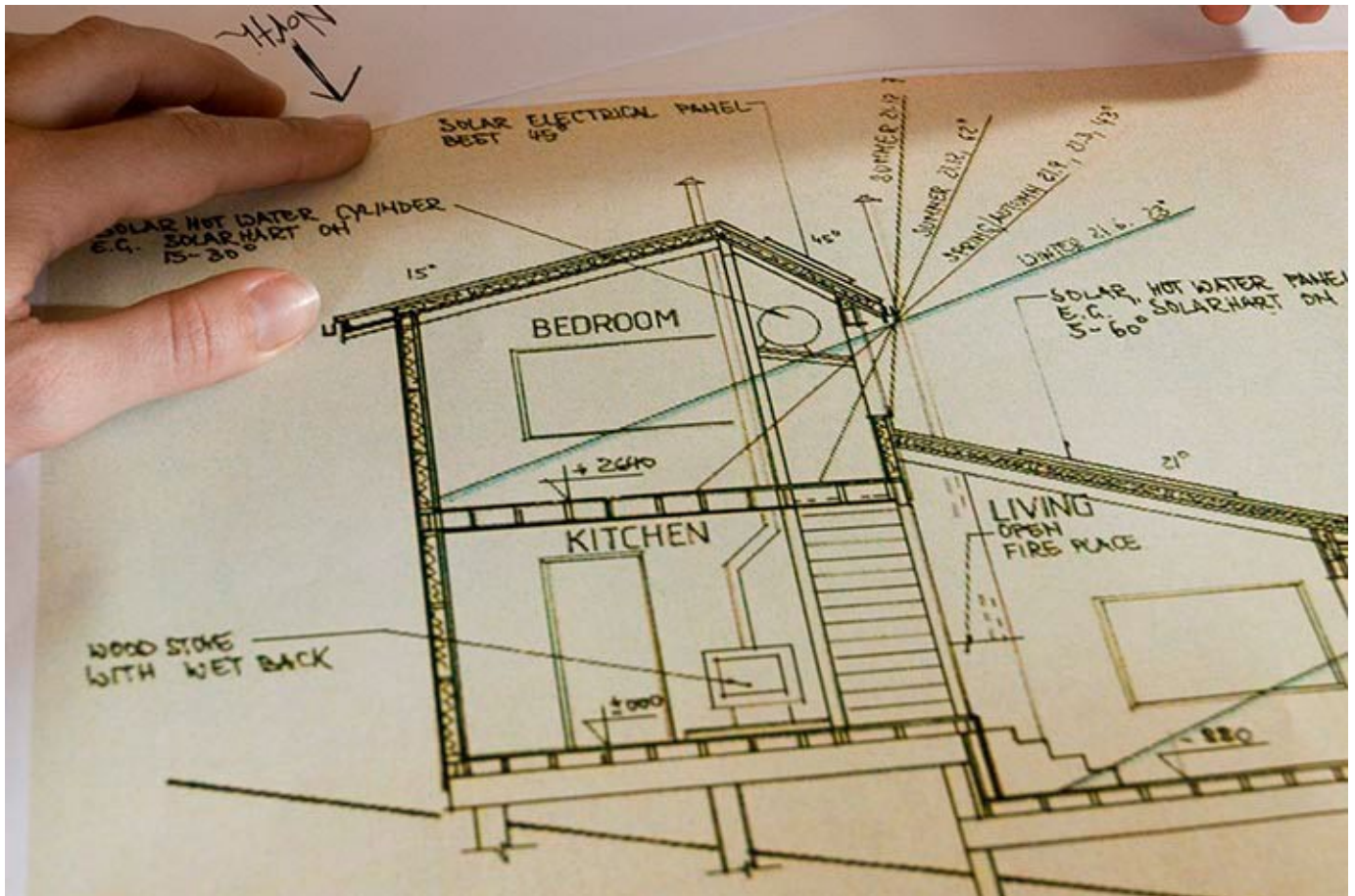


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Introduction



A sample of a concept drawing

During this stage, designers translate the ideas and requirements captured in the Design Brief into the first drawings of what your house could look like, otherwise known as 'concept designs'. Different concepts are explored until you agree on a preferred option that will be developed in subsequent stages.

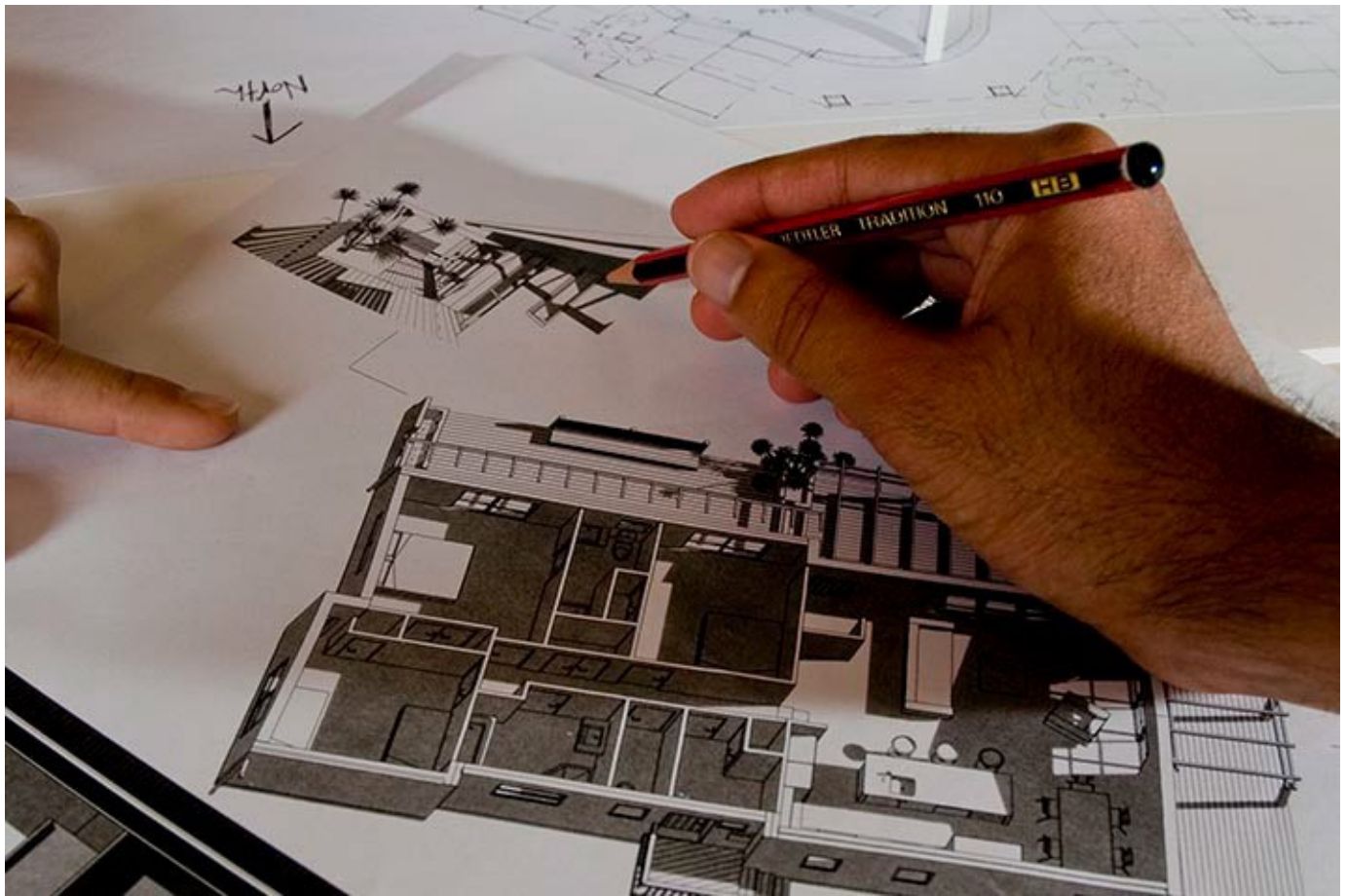
Check out this [webisode](#) by Architect Barry Berkus, and find out how architects develop their concept designs.

How concept design contributes to your project objectives

In this stage a range of conceptual solutions that both achieve the requirements of your Design Brief and work within any constraints will be presented to you. Assessing the different directions your design could take at this stage will allow you to identify what you like and don't like from each one. Your preferred concept will then be further developed using drawings, images and possibly 3D models which will show how the house will look on the **site**.

Important information and knowledge will be gathered by designers in this process, which should be added to your Design Brief to ensure the design adheres to your original aspirations and requirements. It is a good idea to record why you picked your preferred option for future reference.

Key Activities



A sample of a 3D concept model

This stage will be more intensive for you if you are building a Custom Design house, as the design will be unique to your project, rather than based on standard design options. Below are the differences in the concept and preliminary design phase between the three main procurement options.

Custom Design

Designs are unique and tailored to fulfil your needs. You must play a more active role since you need to work alongside designers to achieve optimum results.

Design & Build

The degree of customisation increases depending on what is agreed with the builder. If the builder has a set of standard plans the options may be limited, but if a designer is engaged the project may be adjusted to your needs.

Group Housing

Clients choose the option that best suits their requirements from a set of standard designs. The degree of customisation is minimal.

Once a design team is engaged, both you and the design team take on the responsibilities below.

Clients

Hand over documents

Before designers can begin they need to review the documents you have gathered in preparing for your project. These may include council documents and reports from external advisors hired in the process.

Going through the Design Brief with the design team at this stage can provide new insights into existing requirements and point out gaps in the Design Brief.

Get involved

Being an active part of the design process is essential, but allowing designers to develop their ideas is just as important.

You can request visual aids to better understand how the project is evolving. Simple 3D computer models or fly-through such as those produced in **Sketchup** (<http://www.sketchup.com/>) are excellent tools and act as a reality check.

You will need to sign off the design at key stages, and at these points you should discuss all aspects of the design with your design team. Only accept proposals that you completely understand. It is important to remember that changes become more costly and time consuming as the project advances, so clear and timely feedback in the early design stages is vital.

Review the project team

At the end of this first design stage, take time to review the designers and question if they are the right team to continue the process. Keep in mind that the most complex part of the design process is still ahead, and a tough decision at this moment can avoid more complicated problems in the future.

In addition, revise the list of sub-consultants or separate consultants and, if they are not yet engaged, discuss with the designers the right time for them to get involved. If you have opted for an integrated design process, it is likely that input from other parties is already being included in the design.

Keep written records

Regardless of how your relationship with the design team evolves, keeping written confirmation of key decisions is a good way of tracking progress and could help settle disputes if they arise. This habit is also useful for interactions with the council. Keeping track of the requirements and issues that need to be considered during the consent application process will prevent the team from gathering incorrect or insufficient information.

Using an online resource like a blog or Facebook is also a good idea, as it allows you to store photos and includes the date that information was uploaded. This can be very important if any disputes arise.

What to expect from your designer

Establish project milestones

In order to have a fluent design process it is important to define key stages for interaction between you and the design team. Communication can be kept casual for most of the process, with periodic meetings to inform you about progress, review alternatives and receive feedback.

However, it is important to define the formal moments where stages are signed off, and after which making significant changes will incur additional charges. Agreed decisions should always be recorded in meeting minutes, no matter how informal they may seem.

Analyse the site

Responding to the **site's** features and characteristics is essential for good design. Understanding the opportunities and limitations the **site** presents will help designers produce a house that belongs to the **site** and makes the most of it. Talking to neighbours during the design stage and factoring in their concerns in the design response may also improve the outcome, in addition to nurturing what will be a long-lasting relationship.

Design Statements are a good mechanism for designers to record what they have learned about the **site** (**site analysis**) and present their findings to you in a clear and simple way. A simple set of drawings can be used to convey understanding of physical characteristics of the **site** and an 'Opportunities and Constraints Analysis' can summarise key elements that will influence future design decisions.

Define primary elements of design

After they have discussed the Design Brief with you, any doubts or issues have been raised, and the **site analysis** has been completed, designers should have a clear idea of how to approach the project and should be able to produce alternatives for you to review. Diagrams, models and general drawings will be helpful when exploring the different possibilities. These will later be assessed with you to determine which one provides the best solution to the Design Brief and context.

After deciding on a general form and layout, the design team can begin to refine the proposal by adding more detail to the drawings, including dimensions, key materials, and allowance for special systems.

Prioritise passive design

Finding ways to make the most of the surrounding environment will be cost-effective and will have a great impact on internal comfort and future energy use. Passive solar is a key element of good design and can help your project to:

- capture the sun's energy for heating and wind for cooling
- retain the sun's warmth using adequate window placement and thermal mass.
- reduce or eliminate the need for heating and cooling systems and the energy to run them

See the Sustainability hub for more information on passive solar design.

Coordinate sub-consultants or separate consultants

Sub-consultants or separate consultants can be engaged to complement the design and provide technical solutions to the house's different systems, e.g. heating and water supply. The design team should determine the correct time to involve them, take them through the project to ensure they fully understand it, coordinate their progress, and incorporate their input.

The early stages of design are essential to developing integrated solutions that minimise the impact on the design and building process, and maximise outcomes, so good communication and a coordinated approach are vital.

If you are pursuing certification, sustainability consultants will play a key role from the start of the project as the design is likely to be influenced by the scheme's requirements. They will be able to advise on the required features to meet the objectives and the right time to incorporate them in the design.

Deliverables



After exploring the different options, you will choose one Preferred Concept Design

Design Statement

A Design Statement is a useful tool for both you and your designers. It gives you a clear format and structure for understanding your designer's process, and give designers a tool for clearly documenting their thoughts and processes.

For designers, the Design Statement provides an efficient way of showing how the design responds to the opportunities and constraints of the **site**, its neighbourhood and your Design Brief.

Design alternatives

Soon after this stage starts, designers should prepare regular meetings in which they present different design options to you in a clear and illustrative way. Proposals might be only schematic but they need to explore different approaches to the design so you can choose a preferred option. These proposals should respond to your Design Brief and should consider your objectives around different areas, including sustainability.

Presenting the **site analysis** is essential for you to understand the resulting alternatives, since a good design is **site-specific** and responds to the surrounding conditions. Using a Design Statement is a useful way to communicate the conclusions of this analysis.

Preferred Concept Design

After exploring the different options, you need to choose one Preferred Concept Design that will be signed off before progressing to Preliminary Design. A set of documents should be compiled to mark the completion of this stage, including:

- ◆ Design Statement - including a context analysis and design response
- ◆ analysis of applicable regulations

- ◆ relationship with context and neighbouring sites
- ◆ record of all the options explored - and what were the good and bad points with each design
- statement of how the preferred option meets your needs, including your sustainability objectives.

Preliminary Design

After selecting the concept that best responds to the brief and site, the Preliminary Design is developed which refines this initial concept. The document produced at this stage should contain:

- ◆ preliminary design drawing including plans, elevations and sections
- ◆ a 3D form
- ◆ specifications of main aspects
- ◆ design features that will help you meet objectives and targets around energy, water, comfort and health.
- ◆ thermal modelling if you want to ensure targets around energy and thermal comfort are being met
- ◆ a cost plan (a quantity surveyor may be engaged to produce this)
- ◆ a general programme setting a schedule for design, construction and handover stages, including all permissions required.

Who should you be talking to?

Request a pre-application meeting with Auckland Council staff to review the proposal



Auckland Council

After the preferred concept design is selected, the information gathered will be sufficient to approach the council with specific questions about design limitations and the required consents. The following interactions are recommended:

- use the 15 minutes of free advice offered to find out if the project requires resource consent (<http://www.aucklandcouncil.govt.nz/EN/RATESBUILDINGPROPERTY/CONSENTS/RESOURCECONSENTS/Pages/home.aspx>)
- request a pre-application meeting (<http://www.aucklandcouncil.govt.nz/EN/RATESBUILDINGPROPERTY/PREAPPLICATIONADVICE/Pages/PreApplicationMeetings.aspx>) to review the proposal with council staff. The Design Statement can be a helpful tool to discuss the proposal with council officers.
- apply for a Project Information Memorandum (PIM) (<https://www.aucklandcouncil.govt.nz/building-and-consents/understanding-building-consents-process/check-if-need-consent/Pages/project-information-memorandum.aspx>) which is a report that, based on the proposed location and bulk of the building, provides additional technical information regarding the site, its services, and applicable regulations.
- Eco-Design Advisors provide two hours of free consultation in which they evaluate your design and recommend strategies to achieve your sustainability objectives.

Resource consent

Generally, a resource consent (<http://www.aucklandcouncil.govt.nz/EN/RATESBUILDINGPROPERTY/CONSENTS/RESOURCECONSENTS/Pages/home.aspx>) is required if a project doesn't comply with local planning rules which are outlined in the relevant District Plan. For example, greywater and rainwater systems may require a resource consent depending on the area where the project is located and the type of system proposed. The resource consent application contains an **Assessment of Environmental Effects** which outlines which rules have been infringed, by how much, and what the impact on the surrounding environment is. The relevant District Plan will contain the rules relevant to your **site**, but in some cases the Proposed Auckland Unitary Plan may be applicable as well. Planning documents can be complex and it is worth having a meeting with a council Planner as soon as possible to understand what rules are applicable to the **site**. Having a planner as part of the design team is a necessity on more complex projects.

Auckland Council has to grant consent within statutory timeframes, but these can be extended if more information is required or the project is complex. It is important to submit a well-prepared and comprehensive resource consent application, and a pre-application meeting will be very helpful in ensuring everything progresses smoothly.

It is recommended that applications for resource consent be submitted at the end of preliminary design. However, designers may have preferences regarding the correct time to do this based on previous experience, the nature of the project, its constraints and risks. Depending on its complexity, different professionals may need to be engaged to submit the application. The information in your application should reflect any guidance given by council officers in a pre-application meeting. Typically a resource consent application includes:

- ◆ an Assessment of Environmental Effects (AEE)
- ◆ written approval from affected parties, usually immediate neighbours. It is important to note that a project can still be granted consent by the council even if the neighbours (or other affected parties) do not give approval.
- ◆ a set of architectural drawings showing the proposed development. If designers have produced a Design Statement, the same set of documents may be used in the application.

What to look out for?



It is vital you understand the design documentation that is prepared by designers

Not understanding the design documentation

It is vital you understand the design documentation that is prepared by designers. You shouldn't refrain from asking questions, even if they seem simple, or from requesting changes if the approach doesn't match your expectations. The early design stages are the best moment to explore different options since the design can be changed more easily and without redesign costs.

Not considering all aspects of the design

Focusing only on the architectural aspects of the project and failing to consider other aspects such as the long term cost of running the house can be a risk for both you and the designers.

Involving sub-consultants for these other aspects at the right time and as early as possible through an integrated design process will add extra value to their input. On the other hand, doing it too late may generate additional costs and delays.

For example, if building performance is considered important within the project's objectives, engaging experts in the subject early on will improve comfort, health, and operational cost outcomes by integrating key features into the design.

Not taking costs into account

Extra caution around costs is necessary at this stage. It is important to check costs at key stages in the design process to avoid creating false expectations that generate future disappointments. You also need to understand that every design decision affects future expenditure – not only during construction but also during the lifetime of the building. It is important to assess design features not only in terms of initial costs, but also in terms of their impact on costs incurred over the long term.