

ARCHIPLAN'S DESIGN & PLANNING GUIDE

INTRODUCTION

Planning and building a new home can be very stressful, but if the correct procedures are followed the experience can be exciting and rewarding.

Generally, buying or building a new home is one of the major financial decisions we will make in our lifetime. It is therefore imperative that we plan our investment with caution and do the necessary research. Careful planning can be rewarding not only for the short term but also for the years ahead.

Before making a decision on the type of design and plan that will suit your family you must set out in detail the family's accommodation and other requirements. This is the first stage in any design process and will help to reduce making the incorrect decisions and therefore affecting the liveability of your new home.

Archiplan has devised this Guide to assist you to making the right decisions by listing a number of personal criteria in selecting and planning of your new home. The guide will help you set your priorities, define your needs, select an Architectural style and explore various options. After completing the various lists you will be able to select a home from our [Selected Plans](#) or let Archiplan [Custom Design](#) a home personally for you.

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1 FAMILY LIFESTYLE

Lifestyle Requirements

The Family Lifestyle questionnaire below will assist in establishing your family's design requirements. These questions are only a prompt and it is not necessary to answer all or any of the listed questions. In addition you may want to add some requirements of your own.

1. How many people will be living in the new home?

2. How old are your children and how will their needs change, as they get older?

3. Does your family enjoy private surroundings?

4. Do you entertain formally or informally?

5. Do you enjoy any outdoor facilities such as a pool or gazebo?

6. Do you enjoy gardening?

7. What hobbies does your family enjoy and will be design requirements?

8. Which room(s) do you and your family spend most of your time?
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9. Do you have guest staying over?

10. Do you bring work home and is a study required?

11. Do you need additional storage area?

12. Do you need a workshop area?

13. What is your budget and how big should your new home be?

14. Any special rooms e.g. home theatre, basement, Computer room etc?

15. How many storeys are required?

16. Any additional lifestyle requirements

Budget Requirements

The consideration of budget requirements is an important factor in finding the right design. Archiplan have seen many clients disappointed when they find out that their dream home is way beyond their financial resources. It is imperative that one has to be realistic when establishing the size of your home as this will ultimately establish the cost of the new home. Each person has a different approach in setting their budget and this the age of the family and their lifestyle. Listed below are the options:

- **Employing a Contractor**

This is the traditional method where the builder will give a price on a completed home. In establishing this method one should find out the present rate per square metre of building cost in your area. The cost may vary according to the style of the home, finishes, site conditions, specifications and locality.

$$\text{e.g. } \frac{\text{Budget}}{\text{Rate per sqm}} = \text{Size of Home}$$

- **Owner Building**

Much has been said on the savings that are available to owner builders, but this is not always the case. Owner builders tend to use more expensive finishes than a project homebuilder. In addition when one takes the personal time into account the savings would not be great. However, if you do decide to owner build for the sake of making savings then you will have to act a hard-nosed negotiator. To be on the safe side find out the present building rate per square meter less a possible 5-15%.

$$\text{e.g. } \frac{\text{Budget} + 5\%}{\text{Rate per sqm}} = \text{Size of Home}$$

- **Build in Stages**

Another method would be to design a home to suit your present budget situation and add the other spaces at a later date. This may appeal to a young married couple with intentions of having a family at a later date.

Alternatively you could contract a builder to finish your home to Lock-Up stage and you fit out the interiors. Using your own labour can make possible savings.

Whichever approach you take always find out the present building cost in your area before establishing the size of home you want. Information can be obtained from local builders or associations such as the MBA or HIA in your area.

Space Requirements

Once the family lifestyle and budget is established then the next stage is to do a preliminary analysis of the space required. Some of the factors to consider are:

- The entry to the house should be given priority, as this is the first impression into your home. Consideration should be given if there should be a separate informal entrance from the garage area with the main formal entrance for visitors protected from the weather. Access from the garage or carport is helpful especially with heavy grocery packages.
- Decisions should be made on the Living areas such as a Lounge, Dining Room, Family Room and Meals area. This will depend on ones family lifestyle. Some families will require all four spaces whereas less formal families only require two as they see this a doubling up of facilities.
- How many bedrooms will be required and how big should they be? What type of cupboards will be required – built-in or walk-in?
- What is the planning relationship between these bedrooms? Should they be separated or grouped together? Should the Parent's bedroom be away from the Children?
- Analyse the type of living spaces that will be required. Will they be formal or informal, private or semi-private and what their specific functions would be?
- A lot of thought has to be applied to the Kitchen, as it is the most used space in any household. The function of this area, other than the simple fact of preparing the family meal, is essential in determining the actual size, worktop area, cupboard space, separate pantry and the number and quality of appliances to be installed.
- The spatial relationship of the kitchen to the other living areas such as the Dining room or Meals area requires some thought. If the kitchen area has to serve more than one eating area, care must be taken so that food can easily be conveyed to these areas.
- Most laundries would have a wash-trough, washing machine and possibly a drying machine. Further thought should be given if this space is to double up as an ironing area or a sewing room. Access to the outdoor drying facilities should be close by.
- Despite having to be practical bathrooms and en-suites are the most expensive areas of the house. With the various fixtures, fittings and finishes the cost per square meter is higher than the other areas of a home. Consideration should also be given for the handicap visitors and if they accessible by visitors without having to walk through the private section of your home .
- With modern technology alternative spaces have been created to accommodate the use of computers and television. Spaces such as a Games Room, Computer/Activity Room or a Home Theatre are now found in a number of new designs.
- The decision whether to have a lock up garage or carport will depend on budget. A double garage is takes up about the same floor area as a medium size living space. Consideration should be given as to how many cars will be parking and space for bicycles, boats, caravan and trailers if applicable. Additional covered storage may also be considered such as storage of garden tools or a workshop area.
- With Information Technology a number of people are starting to work from home. A study or library near the front entrance can be considered. However you may want to check with your local council if you can run a small business from your home.
- Outdoor facilities such as a swimming pool, gazebo, outdoor courtyard etc will depend on your lifestyle and the size of your lot. A number of new releases of sub-divided land are in the range of 350 to 450 sqm, which will not be large enough to accommodate such facilities.

Interior Spatial Requirements			
Room	Location	Size	Area
Entrance Hall	1 st Floor Near Living	2m x 1.5m	3sqm
Living Room			
Dining			
Family			
Kitchen			
Meals			
Games			
Study/Library			
Laundry			
Powder Room			
Main Bedroom			
En-suite			
Bedroom 2			
Bedroom 3			
Bedroom 4			
Bedroom 5			
Bathroom 2			
Bathroom 3			
Total Square Meters			

Exterior Spatial Requirements			
Item	Location	Size	Area
Garage			
Carport			
Storage			
Workshop			
Patio/Gazebo			
Verandah			
Courtyard			
Swimming Pool			

2. SITE ANALYSIS

Site Selection

When selecting a building site there are a number of investigations to be completed before the purchase is made. This includes:

- The site should be free from dangers of flooding associated with low-lying areas, swampy areas, streams and watercourses.
- The site should not be located near drainage catch-pit areas or drainage channels where there is a history of overflowing.
- The site should not be subject to soil settlement normally experienced with ex-rubbish tips or landfill areas.
- The site should not be adjacent to existing or future commercial or industrial activity. Check the town-planning scheme at your local council.
- The site should be accessible from a public street and if the access street is private ensure that there is a maintenance agreement between all parties using the road.
- The site should not be on a major arterial road as not only traffic noise would be a major problem but also vehicular access and egress.
- The site should not be in an area where there is a possibility of change of use. Here again check with your local council.
- Check with your local town-planning department for the zoning, building lines and any other building codes that may affect the design of the home.
- Check the title for any outstanding mortgages, easements or any other restrictive covenants such as native land title etc.
- Check the availability of essential services such as water, electricity, gas, telephone and sewerage.
- If the site is in a specially planned estate there may be stringent planning codes such as use of materials and setbacks.

If you are unfamiliar with the above it is advisable to speak to your architect or building designer (if you have already appointed one) to check the above.

Site Survey

Site analysis is an important part in assembling vital information from which to start preliminary planning. A licensed land surveyor can assist you with a site survey tabulating the following information:

- Your site should be accurately surveyed with pegs installed so that the extent of the site can be evaluated.
- The slope or fall of the site should be accurately determined. The fall and final gradient will influence the final planning and appearance of your home.
- The survey should indicate the North Point as this will assist in determining the wind directions and the sun patterns. This information is vital in planning a solar passive home.
- The location of major trees and other features should be clearly recorded. This will help to plan around any trees you may want to save.
- Street furniture such as streetlights, storm-water catch-pits, fire hydrants etc will assist in determining vehicular and pedestrian access to your home.
- Your survey should also indicate the position of existing services available. The type of information should include:
 - Electricity – Is the service overhead or underground?
 - Sewer Line – If available what is the depth?
 - Water Supply – Is it at the front or rear?

3 ARCHITECTURAL STYLE

In Australia, there appears to be a diverse range of Architectural Styles, this is due the multi-cultural society who have introduced certain architectural forms from their country of origin. Over the last century there have been a number of distinctive architectural styles, however only a few have withstood the test of time and are still being built today.

Style and Period



GEORGIAN COLONIAL Up to 1900

A simple, symmetrical arrangement of rooms about a central hallway, thick walls of hand made bricks and a corrugated iron roofed verandah running the full perimeter of the house – an Australian adaptation of low key English period designs.



FEDERATION STYLE Up to 1910

From the 1890's, machine made bricks became available together with interlocking terracotta roof tiles. An urban style house evolved to include Art Nouveau decoration expressing native Australian motifs in a complex asymmetric planning concept.



CALIFORNIAN BUNGALOW Up to 1920'S

Wide porches, broad sloping rooflines and overhanging eaves – originating from the traditional American timber house. Australians adapted this style to produce heavy looking brick versions, which lacked the elegance of the originals.



ART DECO Up to 1930'S

A European style expressing new materials and technology. Few examples in W.A. due to inherent difficulties in adapting to our climate. Curved walls, metal framed windows, glass blocks and rendered, painted finishes are all features of this style.



POST-WAR AUSTERITY Up to 1940'S

Limited finance and a shortage of materials and skilled labour saw the elimination of such design features as porches and verandahs. Few redeeming qualities remained in those houses built during this period.



MIGRATION HOUSING Up to 1950'S

The main characteristics of this period were 2.7 – 3 dm ceilings, timber casement windows, 30-degree pitch roofs and timber floors. Bathrooms became incorporated into the main house with a lean-to at the rear to house the laundry and toilet.



LOW LINE Up to 1960'S

Low-pitched asbestos roofs supported on slim supports appeared to float over walls of glass. Concrete floors became common with laundries, W.C.'s & bathroom grouped together in the main house. Carports became integrated under the main roof.



EXECUTIVE RANCH Up to 1970'S

Planning expanded to include Games Rooms, Conversation pits, En-suite bathrooms and formal Dining areas – with much use of face brickwork inside and out. Dark stained timbers skillion roofs, arches and clerestory windows were all mixed together.



INTERNATIONAL CUBIST Up to 1980'S

Crudely referred as 'Mediterranean' style. A revival of 1930's Cubism, which exploits the hard shadows created by our intense sunlight, became popular in some beachside suburbs despite problems with unprotected windows in parapet walls.



POST-MODERN Up to 1990'S

Evolved as a reaction to the somewhat bland appearance of early modernist designs. Post modernism may encompass many classical design elements in a cohesive composition rich in cultural expression.



Up to 2000'S

Somewhat of a mixed period with a variety of styles appearing. A number of architectural styles have been revived this includes a number of variations of neo-classical, neo-colonial etc.

4 PLANNING

Design Stage

Also known as the Sketch Design where the architect or building designer draws rough sketches to give you an opportunity to see your home in a picture form.

Stage 1

After all information has been collated a sketch in a form of a bubble diagram is then drawn up. The term bubble diagram can be described as all data collected is drawn on a sheet of paper under a loose arrangement of spaces and other important requirements. A number sketches may be undertaken, until what appears to be a conceptual layout that satisfies most of your requirements. Elevations of the exterior are also sketched in a thumbnail format.

Stage 2

When the bubble diagram reaches a satisfactory level, room sizes are the rationalised. Again a number of sketches may be undertaken until the room sizes are satisfied. At times certain compromises will have to be made and spaces altered suit certain constraints and priorities.

Stage 3

The third and final stage in the sketch design process is the preparation of a scaled plan showing the wall thickness, door swings and various fittings or built-in furniture. Elevations of the exterior are also drawn to scale.

Working Drawings

Working Drawings are a set of documents, which show and explain the construction of the finalised design of the house. These drawings should have all the necessary information for a builder to build the house. In residential construction most drawings are produced to a scale of 1:100 and 1:50 for details. This is due to the fact that construction is fairly standardised and would not require a lot of detail, which is common knowledge to builders and tradesmen. However if the design has unusual features details construction drawings should be produced. The following is a list of drawings with necessary information to build a home.

1. Site Plan

Information shown on the Site survey should be transposed to this drawing. With most compatible CAD systems and if the site survey is produced on Autocad the outline of the home can be superimposed. The following information should be shown: -

- The outline of the site boundaries showing the position of the proposed new home.
- The position of building lines and boundary setbacks.
- Finished floor level of new home and surrounding new levels including contour lines.
- Indication of banking and any retaining walls if required.
- New access driveways and paths
- Any existing trees or vegetation to be retained.
- The location of services such as water, sewer, gas, electricity and telephone.
- The connection points to these services.
- Soil and surface water drains with sizes if applicable.

2. Floor Plans

- External and internal walls showing all relevant and overall dimensions.
- Wall thickness of external and internal walls.
- Dimensions of openings and windows
- Door swings and sizes.
- The location of all fittings and fixtures
- A name of all rooms with levels and floor finishes.
- Staircases and number of treads if applicable

3. Sections

- Cross section through house from foundation to the roof
- Should give notes of construction.
- Floor to Ceiling Heights.
- Floor Level and background internal room elevations

4. Elevations

- Drawing showing front, rear and side elevations.
- Annotations of exterior materials and finishes.
- Floor to Ceiling Heights
- Natural Ground Level

5. Internal Details

- Layout of Kitchen and details of cabinets
- Room layouts and details of bathroom and Laundry areas
- Details of other special features such as Fireplaces and Staircases if applicable.

6. Electrical Layout

- Diagrammatic layout showing the position and links of switches, light fittings and plug points.
- Should also show Television and Telephone Points

7. Additional Drawings

These drawings may be required for more complex houses.

- Foundation Layout
- Roof Plan
- Services Plan
- Door & Window Schedule
- Finishing Schedule

5 SPECIFICATIONS

What is a building specification?

A specification can be defined as a written document or documents that explains:

- The quality and standard of the building material to be used.
- The standard of labour and workmanship.

Specifications can be come in a form of a Standard document or it can be written to suit a specific project. The latter is generally required for more complex or special buildings. Standard Specifications are often of written with sufficiently high standards but may require certain areas to be upgraded or inserted. These insertion or deletions can be made by way of an Addenda. Specifications also form part of the building contract to be signed.

Who requires a specification?

All local government-building departments require specifications to accompany working drawings when an application for a building license is lodged. This will help the officials to determine whether the proposed home will meet the standards required by their regulations and by-laws.

If you are borrowing money to build your home, your lending institution will require a specification together with your working drawings as part of your loan application. This is to ensure that the home will meet the standard of quality deemed desirable by them.

Who can supply specifications?

Specifications can be obtained from the following sources: -

- *Architects or Building Designers*
These professionals can provide you with a Standard Specification or they can prepare a new specification for a special or complex project.
- *Lending Institutions*
Most lending institutions would have their own standard specifications, which defines the quality and standard of building required by them. These specifications have been written to meet the local government authorities.

6 TENDERING & CONTRACTS

Tendering

The system of competitive tendering is a proven and fair pricing system if done fairly and ethically. Builders tendering for your contract know that they are competing as keen as they are in trying to get the job. Therefore they restrict their anticipated profit if they are to have a chance. The basic principles of tendering should be adhered to:

- Before inviting builders to tender do some research on the builders. An architect or designer can recommend builders they know from experience.
- Make sure that information and documents are correct and the scope of work is clearly understood and that each tenderer is given the same information.
- Avoid variables such as time, alternative materials or construction methods, or reduction in the quality of materials to be used.
- Depending on the size of the home, it is recommended to select a minimum of 3 to a maximum of 8 tenderers. Too many tenderers will make the builders disinterested as they consider it to be a lottery.
- Ensure that there is a clause to state that the lowest or any tender will not necessarily be accepted.
- Give a reasonable period for the tender but make sure that all tenders close at the same time and do not accept any late tenders. Late tenderers indicate inefficiency on the part of the builder.

Contracts

Depending on the size of the home and budget the general contract that is adopted by most builders and professionals is the fixed price contract. For example a \$250,000-00 home will take less time to build than a \$1,000,000-00 mansion and therefore the latter will attract an escalation clause to cover any increases in building cost. In either of the contracts try and avoid variations as it will not only delay the construction period but will escalate your budget. Make sure that all warranties are in place and that there is a maintenance contract after the completion of the home.

Many institutions like the Royal Australian Institute of Architects, the Master Builders Association and the Housing Industries Association (HIA) have standard off-the-shelf contracts that are readily available. Types of contracts that are used in the building industry are:

The Lump Sum, Fixed-Price Contract

Under this contract, the contractor has completed the works for an agreed sum and within a certain time frame. There will be no rise or fall in the contract figure except through provisional items listed in the contract or for variations during the contract. Therefore keep your variations to a minimum. Extensions of time can be granted on condition that there are unforeseen circumstances or delays due to rain.

Lump-Sum, Rise-and-Fall Contract

In a rise-and-fall contract, the contractor is protected against the effects of inflation after the tender closes. The selected tenderer is entitled to claim any extra payment for any escalation in cost in labour and materials after the tender date. The escalation is calculated by means of a formula based on the consumer price index or some other agreed point of reference. This type of contract is used in larger projects and it is important that this escalation is allowed for in the developer's budget.

Cost-Plus Contract

Under this contract the builder does not give a price at the start of the project. The developer agrees to pay the actual cost of the work plus a fee to the builder for organising and overseeing the project work and including overheads and profit margin. The fee can be a fixed amount or a percentage of the actual cost. There is not much benefit to the developer in using this contract, as he does not know the final cost. It only benefits the builder as there is no risk and as his fee is protected there is no incentive to keep the cost down.

Schedule of Rates Contract

This is another form of cost-plus contract with the exception that rates for various items of work are agreed at the outset. This is normally a two-stage selection process. Firstly the tenderers submit prices for overheads and preliminaries. A successful tenderer is then chosen to negotiate rates for the construction work. Alternatively the tenderers can submit rates and mark-up percentages and arriving at a cost estimate based on a provisional bill of quantities. The latter system is also known as a provisional-lump-sum contract. In both systems the work is remeasured at the end of the project to arrive at the final price.

Design and Construct Contract

Under this contract the project is designed and built as a total package for a fixed figure. Most project builders offer this service for their standard range of plans.

Most contracts are legally exhaustive in nature and it is advisable that if you are unfamiliar with the contract let your lawyer or Architect examine the document before signing. Whilst all clauses are important to a contract, listed below are a few to take note of:

- *Warranties.* Which items will have a guarantee and for what period?
- *Time Schedule.* When will the work on site begin and the completion date. There should be a clause to account for rainy delays.
- *Payment Schedule.* This section will cover when certain payments will be made and at what stage of completion of the work schedule.
- *Retention.* This section will outline the amount of money to be held back until the building is 100% complete.
- *Liens.* This will detail what obligations the builder has to remove any liens and what lien releases are required.
- *PC Items and Provisional Sums.* These should be listed and the builder's margin noted for handling and profit.
- *Variations.* This should cover how the cost will be arrived at which includes the actual cost and builders margin for handling and profit margin.
- *Insurance:* This should explain what insurance the builder is taking and when does the responsibility is to passed onto yourself.