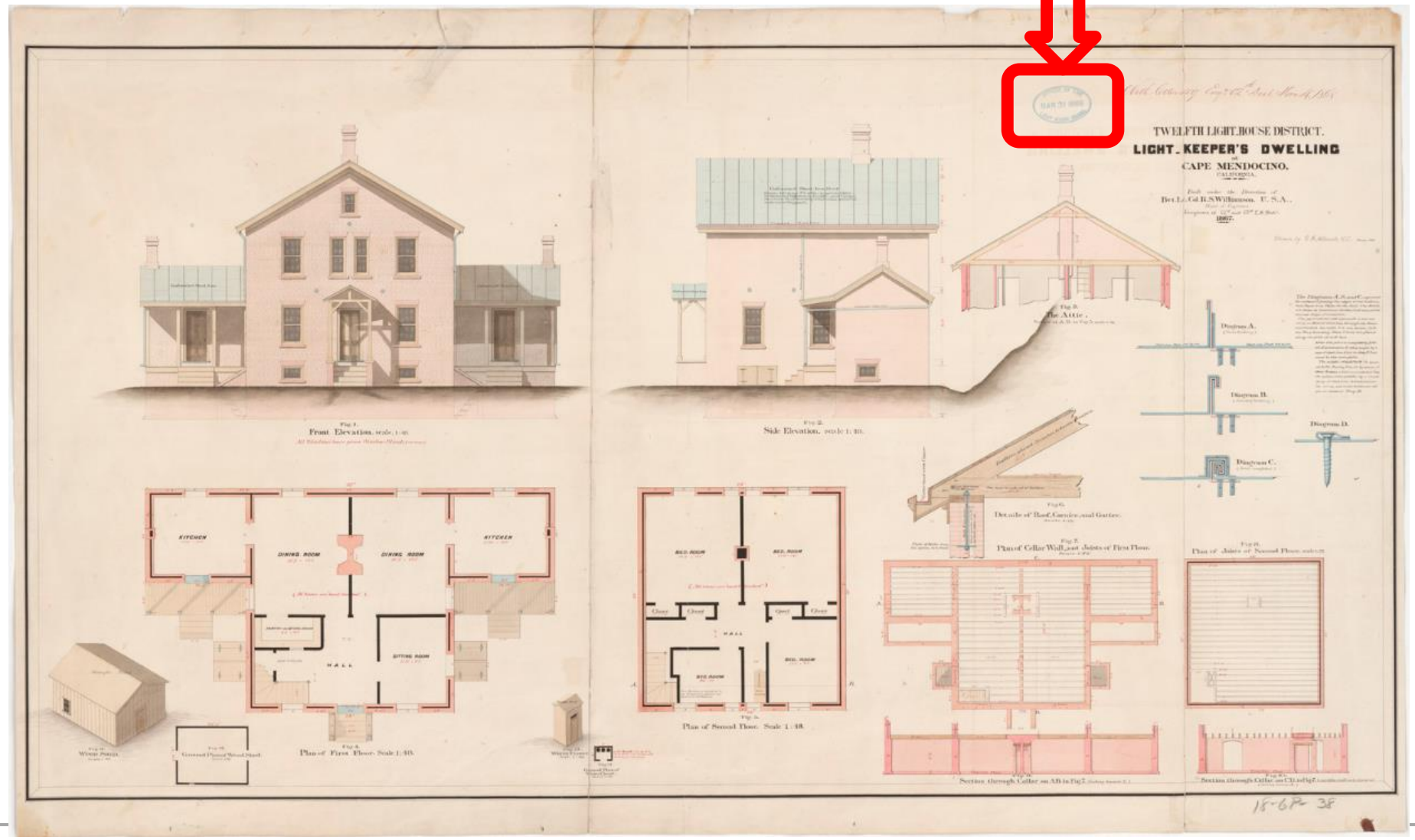


Following Your Load Path: Linking

- Copy-pasting numbers is a waste of time
- Instead, click the chain (Link) icon to link to another calculator
  - Results will automatically update if you change upstream sheets!
- Power-up: The sky's the limit!
  - You can create long and complex chains of load linking. ClearCalcs will still automatically update everything
  - (well, maybe the foundation's the limit actually)

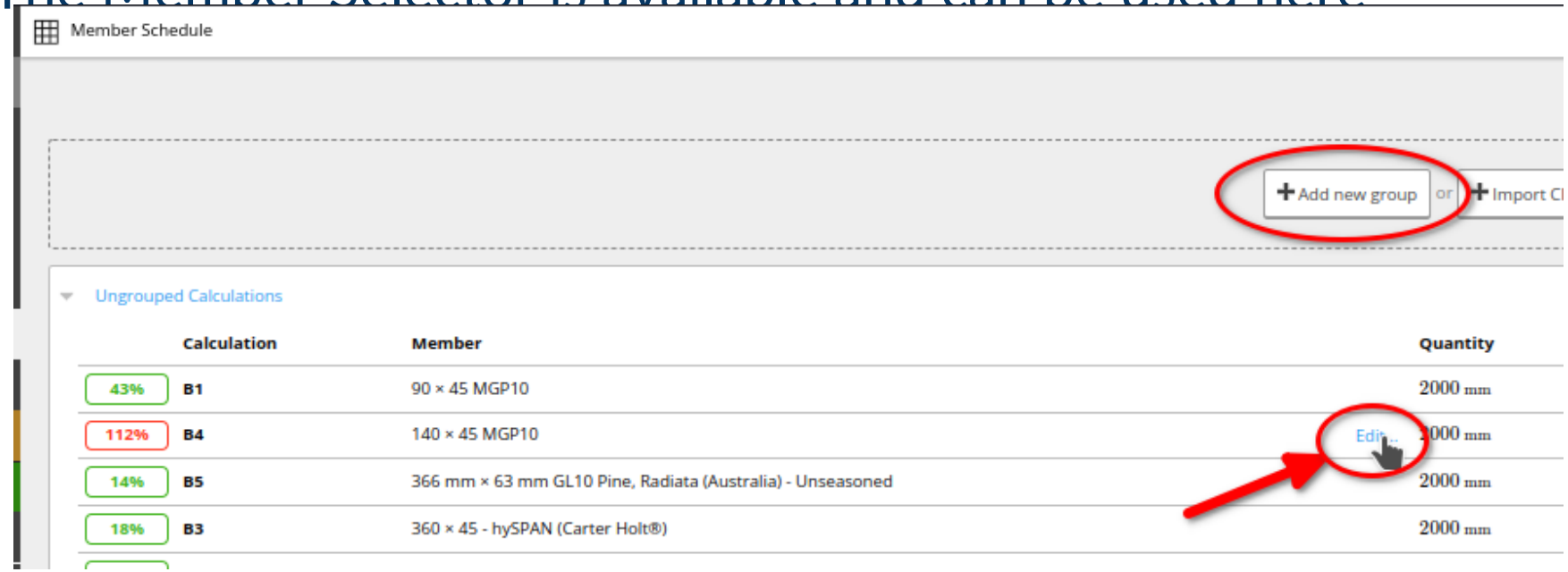


Submitting Your Work



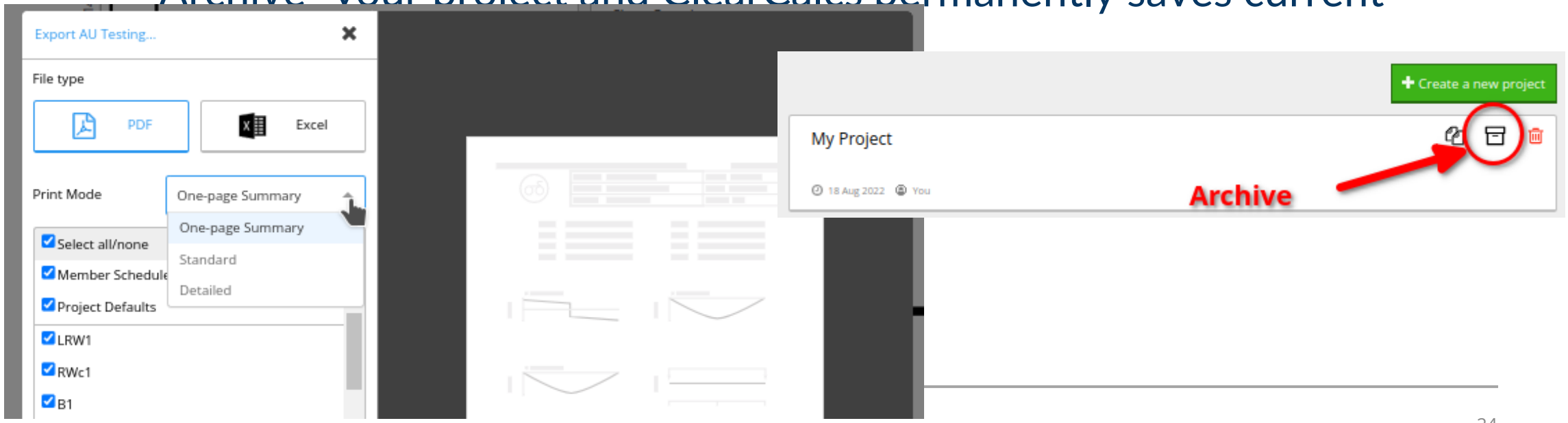
Submitting Your Work: Organising

- Review everything designed in the Member Schedule
  - And re-order or organise the calculations into groups
- Check the quantity of every section type in the Quantity view
- Power-up: Make quick changes here too!
  - The Member Selector is available and can be used here



Submitting Your Work: Printing

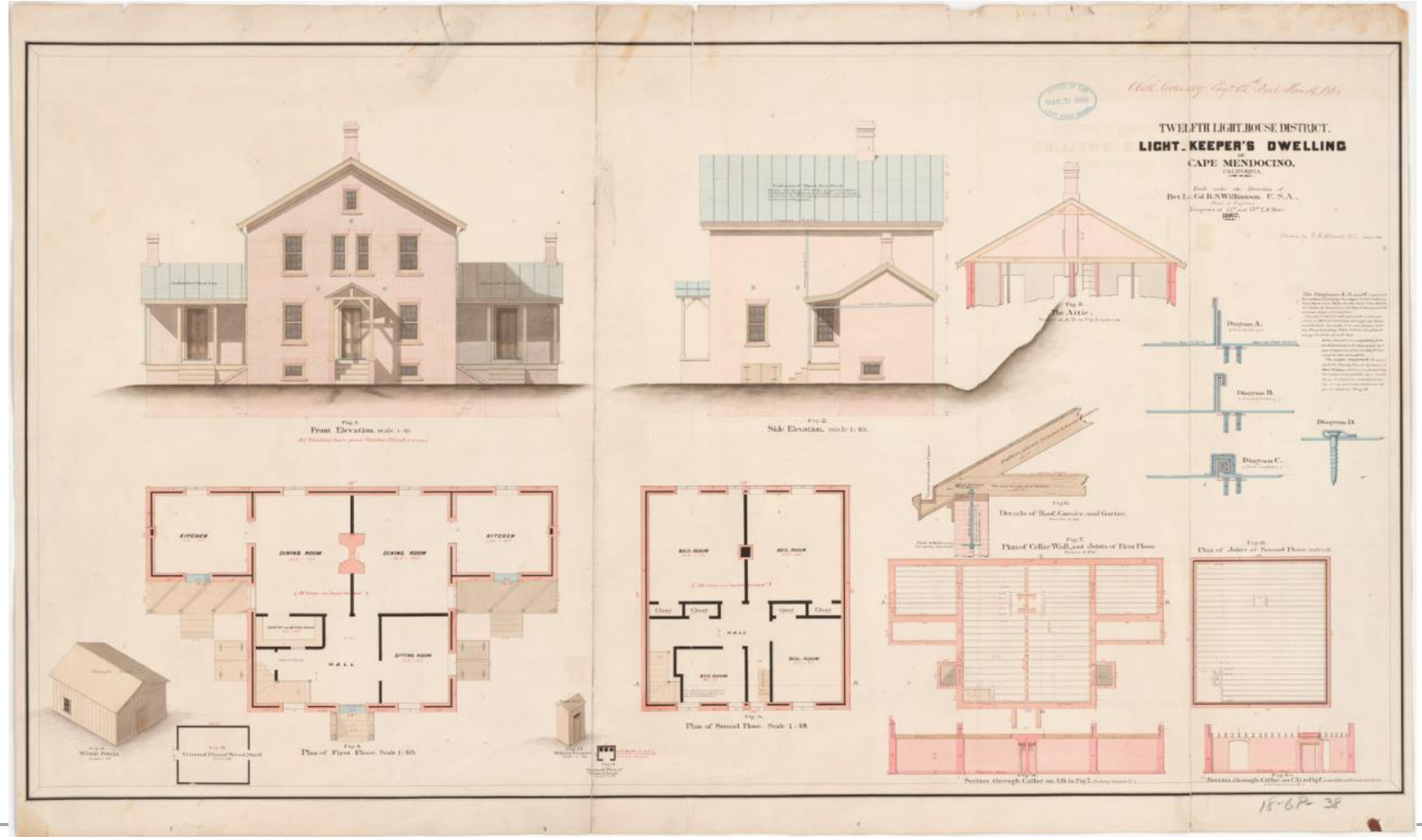
- Ready to submit your work?
- ClearCalcs offers 3 print modes: 1-page, standard, or detailed
  - If you need to justify your fee, just send the detailed calcs!
- Headers are based upon your Project Details
- Power-up: Finalised your project?
  - "Archive" your project and ClearCalcs permanently saves current



Worked Examples

How does the workflow look like in ClearCalcs

Light Keeper's Dwelling



ClearCalcs

Questions?

Appendix

About ClearCalcs

Happy Engineers Using ClearCalcs

ClearCalcs has been used in 4,500,000+ designs by a growing number of engineers across the globe.

"You are light years ahead of the competition on features and ongoing growth."

Don C.
Foundation Engineering Specialists, LLC

"Why didn't you just use ClearCalcs for that?"

Helen W. via Landon R.
Criterium Engineers

"The program basically does the work for you...Wow, I can finally throw away the last of my spreadsheets!"

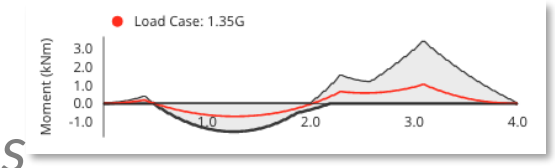
Jason M.
J. Michael Engineering, PLLC

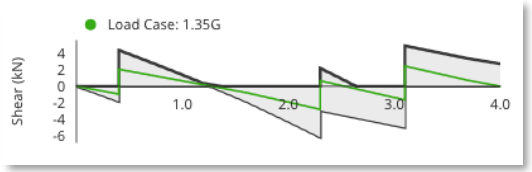
The ClearCalcs Team

A growing team of passionate engineers, programmers, customer success specialists, product managers, marketers, and more!

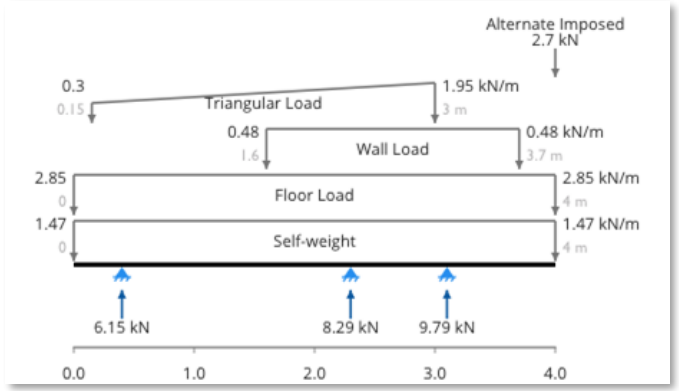
What Sets Our Calculations Apart

- **Live solutions**
  - *Instantly see how every change you make affects the design, in all load cases*

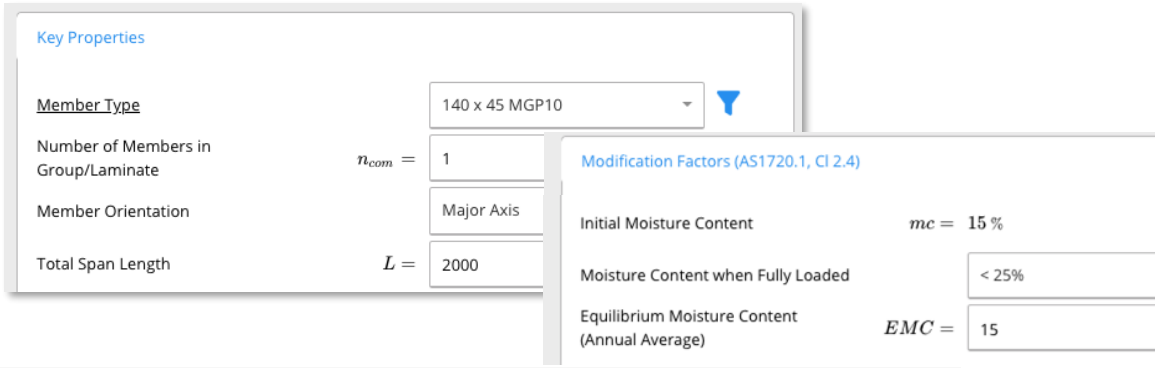




- **Finite Element Analysis**
  - *Get the most accurate results no matter what your configuration*

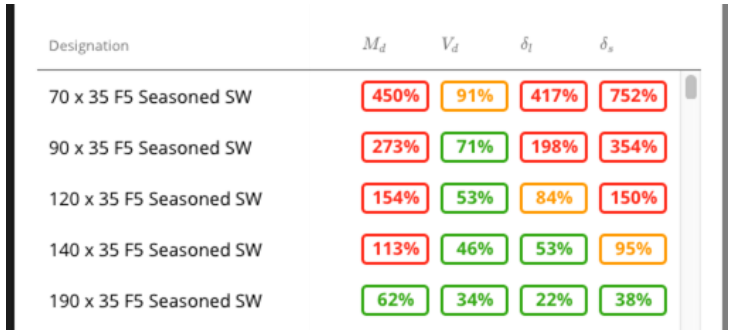


- **As simple or complex as you want**
  - *Safely enter in only a few properties, or tune every parameter – it's up to you*

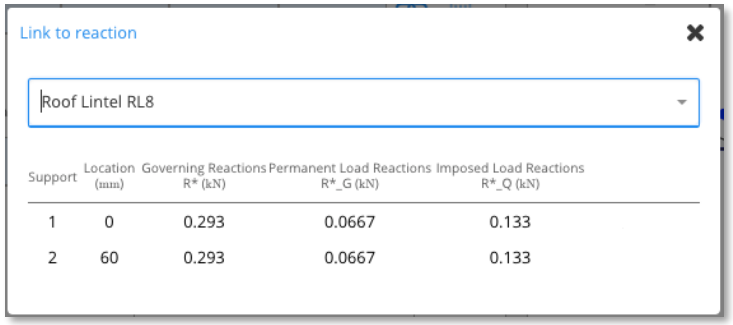


What Sets Our Design Process Apart

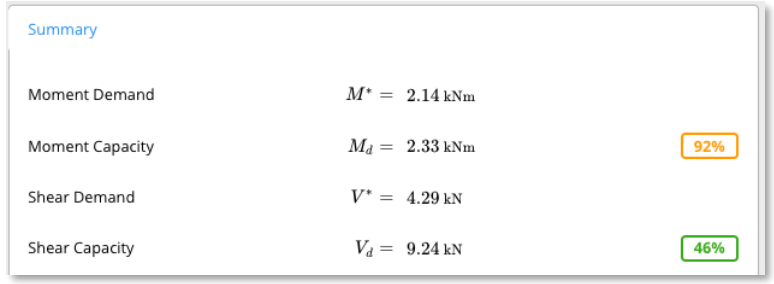
- **Member selector**
  - *Check every possible member in seconds*



- **Link your loads**
  - *No need to manually copy reactions into the next sheet – just create a link*

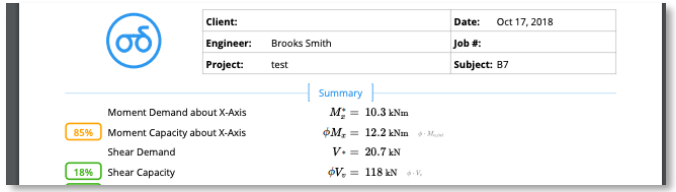


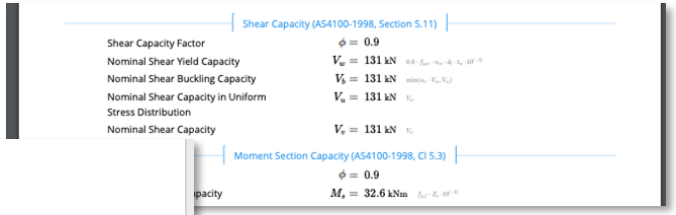
- **Simple traffic light indicators**
  - *See at a glance how close your design is to perfection*



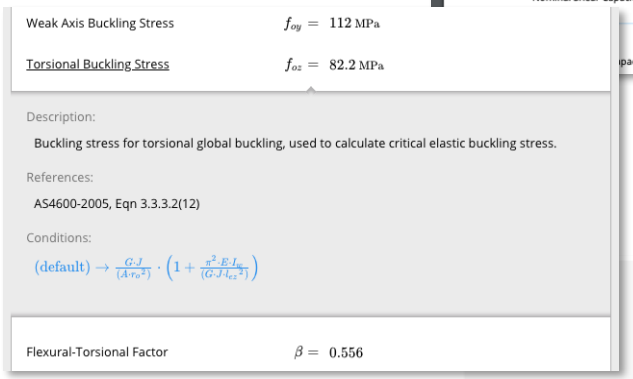
What Sets Our Platform Apart

- **Clean, clear printouts**
  - *Beautiful results your clients can understand*

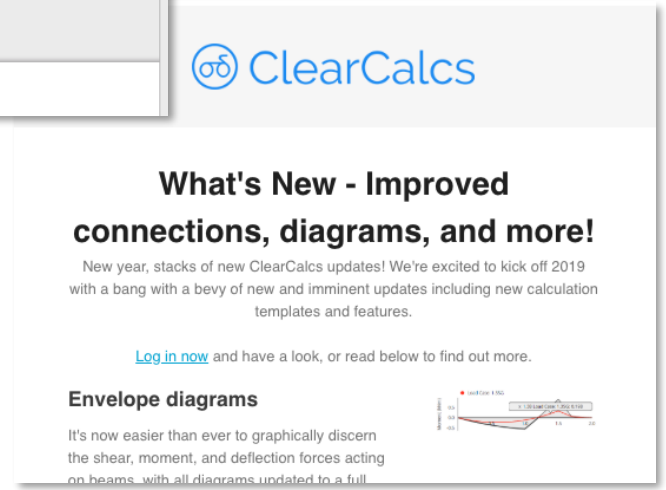




- **See full detail for every field**
  - *References, equations, and more*



- **Rapid product updates**
  - *Receive new features and calculations within days, not years*



Key Advantages

ClearCalcs is designed for the modern efficiency focused engineering practice

More accurate results.

Get far better quality and efficiency than spreadsheets with highly accurate FEM calculations and dynamic load path tracking between members.

Easy to understand.

Work faster and impress clients and checkers with professional, easy to understand calculations and quick export to PDF.

Never lose work again.

ClearCalcs was built in the cloud. That means we automatically save your work as you type and keep it securely backed up on our servers.

Help when you need it.

Need help? Our customer support is built right in to the platform. With a single click you can talk to one of our talented engineers.

Save time.

Our wide range of templates and easy linking, duplication, and export are all designed to help automate creation of repetitive calculations.

Always have access.

Shared licenses and lock-outs are a thing of the past! Our simple pricing model makes it easy to give everyone access to ClearCalcs when they need it.

Easy collaboration.

No more USBs or sending files over email! Everything is shared inside ClearCalcs so you can easily collaborate on projects.

Upgrades are always free.

We added over 250 updates to ClearCalcs last year. All of our users had them as soon as they were released, and we didn't charge them a cent extra.

Mobile. Tablet. Desktop.

ClearCalcs was designed to work on any modern device. Nothing to download or install, all you need is a web browser.