eco panels®

A NEW ERA IN BUILDING TECHNOLOGY

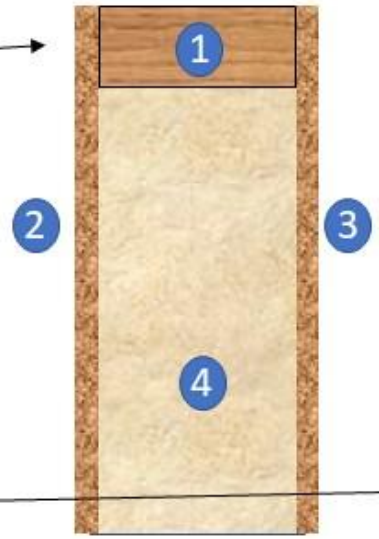
"This is the most advanced structural insulated panel on the market today" – US Dept of Energy building scientists

Working with Eco-Panels and General Design Guidelines…

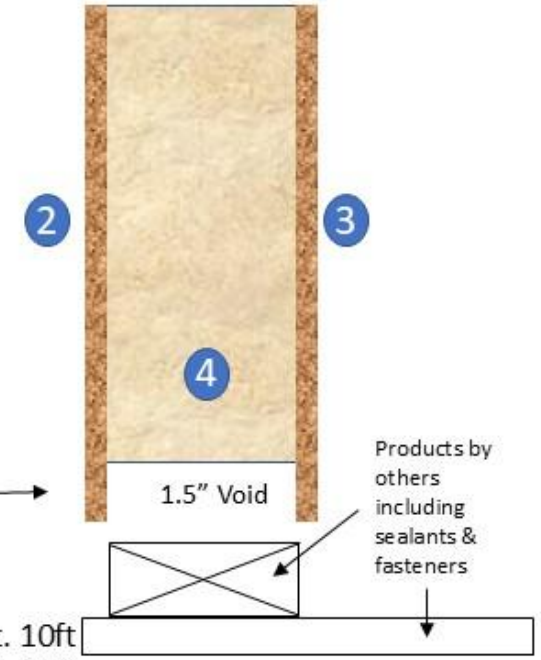
Eco-Panels "Standard" Types of Wall Panels

(9ft Tall Panels Shown Below, 8ft, 9ft & 10ft are typical)
Typical width, anywhere from 24" to 48"

Top of Panel Cross Section View (typical)



Bottom of Panel Cross Section View (typical)



Primary Components

1. 2x4 for 4.5" thick panel - ~R26, typ. max ht. 10ft
   2x6 for 6.5" thick panel - ~R40, typ. max ht. 16ft
   2x8 for 8.25" thick panel - ~R52, typ. max ht. 16ft
2. Exterior "skin" – 7/16" Oriented Strand Board, PS2 grade, APA rated
   - Alternative skin #1 – Huber ZIP System 7/16" sheathing
   - Alt. skin #2 – LP Smartside Panel 7/16" finished siding panel
3. Interior "skin" – 7/16" OSB (will be typically covered by sheetrock)
4. INJECTED closed cell polyurethane HFO blown foam core – no add'l adhesives req'd.
5. Cam-locks typ. embedded on vert. edge @24", starting 12" from base & 12" fr. top.
6. Pre-framed rough openings using 2x framing members as req'd by design.

Eco-Panels manufactures custom panels every day, but when customers can design a structure using only "STANDARD" panels, they can realize savings in job cost, labor cost and general overall efficiency of building the structure.

Eco-Panels Special Configuration Panels

a. Half-window Panel
(rarely used)

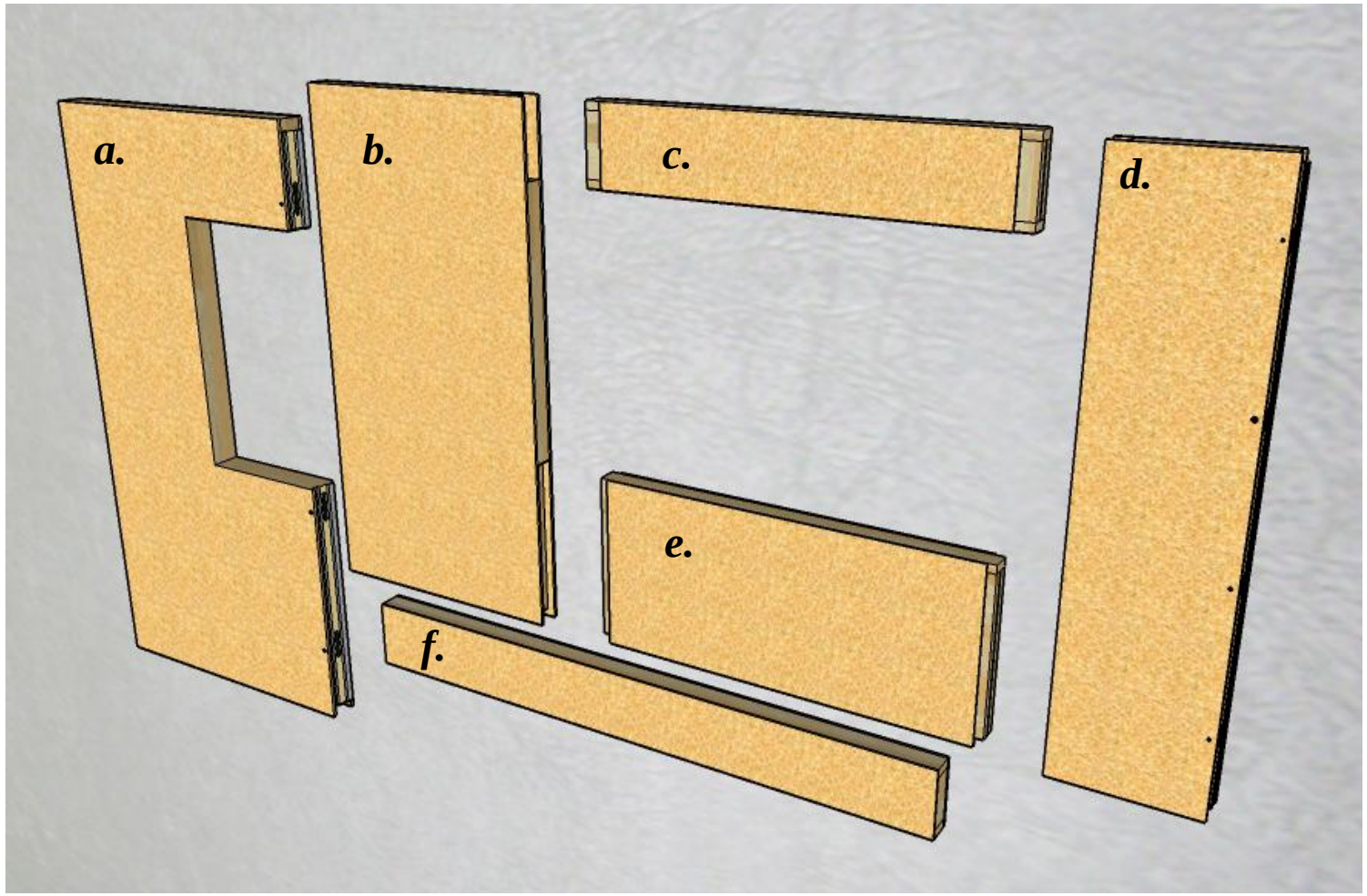
b. Left Notch Panel
(supports header/footer panels from the left side)

c. Header Panel
(may contain embedded structural members if req'd)

d. Right Notch Panel
(supports header/footer panels from the right side)

e. Footer Panel

f. Rim Board Panel



Typical Section Details

Always consult local code requirements and your local building professional before finalizing details

Please see www.eco-panels.com/section-gallery

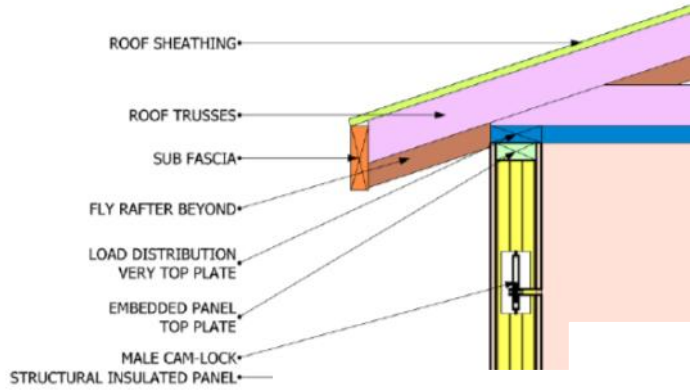
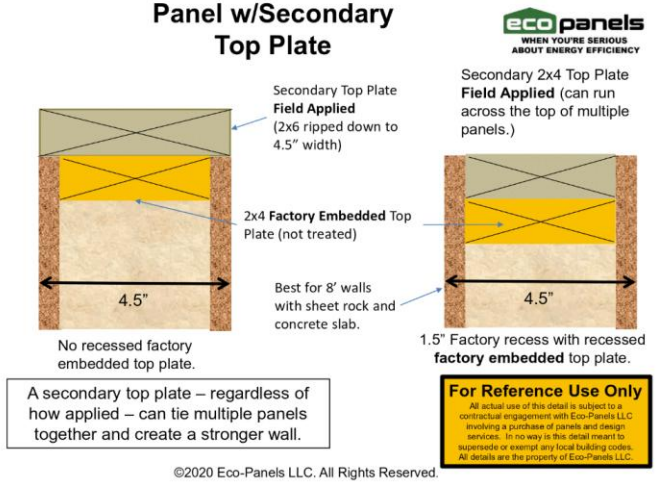
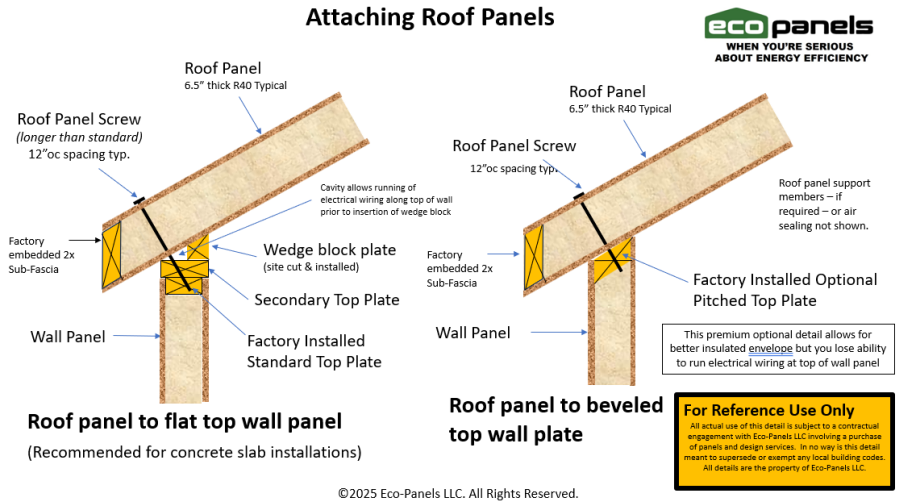
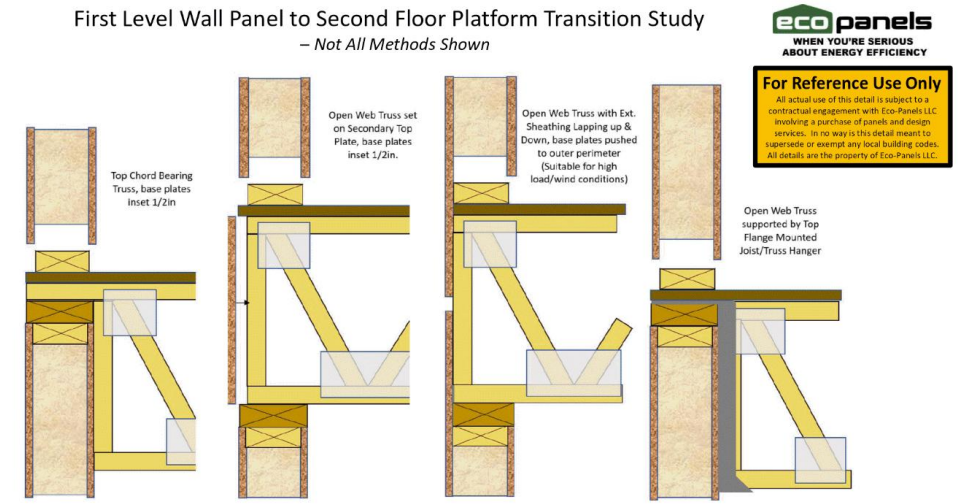
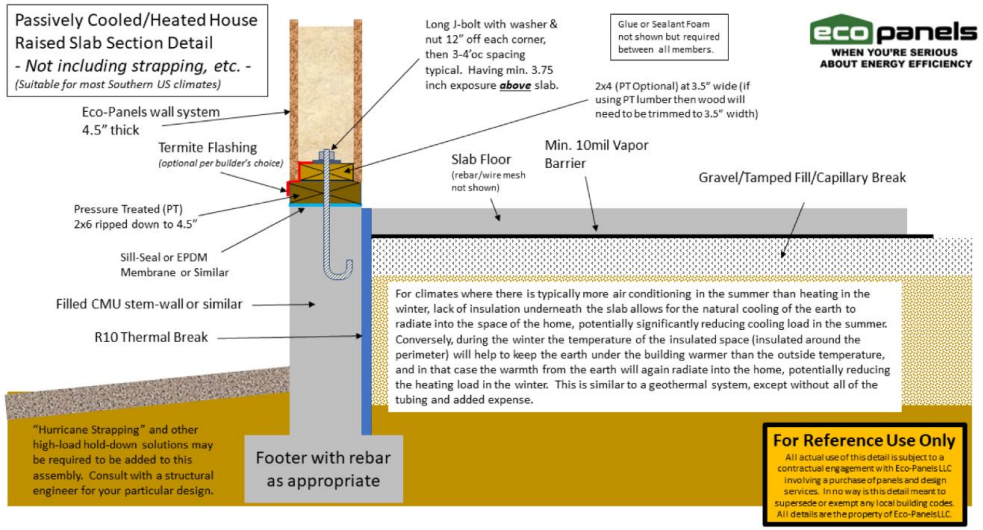


Figure 4e Typical Two Story Building Structure Assembly Detail at the Roof





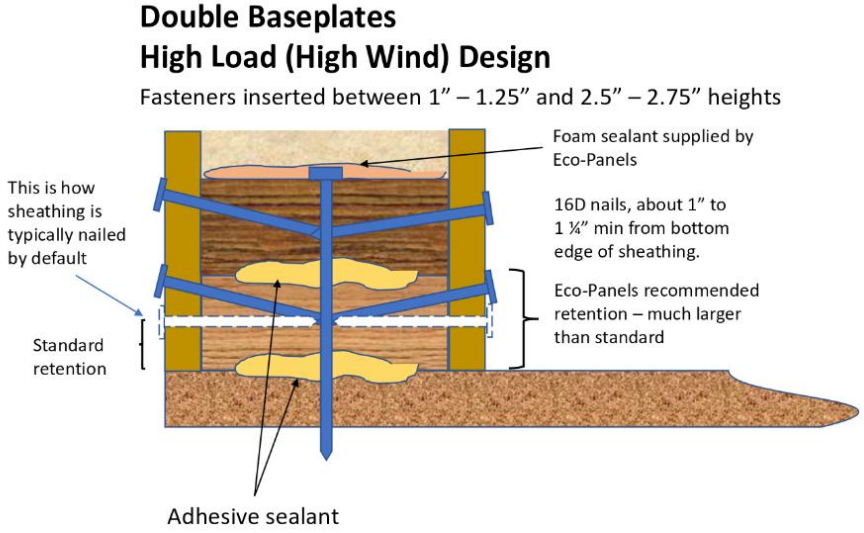


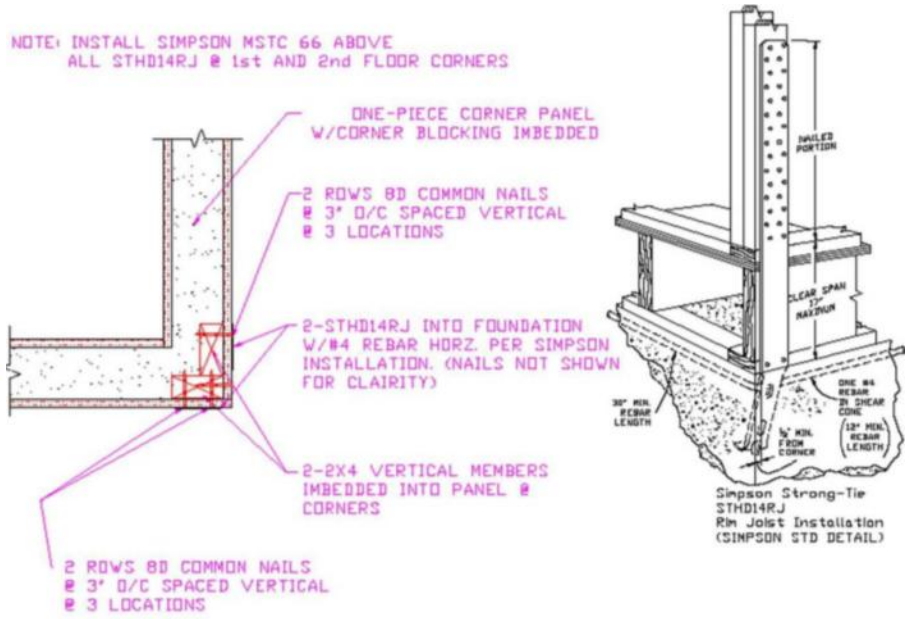


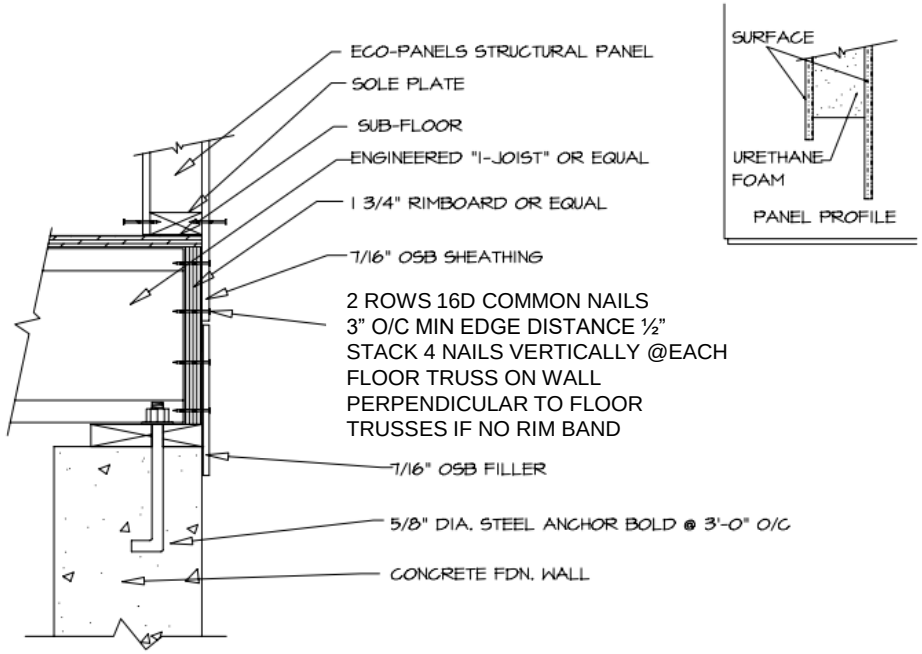
Please see www.eco-panels.com/section-gallery

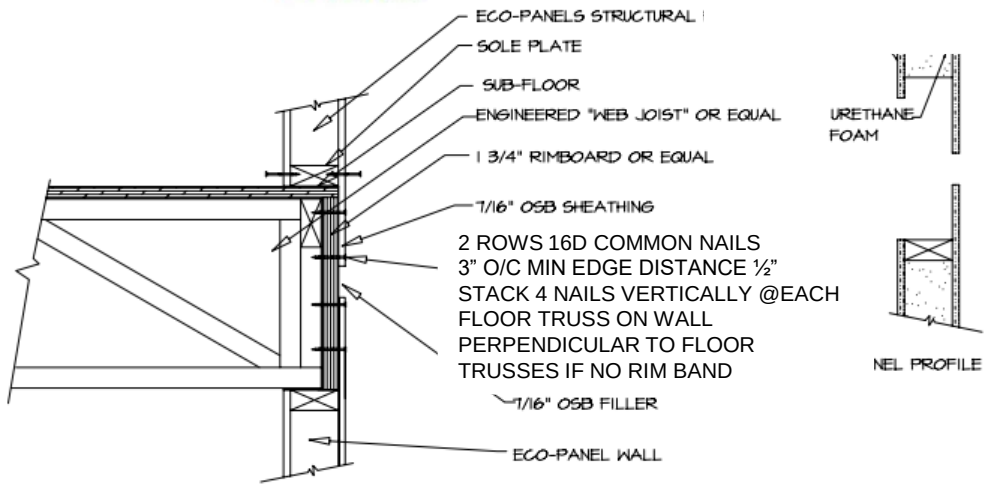
"High Load" Misc. Section Details

(Often used in high wind/coastal /seismically active regions)









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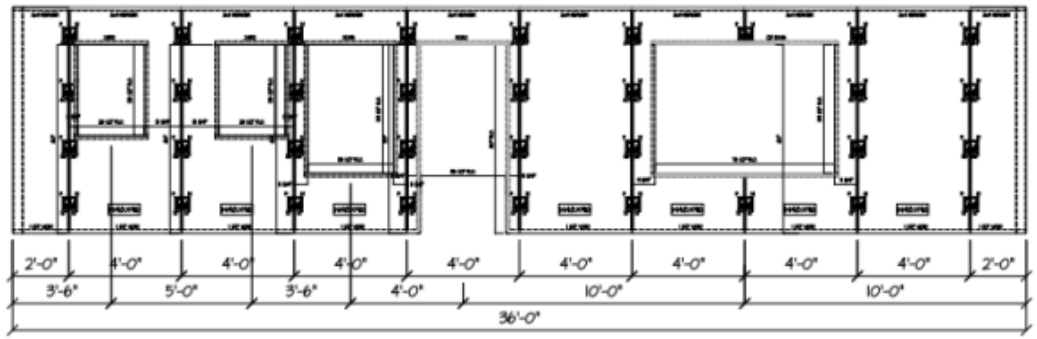
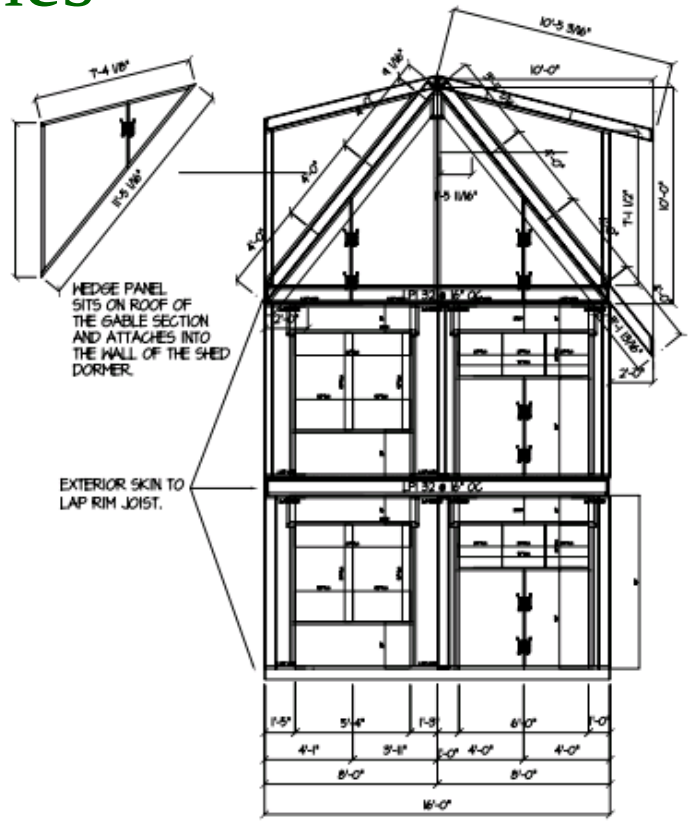
General Design Guidelines





- Points to consider in design for Wall Panels:
  - Structural guidelines for panels generally follow stick-frame guidelines as far as building code is concerned for wall heights and number of stories for a building.
  - Note how windows do not have to be centered within a 4’ panel
  - Panels can be from 8”-48” wide, but narrower panels cost more/sqft
  - Max window rough opening (RO) for 4’ wide panel is 36” wide – else migrates to 2+ panels
  - Door RO can be 38” wide (38”x83.5” would be standard exterior door)
  - For large windows (5’+) headers should be at least 12” deep - may be >12” if wider spans
  - Window openings wider than approx 6’ would have dedicated headers and footers embedded within hdr. panel
  - Try to keep panel height dimensions equal to even panel length – 8’, 9’, 10’, 12’ or similar – don’t forget a secondary top plate will add 1.5”.
  - Typical wall panel thickness is 4.5” (R26 at 52deg F). Some higher end homes, or colder regions, may choose to go with 6.5” thick panels (R40 at 52degF).
  - Each leg on a corner panel typically varies from 8” to 24. Corner panels may have a “variable joint” on one leg to allow for floor platform variance.
  - Electrical boxes with chase running either up or down can be pre-installed as required – you tell us where to put them during design review.
  - Tolerances are typically around 1/8-1/4” at panel level and ½” across structure. ***DO NOT*** try to set electrical chases in floor prior to panel set.

General Design Guidelines, con't

- Roof Panels
  - If a home has an attic space, it is often an opportunity to consider using traditional trusses and alternative insulation methods on the floor of the attic space if budgets are tight
  - Selecting Eco-Panels as your roof panels should provide best thermal envelope, especially for vaulted spaces
  - Our 6.5" thick R40 (at 55deg F) rated panel is sufficient for most roof applications – these weigh ~5 lbs/sqft.
  - For colder climes or where longer spans are required our 8.25" thick R52.5 rated panel offers R60 at ~15degF at ~ 6 lbs/sqft.
  - When considering using our roof panels, roof panel spans between rafters are typically 2', 4' or 6', or could be 8' span if single panel running from ridge to eave and the horizontal "run" of the panel is in the range of 8'. The max panel length right now is 16' long. Our 8.25" thick panel can span max around 12-14', depending on snow load. Max length 16' including overhang.
  - Normally we do not recommend a panel overhang at eave or gable to exceed 24".
  - Roof panels may not have cam-locks on short spans – but for spans beyond 48" cam-locks are desired to create strong diaphragm
  - Long panel screws are supplied by Eco-Panels for securing roof panels to structure.
  - An expanding foam sealant (supplied by Eco-Panels) or other type barrier should always be used on both the interior and exterior of panel joints, just as with wall panels.
- Floor Panels
  - Not often used, though often very practical for elevated platforms or cantilevered floors
  - Top layer skin typ 5/8" OSB floor decking, bottom (ext) layer skin typ ½" CDX Plywood or preferred LP Smartside Panel.
  - Typically supported at 24" or 48" OC, though shorter or longer spans may be appropriate

How do you work with Eco-Panels?

- Client provides a drawing with dimensions, or a sufficient description, and Eco-Panels can provide an Estimate or a firm Proposal.
- To move forward client places a deposit, typically 60% though sometimes more depending upon delivery request or other. Discounts offered for industry professionals, non-profits, etc.
- Eco-Panels will create panel drawings and ***client is responsible*** for reviewing and approving for manufacture or asking for changes to plan. Eco-Panels is only responsible according to the approved panel drawings.
- We understand that a client's schedule changes, so we will do our best to react to client's request, but since we only build panels when we know that we can ship them, client needs to keep EP informed of latest schedule. The client is responsible for driving the schedule – this is because most people's schedules change.
- Leadtimes typically 8-12 weeks *(ask to confirm)*
  - 50-60% panel design effort – Eco-Panels creates a custom panel plan and reviews plan with client, often resulting in design changes for structure or cost efficiency
  - 40-50% mfg queue time and actual mfg
- Final payment due prior to product shipment
- All structures assembled & checked at factory prior to shipment!
- With local deliveries Eco-Panels can provide technical support at charge at the time of delivery
- We encourage clients to visit our factory in N.C. if they have a chance!

Stronger. Safer. Significantly more Energy Efficient.

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