Start your custom home with PSE, Today!

Your steps to custom home design success

PSE Consulting Engineers, Inc. has designed, remodeled, and renovated residential homes for close to 25 years. Licensed in all 50 states, we take pride in helping homeowners all over the US bring their dream building project to life, with custom floor plans, innovative ideas, and decades of hardwon home construction experience.

If you're planning a new custom home, one of the first assets you'll need is a clear, technically accurate floor plan. This will be crucial as you translate your grand vision into a beautiful home that you'll love to live in. In this article, we'll give you a step-by-step breakdown of how to create a top-notch custom home design, including:

- Why you might decide to work with an architect or a structural engineer for houses.
- How custom floor plan reviews can save you money and time.
- When and where to obtain the right permits. (And yes, we can help with that too!)

Step 1: Choose your custom home design professional

Architect – If you're starting your custom home design with a broad and unfocused idea, consider working with an architect. An experienced architect can assist you with almost every step of the process, giving you clarity, consistency, and a practiced eye for efficiency as you flesh out your custom floor plan. Your architect will most likely start with a full interview to get a complete grasp of your planned direction. Preliminary design, bidding on the project, and insight into the whole residential home engineering process are all part of the service an architect may provide.

Home Designer – A home designer is not licensed, but still has extensive knowledge of the residential home drafting process. To get the most from your home designer, you'll probably need a clear starting vision on what you want your custom home design to look like. Provided you have that clarity, a home designer can equip you with invaluable supplemental advice on the unique steps required for a house of your planned type and style. A good home designer sets you on the right track for a quick, efficient, and successful design phase.

Structural Engineer – A housing structural engineer will typically focus on the structural portion

of your construction drawings. An engineer is probably best suited to your needs if you prefer to handle the aesthetic design choices yourself, or with the help of a home designer. And remember, we can offer you a great package of home design and residential home engineering services. This gives you a one-stop shop and can save you significant time and money. Check out our page, "Why hire a structural engineer?" for more information about a structural engineer's unique skill-set and capabilities.

Step 2: Build your design concept

The custom home design stage will vary a little depending on the professional you chose in step 1. However, architects, home designers, and engineers will all aim to combine their knowledge and expertise with yours to develop a concept design that reflects your vision.

In the initial stages, your design concept will most likely take the form of a basic sketch. Your early-stage custom floor plan will begin to lay down some key measurements and elaborate on other important elements guiding house design. Most importantly, you'll gain a clearer image of how your ideas and the design possibilities can converge. It's exciting! Bear in mind that you can perform this step without a professional if you wish. There are free programs and even design websites out there that can help you sketch out a basic floor plan. However, working with a professional can save time later on. An expert's perspective will help you gain an early appreciation of residential home engineering and how good construction practice should guide home construction. For a useful starting point, check out our blog post on how to design a custom home.

Step 3: Agree on a fee proposal and design contract

If you haven't signed a contract before this step, you will be most likely addressing this in Step 3. A design contract and fee proposal will be prepared, forming a written agreement between you and the designer outlining the services provided, the proposed construction system, as well as any additional legal particulars protecting both parties. The details of your contract will be guided in large part by the kind of consultant you selected in step 1. For example, an architect or designer would not be responsible for geotechnical, engineering, and construction services. A structural engineer for houses would accept these responsibilities.

Step 4: Prepare a preliminary layout

Now it is time to turn your concept design into a preliminary layout. Your custom home design will now be developed to a much finer level of detail, including room layout, window size and

placement, door locations, furniture options, and of course, residential home engineering elements including construction materials and methods. As you work with your consultant to refine your custom floor plan, you'll be invited to consider your current household layout, focusing in detail on what you like or don't like. Be sure to take this opportunity to think about incorporating sustainable source materials with a low environmental impact into your home's design.

If you undertook earlier stages on your own, it may be prudent at this stage to have your floor plan reviewed. A review can identify essential features you may have missed, saving you significant money further down the line.

Step 5: Finalize your custom home design

PSE will prepare multiple sets of construction documents for you, each stamped by a licensed structural housing engineer licensed in your state. The typical set of documents we provide will include:

- Title Page
- Floor plan(s)
- Elevations
- Structural Framing plan
- Windows and Door Schedules
- Sections
- Interior Elevations
- Details

If any of the following items are required by your local building department — or if you are personally requesting these services — be sure to request these during the fee proposal and design contract stage:

- Site Plan (this can be sketched by homeowner)
- Civil Engineering Documentation
- Landscaping

- HVAC Plan
- Electric Plan
- Plumbing Plan
- Energy Calculations

The final design package will be reviewed with you to ensure that everything is correct and that you're satisfied with your custom home design.

Step 6: Building official approval, planning, and construction permits

You will need to submit a set of construction documents to the local building authorities to obtain construction approval. Usually, one set of these plans will be required, addressing both planning and construction details. Most simple residential homes will go through a more straightforward approval process. More complex projects — particularly those impacting neighboring land, views, and amenities — may be subject to more detailed project analysis. Your local building department may comment on specific sections of your plan, requesting further explanation or that changes be made. Your designer or housing structural engineer will coordinate a response. Once your project has completed the approval process, you will be granted your building permit to complete the construction of your new home.

When you're ready to begin construction, you can always talk to PSE about our construction management services.

Types of homes we can design

- Wood Framed
- Light Gauge Steel
- Masonry
- Log Homes
- Dome

Other Sustainable Options

- Bamboo
- Earthbag
- ICF (Insulated Concrete Forms)
- Modular
- Shipping Containers (POPULAR!)
- SIPS (Structurally Insulated Panels)
- Straw Bale

…and more!

Custom Home Design Guide eBook – Free Download!

Complete the form below and receive our “Short Guide to Designing a Custom Home” eBook free!