START your renovations and additions RIGHT!

OWNER-BUILDER HANDBOOK

Successful building or renovating

tyrrells.com

Approved by the Office of Fair Trading New South Wales.

TYRRELLS PROPERTY INSPECTIONS Tyrrells Building Consultants Pty Ltd ACN 109 361 695 as trustee for Tyrrells Consultancy Trust No. 1 ABN 28 238 913 625 trading as Tyrrells Property Inspections

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For other acknowledgements please see the last page.

Disclaimer

Owner builders whose projects exceed $12,000 in value must undertake approved educational training. The *Owner Builder Handbook* has been developed to satisfy the provisions of the Home Building Act and has been approved by the Office of Fair Trading New South Wales. The Handbook contains helpful and essential information for those who wish to gain certification as an owner builder. However, it is a general guide only, and does not purport to replace professional knowledge or expertise. During the building process, owner-builders should seek the advice of a licensed builder or relevant consultant in relation to any problems that might arise.

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PREFACE

Every year over 30% of residential building in Australia is done by owner-builders. Owner-building is a skill. In fact, most builders take over a decade getting the qualifications and experience to build well. Then it takes at least another five years to work out how to coordinate all the different activities effectively.

tyrrells.com wants you know how to owner-build. It is unlikely will you ever know what a good builder knows. But at worst you can manage the process and take credit for a result that is very close to what you want.

The best owner builders are a mixture of cook, team player and book-keeper

To best understand owner-building you should imagine yourself as a mixture of cook, team player and book-keeper.

As **a cook**, you need to follow the 'recipe' to the letter, although you can always plan and take advice on how to best decorate the 'cake'.

As **a team player** you need to understand the 'game plan' and be able to react to whatever happens. But you don't need to play in every position. You just need to coordinate with (see Who's Who) and trust your 'team mates' and not fall apart when something goes wrong. You don't need to know what every tradesman knows. You just need to know who knows it or find someone who knows the person who does.

Through all the 'cake making' and 'teamwork' you need to keep good records and control costs – you need to be a good **book-keeper**. Poor records can lead to chaos, misunderstandings and, at worst, disputes over what seemed clear when discussed before the work started.

tyrrells.com will take you quickly into this dynamic process. Planning and management are about 90% of a successful project. You will need to mix together a few specific ingredients.

- research
- participation
- hard work
- trust
- quality assurance.

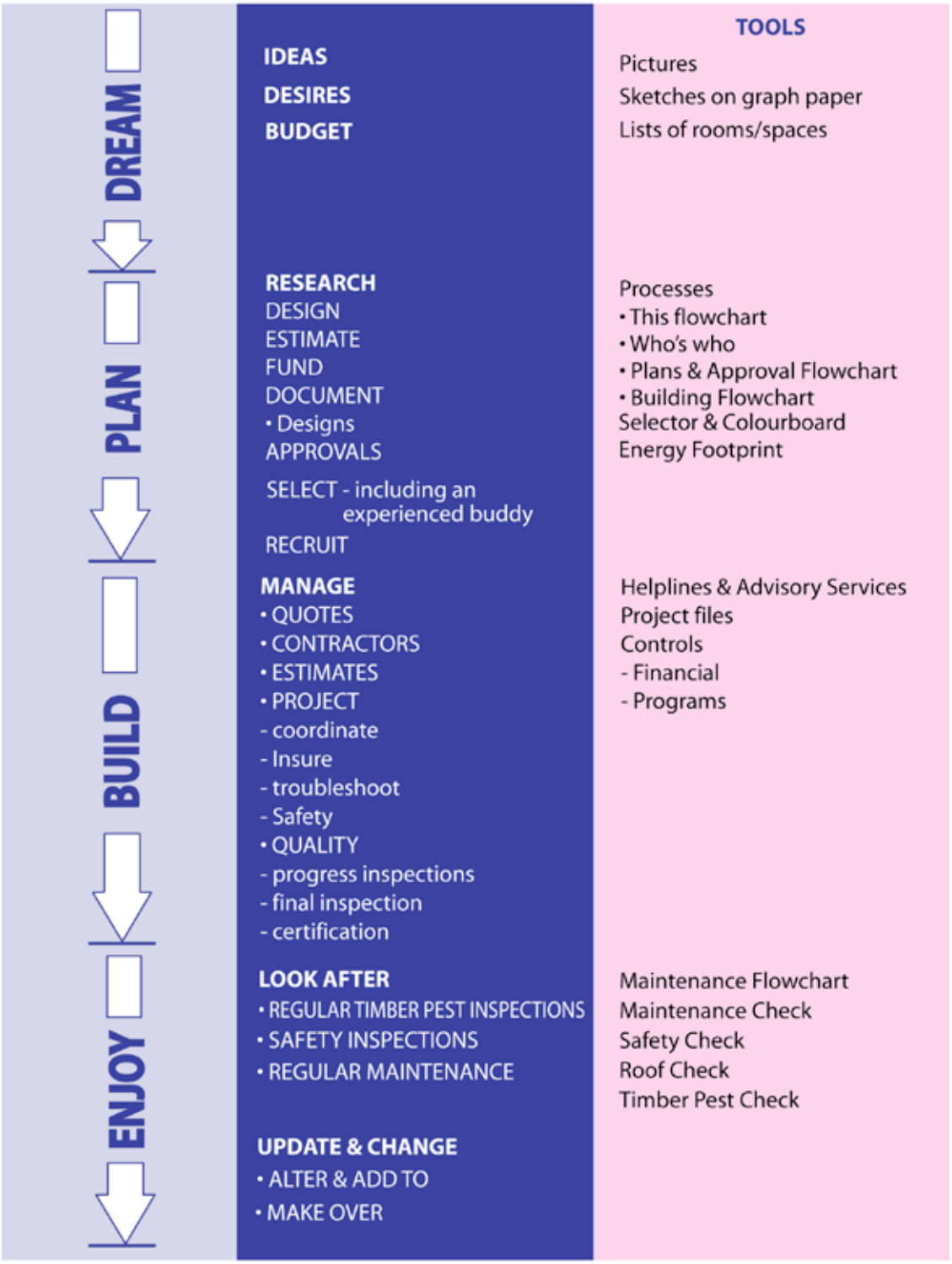
There are *Tips* and *Alerts* along the way to guide you.

When you stand back and admire your success, please remember

1. A wise cook rarely changes a successful recipe but often decorates the cake to his or her taste.
2. A great teammate doesn't play out of position or criticise the coach or referee.

Manage on...you great owner-builder!

OWNER BUILDING PROCESS



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GETTING STARTED

UNIT 1 **INTRODUCTION**

1.1 Who can apply for an Owner-Builder Permit?

In New South Wales you can apply for an Owner-Builder Permit if

- you own the land or part own the property concerned
- you are over 18 years of age
- you plan to live in the dwelling
- you are not already an owner-builder and haven't been an owner-builder within the past 5 years (unless there are special circumstances)
- you complete an approved course. (Note: Tyrrells is currently unable to offer the course owing to recent but major changes to the course structure and course delivery by the Office of Fair Trading. Contact the Office of Fair Trading www.fairtrading.nsw.gov.au for more details.)

Although a separate permit is required for each project, you can easily combine a number of minor or major jobs on your property under one permit with anticipation and planning.

1.2 How do you get an Owner-Builder Permit?

Owner-Builder Permits are administered by each state – usually by a Building or Fair Trading Department. In New South Wales it is the Office of Fair Trading (OFT) www.fairtrading.nsw.gov.au.

1.3 The Owner-Builder Permit form

In New South Wales, according to the OFT's Application for Owner-Builder Permit, you need to provide certain information and documents to obtain the permit including

1. Details of applicant

Name and address details

2. Supporting documentation

- Proof of legal ownership (copy of rate notice will do)
- Copy of plans submitted to Council
- If property is owned by a company, proof of the applicant's shareholding, including evidence that all shares are owned by individuals
- Evidence that you have completed an approved owner-building course if the building work exceeds $12,000.

3. Details of building work including a brief description of the size and type of construction, plus the estimate of the cost of the building work.
4. Whether you reside at the address of the proposed building work.
5. Whether you have been granted an Owner-Builder Permit during the past five years. Details of previous building work are required if applicable.
6. Declaration and signature of applicant.

1.4 Lodging the owner-builder application

You can lodge the application in person or by post to any Fair Trading Centre in New South Wales Office of Fair Trading, PO Box 972, Parramatta NSW 2124. Phone 13 32 20. For more details go to http://www.fairtrading.nsw.gov.au/About_us/Contact_us/Fair_Trading_Centres.html

ALERT

- You must have the Owner-Builder Permit before you start your building work except for minor preparatory work such as non-structural demolition. If you don't, any work you have done might be declared illegal building work and you risk your permit being cancelled.

- The permit allows you to carry out ONLY the work shown on your approved Development Application and Construction Certificate. It also doesn't allow you to undertake some specialist building work where a plumber or electrician must be employed.

1.5 What are the owner-builder's main responsibilities?

The owner-builder has a number of responsibilities including

- Being able to understand the plans for the proposed work.
- Arranging the approvals from Council.
- Obtaining the required insurances, eg worker's compensation, public liability.
- Getting quotes for the work.
- Arranging for any required inspections during the building stages.

- Managing the budget, paying contractors and recording all expenses. This requires confidence in your ability to look after the financial aspects and an attention to detail when looking at contractor quotations, ie what is covered and what is not.
- Be easy to contact. Projects can be unnecessarily delayed if the contractor cannot get in touch with you.
- Coordinate the project. This requires foresight, planning, a lot of time and good management and people skills.
- Supervise the contractors or do the work yourself. This requires that you have a adequate understanding of the tasks you are requesting the contractor to do. If not, you should get help from someone who does know, such as a builder friend or relative. Each contractor must be licensed if the work they are doing for you is over $5,000, as set out in the New South Wales *Home Building Act 1989* (s. 29(1)), and they must give you a certificate of home warranty insurance where the work is more than $12,000. For more on warranties, see Unit 8.
- Seek professional help/select someone knowledgeable to help you with technical problems or difficult personalities.
- Keep the building site clean and tidy and hazard free.
- Ensure the work meets minimum building regulation and standards.
- Obtain the final Occupation Certificate from the local Council or the Private Certifier.

If you decide to be an owner-builder, aside from doing the required training course, you should become familiar with any occupational health and safety issues pertaining to building sites, see 7.3.

1.6 What risks are associated with being an owner-builder?

The owner-builder assumes most of the responsibilities associated with the project. The degree of risk depends upon the complexity of the project and how much of the work you intend doing yourself.

The risks include

- *Your own skills/knowledge* – you might think you know more than you really do.
- *Quality issues* – your ability to choose/engage good contractors and making sure their work is satisfactory, ie ending up with substandard workmanship.
- *Time delays* – the building might take longer than you estimated. This can affect how much rent you have to pay, the comfort of your family and take more of your own time.

- *Cost overruns* – the building might cost more than budgeted. This can be caused by your mistakes, faulty work by one of the contractors (needing costly repair), variations, etc.
- *Security problems* – materials can be stolen from the site, the work vandalized, the existing house being extended can be robbed.
- *Insurance issues* – you must have appropriate public liability insurance, home warranty insurance, and workplace (workers compensation) insurance.

1.7 What benefits are associated with being an owner-builder?

There are many advantages of becoming an owner-builder such as

- *Control of process* and flexibility to make changes during the job – you can have greater involvement in design, then make changes more easily, you can choose materials/finishes as you go along. Although you need to remember that every time you change something, it will cost you additional labour, interest, rent or time.
- *Timing* – providing you plan you won't have to wait around for people. Similarly you can delay the work if you need to take a bit more time or decide to go on holiday. Owner-builders often 'wait around' for contractors.
- *Financial savings* – even though you are not getting paid, you can save contractor's wages. So you are often making a tax-free profit in the improvement in value of the property. Besides, it is amazing how much you save in builder's costs in buying taps and lights or simply keeping the site clean or taking the bricks around the back of the house for the brickie.

One of the major decisions for an owner-builder is to compare financial benefit against time/effort/worry, etc.

But remember, you are saving on the costs of the builder's profit and overheads which are usually at least 15 – 20% of EVERYTHING.

UNIT 2 **FINANCE and BUDGETS**

2.1 Set your budget BEFORE you start

You can dream all you like, but making sure you can afford what you want must be the first step. Building is expensive and building costs are usually at least 50% more than you think they will be. So setting your budget before you starting designing might not appear logical to many people, but the main reason some owner-builders get into trouble and end up with half-finished work is because they run out of money.

It is usually easy to get money for building work if you own your land or home or have a small mortgage or good equity in your property.

Some lending institutions have rules when loaning to owner-builders. It is best to check what you can borrow with your lending institution.

2.2 Estimating building costs

This is probably the most important first step in a successful project. Most people underestimate building costs and are unprepared for the inevitable extras and changes throughout the project.

The basic formula for building costs is

Project Cost = Total area of building x cost/m2 + 10–15% contingency for mistakes and omissions.

Cost/m^2 is made up of three separate costs

- actual **construction costs** including an amount for contingencies or unexpected costs, eg rock excavation
- **professional and approval costs,** such as design and council costs
- **accessories,** such as a clothes line or TV antenna, which add about 2.5% to the overall cost.

The best way to avoid any shocks is to use realistic costs from the start. The likely building costs and include all fees, consultant costs, finishes and fittings as set in the following table. You should ALWAYS include a contingency of at least 5% and preferably closer to 15% for all the 'forget-me-not' things like heated towel rails, pull out pantry, remote control to garage.

Why not allow for the upper limit of prices and surprise yourself if the costs are less?

TIP ***Save on labour costs***

You will save the labour cost (usually around 40%) of any part of the job if you or your friends/family REALLY can do the work you'd have pay a tradesman to do .

Type of work		**Cost range per m2**
Freestanding home	1 & 2 storey	$1,300 - $1,950
Architect designed home		$2,150 - $3,600
Additions	Extensions	$1,600 - $3,300
Additions	First floor	$1,800 - $3,900
Additions	Basements	$1,350 - $2,900
Alterations	Renovations	$800 - $ 1,500
Alterations	Kitchen, bathroom	$3,200 - $8,100
Decks		
Unroofed		$700 - $1,300
Roofed		$1,050 - $2,200
Garages		$1,000 - $2,500

STEP 1
Divide the total money you want to spend by say $2,000. This will ROUGHLY give you the area you can afford to build.

STEP 2

Work it out in detail using the calculator below

	Area	Rate	Sub Total
CONSTRUCTION			
New extension			
Renovation			
Deck			
Garage			
Building Cost			$
Contingency		15%	
CONSULTANT & APPROVAL			
Professional Costs			
Council Costs			
ACCESSORIES		2.5%	
TOTAL			

So let's say you have $165,000 to spend and you want a good quality single storey extension but you'll have lots of help from your carpenter father-in-law. The cost per m^2 will be low end at $1,750. This means you can build around $95m^2$ or $85m^2$ under roof and $25m^2$ of deck. However, once you do the detailed costing you find that it will best to plan for $78m^2$ of extension plus $20m^2$ of deck.

2.3 Costs other than building costs

There are costs other than building costs that you should be prepared for. Although we have included most of these in the previous table or in the 10 – 15% contingency, it is important to know what the additional costs are.

- *Stamp dut*y on the mortgage.
- *Lending authority* establishment fees.
- *Mortgage insurance* if you borrow more than 80% of the value of the property.
- *Insurance* construction and workers' compensation.
- *Surveyor's costs* for the original contour and identification used by you or your designer, plus one survey to set out where everything goes and one at the end to verify the building work is in the correct place and not, for example, higher than the approved design.
- *Design costs* for preparing the design and the drawings the contractor and you will use
- *Engineer's costs* for structural design and drawings and inspection and certification during the job.
- *Council costs* for the Development Application and Construction Certificate.
- *Tools and equipment* you'll have some of these already and good ones you buy you should have for life.

- *Storage, removalist expenses* if you need to protect or store furniture during a major project on an existing home.
- *TV antenna, letter box, street numbers, clothes line, plants, landscaping, lights, locksmith, security.* It is amazing all the things we forget that are part of new building work.

2.4 Obtaining finance for the work

Owner-builders often find it difficult to obtain finance. This is because your lender may be skeptical about your ability to build a house if you are not a licensed builder. The lender may not want to risk funding the project for fear of losing its money should you have problems doing the work or the project does not get finished.

It is important to check with your lender what documents they need you to provide. In this regard you might consider seeking the services of a mortgage broker who can manage the paperwork and give you advice on the best way of increasing your existing home loan.

As an owner-builder, it is likely you have to provide them with

- An Estimate of Construction Costs (this is a form available from the lending authority).
- Council approved plans and specifications.
- Details of the work you will do yourself at no cost and details of the work you will be subcontracting, ie the work you will be paying for.
- Details of where you intend to purchase the building materials.
- Evidence of your savings because you will need to fund the project up to the stage the lender will release the loan funds.
- Details of insurance cover for the building work, see Unit 8.1.
- Water and Council rate notices showing your rates are paid up.
- See further, Cost Control.

First home owner's grant

Remember if this is your first home, you should apply for the First Home Owner's Grant.

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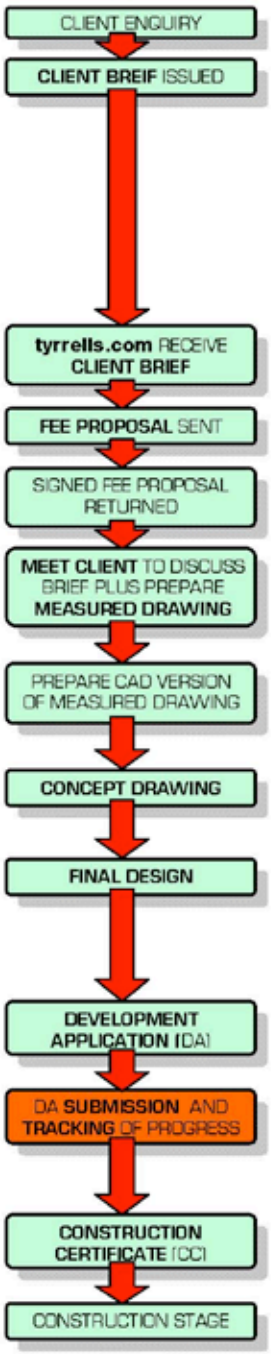
PLANS AND APPROVALS

the plans + approvals process



Client contacts **tyrrells.com** to start their renovation, alteration or owner building project.

Client Brief contains important information for the client to accurately asses likely building costs, as well as being able to see up front what the costs will be for the design, documentation & approvals process.

Client Brief contains packages that include all items that are generally required for certain stages of the plans & approvals process. These packages are offered to the client as an 'easy to understand' option, or if they wish they can select any individual items they want from the list.

The client also has the opportunity here to provide us with detailed information on their requirements & objectives for the project, allowing us to tailor the design to their individual needs.

Once the client has completed the Client Brief, it is sent back to **tyrrells.com** for processing

A fee proposal letter is prepared as confirmation of costs, based on information provided by the client in the client brief.

We meet on site to discuss the brief, view the existing building and prepare a measured drawing (all appropriate information is obtained where possible including a comprehensive photographic record). Additional costs will be incurred if the site measure cannot be completed at the same time as the client meeting.

The information gathered on-site is then used to produce CAD plans of the existing building which will be used as the basis for design plans. We may also integrate a surveyors contour plan at this time.

We will prepare a concept drawing (sketch plan) from the Client Brief and site meeting. This drawing is a basic outline of rooms & spaces. The client is invited to mark up changes to this design at this stage before the final design is completed.

Feedback received from the client at the concept stage is then used to produce the final design. Drawings are completed, indicating doors, windows, fixtures, etc, and presented in colour. Elevations (what the building will look like) are also produced at this stage. Again the Client has the opportunity here to request changes. However, after this point further changes to the plans or elevations will attract additional fees.

Once the final design is signed off, drawings will be completed to DA standard. Supporting information as required by the approval authority will also be prepared if requested by the client

DA documents are collated & submitted to the relevant authority (usually local council) where they are assessed. **tyrrells.com** can submit the documents to the authority, & track their progress through the assessment process, regularly reporting to the client on their progress.

Construction Certificate (including the plans required) can either be provided for private certification following receipt of development approval, or can be submitted as a combined application with the DA.

Additional information can be provided for construction, including a window schedule & suite of generic details, as well as an option for **tyrrells.com** to provide quality assurance and advice during the project. See the **Building Process** flowchart.

PLANNING

UNIT 3 **THE DESIGN**

3.1 Nothing beats good design

By now, you should have worked out know how much you can afford to spend on this exciting project. This will give you the total area you can afford to build. Now you will need to set out the detail, eg the area of the rooms and decks you will be building, what shapes and sizes the rooms will be and how you want the outside to look. See Plans and Approvals flowchart.

Whether you are renovating, adding to your existing home or building a new home, the key to success starts with a well thought out design that fits your needs. It is important to do all the thinking up front and then develop this into your design. If you don't get it right on paper it will cost a small fortune to change during or after construction. This is besides the misfortune of living with any silly mistakes, such as your bedroom window opening on to your neighbour's noisy carport!

It is essential that the person or firm you recruit to do the design is qualified for the task. Get names from friends whose opinion you respect. Or, better still, find out who designed the houses you love being in. Check their references by asking the designer for the addresses of recent projects. Look at their work and talk to the owners of these properties if you can.

3.2 Finding a designer or architect

The main sources of good design advice are architects and building designers. In many ways, you will easily save whatever it costs to get professional advice with all the benefits in function, appearance and savings you get out of a clever design. Yes, that's right. Good design is worth a 'small fortune' to you in comfort and the pleasure you and your family gets from living in imaginative sunny spaces.

The organisations to contact are

Building Designers Association of Australia

http://www.bdaa.com.au/

Ph 1300 669 854

Building Designers Association of NSW

www.bdansw.com.au

Ph 02 4926 4855

Royal Australian Institute of Architects

http://www.architecture.com.au

Phone 02 9246 4055

NSW Chapter

Tusculum

Level 1 / 3 Manning Street,

Potts Point NSW 2011

Ph (02) 9246 4055

Fax (02) 9246 4030

Design Institute of Australia

http://www.dia.org.au Ph 02 9929 5188

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Melbourne VIC 3001

Ph 1300 888 056

Fax +61 (03) 9662 4140

Email admin@design.org.au

New South Wales

Ph 02 9929 5188

3.3 Designing a new home

Building a new home on land you already own is an exciting but a very big owner-builder project. Hopefully, you have chosen land that suits your family and lifestyle needs with access to a good aspect. A good design should take into account all these requirements.

It takes most architects and designers years of study and then years of practical experience to get good at successfully designing spaces. Their advice will usually be

- check out and take pictures of buildings and styles you like
- prepare a brief of what you want. This brief will include the number of rooms, the things you want most (view v sunlight, privacy v carparking), features and styles you want and a list of detailed inclusions
- indicate the maximum price you can afford to spend
- give this brief to your preferred designer or architect and ask him or her to prepare sketch plans
- work with your architect or designer and evolve the drawings until they are what you want and can afford.

3.4 Renovation of an existing home

Many of same design principles you use with a new home apply to extensions, alterations, additions or renovations. There are, of course, specific issues with an existing home, such as the desire to maintain the original character and materials, and limitations on things like the entry, height of floors, location of rooms. You will need very careful integration with the original building and you will need to program the work if you don't move out while the work is being done.

3.5 The design concept

You probably have some idea of what style of home or renovation you want to suit your family and lifestyle. It is useful to look through home style/design magazines at this concept stage. This will help crystallise your ideas. Remember, though, that you cannot reproduce the designs/floor plans you find in many of these magazines because they are copyrighted.

Features checklist

Look at the land and consider

- *The shape and slope of the land. This will affect the type of construction, location of main areas*
- *The natural features of the land, such as aspect, orientation or views of the block. This will affect where you place the living areas and what size windows you use*
- *Are there parts of the land you can't build on, such as an easement?*
- *Will your building work affect neighbours' homes or will you face privacy problems from the same homes?*
- *Will large trees stop you building on some parts of the land?*
- *Can you cheaply install all the services you need?*
- *Is there adequate access to the site for deliveries and storage of materials?*

3.6 Design costs

Designers and architects usually charge a percentage of the overall building costs to prepare plans for approval by your local Council. The percentage will depend upon how much work you get them to do. The typical range of percentages are

- architects 3–12%
- building designers 2–6%

The usual fees cover

- sketch design
- design development
- preparation of drawings for development consent
- preparation of drawings for construction.

It is important to get an estimate from the architect or designer. The quote should specify exactly what will be covered. For an additional sum the designer can submit the plans to Council on your behalf and deal with any objections to the plans. (If protracted negotiations with Council are required, then the designer would be likely to charge a separate fee.) The quote should also indicate how many revisions/redesigns the designer is prepared to do before charging extra.

An architect or designer might ask for progressive payments for work. For example

- Preliminary site and planning investigation leading to the production of sketch designs.
- Development of sketch designs to an agreed proposal for submission to council.
- Preparation of the Development Application drawings and calculations, writing the Statement of Environmental Effects, presenting argument for any policy on non-compliance you wish to be exempted from, presenting finishes schedule.
- Liaison with Council during DA assessment.
- Coordination with other consultants such as surveyors, structural engineer

Note Costs for engaging a planner to give specific additional advice about any complex Council planning regulations will be an extra charge.

3.7 Council advice

You should go to your local Council and get copies of Council's LEP (Local Environmental Plan). Some Councils offer a service where for a fee you can meet with them on your block of land and discuss where the best position would be to build, taking account of any natural features or any issues that Council might have with, say, heritage.

At this stage it is also useful to arrange to meet your neighbours-to-be and let them know what sort of design you have in mind.

3.8 Drawing up the plans

Depending on the amount of money you have to spend you can either utilise an architect or a draftsperson to draw up your design. The essential thing when briefing the designer is to be very clear on what you want, but also to listen to their advice regarding the essential issues, such as orientation of the house on the land, etc.

> ***TIP*** ***Meeting with the designer***
> *When you go to your first meeting with the architect or designer take along a list of main rooms and spaces you want and any sketches or pictures you have of the building style you like. Be prepared to spend some time communicating your design ideas to the designer. Be clear about what you like and don't like. Encourage the designer to take notes…or give him or her copies of your notes.*

Surveyor

You or the architect or designer will need to arrange a surveyor to plot the trees on a drawing and also mark the contours of the land and location of adjoining houses and anything which might affect your building such as a watercourse or sewer manhole. The survey should be provided in electronic form for use by the architect or designer.

Engineer

Remember you will also need to submit the plans to an engineer who will draw up structural drawings for the building's footings, slabs, beams and retaining walls.

3.9 Energy efficient house design

Do everything you can to minimise the home's 'footprint' and energy usage.

Each house must comply with the BASIX criteria, see Unit 4.3. Refer to the BASIX checklist www.basix.nsw.gov.au but be aware of the following

- consider the climate and location and choose appropriate building materials, ie what material are more durable by the sea what materials should you use in fire prone areas
- orientate the home to be cool in summer and warm in winter
- plan the rooms to receive natural light
- use window protection, such as eaves
- use insulation
- group rooms that use plumbing together.

3.10 Specifications

A specification gives the builder and contractors more detail about what they are doing. It usually contains

- the Building Code of Australia, Australian Standards and industry best practice you need to comply with
- specific requirements for each trade
- the Schedule of Finishes including the specific materials you will use eg solid core doors, terracotta tiles
- lists of the specific appliances, fittings, and fixtures such as toilets are often included with the Schedule of Finishes.

More detailed specifications can also include

- paint schedule for all coatings and paint finishes
- hardware schedule for door and window locks.

> ***TIP*** ***NATSPEC for specifications***
> *NATSPEC, founded in 1975, is a not-for-profit organisation that is owned by the design, build, construct and property industry through professional associations and government property groups. It is impartial and is not involved in advocacy or policy development. NATSPEC's major service is the comprehensive national specification system endorsed by government and professional bodies. The specification applies to all building work and has specialist packages for architects/designers, interior designers, landscape architects, structural engineers, service engineers and domestic owners.*
> *NATSPEC* http://www.natspec.com.au/Products_Services/publications.asp

Consumers and builders assume that drawings and specifications are complete and accurate. This may not be the case even when dealing with architects and experienced designers. Remember the people you contract to do the work on your home will only build what's on the drawings you provide. Detecting problems on the drawings before any work commences can save money, time and the nightmare of a dispute between you and your contractors. So make sure you understand the plans and what all the symbols mean. And if you don't, ASK the designer.

UNIT 4 **APPROVALS**

4.1 Getting approvals

In Australia, you must get planning and building approval to do any large building project. Basically, it works like this.

- Minor, non-structural work will NOT require formal approval if it is less than $5,000 in value (NSW). However, whatever you build must ALWAYS be built in accordance with the building regulations (Building Code of Australia).
- Structural work or major building work over $12,000 requires Council approval, ie planning approval (usually called Development Approval) and building approval (usually called Construction Certificate or Building Permit).
- Some buildings or building work will need additional specialist approval, eg historic buildings, building over the main sewer pipes, building close to delicate wetlands, building in bushfire areas etc.

In all cases, the approvals must be obtained BEFORE you start work. You will get most of these approvals will come from your local Council or from the authority set out in Table 4.1.

Table 4.1 Integrated development

Some development proposals need other kinds of approvals, eg licences or permits. For example, you might be building on land which is subject to a heritage conservation order, in which case you would need to apply to the Heritage Council or the National Parks and Wildlife if it is thought your proposed dwelling could endanger flora or fauna on the land. The other instrumentalities that you might need to contact are the Environment Protection Authority, Department of Natural Resources, Roads and Traffic Authorities and the Rural Fire Service (NSW).

State	***Natural Resources***	***Heritage***	***Fire***	***Roads and Traffic***	***Environment***	***Flora and Fauna***
New South Wales	*Dept of Natural Resources*	*Heritage Council*	*Rural Fire Service*	*Roads and Traffic Authority*	*Environment Protection Authority*	*National Parks and Wildlife*

Anyone can lodge a DA, ie it could be a builder, the designer or the owner-builder. It is usual for the owner-builder to lodge the application themselves.

As an owner-builder, it is unlikely that you will solve any of the more complex planning or technical approval problems yourself. You will usually engage an expert or rely on your architect or designer.

Table 4.2 State significant development

State significant development is declared by the state or regional environmental plan (SEPP or REPP). In New South Wales, applications for such a development are made direct to Planning NSW www.planning.nsw.gov.au under the Environmental Planning and Assessment Act 1979 (Part 3A) and Regulations.

As an owner-builder, it is probably not likely that you will need to apply for a SEPP consent.

Your council can tell you what consents you need.

4.2 Lodging a DA

You may already have your sketch plans prepared but this doesn't mean the plan will automatically meet all the requirements of your local Council. If you intend to become an owner-builder, you should talk to the relevant Council officers (preferably before buying land) and definitely before you build or alter a home. Council officers are usually keen to help with their local knowledge and can advise you about what documents must be included with your applications.

The Council officer can provide preliminary advice and detail specific site issues that you need to address in your Development Application.

You can do this one of two ways

1. You may have worked with an architect or designer to the stage where you have fully developed your design into a Plan, Elevations, Specifications, Survey and Engineering Report showing detailed information on proposed location, size, shape, excavation and structural design. This should have helped you work out a preliminary cost estimate. In this situation the architect/designer should make the application on your behalf and handle all council queries.
2. You may have decided to be an owner-builder with or without assistance from an experienced architect or designer because you already have really good knowledge of the home building industry, procedures and regulations. You can proceed with much of the design and documentation of the job yourself so that you could apply for the DA.

TIP ***If you don't get approval, you might build illegally***

Remember that garages, carports, sheds and roofed outdoor areas (as opposed to pergolas) will normally require Development Approval and you should check with your Council before starting any building work or making any commitment to a contractor or supplier who may say it does not need approval. If you build illegally, this can cause problems when you resell the property, or, worse, if a council officer sees you building they could require you to demolish the unapproved work.

4.3 Council requirements

Every Council tries to make sure the building work you plan to do complies with

PLANNING

1. State planning laws, including traffic management. In New South Wales you need a Section 149 Certificate.
2. Local planning rules.
3. Specific requirements of a precinct or small area.
4. Technical requirements eg fees paid, documents you need, copies of plans.

BUILDING

1. Building Code of Australia.
2. Specific Council requirements such as work on council property eg driveway, hours of work.
3. Specific building requirements such as bushfire, character or style.

Each Council will have different ways to meet its requirements. Below is a list of the sorts of documents that are relevant

- title details
- survey plan
- arborist report
- site plan
- floor plan
- elevations and sections
- landscape plan
- notification plan (these are the plans that are sent to your immediate neighbours)
- stormwater management plan and drainage diagram
- shadow diagrams (show impact of proposed dwelling on neighbouring properties)
- BASIX certificate.

In addition, you may have to provide. a geotechnical report, a bushfire report, statement of environmental affects, heritage impact statement, see Table 4.1.

You will also need to lodge a development application and pay fees to Council. Development consents are usually valid for between two and five years.

Planning (Development) consent

The Council Planning Officers will assess the proposed building for compliance with their Development Plan that divides the Council area into zones in which the different building types are listed as either complying or non-complying. Typically a residential zone requires a minimum site area for each dwelling, a minimum number of onsite carparks, a limit on the number of storeys and a minimum distance of building from the front boundary. Designs that do not comply with all provisions of a Development Plan may still obtain Planning Consent but may be subject to time delays due to arguments necessary to convince Council that the design proposal will not adversely impact on neighbouring properties and the neighbourhood generally.

Application can be made for Development Consent only (without Building Consent) if an owner needs to be satisfied that a proposed design will be acceptable before incurring the costs of detailed drawings and engineering design. It is common, however, to seek both Development and Building application for most house designs in order to save time.

After the Council receives the application they are likely to advertise the proposal in the local newspaper and also write to your neighbours, enclosing a copy of the plan for your proposed dwelling.

What criteria does Council use when assessing the DA?

Councils will seek to ensure that the proposed residence respects the character and amenity of the surrounding area. An extensive range of planning issues are considered, including community or neighbourhood submissions. These submissions form part of the paperwork associated with the application and cannot be kept confidential.

How much does the Development Application cost?

Fees are calculated based on the contract value of the work. You can usually ring Council for a quote. An indication of fees is

State	***Country DA Cost – 250 K – 500K***	***City DA Cost***
NSW	*$1160+$2.34 ea $1000 (or part $1000) greater than $250,000 http://www.gosford.nsw.gov.au/customer/fees-charges/fees_and_charges/fee.2006-01-12.1646175205/fee.2005-06-26.4019262665/fee.2005-06-26.4022542333/fee.2006-01-03.5557345232/*	*per application - $1000 Plan first fee - $160 Additional Charge over $250k – $1.70 (per $1K) Additional Charge over $250k plan first – $0.64 (per $1K)*

In addition to the cost of the DA you will have to pay the Long Service Levy. Owner-builders can apply for a part exemption.

$250,001 - $500,000				
Fee	Legislative	per application	0%	1,000.00
PlanFirst Fee	Legislative	per application	0%	160.00
Additional Charge Over $250k	Legislative	per $1K	0%	1.70
Additional Charge over $250k - PlanFirst	Legislative	per $1K	0%	0.64

If you vary or amend the plans during or after the application period Council will charge additional fees.

Building consent

After planning consent is granted, the Council officers will assess the Drawings, Specifications and Engineering Report for the proposed building to ensure compliance with the Building Code of Australia (BCA). The BCA specifies a minimum standard of materials and workmanship for all the various trades with reference to relevant Australian Standards. The BCA also prescribes minimum design standards that must be applied, including the heights of safety rails, stormwater disposal systems, waterproofing of showers and wet areas generally, and standards for staircases etc.

BASIX

BASIX is required for all developments which contain new residential dwellings. BASIX is a free web-based planning tool www.basix.nsw.gov.au. that requires new residential developments to reduce their water use by 40% and their energy use by 40% compared to existing homes.

How do you get a BASIX certificate?

The BASIX tool calculates the house's energy and water scores based on a range of data, including size, location, design features that you input into the BASIX calculator. The end result is a list of the ways you will meet the BASIX targets. These might be the location of rainwater tanks, the orientation of the dwelling, the size of the windows, heating and cooling systems. You must show these commitments on the DA plans that you submit to Council.

The BASIX tool is not complicated but it is lengthy. You must follow its instructions

4.4 How long do Development Applications take to be approved?

It will take at least six weeks and usually more than 10 weeks for your DA to be determined or approved. However, delays can be experienced where supporting material is missing. When you lodge your application you should be given a reference number and a contact person at Council to assist with your enquiries.

Council need this time for the statutory period to notify adjoining properties about the proposed dwelling or building work on your land.

Some DAs can be approved under what's called 'delegated authority' at Council but others are required to go to a full meeting of Council because it is in the public interest that everyone can debate the development. Development consent is granted on the basis that certain conditions are met during the construction of the project (see Sample below).

Once you have the DA consent then the Construction Certificate/Building Permit application (sometimes called Complying Development) will usually take at least two weeks.

SAMPLE of Development Consent

The DA sets out all the conditions relating to its consent, in accordance with the Environmental Planning and Assessment Act 1979 (NSW).

The conditions are

Confirmation of relevant plans *The terms of consent are given only for the plans submitted.*

Period of development consent *The consent is for a period of two years from the date of consent*

Structural details *Engineer's drawings for the piers, footings and major structural beams are to be submitted and approved.*

Survey report *To ensure the building does not encroach on the minimum required setbacks and is located within the boundary. Builders often get a surveyor to set out the exact position from the very start eg the excavation and footings.*

Home building insurance *Property owners to obtain Home Owners Warranty Insurance (see Unit 8).*

Energy efficiency *(See 3.9).*

Builder's details *Before work commences, written advice to Council of name of builder or owner-builder (including Owner-Builder Permit number).*

Signage *Ensure sign is erected displaying address, name and licence number of the licensed builder or owner-builder (see Unit 7).*

Site management *To safeguard the local amenity, reduce noise nuisance and prevent environmental pollution (see Unit 7).*

Erosion and sediment controls *To contain soil and sediment on the property (see Unit 7).*

Recycling on site *Any vegetation requiring removal should be mulched or chipped immediately.*

Worker's amenities *Toilet facilities must be provided for construction personnel (see Unit 7).*

Termite management certificate *Details of the termite management system must be placed in the meter box when work is completed.*

Stormwater drainage *Drainage system to be installed to control rainwater runoff from roof (as soon as roof is installed) and should be connected to the street gutter or drainage system approved by Council.*

Surface drainage *Minimum floor level above finished ground level, collection of seepage and ground waters.*

Materials and colours *To have regard to amenity of the area.*

Construction or private certifier inspections *To ensure structural integrity, maintenance of health standards, management of environment, compliance certificates to be sought and issued. Seven inspections (see Unit 4.6).*

Building materials *Specific materials for particular environments, eg fire, flood prone areas.*

Driveway access *To ensure adequate access.*

Protection of vegetation *To preserve natural site features and protect trees and ground covers within 3 metres of the building.*

Smoke alarms *To be installed in accordance with Australian Standards.*

Construction Certificate or Complying Development?

After the DA is approved, you can engage Council or an accredited certifier (PCA) to provide you with a Construction Certificate or Complying Development Certificate. This certificate is issued after the Council or an accredited certifier assesses whether the proposed construction will comply with the requirements of the Building Code of Australia and the *Environmental Planning and Assessment Act*.

The applicant must advise Council a minimum two days before work starts and provide Council with the name of the PCA (if it is not Council) and notify any adjoining neighbours of the commencement of works. In addition, as an owner-builder you must now provide Council with a copy of your Owner-Builder Permit.

4.5 Appointment of Principal Certifying Authority (PCA)

Inspections during construction help to ensure that what is built is consistent with what has been approved in the Development Consent and Construction Certificate. These inspections are mandatory at particular stages in the construction process.

It is the owner's responsibility to appoint the PCA. This can be either Council or an accredited certifier. Once chosen, the same PCA must be used throughout the entire project. The PCA will give you a list of the mandatory critical stage inspections and any other inspections that will be required during the construction of your building. The PCA will issue inspection results or compliance certificates. On completion of the development if it complies with all relevant standards an Occupation Certificate will be issued.

If you are an owner-builder you will need to contact your PCA at least 48 hours before an inspection is required. If your PCA misses an inspection due to unavoidable circumstances, your PCA will still need to ensure that the building work is satisfactory

For a list of the mandatory critical stage inspections, see 4.6.

***TIP* Inspections**

- *At each inspection erosion and sediment control measures and site management will be inspected.*
- *Try to be there when the PCA comes to inspect*
- *The PCA might require additional inspections to be carried out, eg some building work that needs to be adjusted before giving approval for a particular stage. They might require presentation of certificates from particular trades.*

If you choose an accredited certifier rather than Council, you need to give Council details of the accredited certifier's name etc.

4.6 Mandatory critical stage inspections

In New South Wales clause 162A of the *Environmental Planning and Assessment Regulations 2000* sets out the mandatory critical stage inspections. For houses and garages they are

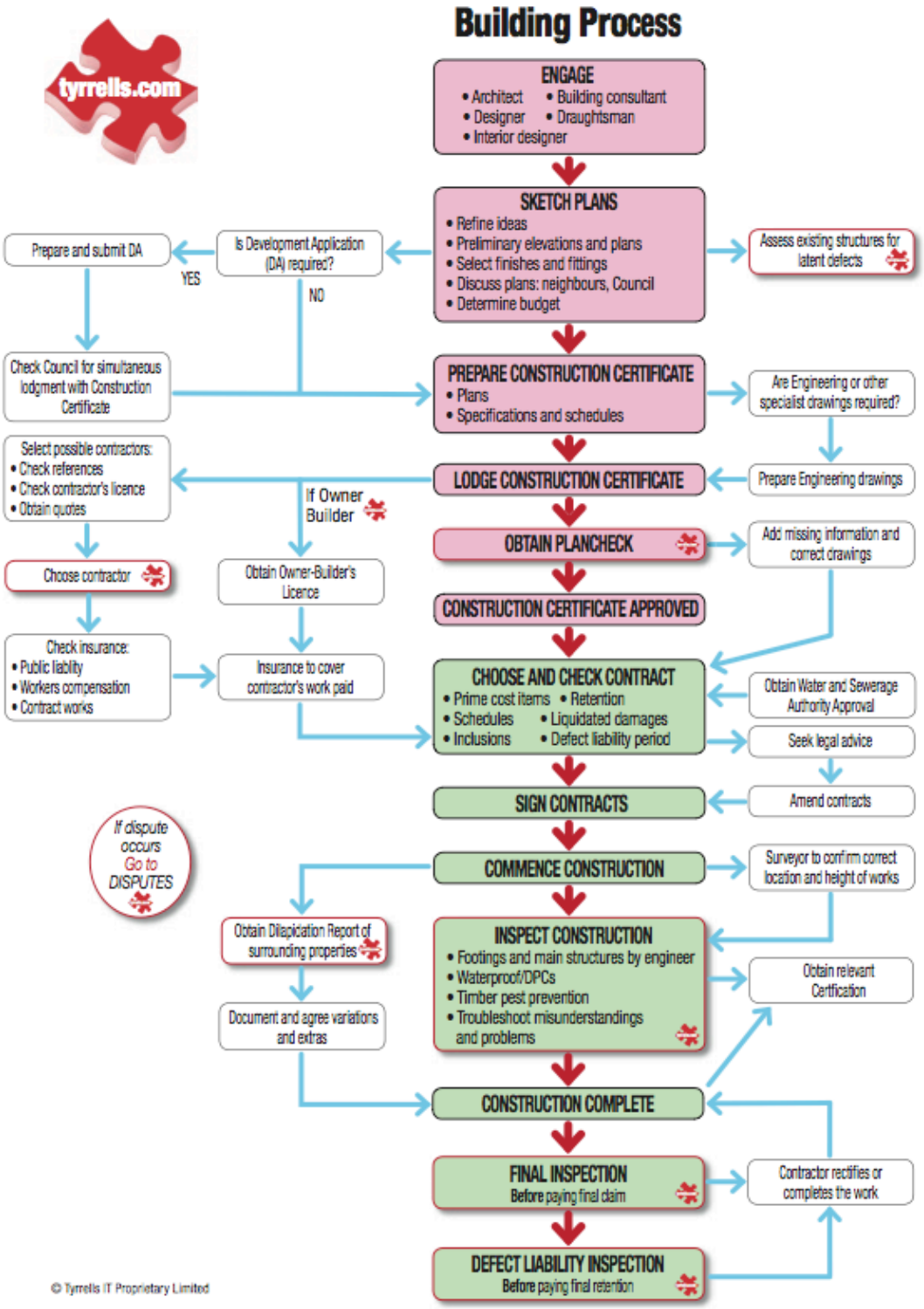
- At the commencement of building work,
- After excavation for, and prior to the placement of, any footings,
- Prior to pouring any in situ reinforced concrete building element,
- Prior to the covering of any framework for any floor, wall, roof or other building element,
- Prior to covering waterproofing in any wet areas,
- Prior to covering any stormwater drainage connections, and
- After the building work has been completed and prior to any occupation certificate being issued in relation to the building.

Depending on the type of building work and how it is being done, the PC may be able to carry out two or more of the required inspections at one time.

TIP ***Check the quality of the work***

Remember that Council inspections DO NOT guarantee the quality of any work you are having done. The quality of the work is in your hands and an inspection by an independent professional, such as a building consultant, is the cheapest way of identifying any incomplete and defective work. It also reduces the risk of you living with or trying to sell a property with serious problems.

A dispute with your contractor will be costly, stressful and take much of the pleasure from the new building work. By selecting someone to check quality and solve inevitable misunderstandings before you begin building you can save money and stress.



MANAGING

UNIT 5 **WHAT HAPPENS WHEN YOU BUILD?**

It's silly trying to know everything a builder knows. However, it is simple to understand the processes step by step – see the flowcharts on Building and Plans and Approvals.

5.1 Step-by-step building process

Once the job gets started, most stages/trades go step-by-step. You need to

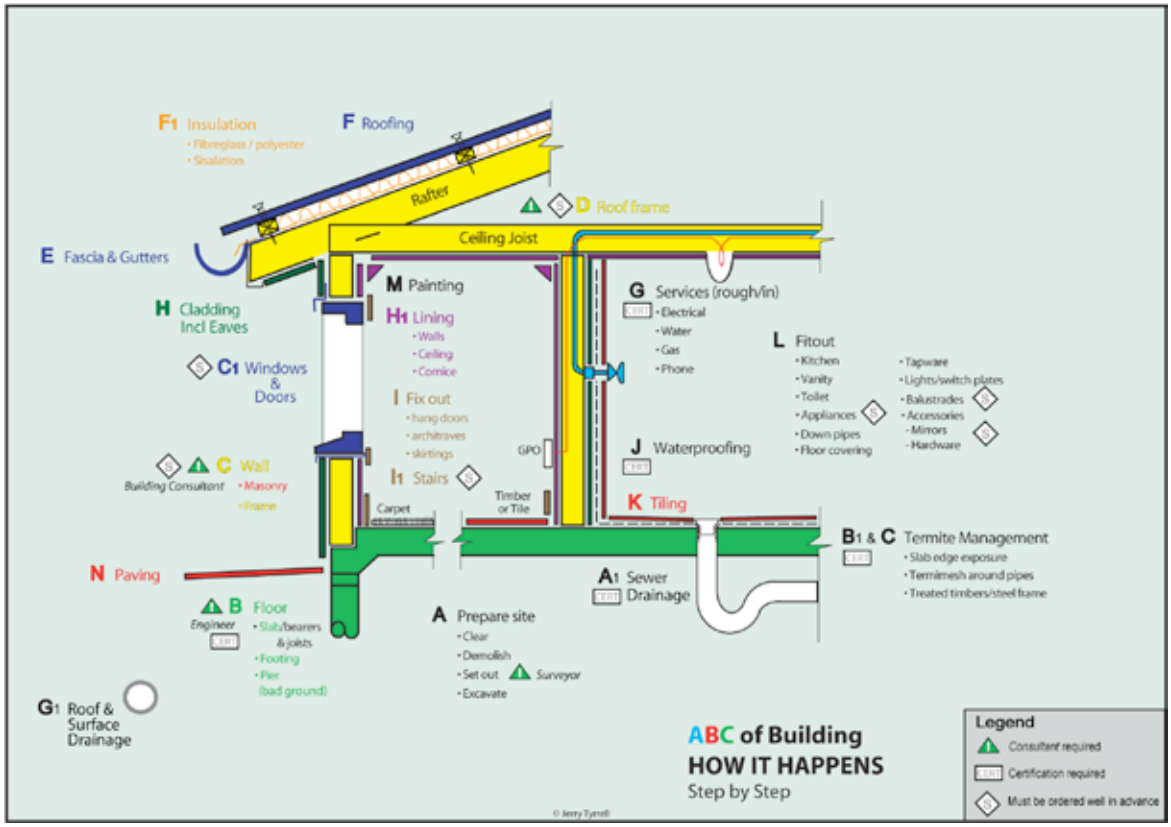
- know the sequence of the work to be able to plan, obtain prices and coordinate the tradesmen, materials and products without mistakes and delays

- prepare a program to suit the complexity and size of your project. For instance, the tiler will not be able to start work before the waterproofing is done. And the internal linings cannot begin before the roof is waterproof. Every job is different but most follow a predictable path which in the industry is called a 'program'. The skill of the good owner–builder is knowing the basic program and then adjusting it to suit the features unique to your building. For instance, a feature fireplace or a suspended concrete spa pool will require careful coordination. The usual sequence of trades is

  1. Excavator
  2. Plumber
  3. Concretor + Engineer + termite protection to penetrations/joints
  4. Carpenter + Frame/Truss manufacturer + Window manufacturer
  5. Electrical/Plumber
  6. Roofer + Fascia/Gutters + Insulation contractor
  7. Bricklayer/cladding contractor
  8. Drywall contractor
  9. Waterproofer
  10. Joiner (a carpenter who does the more detailed stuff)
  11. Tiler
  12. Stair/balustrade contractor
  13. Kitchen manufacturer/installer
  14. Painter
  15. Flooring contractor
  16. Paver/landscaper/carpenter for decks

17. Accessory installers eg mirrors/gates/security.

The following illustration shows the steps in alphabetical order.



This knowledge will help you develop the correct sequence of works for your job. When you engage a contractor you can discuss how long they need for their work. You can also work with them regarding when the next stage can start. There is often an optimum time when it is not a problem for another trade to start. For example, the plumber should start the rough in first. But the electrician can start at the same time so long as he or she leaves the bathrooms until last.

5.2 The program

Take account of the weather and your available time when making up a program for the job. Allow for contingencies, such as delays in the supply of materials and labour shortages, and the time it takes to coordinate each next step.

Do not overestimate your capabilities. Most owner-builder projects take longer than those of licensed builders. As a rule a larger building project will take at least 6 months and if you are doing most of the work yourself, you should allow at least 12 – 18 months.

UNIT 6 **COST CONTROL**

From the start of any major project, financial issues must be carefully managed. Step 1, early in the project, you should work out your budget and how many square metres you can afford to build. Step 2 is to get into the detail of estimates, quotes, negotiating and, most importantly, the Job Cost. The Job Cost is the 'traffic control' for all quotes and financial records.

6.1 Purchasing and estimating

Buying right can save you a lot of money. It is like shopping for groceries. You want quality or a specific product, but you don't want to pay inflated prices. And specials make good sense. Buying building materials and products is also about economies of scale. The basic rule is 'the more you buy, the better price'. You should always calculate the total number of the products you need before you get a price. For example, you won't get a discount for two taps but you'll probably get at least 15% off the price for the 20 taps, spouts and mixers you need for the entire job.

But how do you know how much to buy? You need to be a good mathematician to estimate quantities of products and materials from the plans. You'll need a scale rule and a calculator or spreadsheet to speed up the process and minimise errors. Alternatively, you can ask the contractor to tell you the quantities. The trouble with this approach is the contractor doesn't have to pay for any leftovers, or, worse, pay to get rid of them.

You might consider shopping around for second-hand flooring timbers or bricks or using recycled materials. However, do this prudently and know what you are looking for. You do not want the contractor to put effort into part of the home construction only to find that the materials being used are defective and that the work needs to be redone with new materials.

Use standard sizes wherever possible, particularly for windows and doors. Don't use expensive fittings and fixtures. Room sizes should be efficient.

You can save money by carefully estimating quantities. Return unused materials to the supplier and receive a credit or refund.

TIP ***Finding savings***

- *Buy in bulk whenever possible, ie ALL your tapware, ALL appliances.*
- *Get your contractor to measure up and give you the quantity for any expensive items, such as hardwood decking, driveway paving*

Some contractors will quote to supply and fix while others will quote labour only, ie you will need to pay for all the materials. You must ensure that the contract you enter into with any trade is clear in this regard. It is ALWAYS better to get the contractor to supply most basic materials such as cement, flashings and nails. Otherwise you may spend too much time sourcing products you know nothing about. And, besides, the contractor will usually get sand or dampcourses at least 25% cheaper and will look after anything he/she is responsible much more carefully.

However, you can save a lot of money by buying some products yourself such as appliances. And you should offer to direct pay for any large item, such as tiles and decking timbers if you get the benefit of the contractor's trade discount.

6.2 Discounts

Ask for a trade discount as an owner-builder at all suppliers, including suppliers of concrete, gravel, hardware, doors and even door furniture, such as knobs and hinges, or you can quote the subcontractor's name to companies he or she has referred you to and many businesses will give you a discount.

Hardware costs can add up, and a 5% discount over a total expenditure of around $5,000 (much more if you include items such as sand and cement) for the average home is a savings of $250.

6.3 Variations

During the job, you might change your mind or add work to the original job. These are usually called variations or extras. Variations should be put in writing and a cost provided.

All variations have the ability to throw your budget out.

TIP ***Making variations***

Changes during the job are so much cheaper than changing things when the job is finished. So have courage, but be ready for some unexpected added costs. Keep an accurate record of the contractor's estimates of variations and extras and confirm these in writing when possible.

6.4 GST and statutory charges

Ensure that all quotes you receive include GST and statutory fees. For instance, if the plumber needs to dig up the footpath to connect to the water main he or she needs to add the Council 'Road opening' charges.

6.5 Paying contractors

If you have a contract with the contractor the terms of payment will be set out in the quotation or contract.

Pay contractors on presentation of invoice or within seven days of the completion of the work. Contractors you know or who are referred to you should never need prepayment. However, you may have to pay them a deposit for materials, such as windows, kitchens, bricks etc, but you also should be able to pay the supplier directly. Do not pay for any work in advance of it being done.

Where there is extra work, it is preferable to have agreed on the cost of the extra work. Unless you know the contractor very well and know their work habits it is best to avoid being tied down to an hourly rate.

See also Contracts, Unit 10.

6.6 Cost control

The best way to stay on top of the financial side of project is to summarise all estimates and actual costs in one document. Most contractors use a similar approach and call this the 'Job Cost' (see the table on the next page). So why not set up a spreadsheet with headings similar to the ones below? The trick with cost control is to use it like a financial diary. This means spending time writing up any of the day's costs EVERY night. Otherwise you'll be surprised how you miss adding a variation the carpenter has warned you about or the cost of the aluminum angle the tiler asked you get. The other tip is to arrange the spreadsheet to self-calculate all totals. If you can't do this yourself, ask your computer or accountant friends to show you how to do set it up.

For more on estimating and budgeting, see Unit 2.

JOB COST	Project	*Owner-Builder name*
COST SUMMARY	Estimate	
	Actual	
	Variations	
	TOTAL to date	
	QUOTATIONS & FEES	MISCELLANEOUS
	Cost ($)	Materials/supplies/hardware/hire/day wages ($)

Item*	Estimate	Actual	Item	Cost
PLANS & APPROVALS				
Design costs				
Engineer's fees				
Council fees				
Statutory fees				
BUILDING WORK				
Demolition A				
Treelopping				
Clearing				
Surveyor				
PLUMBER				
Drainage				
Excavation A				
Termite management B & C				
FOOTINGS B				
Concreter				
FLOORS B				
Concreter				
Bearers and joists				
WALLS C				
Bricklayer				
Bricks				
Frames and trusses				
Timber				
WINDOWS & DOORS C1				
Windows/doors				
Internal doors				
External doors				
Garage door				
Roof frame D				
Fascias and gutters E				
Roofing F				

Item*	Estimate	Actual	Item	Cost
Insulation F1				
Sisalation				
Wall/roof				
Electrician G				
Plumber G				
Water/hot water/aerial drainage				
Gas				
Roof and surface drainage G1				
Cladding H				
Including eaves				
Lining H1				
Fix out I				
Stairs I1				
Waterproofing J				
Tiling K				
FITOUT L				
• Kitchen				
• Vanities				
• Toilets/basins/baths				
• Appliances				
• Tapware				
• Balustrades/handrails				
• Switch plates				
• Lights				
• Accessories				
• Floor coverings				
• TV antenna				
• Downpipes				
PAINTING M				
• Interior				
• Exterior				
Paving/driveways N				
Surveyor				
Building Consultant				
SUB TOTAL				

* In this column

- list ALL items you can think of, eg various consultant's, concreter, carpenter etc. Include appliances and consultants fees.
- Coloured letters, eg B refers to How it Happens.

UNIT 7 **STICKING TO THE RULES**

7.1 Relevant codes and authorities

All building work you do or have done MUST comply with the Building Code of Australia (BCA), see also 4.1 and following. The Code is a uniform set of technical provisions for the design and construction of buildings and other structures throughout Australia. In New South Wales the BCA is given legal effect under the *Environmental Planning and Assessment Regulations 2000.*

For further information please refer to the Building Codes Board's website at www.abcb.gov.au.

As an owner-builder you have the same responsibilities under the BCA as does a licensed builder.

Australian Building Codes Board (ABCB)

The Australian Building Codes Board is a joint initiative of all levels of government in Australia. The Board's mission is to provide for efficiency and cost effectiveness in meeting community expectations for health, safety and amenity in the design, construction and use of buildings through creation of nationally consistent building codes, standards, regulatory requirements and regulatory systems.

The ABCB welcomes comments and suggestions for the BCA and on other matters.

Phone and email contact details for ABCB staff can be found at the ABCB website or you can fax/mail/phone the office

Australian Building Codes Board
GPO Box 9839
Canberra ACT 2601
Telephone 1300 134 631
Facsimile (02) 6213 7287
Email abcb.office@abcb.gov.au

We have also included a summary of rules most tradesman and their associations follow – see 15.3.

***TIP* Paperwork can become Project Records**

- *Buy a lever arch binder and dividers from your local stationary.*
- *The first section should be Contacts with names, email address mobiles, faxes and banking details if you intend to pay them electronically.*
- *Use the first divider as your Contents and label this each time you add another section.*
- *Label the dividers for each consultant, trade or supplier.*
- *You can use then this to store all quotations and information about your project.*
- *Keep at least 5 copies of the approved plans in A1 size and 10 copies reduced to A3 size. Replace with any new amended plans so no one gets confused. You will need these to provide to professionals and tradespeople for quoting or for set out. Keep them in a plastic sleeve in the binder. You will also need to send plans to suppliers such as the window and kitchen company.*
- *You will also require additional photocopies of the Council approval documentation and any engineer's drawings.*

7.2 Getting organised

One of the secrets to successful owner-building is to be well organised. Try to anticipate any difficulties or clashes. Do as much work upfront with the timetable/schedule and keep an eye on the budget, see Units 2 and Unit 6. At the minimum

- pay all fees to utilities as soon as possible, eg Council for gutter crossing, water utility for the sewer connection, etc.
- open an account at the local hardware store and negotiate a trade discount if possible.
- buy a lever arch folder for the quotes and warranty/certification inspection certificates, see also the Tip above
- put the phone numbers of key contractors and consultants into your mobile phone (see Tip above)
- do a rough schedule of when certain trades are commencing work on your dwelling – look at overlaps
- create a spreadsheet to keep track of costs – see sample at 6.6.

7.3 Safety

The most important practical responsibility of your project is to create and maintain a safe workplace and that everyone carries out their work safely. You might think this is commonsense, but everyone who comes onto a building site must work safely together and you will ultimately be responsible for any injury or accident.

If you have worked on building sites, then you will probably have what's known as a 'Green Card'. This is proof that you have completed a course on safe building practices run by training organisations in your state. If you haven't worked on building sites, you should do this course.

In New South Wales the body that administers safety on work sites is Workcover NSW www.workcover.nsw.gov.au. WorkCover is a government agency and its main statutory functions are to administer the Acts listed below

- *Occupational Health and Safety Act 2000*
- *Workers Compensation Act 1987*
- *Workplace Injury Management and Workers Compensation Act 1998*
- *Workers' Compensation (Dust Diseases) Act 1942*
- Regulations.

Everyone who works on your project should give you a document setting out how they will safely do their work. This is usually called a Work Method Statement, see 7.3.2 below.

TIP ***Keeping the site safe***

During the project, you should

- *ensure all electrical cables and equipment have been inspected and labelled by a qualified electrician*
- *inspect the site at the end of each day*
- *remove any hazards immediately or ask the person responsible to remove them*
- *keep a first-aid kit on site and restock regularly.*

***TIP* Safety rules**

- *Most safety is commonsense or simply care for others.*
- *No unauthorised person should be able to enter the site.*
- *Read the labels/cans/containers on all products regarding flammability, toxicity and handling instructions.*
- *Place materials carefully on a stable, level surface and do not stack too high.*
- *Cover or barricade holes.*
- *Place caps/covers on sharp points/edges.*
- *Barricade sides of any raised areas/stairs.*
- *Keep all areas well ventilated and especially under buildings or when using strong solvents.*
- *Avoid termite chemical use and if it is used, warn everyone where it has been applied.*
- *Never work above someone.*
- *Work off properly placed ladders, step ladders, tressles and scaffold.*
- *Never reach/lean from a ladder or work platform.*
- *Get fall arrest and ladder stability points fitted to your roofs*
- *Do not step onto sloping roofs unless you are harnessed.*
- *Never work behind earth moving machinery.*
- *Wear gloves, goggles and ear buds. Wear a hard hat when during demolition and when erecting frames.*
- *Do not demolish anything without an experienced with you.*
- *Do not use nail guns and power saws unless you have been taught how to use them.*
- *Water and electricity do not mix.*
- *Get the electrician to set up a waterproof power board with safety switch fitted on every level.*
- *Do not leave loose materials and tools around especially on roofs/scaffolds where they tripped over or be kicked onto people below.*
- *Avoid working outside on wet days.*
- *Respect strong winds – brace incompletes structures and tie down materials.*

A WorkCover B kit is available from tyrrells.com

WORKCOVER B COMPONENTS are

2 x sterile eye pads

1 x 10cm gauze bandage

1 x thermal rescue blanket

1 x pair of stainless steel scissors

1 x pack of 50 adhesive plastic strips

1 x adhesive dressing tape 2.5cm x 5m

1 x pack of plastic amputation bags (S/M/L)

5 x non adherent dressings 7.5cm x 7.5cm

6 x sterile eye wash solution 10ml single use

1 x pack of sterile swabs (10)

4 x triangular bandages

3 x wound dressings large non medicated

1 x gauze bandage 5cm

4 x pairs of disposable gloves

1 x pack of safety pins

1 x stainless steel splinter forceps

1 x first aid pamphlet

7.3.1 Codes of practice

Industry codes of practice provide practical guidance and advice on how to achieve the standard required by the Acts and regulations. Codes of practice are developed through consultation with representatives from industry, workers and employers, special interest groups and government agencies.

There are many Guides and Codes of Practice available from Workcover NSW on the http://www.workcover.nsw.gov.au site and you can contact WorkCover if you want to discuss any concerns you have with the safety of your building project.

7.3.2 Work method statements

The purpose of a work method statement is to

- outline a safe method of work for a specific job
- provide an induction document that workers must read and understand
- meet legal requirements, ie for hazard identification and control
- program work, materials time, contractors, and to anticipate problems
- use as a tool in quality assurance.

You can obtain a pro forma Work Methods Statement from the WorkCover site at http://www.workcover.nsw.gov.au/Documents/Publications/AlertsGuidesHazards/General/writing_work_method_statement_plain_english_guidelines_0231.pdf
If you take time to prepare a clear and concise statement you will save time and money.

7.4 Site management

Successful site management takes skill and will usually lead to a reduction in problems and complaints from neighbours and authorities, especially noise and prevention of environmental pollution during the building process. With good site management you can influence

- TIME - Building works (including excavation and delivery of materials to and from the site) must only be carried out within the hours set out in conditions of consent. This is usually Monday to Friday 7 am to 6 pm and Saturday 8 am to 3 pm. Work outside these hours is not permitted without prior Council approval.

- STORAGE - Stockpiles of topsoil, sand, aggregate, spoil or other material must be stored clear of any drainage path or easement, natural watercourse, footpath, kerb or road surface and must have measures in place to prevent the movement of these materials off site. (see also Erosion controls below)

- CUTTING, WASHING and CLEANING - Building operations such as brickcutting, washing tools, concreting and bricklaying shall be undertaken on the building block. The pollutants resulting from these operations must remain on site.

- RUBBISH and WASTE - Builders waste must not be burnt or buried on site. All waste (including felled trees) must be contained and removed to a Waste Disposal Depot. Rubbish should be disposed of in a designated manner preferably into a container and frequently removed from site.

- TREES and SHRUBS should be properly protected by mesh.
- SILT FENCING/CONTROL.

ALERT Protecting neighbour's property

You have a responsibility to ensure your building work does not cause damage to a neighbour's property, ie your footings might require excavation near a neighbour's boundary fence, with potential damage or cracking to brickwork.

Take photographic records BEFORE any work is started.

7.5 Signage

Owner-builders must erect a sign showing

(1) the Owner-Builder Permit number, their name and contact details.

(2) the Prime Certifying Authority and its contact details

(3) 'Unauthorised access to the site is not permitted'

(4) The lot number.

The minimum size of the sign should be .5m^2. Tyrrells suggests the dimensions of the sign should be 600mm x 420mm.

7.6 Notifications

You must notify various organisations or consultants that you are about to commence construction work

- **Council** - two days before you start and in writing
- **Neighbours** - before you start
- **Principal Certifying Authority** - five days before you start, and in writing.

7.7 Services

It is essential that you know where on the property the services are available before you commence construction. The sewer authority can give you this diagram for a fee. Most properties will already have a water meter and possibly gas connected. The electrical supply will be connected to a pole in your property or to the existing building. Relocation of these services or temporary supply will be organised by your tradesman in consultation with the relevant authority.

In all cases, you need to know where everything in the ground is BEFORE you dig. In New South Wales there is a service called Dial Before You Dig (see Alert box below). They will find the location of underground pipes and cables and mark them on the ground or a plan for easy identification. Aerial or overhead wires might need moving if they are too low and stop access for vehicles. You can also arrange for wires in the street to be covered by your electrical authority.

You will have to pay the sewer connection fee and the water connection fee. There is also a fee for inspecting the plans. The water authority will also need to stamp the plans. Failure to get the sewer authority to approve your building work will incur a fine. If you damage any services in the street, you need to get them fixed

Telephone

You will need to contact the telephone carrier, who will provide a plan showing where the telephone cable is located.

ALERT Dial Before You Dig

This service provides you with contact details for all the services that come on to your property. You must contact them before you start any excavation work. Allow two days.

Gas

If you want to use gas appliances in your new home, you should contact your local gas authority to find out whether there is a natural gas main in your street, or whether you need to use portable bottled gas. The gas provider will provide you with a map of the location of the gas at a point nearest your boundary.

Electricity

You should contact your electrical authority and ask for advice regarding installation of power on to your property. It is sensible to put power underground if possible.

7.8 Amenities

Before work starts, toilet facilities must be provided for everyone working on the job. One is usually enough, but technically you need 1 toilet for every 20 workers. The toilet should to be installed and operated in an environmentally responsible and sanitary manner.
Temporary toilets cannot remain onsite for any longer than 12 months without approval of Council.

You should have water connected to the most convenient, well drained and central position on the site, and not where it might interfere with your building.

Every contractor who works on your site should take care of their own first aid. However, as previously advised, you should also have a Work Cover approved kit for your own use and ready for any emergency.

TIP ***Cost-effective site toilet***

For a longer job, you can save money and install your own toilet using a temporary shed with a toilet and hand basin plumbed into the sewer by your plumber. When the excavator is onsite ask him to cut a nice flat base for the shed or the shed door will be hard to close! Buy a toilet and you can often use the cistern and basin from a bathroom you are renovating or just get a small handbasin and cistern secondhand.

Note put the shed as close to the point where the sewer comes on to the property. Put a simple hook and eye catch on the inside of the shed door.

Also ask the plumber to install a separate garden tap. This will provide onsite water. Buy a metal fitting for the tap connection and a hose.

At the end of the job, you can remove the shed (and sell it or move it to a more suitable spot) and ask the plumber to remove/disconnect the toilet.

7.9 Erosion controls

To contain soil and sediment on the property, you must implement erosion controls prior to clearing the site and commencement of site works. You usually do this by

- The installation of a sediment barrier or fence. This is usually a combination of hay bales and fabric fencing which stops silt and mud washing off the property before all the new drains are working and external paving and turf is completed. Drains, gutters and roadway must be kept clean and free of sediment.
- Construction of a single driveway for access onto the site made of 40 mm blue metal aggregate or recycled concrete to a depth of 150 mm.
- Soil erosion fences must be maintained until all disturbed areas are restored by turfing, paving or revegetation.

UNIT 8 **INSURANCE**

Before signing any Contract for residential building work, it is essential to make sure that all the relevant insurances are in place to protect

- you as owner/owner-builder against physical and financial loss
- the health and safety of everyone working on the building site.

Of course, each contractor or consultant SHOULD have their own insurances. You need to check that each contractor's certificates of currency is suitable and up to date BEFORE they do any work for you.

8.1 Owner-builder insurances

There are a number of insurances you will be involved with as an owner-builder.

You must have

- construction insurance
- workers compensation insurance
- public liability insurance

There are several companies who can provide these insurances. Contact your insurance broker builders@buildersbroker.com.au or research on the Internet. A number of insurance companies can provide a quick online quote for you.

The important factor for insurance companies during renovations is whether the home is lockable and secure. Some insurers (eg AAMI) will insure renovations under normal building insurance. If your owner-builder work is a renovation, you must check with your insurer to determine if your current building insurance policy still protects you during the period of the renovation or extension. You should obtain any confirmation in writing.

In New South Wales under *the Home Building Act 1989*, your contractors must have home warranty insurance for building work costing more than $12,000.

Construction insurance

Construction insurance is also known as Contract Works Insurance or Construction All Risks Insurance. It covers the risks associated with the building process, including fire and storm impact, wind and water damage, malicious damage, theft, including theft of materials in the open air. The policy also covers demolition, removal of debris etc, if needed. The cost is usually based on a percentage of the cost of the building.

Public liability insurance

Public liability insurance covers third party personal injury and property damage that occurs during the period of the policy for which you are legally liable. This covers the owner-builder or tradesperson if anyone is injured as a result of the building work. Owner-builders are responsible for site safety and coordination of their building works and that is why it is vital that you take out public liability Insurance. You should also obtain a certificate of currency from any sub-contractor working on your project to ensure they too have public liability cover before they commence work.

Some Councils require you to have public liability cover before they allow works to commence. As well, if you have obtained finance for the building work, the financier will require evidence of a Construction and Public Liability policy.

Workers compensation insurance

Workers compensation provides insurance for contractors injured during the building work. Builders or tradespersons who are not working under a company name cannot usually take out workers compensation insurance for themselves. As an owner-builder it is important you take out this cover for your contractors. It can be minimal cover but it will provide insurance for contractors who are injured on the building site (who are not covered by their own workers compensation insurance).

ALERT ***Ensure contractors are insured***

Beware of any contractor or tradesperson who says they don't need insurance!

Home warranty insurance

Home warranty insurance protects consumers from financial loss caused by a builder's failure to rectify or compensate their client for defective or incomplete residential building work. The cover only applies when the builder has died, disappeared or become insolvent.

Home warranty insurance is compulsory under relevant building legislation in most states for builders carrying out residential work valued at over $12,000. The builder is responsible for taking out home warranty insurance at the time of entering into a building contract with the homeowner.

The warranty covers the client during construction and for six years from the completion of the work. Again it protects the client against the builders' insolvency and for structural defects, but only if the builder disappears, dies or becomes insolvent.

In New South Wales, if the building work is valued at less than $12,000, there is no legal requirement for the builder or tradesperson to provide a home warranty insurance certificate.

ALERT ***Other insurances***

If you are renovating, and you are staying in the home or keeping your furniture there during the work, you must alert your current home insurance provider in writing before construction begins. You need to find out if your ***home and contents*** *will still be insured during the building period. If you don't inform your insurance company and damage or theft occurs during construction you may find you are not covered.*

Home owners and owner-builders should give consideration to ***personal accident*** *insurance. This will protect you if you have an injury on the site.*

8.2 Warranties

The work and quality must be to acceptable industry standards. The *Guide to Standards and Tolerances 2007* was produced by the Victorian Building Commission in collaboration with the NSW Office of Fair Trading, the Tasmanian Government and the ACT Government.

The following warranties by builders and tradespersons are implied by law into contracts, even if they are not written in the contract

- the work will be performed in a proper and workmanlike manner
- the work will be in accordance with the plans and specifications
- all materials supplied by the contractor will be new unless otherwise specified
- the work will comply the relevant state law eg the NSW *Home Building Act 1989*
- the work will be done with due diligence and within the time stated in the contract, or within a reasonable time
- the work will result in a dwelling that is reasonably fit to live in
- the work and any materials used will be reasonably fit for the specified purpose.

(from OFT Home building contracts, 8 November 2007)

The contractor should provide you with any manufacturer's warranties. If there are defects it is the contractor's or supplier's responsibility to ensure they are rectified within the warranty time.

Within six years of completion

In New South Wales, if you sell your home within six years of practical completion of the works you must comply with the following requirements under the Building Act

- provide a Defect Report prepared by a certified building practitioner. The Report should be not older than six months
- obtain owner-builder insurance covering the building work
- provide the new owner with copies of the specific home warranty insurances that you have received from contractors who did building work on your home
- warrant that all the building work was carried out in a proper workmanlike manner.

More than six years after completion

If you sell your home on or after six years after practical completion, the purchaser will usually obtain a pre purchase inspection to identify any serious issues. You may also be asked to provide copies of the various certificates you have obtained from consultants and contractors involved in the project, eg the Occupancy Certificate, Engineer's Certificate, Waterproofing Certificate etc.

ALERT

In New South Wales contractors must provide a certificate of home warranty insurance for work over $12,000.

8.3 Making a claim

To make a claim under the contractor's Home Warranty Insurance Policy you need to

1. Notify the contractor in writing
2. Lodge a Request for Assistance with the Office of Fair Trading (OFT)
3. The OFT will attempt to mediate the complaint with both parties by telephone
4. If unsuccessful, the OFT will refer the complaint to
   (a) formal mediation
   (b) the Consumer Trading and Tenancy Tribunal http://www.cttt.nsw.gov.au if the claim is less than $25,000
   (c) the Commercial Tribunal where the claim is more than $25,000.

   See further 16.3.
5. If still unresolved, a claim is made against the insurance companies.

UNIT 9 **PERSONNEL**

Some owner-builders just do the coordination and contract out some or all of the work to building professionals or tradespeople. Others do a lot of the building work themselves, except work that requires a licensed tradesperson such as a plumber or electrician. Finding people, getting quotes, buying the right products and keeping enough time to make careful decisions is a big task in itself.

9.1 Professionals

As an owner-builder you will come in contact with a number of building professionals. Briefly this is what they can offer to your building project.

Architect or building designer

- Works with you to develop your dreams and ideas into the plans you need.
- Prepares detailed documents for council submission.
- Coordinates other consultants (eg engineer etc) and obtains Council approval.
- Advises basic costs.

Engineer

- Works with the designer to create drawings to support the building structure.
- Inspects the work they have designed to ensure it complies with the drawings.
- Certifies any work at the end of the job.

Surveyor

- Measures the land and any improvements on the land and prepares a detailed drawing for the designer.
- Sets out the location and height of the proposed building accurately.
- Certifies that the building has been built to the right height and location on the property.

Building surveyor

- Assists with enquiries about building rules and issues approvals.
- Inspects the work at critical stages.
- Issues relevant certificates at the completion of the work.

***ALERT* Site set out**

No construction can begin until the site has been set out. An owner-builder is advised to secure the services of a Registered Surveyor It will become evident during the building process if the set out hasn't been done correctly and can be disastrous.

Building consultant

- Checks plans and documents for any errors or omissions.
- Inspects the building work at stages to check the quality.
- Certifies payment claims.
- Manages the building work on your behalf.
- Assists with problems or disputes.

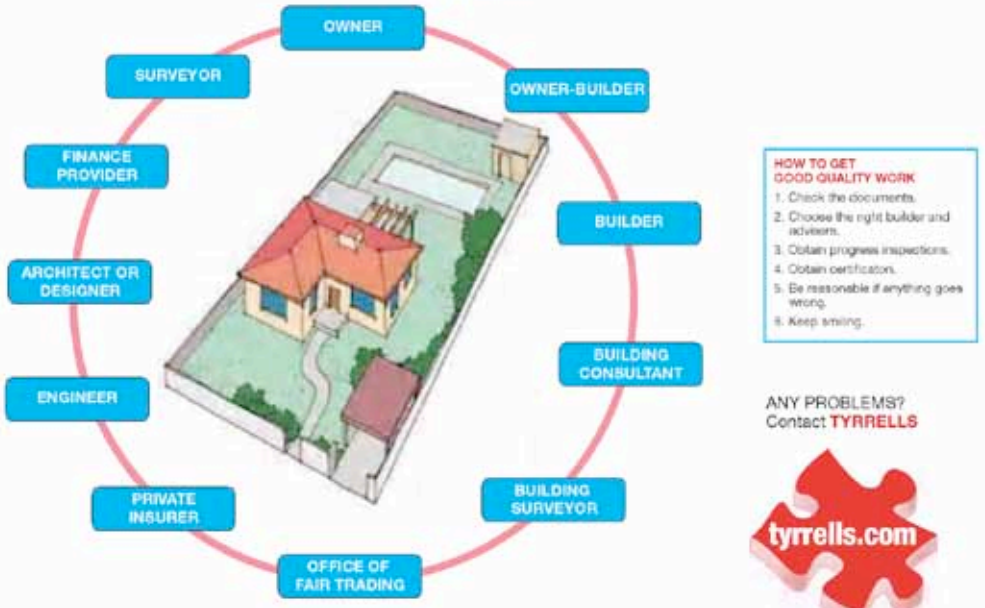
***TIP* Contact details at your fingertips**

When you have chosen your professionals put their contact details into your building folder and your mobile phone.

Who's Who in the Building Zoo

Who's who in the building zoo?

Your guide to understanding the role of building professionals
A BUILDING PROJECT IS A TEAM EFFORT



HOW TO GET GOOD QUALITY WORK

1. Check the documents.
2. Choose the right builder and advisers.
3. Obtain progress inspections.
4. Obtain certificates.
5. Be reasonable if anything goes wrong.
6. Keep smiling.

ANY PROBLEMS?
Contact **TYRRELLS**

tyrrells.com

This diagram tells you what everyone in the team is doing.

Most buildings projects are successful if you are aware of the key steps in the process and understand what each participant does. The process can be complex (see Building Process) and it is important to avoid the typical building nightmares. YOU are the team captain and the most important person in the project.

THE OWNER
- RESEARCH what you need to competently carry out a building project.
- COMMUNICATE your requirements to a carefully chosen designer.
- SELECT everything.
- UNDERSTAND what the drawings mean and take responsibility for mistakes or anything left out of the plans.
- REQUIRE approval and compliance of all work.
- SELECT an appropriate builder.
- ENSURE the building quality is satisfactory.
- PAY all reasonable costs including extras and variations promptly.
- BE RESPONSIBLE for getting what you pay for.

THE OWNER-BUILDER
- ALL the above.
- You have the same responsibilities as a licensed builder.

THE BUILDER
- PROVIDES quotations.
- OBTAINS appropriate insurance cover.
- PROVIDES and/or enter into a contract.
- CARRIES OUT the work in accordance with the building regulations, trade practice and approved documents.
- MAKES ANY CHANGES you want, if you pay for them.

THE BUILDING SURVEYOR
- ASSISTS with enquiries about building rules and issue approvals.
- INSPECTS the work at critical stages.
- ISSUES relevant certificates at the completion of the project.

THE ARCHITECT OR BUILDING DESIGNER
- WORKS WITH YOU to develop your dreams and ideas into the documents you need.
- PREPARES detailed documents for more complex work.
- COORDINATES other consultants and obtains Council approval.
- ASSISTS in selecting the builder, getting quotes and preparing the contract.

THE ENGINEER
- COORDINATES with the designer to create the structural documents.
- INSPECTS the work he has designed.
- CERTIFIES any work he has inspected at the end of the job.

THE BUILDING CONSULTANT
- CHECKS document for errors and omissions.
- INSPECTS the work at stages to make sure the quality is OK.
- CERTIFIES progress payment claims.
- MANAGES the building work on your behalf.
- ASSISTS with problems and disputes.

THE SURVEYOR
- MEASURES the land and improvements and prepares a detailed drawing for the designer.
- SETS OUT the location and height of your building accurately.
- CERTIFIES that the building has been built to the right height and location on the land.

THE OFFICE OF FAIR TRADING
- LICENSES the builder.
- ISSUES Owner-Builder licenses.
- ADVISES the consumer if a complaint is made against the builder.
- ADMINISTERS the Fair Trading Tribunal in the event of a dispute.

FINANCE PROVIDER
- PROVIDES funding.
- RELEASES funds when stages of the work are finished.

PRIVATE INSURER
- PROVIDES home building warranty insurance.
- PROCESSES insurance claims.

Table 9.1 Where to get help

Organisation	Phone Number
Association of Consulting Engineers	(02) 9922 4711
Australian Institute of Building	(02) 9279 0094
Australian Institute of Building Surveyors	(02) 9712 8822
Australian Paint Manufacturers Federation	(02) 9922 3955
BISCOA (Building Industry Specialists Contractors Association)	(02) 9876 2331
Building Designers Association of Australia	(02) 9413 9352
Building Research Centre	(02) 9385 0400
Cement & Concrete Assoc.	(02) 9437 9711
Ceramic Tile Association	(02) 9807 6048
Clay, Bricks & Pavers Assoc.	(02) 9629 4922
Concrete Masonry Association	(02) 9903 7760
Consulting Engineers of Australia Association	1800 800 528
Dept of Fair Trading	(02) 9895 0111
Design Institute of Australia	(02) 9929 5188
Housing Industry Association	(02) 9978 0400
Institute of Building Consultants	(02) 9879 7050
Institute of Engineers	(02) 4926 4440
Institute of Strata Title Management	(02) 9904 8499
Law Society/Institute	(02) 9926 0333
Master Builders Association	(02) 8586 3555
Master Plumbers Association	(02) 9797 7055
National Electrical & Communications Association	(02) 9744 1099
NATSPEC (Specification for Construction Industry)	(02) 9923 1499
Property Council of Australia (formerly BOMA)	(02) 9252 3111
Royal Australian Institute of Architects	(02) 9246 4055
SPASA (Swimming Pool & Spa Association)	1800 802 482
Standards Australia	1300 654 646
Timber & Building Materials Association	(02) 9360 3088
Timber Development Association	(02) 9360 3088
Workcover	(02) 9370 5000

9.2 Contractors and tradespersons

9.2.1 Making a selection

As an owner-builder you are responsible for engaging all the consultants, contractors and suppliers working on your property.

It is preferable to engage people who live and work in the area in which you are building. You can find them by

- word of mouth through friends, or recommendations from a contractor you have already hired
- professionals in the area
- previous contractors who you have liked working with
- advertisements in the local newspaper
- local trades associations.

You should only deal with licensed tradespersons. You are asking for trouble if you don't as unlicensed tradespersons may not be qualified to do the work.

> ***TIP*** ***Contact details at your fingertips***
>
> *When you have chosen the main tradesperson or contractor, put their phone number in your mobile phone and in your building folder.*

The Office of Fair Trading NSW offers the following building checklist. It is available on their website at http://www.fairtrading.nsw.gov.au/building/homeowners/buildingchecklist.html

Twelve important questions to ask a contractor.

1. What is your contractor licence number?

You should only deal with a contractor who is currently licensed by the Office of Fair Trading

- go to our online licence check and look up the contractors details yourself or
- call the Office of Fair Trading on 13 32 20.

2. Where can I see examples of your work?

Ask the contractor for the addresses of previous houses they have renovated or built and ask their clients if they were satisfied with the results.

Some questions you can ask

- Was the project finished on time?
- Did they stay close to the quoted costs?
- Was there proper supervision of the other tradespeople?
- Did any defective work get fixed promptly?
- Would they recommend the contractor?
- And importantly, was there good communication with the contractor?

3. What other jobs have you got on at the moment?

A contractor with a lot of work on may not be able to properly manage your job as well.

4. Who will supervise the work?

A contractor doing a large job may get a supervisor to manage the project.

Make sure the supervisor has

- sufficient experience in the type of work you want done, and
- a current Supervisor's Certificate from the Office of Fair Trading.

5. Do you have proper insurance?

It is important to check the contractor has all the necessary insurance cover to protect you and your home if something goes wrong.

See Unit 8 for an explanation of the different issues and types of insurance

- Home Warranty Insurance.
- Builders All-Risk Insurance.
- Construction Insurance.
- Public Liability Insurance.
- Workers Compensation or WorkCover Insurance.

6. How much deposit do you need?

The law specifies the maximum deposit you can be asked to pay

- if the contract price is up to $20,000, the maximum deposit is 10% of the contract price.
- if the contract price is over $20,000 you can't be asked to pay more than 5% of the contract price.

But, if the work needs to be covered by home warranty insurance, it is illegal for the contractor to take a deposit or progress payment until a certificate of insurance has been given to you.

> ***Important.*** *It is highly recommended that you check the validity of the insurance certificate given to you by contacting the insurance company shown on the certificate.*

7. When can you start the work and how long will it take?

If you want the work done by a specific date, make sure the time frame provided in the contract

- is realistic
- takes into account possible delays through bad weather or the late supply of materials
- has a start date and completion date.

Make sure you and the contractor are clear on what they consider 'complete'.

8. What sort of contract will be used?

If the cost of labour and materials is more than $1,000 but under $12,000, the law requires a written contract to be used. These are known as Minor Works Contracts.

As an owner-builder it is most likely you will use a Home Building Contract which is suitable for trade work, maintenance and repair work as well as smaller alterations or improvement jobs likely to cost less than $25,000.

Fair Trading Contracts

The Office of Fair Trading has produced a series of plain English contracts covering all types of building and renovating work. These are available from Fair Trading Centres, most post offices and some Councils. See also, Unit 10.

9. How much will it cost?

Make sure

- the contractor includes the total cost of the work in the Contract
- estimated costs are clearly stated in the Contract and are realistic
- you understand how and why costs may change and how the total cost can be affected (eg. some builders will specify the site cost in the Contract as a 'provisionary cost item'. This means that this cost may change depending on what the builder's actual costs are in preparing the site. If the site is difficult to build on, or the builders hit solid rock, it will cost you more.)

You might consider holding back 5% of the Contract price as a retention if you have any doubt about the quality or completeness of the works. Certainly, it is foolish to pay anyone in full before they have completely finished their work.

10. When are progress payments to be made?

Most building contracts have a fixed price and should provide for payments to be made for work done, not time on the job. Progress payments should be equal to the dollar value of work completed, see 10.5.

If you've borrowed to build or renovate, your bank or mortgage lender may want to inspect the work before each payment is made. You may also want to have an architect or building consultant inspect the work at each stage to ensure it is being done properly and to the agreed drawings and specification.

11. What happens if the work is wrong or defective?

This question will help you get a sense of how the contractor is likely to deal with any complaints you may have about the work. You should know in advance what your options are if a dispute arises. See Unit 16.

12. Who cleans the site?

From the start make sure each contractor is responsible for removing any rubbish into one area or rubbish bin and for cleaning their work area. This will ensure you are not left with a big mess or a dangerous building site.

9.3 Obtaining quotes

It is essential to know up front how much a particular building task is going to cost. You should try to obtain three written quotes for the work you are contracting for. However, this is difficult to do unless you are very patient and know lots of tradesmen willing to price your work. Besides tradesmen are often uneasy dealing with owner-builders because they are worried that you will be disorganised. Any quotes should detail

- exactly what is going to be done including reference to the relevant plans/engineering drawings
- what materials/finishes are to be used
- any provisional sums such as the rate for rock excavation and cubic metres allowed and any specific fixtures included.

Often you might need to confirm any agreed detail back the contractor by email or fax. For instance, you might want to remind the carpenter you both agreed on tallow wood stair treads and not just 'hardwood'.

As an owner-builder it is most likely you will be the person purchasing the PC items, but if a PC item is to be included in a quote, you must clearly identify the item to be used.

If you get a quote from a professional or tradesperson you should request the quote in writing. You can do this by email or by fax. This means you have a record and so do they!

TIP ***Choosing the right tradesperson***

Sometimes it is difficult to know who will be the better tradesperson for your job. And it's not always the one with the cheapest quote. You need to weigh up the contractor's availability and whether you have a solid personal recommendation for them.

Finally, ask yourself, can you get on with this contractor? The answer to this question will often resolve any doubts.

UNIT 10 **CONTRACTS**

10.1 Who needs a contract?

In New South Wales under the *Home Building Act 1989* contractors doing any home building work, including house construction, renovations, swimming pool construction, landscaping construction, and repairs such as electrical, plumbing and tiling, must provide a written contract where the value of the work or the cost of materials and labour exceeds $1,000. The contract to use for small value work (between $1,000 and $12,000) is a Minor Works Contract. For work between $1,000 and $25,000 you need a Home Building Contract.

A contract formally sets out an agreement between you and the builder/contractor. The contract must be in writing, and must be signed by both parties before any work begins. It describes the relationship between you and the contractor and will usually include price, the nature of the work, and sometimes time for completion and penalties.

Standard contracts are available from various industry bodies including the Office of Fair Trading www.fairtrading.nsw.gov.au/Tradespeople/Home_building_contracts.html Standards Australia, The Housing Industry Association, the Master Builders Association and Institute of Architects. They are also available at some post offices and newsagents.

To successfully manage your building contract, you must be actively involved in planning the content of the contract, so that the contract includes everything you want in the construction of your new home or renovation. If details are not included in the contract, the builder is not required to deliver them.

The contract document may vary depending on the type and value of the building work. It will usually include a number of additional documents, including the drawings and specifications.
A written contract covering all aspects of the work to be undertaken will help minimise or resolve any disputes if they ever arise.

10.2 Contracts for owner-builders

As an owner-builder, you will probably be entering into separate and sometimes different types of contracts with each tradesperson.

All tradespeople must hold a licence from the Office of Fair Trading for the type of work they are to do. You can check a contractor's details by calling the Office of Fair Trading on 13 32 20 or by checking their website at www.fairtrading.nsw.gov.au

Contractors must give building owners a copy of the contract and all relevant documents, such as plans and specifications.

Domestic building work contracts are available in several forms for different types of work. Typically they are

- House contracts (new houses)
- Addition and Alteration contracts
- Minor Works contracts (usually for smaller building work)
- Cost Plus contracts (work charged at cost plus an agreed margin or percentage).

Contracts are prepared by a number of organisations and are available for a range of different types of domestic building work. Before signing your domestic building contract, check that it contains all the details required by the relevant state Act.

- Housing Industry Association (HIA) Contracts
- Plain English for New Homes
- Plain English Domestic Building Contract for Building Works Under $5000
- Plain English Building Contract for Construction of Kit Homes
- Plain English Building Contract for Factory Built Homes

The Office of Fair Trading recommends its Plain English Home Building Contracts. Two different Contracts have been produced to cover most types of residential building work.

- *Home Building Contract for work over $25,000 and all residential swimming pools (FT241)*
  Suitable for new homes, major alterations and additions and any new swimming pool installation which are likely to cost more than $25,000.

- *Home Building Contract for work up to $25,000 (FT240)*
  Suitable for maintenance and alterations up to $25,000.

10.3 What information must be included in a contract?

By law, the written contract you sign must

- be in writing and be legible
- contain the date that it was signed by both you and your contractor
- contain your name and the exact name on your contractor's licence card and the licence number
- contain a sufficient description of the work to be carried out
- set out all terms
- indicate any plans and specifications attached
- specify relevant warranties required by the Home Building Act 1989
- stipulate a fixed price (can include a 'rise and fall clause'), payment terms and a time frame
- provide the contract price, which must be clearly displayed on the front page and/or a warning if the contract price is not known or subject to change, together with an explanation of the effect of this provision.

There should be no blank spaces and the contract should include everything that has been discussed.

ALERT ***Understand the contract and read the fine print!***

Do not sign the contract until you have read the small print.
Get help from your lawyer or building consultant if there is something you do not understand.

The following list has been adapted from a checklist provided by the Office of Fair Trading

1. Does the contractor hold a current contractor licence?
2. Does the licence cover the type of work included in the contract?
3. Is the name and the number on the contractor's licence exactly the same as on the contract?
4. Is the work to be undertaken covered in the contract, drawings and specifications?

5. Is the contract price clearly stated? If not, is it stated that the contract price is not know?
6. If the contract price may be varied, is there a warning and explanation about how it may be varied?
7. Are you aware of cooling off provisions relating to the contract?
8. Is the deposit within the legal limit? The limit is 10% for work costing $20,000 or less or 5% for work costing more than $20,000. In some states (eg WA) it is 6.5% of contract sum up to $500,000.
9. Is the procedure for variations understood?
10. Are you aware of who is to obtain Council approval for the work?
11. Do you understand that the contractor must have a policy of home warranty insurance under the *Home Building Act 1989* and must provide you with a certificate of insurance before receiving any money under the contract, including the deposit or before doing any work for more than $12,000?
12. Has the contractor given you a document that explains the operation of the *Home Building Act 1989* and the procedures for dispute resolution?
13. A caution about signing the Contract if you cannot answer yes to all items in the check list that follows
    - a note about your entitlement to a copy of the signed Contract
    - a note about home warranty insurance
    - an acknowledgment by you that you have read and understood the Consumer building guide and that you have completed the check list it contains and answered yes to all items on it
    - a clause that states that all plans and specifications for the work to be done under the contract (including any variations to those plans and specifications) are taken to form part of the contract
    - a clause that states that any agreement to vary the contract must be signed by you and your contractor
    - a clause that states that work, or kit home components, will comply with the Building Code of Australia, to the extent required under the *Environmental Planning and Assessment Act 1979* including any instrument made under that ACT and all other relevant codes, standards and specifications that the work is required to comply with under any law and the conditions of any relevant development consent or complying development certificate

- a clause that states that the contract may limit the liability of the contractor to comply with the clause referred to immediately above if the failure relates solely to a design or specification prepared by or on behalf of you, the owner, or a design or specification required by you if the contractor has advised you in writing that it contravenes the clause referred to immediately above.

***ALERT* Cooling-off period**

If the contract price or the market cost of the labour and materials is more than $12,000 your contract is subject to a cooling-off period of 5 clear business days within which you may cancel the contract.

10.4 Variations

Most disputes arise between a contractor and owner-builder when there is a difference of opinion on the cost of a change (called a variation) or extra. Make sure you get the cost of all large variations or extras in writing from the contractor BEFORE the work is carried out. This is called a VO or variation order in the building industry. Major variations may need Council approval.

How to make a variation

Before the work commences on a variation, the tradesperson or contractor should give you a

- written description of the work
- any drawings or sketch of the work
- the extra cost, materials and time required to complete the work

Both you and the contractor must sign this written notice if you agree on the price. Once this is done the work may commence.

***ALERT* Beware of any contractor**

- *who is in a rush for you to sign the contract*
- *whose quote is much lower than quotes from other contractors.*

10.5 Progress payments

A progress payment (PP) is made when a stage of the work is completed. Allowable payments under the contract might be as follows

- Maximum deposit $1,000 plus costs, eg. plans, council approvals, building indemnity insurance, soil, engineer's or surveyor's reports.
- Footings/slab completed (PP 1).
- Framing completed (PP 2).

Progress payments continue until the final payment which is made after completion of the work.

For minor work the tradesperson will be happy if you pay on invoice or within a week of the job being finished. However, if the estimate for the job is several thousand dollars it is reasonable for the tradesperson to ask you to make progress payments. This helps them purchase materials and labour. They can claim reimbursement for a specific item, such as stainless steel flashings, even after it has been installed.

You should only pay for work that is done and that you are happy with. If you have to pay for materials in advance such as a purpose-made front door or curved glass, it is best pay a deposit first and then pay the balance once the item is finished. Further, in most cases get anything you have paid for onsite unless the contractor is well known to you.

You can also consider getting an independent building consultant to inspect the work before you make a payment.

TIP ***Fulfilling your part of any contract***

- *Coordinate suppliers and contractors so that there is no down time for contractors waiting for deliveries or for other trades to finish*
- *Pay the contractor as per the terms of the contract*
- *Be cooperative and communicate*
- *Discuss how work will be carried out – ensure you are clear about who is to arrange what*
- *Discuss with contractors ways to protect neighbouring property.*

10.6 Disputes

Here's a really good tip. Choosing good people, planning well, taking responsibility for your own mistakes will usually stop most disputes. See Unit 16.

10.7 Ending the contract

The contract usually contains provisions regarding termination. These relate to default in the contract by either the principal or the contractor. An owner-builder should take legal advice before terminating any contract. If the advice is to terminate, you need to work out how much it is going to cost to get someone else to pick up the pieces of the job and get it finished.

BUILDING

UNIT 11 GETTING STARTED EXCAVATION AND FOOTINGS

11.1 Photographic record

Even before the building work starts, you should take pictures of the footpath, nature strip, kerb, gutter and roads. It also pays to keep a detailed record of fences and any neighbour's buildings which might be affected by the work. Professionals call these dilapidation surveys or reports.

This record will help limit arguments over any damage because you will have record of any damage or cracking which existed prior to your building work starting. If you need to give Council a copy, you may need to engage a building consultant or engineer.

11.2 Clearing the site

The site should be cleared and any unwanted shrubs or grasses should be removed to provide

- an open area where the building work can be set out and done
- access to the site for delivery trucks
- space to store building materials.

Any tree removal is subject to Council approval and you may need advice from an arborist regarding the rules about removing larger trees. The arborist can also help you with lopping the trees.

You may also need the assistance of an excavator or bobcat to prepare the site (see 11.4 below). Sometimes the arborist and excavator will work together to clear a site.

You should mark with an 'X' (spray paint is good) the trees you want removed and CLEARLY mark with a GREEN ribbon those you want to keep. Any tree close to the work should be protected with stakes and safety fencing from damage during excavation and construction.

TIP ***Progress diary***

Keep a diary of the progress. You might take photographs of the work at frequent intervals.

ALERT ***Tree removal***

It is much easier to remove large trees on a site BEFORE the house is erected. So providing you have Council approval remove any trees whose canopy might overhang the house once it is built

11.3 Setting out the house

The approved plans show where the proposed work must be built. It is very easy to locate new work in the wrong place. That's why you should get your surveyor to peg out the precise location of the property's boundaries or the corners or actual building work if you have a complex design or sloping site. This is a small additional cost and one most professional builders willingly pay.

It is important to carefully set out the height of each floor and top of roof. This is usually based on levels the surveyor finds in the street. Again your surveyor can place a peg on your site or a mark on an existing wall with the precise level to set out all future levels from. This point is usually called a 'datum' and should not be removed or damaged.

TIP ***The gutter crossing***

Ask the surveyor to peg out the driveway entrance and do the drawing for the gutter crossing while he or she is on the site.

11.4 Excavation

The excavator will shape the site, dig out footings and drill holes for piers. An medium-sized machine can do in a few hours what might take several weeks of manpower with a shovel. So make a list of all the ground shaping you want and where you want any excess soil stored when you are instructing the excavator.

It is often difficult to get a firm quote from an excavator as it is hard to know whether there is rock on the site. There is also an extra cost for dumping rubbish/soil. You may also need to purchase gravel to put on the driveway, see 7.9. The excavator may have to grade a driveway for future truck access during construction.

This is the time to install the sediment fences/hay bales required to reduce any sedimentation, ie water and soil running off the driveway into the storm water. Council will impose a substantial fine if you do not have your sediment controls in place. See also 7.9.

> ***TIP*** ***Levels***
> *Get the levels checked by the surveyor or building consultant. It is important not to excavate too much or too little. Too much requires too much concrete and too little means the excavator will have to come back.*

Consider

- the driveway cut
- the area where the house will be
- a trench for all the services
- shrubs/small trees to be moved to a safe area
- a flat area to position the site services such as a toilet
- an area to be used for rubbish
- an area in which to pile any excess soil.

Barricading is needed to secure the site from unwanted visitors. Prohibiting unauthorized entry to the site is a safety issue and is a requirement of your Owner-Builder's Permit.

You may need to get the excavator or a smaller machine back a couple of times, and some trenches might need to be finished by hand.

TIP ***Relocating trees and shrubs***

Consider asking the excavator to remove the smaller, quality trees or shrubs on the site – these can be easily removed by a bulldozer or excavator.

It is always costly to dispose of soil at a Council tip. If you are excavating good quality soil, sand, gravel or rock ask the excavator if he or she knows of any local building site that needs fill.

ALERT ***Use the information from Dial Before You Dig***

Provide the excavator with details of where the services come on to your property…as mentioned in Unit 6. Look in the air as well as on the ground. The telephone line might be strung low across the driveway entrance and could be damaged by the excavator's heavy machinery.

11.5 Engineer's inspection

The excavator and the footings or slab concreter must build to the engineer's drawings.

The engineer should have designed the structure of your building to suit the type of soil in your area. However, if you encounter rubbish, fill or excessive water you will need to ask your engineer to make a site visit and check if he or she needs to change their design.

The engineer has to certify that the footings or slab have been built to the Council approved design and you will need to keep him up to date with the progress of the foundations and give him or her notice of when they need to inspect the footings/slab. This inspection MUST be before the concrete is poured. The engineer will check the piers are installed, the location of the steel and other important details of the engineering design.

At completion of the project, the engineer will provide you with a Certificate that the footings and other main parts of the structure are built to the design. Council will need to a copy this Certificate before they allow you occupy the home.

You will need to check that the concrete used is of the correct strength as required on the engineering drawings. This is shown on the delivery dockets in MPA or megapascals. For very complex suspended concrete it pays to arrange the concrete supplier to get the concrete tested, for an additional fee.

11.6 Services

Ask the excavator to dig a trench from street to house area. Coordinate the plumber (water and gas), electrician and telephone company to lay all services from the street connection up to the house in this trench. The trench should not be filled before it is inspected by the sewer authority.

11.6.1 Plumber

Involve the plumber early in the process to lay the pipes in the trenches dug by the excavator and to install the site toilet and tap if necessary. If there is any need for plumbing in the slab, the plumber must do this and also start laying the pipe work for the stormwater drainage.

11.6.2 Electrician

Ask for the electrician to install temporary power with a pole at the street or by using the existing supply. Make sure he or she provides the right size of cable for all your future needs eg appliances, air conditioning and pool equipment. Your electrician will work this out once he has looked at your electrical drawing or list of appliances. Most domestic properties only require 2 phase, but consider installing 3 phase to the property if you plan on installing air-conditioning. It is far easier and cheaper to do it now than have to upgrade supply later. And if you intend installing underfloor heating in the slab this is the time to plan it with your electrician and an approved installer.

11.6.3 Telephone

The telephone supply company must be notified well in advance that you require them to lay telephone cables in the trench. Your electrician can usually coordinate this or install a suitable conduit for running future cables because he will probably wire the building for conventional phones.

11.7 Termite proofing

Properly reinforced and constructed concrete slabs stop termite entering building. BUT, you must provide protection around pipe and service penetrations and joints in the slab. Besides, clever owner-builders are using treated timbers and keeping access to all slab edges and bases of timber post as part of the termite management system which is allowed by the Building Code of Australia.

The termite proofing company must provide you with a warranty certificate for the work and place a record of the method of protection in the meter box at completion of the job. This must be in place before the mandatory PCA inspection prior to the slab pour.

11.8 Concreting contractor

This is specialist work and the owner-builder should contract with a concreter to prepare the formwork for any slab or footings and to place reinforcements and concrete property. This work must be done to engineer's drawings and specifications (see 11.4 above).

11.9 Mandatory inspections

The PCA must inspect

- the trenches complete with reinforcing and prior to filling with concrete
- reinforcing steel prior to the pouring of the concrete for any footings, lintels, beams, columns, floors etc.

You will need to do some coordinating to arrange the sequence of engineer's inspection, the PCA's inspection and then concrete pour. In many cases the PCA will rely on the engineer's expertise, inspection and certification. Provide the PCA with a couple of day's notice and a copy of the engineer's certification.

11.10 Cleaning up

You may need to get the excavator back after the mandatory inspection to help you tidy up the soil on the site – soil needs to be removed from around the footings in preparation for the bricklaying and the slab needs to be clean.

The excavator can also fill in the soil around the services trench and, if needed, move excess soil which will stop you working safely and efficiently.
s

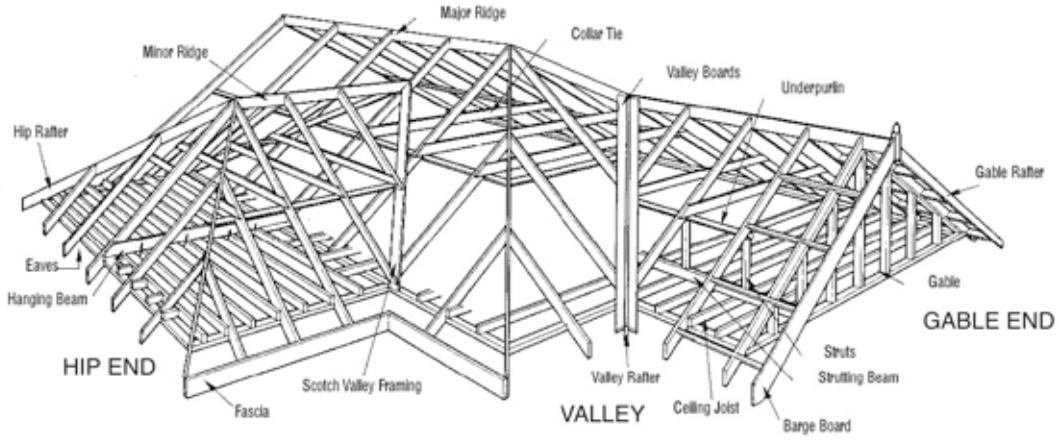
This would be a good time to choose an area on the site for rubbish. Label it and encourage all contractors to pile their rubbish in this spot.

TIP ***Keep the site clean***

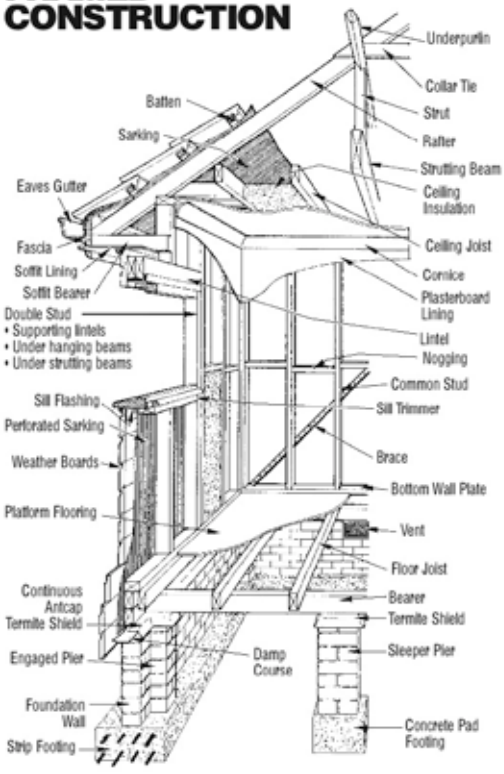
Use a garbage bin (you can use the Council one or purchase one from a hardware store) for food scraps – you don't want vermin on the property.

ILLUSTRATED BUILDING TERMS

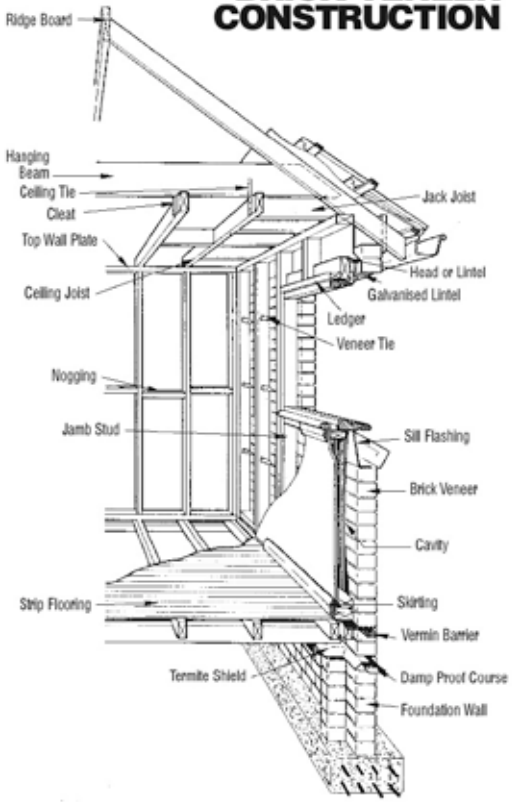
ROOF



FRAMED CONSTRUCTION



BRICK VENEER CONSTRUCTION



UNIT 12 **GETTING TO LOCK UP WALLS AND ROOF**

12.1 Roof and walls

The walls of your building will be either

- masonry – blockwork, brickwork or autoclave concrete (Hebel) BRICKLAYER
- framed – timber or steel CARPENTER
- composite – a combination of masonry and framed ie brick veneer.

12.1.1 Masonry

It is essential that the walls are positioned correctly on the slab or footings, that the levels are correct and the windows, and that doors and stairs are in the correct position as noted on the approved plans.

An owner-builder make sure someone experienced sets out the location of every wall and starting level of floors based on the pegs or marks established by your surveyor. It will make the job a lot easier and ensures that the brickwork is right - ie correct place, level.

At this time, walk around with your partner and imagine the finished spaces. If there are any changes, DO THEM NOW or forever be sorry!

As an owner-builder it is usually up to you to order the bricks unless you have engaged the bricklayer to supply the bricks. You will have to pay for them in advance and take delivery. Consider having them delivered in two batches to reduce the number of bricks on the site at any one time and ask the bricklayer where they want the bricks placed at delivery. This will reduce unnecessary handling.

The bricklayer may need to you purchase dampcourse, flashings, ant caps, brick ties and any waterproofing materials.

> ***TIP*** ***Brickie's quote***
>
> *Bricklayers usually quote per 1,000 bricks laid. Make sure the quote includes sand and cement and any oxide that needs to go in the mortar to change its colour – this will save you having to coordinate and protect sand lying around the site. If possible, ask the contractor to include wall ties and dampcourses.*
>
> *Consider also asking the bricklayer to quote on additional work, such as the front gate pillars.*

12.1.2 The frame

It's worth visiting the frame supplier and timber supply company and also asking them or your carpenter to come to the site to check measure the frame specifications. The frame manufacturer with the aid of software designs the wall and roof frames and trusses.

You may need to provide Council with a certificate from the frame supplier's timber yard certifying the frame design or certification for treated timber or if you intend to use timbers externally. Ensure you request this.

Termite proof buildings

Why not get smart and use building practices that minimise the likelihood of termite entry/activity (eg use of termite resistant materials such as masonry, steel or durable (natural or treated) timbers.

You do not need any termite protection if the frame is termite resistant such as steel, H2 pine or Class 1 hardwood or cypress pine. Weather exposed external timbers must be H3 grade or Class 2.

It is essential that all wall timbers are braced and correctly connected to floor, walls and roof. The correct assembly of the frame is critical and the work should be done by a qualified carpenter.

Once the wall frames are erected the windows can be positioned and correctly flashed.

The floor should be level. You need to plan the height of the different floor finishes so that the top surface is continuous.

TIP

Remember the frame carpenters can also frame up for the wardrobes and cupboards, balustrade walls, openings for serveries and laundry chutes. They can also build the external decks and pergolas.

12.1.3 The roof

The same carpenter who works on the floor and wall frames will usually install the roof trusses or frame.

Modern roof frames are usually trusses but more complex roofs may be made on site with separate pieces of timbers – called a stick or cut roof frame.

ALERT Safety

Remember safety roof rails should be 900mm – 1000mm high and are needed for any roof work over a certain pitch or where the fall risk exceeds 1.8 metres.

12.2 Getting to 'lock up'

Once the frame is finished, you will need to get the plumber to 'rough in' his water, gas and drainage pipes and the electrician to 'pre-wire' his electrical, phone, TV, security and data cables.

Whilst the services are being installed, the roof will be sheeted or tiled and the bricklayers will finish the external walls if it is a brick veneer home. If it is a framed building, a carpenter will fit weatherboard cladding or fibre-cement panels.

When the building is roofed, external walls finished, plumbing rough in and pre-wire is finished and the front door is fitted, the building is said to be at 'Lock up'.

12.3 Mandatory inspections

The PCA must inspect

- floor frame, dampcourse, antcapping, foundation walls before floor material is laid
- framing when external wall and roof cladding is in place but before internal linings.

UNIT 13 **FINISHING AND OCCUPANCY**

13.1 The fit-out

After 'lock-up' the final fit-out and fix-out will include installing insulation, plasterboard to ceilings and walls, door joinery, skirting boards, tiling, finalizing the electrics (lights etc), plumbing fixtures, flooring, painting, and all the accessories such as house numbers, brackets, hooks etc.

The carpenter is an important contractor at this stage and will be involved both with hanging doors, fixing architraves and skirtings as well as stairs and even balustrades.

13.2 Finishing

By the time you get to the installation of the kitchen and laundry, including the white goods, the sanding of the floors (or carpeting) and the painting you are almost ready to move in.

You may still need to coordinate the electrician and the gas plumber to finalise the connections from the supply in the street to the house. Previous electrical connections may have come from a power pole in street. Plumbing to bathrooms and water connection also needs to be working.

Some of the outside work may not be completed but things such as any deck area, the driveway or landscaping can be done after occupation.

13.3 Mandatory inspections

The following inspections are required

- Wet area flashing prior to tiling or covering.
- Stormwater drainage from the building to discharge point (street, soakage pits and the like) prior to covering.
- Completion of the work and sign off to all conditions of the consent, including landscaping, prior to occupation and use (see 13.4).

You will receive Certificates from the waterproofer and plumber for all their work including the stormwater drainage is as per the appropriate Australian Standard. Similar Certification should be given to you by the electrician to warrant that the electrical wiring has been installed and checked so that it complies with the Australian Standard.

13.4 The end! Final Occupancy Certificate

Before you can move into the work, you will need to obtain the PCA's Occupation Certificate. This Certificate will state that the building is suitable for occupation in accordance with its classification under the Building Code of Australia. And once it is issued, you are allowed to move into home or use the new work.

If there is work to be inspected by other consultants prior to the Occupation Certificate get it done and get their Certificates. Then take copies and give the Certifier an organised bundle including

- engineer's certificate
- frame and truss
- termite protection
- waterproofing
- plumber's including gas
- electrical certificate for smoke alarms
- window manufacturer's certificate for strength and water resistance.

Sometimes you can get an interim Occupancy Certificate if some of the works are incomplete. However, in the end you will need to get everything finished.

The PCA might require you to get an updated survey verify the new work is in the right place and not built too high.

13.5 Wrap up

So everything is looking good and you have most things just about done. Even when you are so close to finishing be careful. The best way to make sure you don't get problems after the work is finished is

1. check the work carefully – get independent advice for any larger project
2. ask the contractors to finish and fix anything wrong
3. get any Certification you need
4. do not pay the final payment to the contractor until EVERYTHING is finished
5. read step 4 again.

UNIT 14 **COMPLICATIONS**

Most building work is quite straightforward and the industry has been doing this properly for hundreds of years.

However, in every job there usually is something that is unusual or complex. If hasn't already been solved, it needs everyone involved to stop and plan the correct solution. Typical examples are curves, unusual angles and shapes, and anything to do with below ground or severely exposed waterproofing.

14.1 Complex designs

Most really good builders take a lot of time over anything unusual or complex. So an owner-builder should be doubly cautious if they have designed glass roofs, circular or angled rooms, balconies above living rooms, internal planters, foundations and ponds, hi tech lighting or sound systems, rotating floors etc.

14.2 Waterproofing

The PCA requires certification that correct waterproofing has been done in wet areas (bathrooms and ensuites), balconies above internal rooms and behind basement walls.

14.2.1 Wet areas

Wet areas require particular attention. Shower areas in bathrooms need to be waterproofed using a PVC membrane or quality liquid applied membrane. Ensure your tiler or plumber has correctly sealed all bathroom fixtures and fittings to the waterproofing.

14.2.2 Retaining and basement walls

The drainage behind any retaining and walls below ground should be supervised by a plumber, who will recommend drainage pipes, filter fabric around the pipe and gravel backfill. Any retaining walls which will have soil piled up against them should be painted with a suitable membrane, lined with a protective sheet to stop damage to the membrane before the wall is backfilled with gravel and other free draining material. All retaining walls need weepholes.

14.3 Stairs

You may need help from a designer or building consultant to make sure any internal stairs work properly. Specifically

- the risers are not too high – less than 200 mm and preferably less than 180 mm
- the tread width is wide enough – more than 250 mm and preferably more than 275 mm but not more than 300 mm
- you have at least 2 m head height above every tread or step
- you have allowed for the flooring at top and bottom of the stairs so all steps are equal.

External stairs are often not built until late in the project and will need careful set out.

14.4 Asbestos

Asbestos can be very harmful to your health. It is essential that all owner-builders identify and warn contractors of an asbestos products in their building and obtain information about its safe removal from an approved contractor if it. You will need an Asbestos Survey on all existing homes built before 1985. The company you engage will provide an Asbestos Register which sets out any asbestos products you and the tradesmen should know about. You may need to engage a specialist to remove asbestos sheeting and other asbestos products and dispose of them in an approved way.

14.5 Electrical and plumbing

It is best to plan the overall electrical needs prior to commencing the work. This means the electrician will calculate the correct size of cable to meet all your needs. He may also advise wiring for future photovoltaic panels.

You will then install/rough-in electrical and telephone wiring at the frame stage. The same goes for any plumbing. It is expensive and difficult to do this after the plasterboard has been fitted or finishes are completed.

Security and remote controls are common problems areas. The cables for electronic entries and security cameras and monitors must be planned and installed and the system installed and tested prior to final finishes.

14.6 Timber pests

Termite risk management (TRM) systems differ depending on whether your home is built on

- a concrete slab-on-ground or
- a raised (or suspended) floor.

Termite risk can be minimised when an effective TRM system is in place and you carry out regular checks. Systems that can be used include

- physical barriers (see below)
- termite resistant materials
- minimum termite risk construction
- landscape considerations.
- In rare instances, chemical barriers may be necessary. However, these types of barriers are installed because contractors are not up to date or do not know how to keep termites out of buildings with the combination of access for inspection and choice of durable, termite resistant construction.

14.6.1 Physical barriers

Antcaps (termite shields and capping) located between masonry piers/dwarf walls/stumps and structural timbers do not prevent termites from gaining access to building timbers, but they do make termite entry more visible during inspections. Reinforced concrete is a form of physical barrier. Access to base of posts and to slab edge also complies as a physical barrier so long it can be easily inspected.

14.6.2 Flashings and dampcourses

Dampcourses prevent moisture movement in masonry structures but faulty ones can lead to rising damp. Insertion of antcaps and dampcourses after completion of construction is usually difficult and expensive.

14.6.3 Ventilation and drainage

Most timber pests (including termites, some borers and wood decay fungi) become more active when conditions are moist.

Subfloor spaces, if not sufficiently well ventilated, become damp and the moisture content of timbers increase to such an extent that decay or rot damaged structural and/or flooring timbers (such problems are less likely in houses located on sandy or free draining soils).

Methods of improving ventilation range from relatively minor work, such as repairing leaking taps, downpipes and drainage, clearing weeds or stored goods from existing vents to replacing existing terracotta vents with larger cement/mesh types. More serious and expensive undertakings may include installing vents in sandstone walls or in interior walls for cross-ventilation.

> ***TIP*** ***Ventilation***
>
> *All wall vents should be kept free of obstructions especially soil, plants and debris. Area of vents - dimensions of vents should not be less than the equivalent size of 450 mm x 150 mm per linear metre. Corrosion resistant wire mesh and cement type vents which are vermin proof are the preferred option. Internal foundation walls should have ample openings for cross ventilation without affecting structural stability.*

14.7 Getting help

It is inevitable that a contractor will misunderstand some part of the drawings or will forget what you have told him. The contractor will also make mistakes, have supply problems or cause unnecessary delays. There can also often be errors and omissions in the drawings which lead to frustration to everyone.

This doesn't mean that there is a serious problem or the job is going bad. It means that you need to be ready to work with the contractor to jointly solve any of the issue that crops up during the job.

The best way to do this is to choose someone (before the job starts) that you and the contractor trust to talk over the problem with. Don't overreact when something appears to be wrong. Remember the good reasons why you chose the contractor and the good work he has done. Clarify the issues quickly, with help if necessary. This means checking if something is really wrong, ie

- What do the drawings require?
- Are your expectations realistic?
- Is the work OK (there are tests for defects)?
- If you are wrong, don't be defensive or hold a grudge. Simply 'fess up' and get on with solution which will cost you a lot less when the contractor is sympathetic.

See also Unit 16 Disputes.

14.7.1 Industry organisations

There are a number of industry organisations that you can contact for expert advice, see 9.1. The best owner-builder buddies are practical people who have worked as tradesmen but have technical qualifications. A builder or architect who has WORKED AS A CARPENTER/TRADESMAN is ideal. The term for this type of professional is building consultant.

UNIT 15 **OTHER ISSUES**

15.1 Housekeeping

Your site is a place of work. It is a requirement of your Owner-Builder Permit to keep it tidy and safe. As mentioned in Unit 7.4 set aside one area of the site for rubbish. One of the reasons for keeping a clean site is that it is safer for all workmen, eg 'trip' hazards are removed. A tidy site gives the impression to contractors, the PCA and neighbours that the building is 'under control'.

We recommend that you require each contractor to clean up their own mess. But if they don't you will need to do it.

You should ensure that all materials are protected from the weather and vandals. Damage to materials prior to use can cause unnecessary waste. Ask the supplier to deliver their goods on a day that suits you so you make sure they are unloaded in the right place and then properly protected from the weather, theft or vandalism.

15.2 Doing work yourself

There are definitely financial savings for owner-builders if no mistakes are made. Any mistakes can eat into these savings. You must consider what work you can realistically do yourself and what you should contract out.

While you will certainly save on labour costs if you undertake some of the work yourself, this had to be offset by the amount of time it will take and whether you would be more productively employed in your regular job!

15.3 Industry and trade standards

The *Guide to Standards and Tolerances 2007* was produced by the Victorian Building Commission in collaboration the NSW Office of Fair Trading, the Tasmanian Government and the ACT Government.

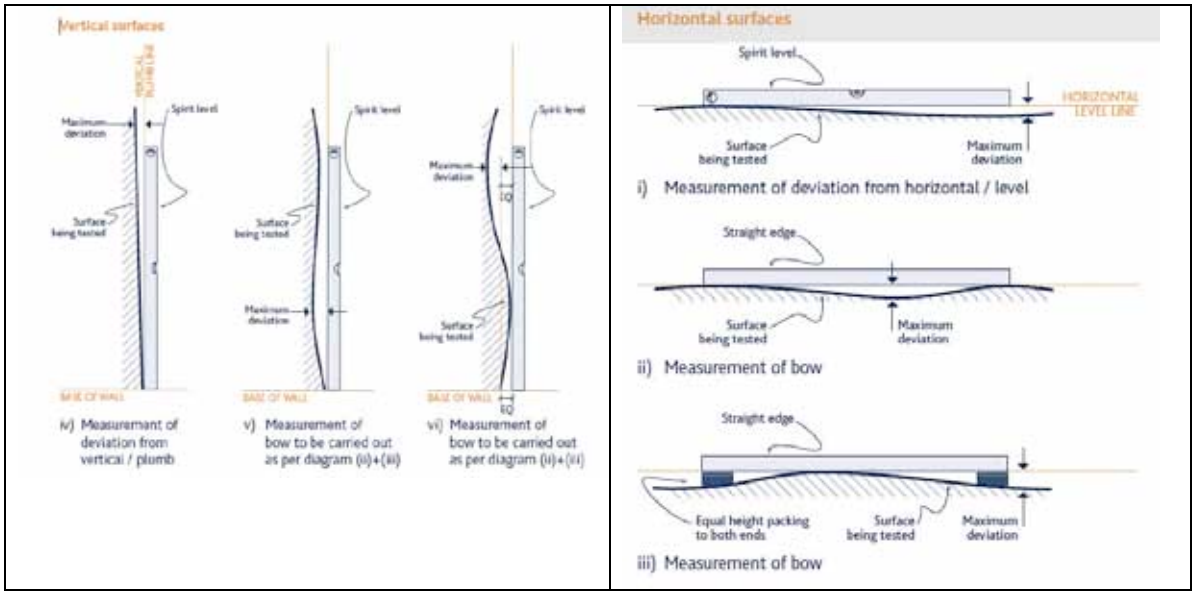
The aim of the Guide is to assist home owners clarify the standards and tolerances on building work where such standards are not prescribed in the *Home Building Act 1989,* the Building Code of Australia or Australian Standards.

The Guide helps home owners if building work is in dispute. It deals with such topics as shrinkage around timber window frames, door frames, nail popping in timber floors, paving through to footings and foundations.

You can order a copy of the Guide from your local Office of Fair Trading
www.fairtrading.nsw.gov.au
We have prepared a summary

Extracts from GUIDE TO STANDARDS & TOLERANCES 2007

For full details refer to original
Check against Australian Standards, Contract Documents & Manufacturer's Instructions
Do not apply standards lower than those regulated by legislation



Normal Viewing Level(NVL) –1.5 m (.6m appliances & fixtures) or more in 'non critical light (defuse)

SITEWORKS TABLE 1.01 CRACKS IN CONCRETE PAVING

Condition	Measure	Limit
Cracking	Crack width	1.5 mm
Subsidence	Heave or slump under 2 m long straight edge (to main pavement only- See Note 2 below)	15 mm
Stepping	Relative surface level of adjacent paving elements within the expanse of the main pavement	5 mm

1.02 **Finish to external concrete paving** defect if not consistent in colour, texture or general appearance.

FOOTINGS, SLABS AND SETTING OUT

2.03 **Building Setting out** - defect if departures for set backs from boundaries, external or service room dimensions is > L/200 or 5 mm, whichever is greater, where L is correct.

2.05 **Building dimensions** – defect if departures for habitable rooms and external elements (carports, garages, decks, patios) is > L/100 or 5 mm, whichever is the greater.

2.07 **Finished Floor Levels** (FFL) or Reduced Levels (RL) defect if

- Depart by more than 40 mm
- Documented on same plane but constructed different planes.
- New does not match existing

2.08 **Levelness of timber and concrete floors defect if** New floors within first 24 months differ in level by more than 10mm in any room or area, or > 4 mm in any 2 m length. Overall deviation of floor level to entire building footprint shall not exceed 20 mm.

2.09 **Dimensions of building elements** (height, cross sectional elements, beams, posts) - defect if > L/200 where L is documented dimension or 5 mm, whichever is the greater.

TABLE 2.10 CLASSIFICATION OF DAMAGE TO CONCRETE FLOORS

Category 3 and 4 are defects.

Category 1 and 2 monitored for a period of 12 months if still > category 2, are defects.

Description of typical damage	Approx. crack width limit in floor	Change in offset from 3 m straight edge placed over defect (See Note 4)	Crack Category
Hairline cracks, insignificant movement of slab from level	< 0.3 mm	< 8 mm	0
Fine but noticeable cracks. Slab reasonably level	< 1.0 mm	< 10 mm	1
Distinct cracks. Slab noticeably curved or changed in level	> 2.0 mm	< 15 mm	2
Wide cracks. Obvious curvature or change in level	**2 mm to 4 mm**	**15 mm to 25 mm**	**3**
Gaps in slab. Disturbing curvature or change in level	**4 mm to 10mm**	**> 25 mm**	**4**

TABLE 3.02 DAMAGE TO WALLS BY MOVEMENT OR SLABS, FOOTINGS & OTHER CAUSES

Category 3 or greater are defects.

Category 2 monitored for a period of 12 months, defect if still category 2 or above.

Description of typical damage and required repair	Crack width limit	Category
Hairline cracks	< 0.1 mm	0
Fine cracks that do not need repair	< 1 mm	1
Cracks noticeable but easily filled. Doors and windows stick slightly	< 5 mm	2
Cracks can be repaired and possibly a small amount of wall will need to be replaced. Doors and windows stick. Service pipes can fracture. Weather tightness often impaired	5 mm to 15mm (or a number of cracks 3 mm or more in one group)	3
Extensive repair work involving breaking-out and replacing sections but also depends of walls, especially over doors and windows. Windows and door frames distort. Walls lean or bulge noticeably, some loss of bearing in beams. Service pipes disrupted	15 mm to 25 mm but also depends on number of cracks	4

Based on AS 2870 Residential slabs and footings – Construction Table C1 Classification of damage with reference to walls.

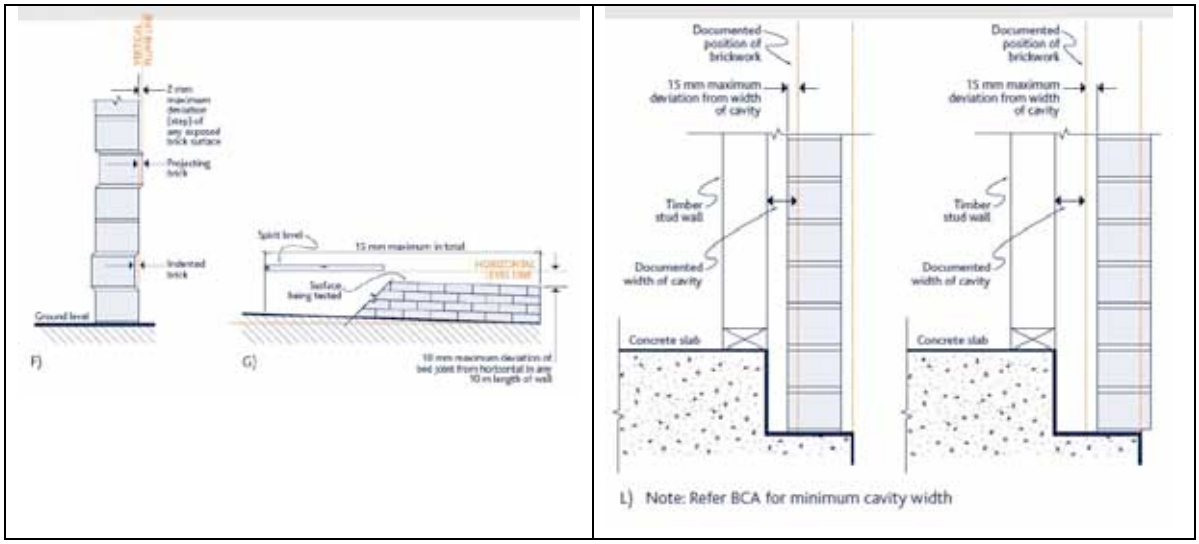
3.03 **Articulation in masonry walls** Defect if articulation and movement control joints not provided as required (3.21 – Joints must be sealed with colour matched flexible filler)

3.04 **Masonry construction generally** Defect if exceeds tolerances in table 3.04.

TABLE 3.04 TOLERANCES IN MASONRY CONSTRUCTION

Item	Structural Tolerance	Non-Structural Framework Tolerance	Reference
A Horizontal positions of any masonry element documented or shown in plan at its base or at each storey level	15 mm	15 mm	Do not exceed set out tolerances in clause 2.03
B Relative displacement between load-bearing walls in adjacent stories intended to be in vertical alignment	10 mm	10 mm	Diagram 3.04 (B)
C Maximum deviation from plumb within a storey from a vertical line through the base of the member	lesser of 10mm per 3m of height or 0.05 times thickness of leaf	10 mm	Diagram 3.05 (C)
D Maximum deviation from plumb in total height of the building (from the base)	25 mm	25 mm	Diagram 3.05 (D)
E Maximum horizontal or vertical deviation of a surface from a plane surface (bow) in any 2 m length	5 mm	3 mm	Diagram E(i) E(iv) page 11
F Deviation (step) of any exposed brick surface from any adjacent exposed brick surface. The bow provision of item (E) above also applies	Not applicable	2 mm	Diagram 3.05 (D)
G Deviation of bed joint from horizontal, or from the level documented or shown in elevation	10 mm in any 10 m length, 15 mm in total	10mm in any 10m length, 15mm in total	Diagram 3.04 (G)
H Deviation from documented thickness of bed joint	3 mm	3 mm	Diagram 3.04 (H)
I Minimum perpend thickness	5 mm	5 mm	Diagram 3.04 (I,J)
J Deviation from documented thickness of perpend	10 mm maximum	5 mm	Diagram 3.04 (I,J)
K Max difference in perpend thickness in any wall	No limit	8 mm	Diagram 3.04 (I,J)
L Deviation from documented width of cavity minimum width as required by the BCA	15 mm	15 mm	Diagram 3.04 (L)

Based on AS 3700 – Masonry structures – Table 11.1 Tolerances in masonry construction



3.09 **Voids and holes in mortar -** Defect if visible from NVL

3.10 **Cracked masonry unit -** Defect when visible surface cracks > 2 mm width. Wall defective if more than one cracked or crazed unit per square meter.

3.11 **Cleaning, mortar smears and stains -** Defects if visible from NVL.

3.14 **Vertical alignment of perpend joints -** Defect if exceeds a maximum deviation from vertical alignment of 15 mm per 2 m height.

3.15 **Horizontal alignment of bed joints -** Defect if not on the same horizontal plane, or do not comply item with G table 3.04.

3.16 **Base bed joint** (exposed) defect if > 20 mm of thickness **and** (not exposed) defect if > 40 mm. Split masonry units and units on edge used in the base row defect if they are exposed.

3.17 **Masonry that overhangs concrete slabs -** Defect if project over more than 15 mm.

3.19 **Raking of joints -** Defect if raked out more than 10 mm or not consistent in depth throughout.

3.20 **Brick sills, sill tiles and shrinkage allowance for timber framing** – defect if clearances less than

- mm at sills of lower and single storey windows and
- 8 mm at roof overhangs of single storey buildings and
- 10 mm at sills of second storey windows and
- 12 mm at roof overhangs to two storey buildings.

Clearances must be doubled if the timber framing is made of unseasoned hardwood.

FRAMING

4.01 **Verticality of plumbness of stumps or piles -** Defect if deviate from vertical by more than 10 mm first 1 m more than 20mm in total length, measured from ground level.

4.02 **Verticality or plumbness of steel and timber frames and exposed posts -** Defect if deviate from vertical by more than 4 mm within any 2 m height.

4.03 **Straightness -** Defect if deviate 4 mm in any 2 m length.

4.04 **Packing under bearers -** Defect if not durable, non-compressible materials, does not provide the minimum bearing area, more than a total thickness of 20 mm or not fixed in a workmanlike manner.

4.05 **Timber shrinkage -** Defect if more than 10% if unseasoned, 3% seasoned.

4.06 **Treads and risers in timber stairs -** Tolerance of up to 5 mm allowed from approved dimensions

4.07 **Fixing stud walls to concrete slabs -** Distance of the fixing from the edge of the slab is 50 to 70 mm minimum for 20 MPa concrete. Fixing point not less than five times the diameter of the fastener from the edge of the timber plate.

4.08 **Bottom plates that overhang concrete slabs** that at least 90 mm wide and overhang concrete slabs are defect if > 10mm unless 4.07 satisfied

WALL CLADDING

5.01 **Completed wall cladding and accessories** – defect if leak under normal weather conditions

5.02 **Staining folds slits dents open joints between panels cracking** and other distortions are defect if visible from NVL

ROOFING

6.01 **Flashings and accessories-** Defect if leak under normal weather conditions.

6.02 **Leaks in roofing -** Defect if leak normal weather conditions.

6.03 **Roof cladding -** Staining, folds, splits, dents, open joints between panels, cracking and other distortions in roof cladding are defects if visible from NVL at ground level or an upper floor level. Any corrosion is a defect.

6.06 **Overhang of roofing** (tiles and sheet roofing) over inside of gutter

- Tiled roofing defect if less than 35 mm or by more than 65 mm.
- Sheet roofing defect if less then 50 mm or by more than 65 mm.

6.07 **Cutting of roof tiles-** Defect if not presenting straight lines at ridges, hips, verges and valleys.

6.09 **Undulating tiled roof lines** Defects if the variation > 20 mm in any 4 m length.

6.10 **Alignment of trusses** Trusses or chords bow more than the lesser of L/200 or 50 mm are defect where L is the length of the truss or chord.

6.11 **Verticality or plumbness of trusses** More than the lesser of H/50 or 50 mm defect, H is the height of the truss.

PLUMBING

7.02 **Positioning of gutters -** Defect if fascia is visible above a gutter from NVL, or fascia is not finished to match gutter, or the fascia is not concealed by a flashing finished to match the gutter.

7.03 **Water retention in gutters-** Defect if more than 10 mm of water deep.

7.04 **Joints in gutters** -Defect if

- Lapped < 25mm.
- Laps that are not in the direction of flow to the outlet.
- Leak.

7.06 **Flashings – Wall, step and sloping flashings cut into walls** - Defect if no weathering folds, anti-capillary breaks and sealing, or do not enter the masonry walls by at least 15mm.

Water hammer - Defect unless it caused by solenoid or ceramic valves.

7.08 **Pipe penetrations through external walls and inside cupboards** - Defect if not properly grouted as appropriate or in the case of cabinet work, fitted through neat minimum size penetrations or fitted with tight fitting cover plates or collars.

WINDOWS AND DOORS

8.02 **Weather tightness of windows, doors and window and door frames** - Defect if they allow water to penetrate rooms under normal weather conditions (when closed).

8.04 **Internal door clearances**

Defect if within three months of completion, clearances between door leaves and frames and between adjacent door leaves are not uniform and within 1 mm of the documented dimension.

If not documented

- Defect if it is < 2 mm or > 5 mm in width.
- Unless additional clearance is required for removable toilet doors or air ventilation, clearance above floor is defect if > then 20 mm after floor covering installed.

8.05 **Distortion of doors**

Distortion	Limit
Twisting measured diagonally across door	5 mm
Bending in door heights up to 2150 mm high	4 mm
Bending in door heights between 2150 and 2400 mm high	6 mm
Bending in door heights over 2400 mm high	7 mm
Bending in door widths up to 1020 mm high	2 mm
Surface (face) misalignment, at the meeting edges of double swing or French doors, when the doors are fully closed	5 mm

8.06 **Sealing of door edges -** Defect if all sides, top and bottom edges not sealed to prevent moisture entering.

8.07 **Operation of windows and doors -** Defect if bind or jamb.

Clearances between window/door frames and structure to be sufficient so joinery can be installed plumb, level and without loads being imposed.

PLASTERING AND RENDERING

9.03 **Repairs to external applied finishes -** Defect if do not match colour and texture of the remaining wall or adjacent area as close a practicable.

9.04 **Articulation or control joints** – provision and cracking – defect if

- Unless documented otherwise, if recommended articulation or control joints not installed.
- Articulation or control joints do not extend through full width of masonry skin.
- With the exception of paint and recommended mastic sealants, if render or other applied finishes cover articulation or control joints.

9.06 **Cracking in external applied finishes used over lightweight substrate -** Defects if greater then 1m and visible from NVL within first 24 months.

9.10 **Verticality or plumbness of internal and external wall surfaces -** Defect if they deviate by more than 4 mm any 2 m height.

9.11 **Straightness of internal and external wall surfaces –** Defect if More than 4 mm within 2 m length of wall.

TABLE 9.14 LEVELS OF FINISH FOR PLASTERBOARD

Level	Level of finish
Level 3	For use in areas which are to receive heavy or medium texture (spray or hand applied) finishes or where heavy wall covering paper are to be applied as the final decoration. This level of finish is not generally suitable where smooth painted surfaces or light to medium weight wall coverings are documented. All joints and interior angles shall have tape embedded in joint compound and one separate coat of joint compound applied over all joints and fastener heads. All joint compound shall be finished smooth. (Generally this is achieved by scraping off nibs and ridges and the like, with the edge of a trowel).
Level 4 (required finish unless documented otherwise)	This is generally the accepted level of finish for domestic construction. It is used where light textures or wall coverings and smooth textured finishes are illuminated by critical lighting and where smooth textured finishes and satin/flat/low sheen paints are illuminated by non-critical lighting. In critical lighting areas, flat paints applied over light textures tent to conceal joints. Gloss and semi-gloss paints are not generally suitable over this level of finish. The weight, texture and sheen level of wall coverings applied over this level of finish should be carefully evaluated. Joints and fasteners must be adequately concealed if the wall covering material is lightweight, contains limited pattern, has a gloss finish, or has any combination of these features. All joints and interior angles shall have tape embedded in joint compound and a minimum of two separate coats of joint compound applied over all joints, angles, fastener heads and accessories. All joint compound shall be finished smooth and be free of tool marks and ridges.
Level 5	This level of finish is for use where gloss or semi-gloss paints are documented or where critical lighting conditions occur on satin, flat or low sheen paints. All joints and interior angles shall have tap embedded in joint compound and a minimum of two separate coats of joint compound applied over all joints, angles, fastener heads and accessories. All joint compound shall be finished smooth and be free of tool marks and ridges. This shall be followed by proprietary surface preparations or (in some areas) skim coating to remove differential surface textures and porosity.

Based on AS/NZ 2589.1 Section 6.6 Levels of Finishes for Plasterboard Surfaces

9.15 **Cracking in plasterboard, hard plaster and other plaster elements –** Defect if > 1 mm visible from NVL[3]. Cracking in recessed and butt joints is a defect if it is visible from NVL.

9.16 **Cracking in cornices -** Defect if > 1 mm can be seen from NVL.

9.17 **Cracking at junctions of dissimilar materials -** Defect > 1mm or visible form NVL[4]

9.18 **Straightness and alignment of plaster cornices -** Defect deviated > 4 mm over a length of up to 2 m.

9.19 **Peaking or jointing in plasterboard -** Defect visible from NVL[5]

9.20 **Nail popping in plasterboard -** Defect if it occurs within the first 24 months.

INTERNAL FIXING

10.01 **Gaps associated with internal fixing -** Defects if > 1 mm in width, occur within first 12 months and visible from NVL. After first 12 months gaps exceeding 2 mm are considered defect.

10.02 **Joints in fixing of internal mouldings -** Defect if not aligned and flush at mitres and butt joints when seen from NVL.

10.03 **Architrave quirks -** Defect if not consistent and irregularity can be seen from NVL.

10.04 **Cabinet doors and drawer fronts[6] -** Defect not aligned at completion or do not have consistent gaps between doors and between drawers.

10.07 **Replacing defective work of natural stone or similar materials -** defect if the replacement material does not match the adjacent areas. If matching of stone is not possible, the whole area of stone shall be replaced[7].

10.08 **Joints in timber, stone and laminated benchtops** - Defect if

- not uniform, close-fitted, aligned and in the same plane
- not sealed or flush-filled with a suitable flexible sealant of matching colour.

FLOOR AND WALL TILING

Where builder has to match tiles that are no longer available, a practical approach must be adopted. Use of a slightly different tile is not a defect if it is used with the written agreement of the owner.

11.05 **Cracked, pitted, chipped, scratched, loose or drummy tiles -** Defect if on completion.

Defect if become cracked, pitted, chipped, loose or drummy and such is more than five per cent of the tiled area within 24 months from completion.

11.06 **Grout -** Grout lines are defect if not as far as practicable of consistent width.

Finished grout is defect if it is not uniform in colour and is not smooth, without voids, pinholes or low spots and finished to the cushion on cushion edged tiles and flush with square edge tiles.

Grout is defect if it becomes loose within 24 months of completion.

11.08 **Uneven tiling -** Except where tiles have distortions inherent in the manufacture, tiling is defect it is has joints that are not uniform, or even width, aligned or in the same plane.

PAINTING

12.02 **Surface finish of paintwork** - Defect if

- Defects or blemishes, paint runs, paint sags, wrinkling, dust, bare or starved painted areas, colour variations, surface cracks, irregular and coarse brush marks, sanding marks, blistering, uniformity of gloss level and other irregularities in surface that visible from NVL.
- Excessive over-paint to fittings, trims, skirtings, architraves, glazing, other finished edges

12.03 **Nail and screw fixings -** Defect in painted or stained surfaces if seen from NVL.

12.04 **Mechanical damage and natural defects in surfaces** Defect if they can be seen from NVL.

TABLE 12.05 MINIMUM DURABILITY OF COATED FINISHES

Coating	Minimum durability
Exterior acrylic	36 months
Exterior enamel	24 months
Exterior semitransparent stains	12 months
Exterior clear finishes	Not recommended
Interior – all finishes	36 months

WET AREAS, DECKS AND BALCONIES

13.03 **Shower recess and components** - Defect if

- Crack, leak or don't perform as intended.
- Cracks in shower bases, screens and glass if they are visible from NVL.
- Any shower component that allows the shower recess to leak during normal usage.

13.04 **Leaks in water proof decks and balconies -** defect.

13.06 **Decks and balcony freeboard outside windows and doors -** Unless documented otherwise, defect if not have a drainage system sufficient to withstand wind-driven water surging from the deck or balcony such as a water proofed freeboard or step-down[9].

13.07 **Leaking and pending of water proof decks and balconies -** Defect if leak, pond water and/or do not drain to the outer edge, or storm water outlet.

13.08 **Calcification and efflorescence associated with decks and balconies. –** Defect unless attributable to the actions of others (e.g. watering plants).

FLOORS

14.03 **Gaps in exposed timber flooring -** Except where affected by exposure to sunlight, cooling, heating or other heat generating appliances, flooring is defect if it has a gap of more than 2 mm between adjacent boards that extend for more than 1 m. Flooring is defect it has gaps of more than 5 m in total of three gaps between four consecutive boards[10].

14.04 **Joint swelling in timber, plywood and particleboard flooring -** Joints in plywood and particleboard floors defect if detected through normal floor coverings.

Swelling in tongue and groove timber flooring defect if it causes buckling of the boards or movement of perimeter restraints such as walls[11].

14.05 **Nail popping in timber, plywood and particleboard floors**[12] **-** Detected through floor coverings or clearly visible is defect if they occur within the first 24 months.

14.06 **Squeaking floors -** Within the first 24 months are defective.

14.07 **Springy floors -** Detected by a person walking normally across defective unless constructed in accordance with AS.1684.

14.08 **Timber floor levels** - Defect if

- Differ by more than 10mm in any room or area, or more than 4 mm in any 2 m length.
- Overall deviation of entire building exceeds 20 mm.

14.09 **Splitting of timber decking -** Extend to the end or side edge of the timber are defects if they are due to the fixing method.

GENERAL

18.04 **Glazing -** Scratches, fractures, chips or other blemishes on glazing and mirrors defect if caused by the builder and seen from NVL. Minor scratches, fractures, chips or other blemishes that are not more than 10mm long and where there are not more than three blemishes per pane, are not defects.

18.08 **Water leaks -** Roofs, gutters, flashings, skylights, window and door frame joints or seals are defective if they leak under normal weather conditions.

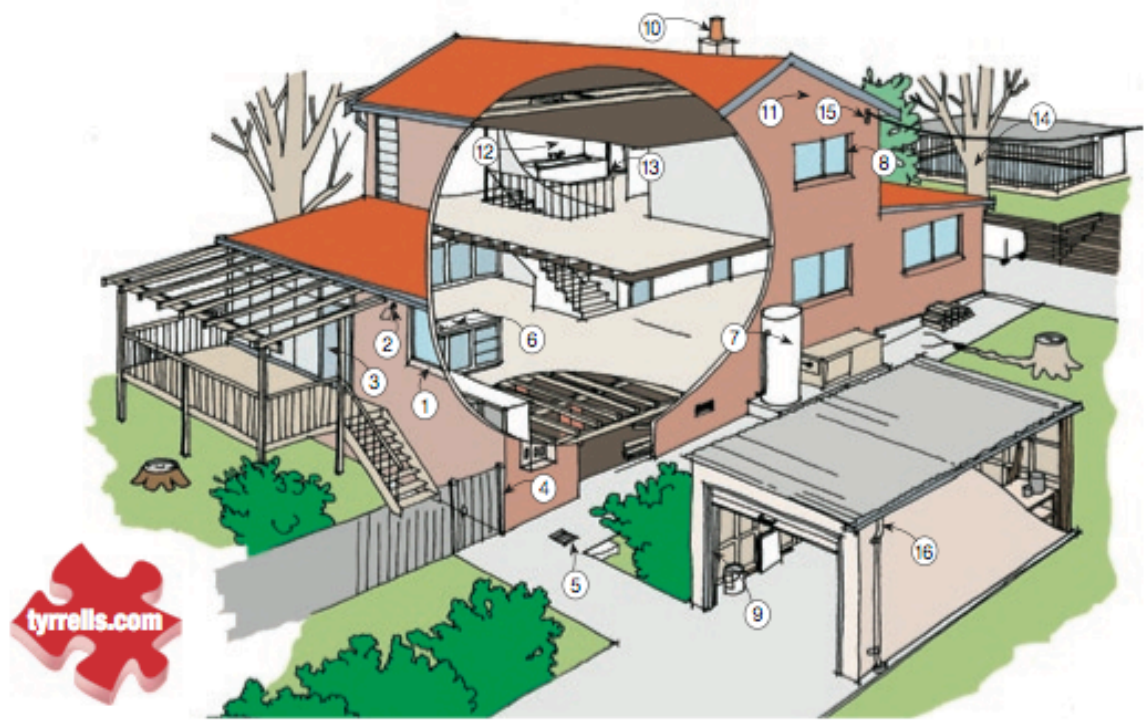
15.4 Maintenance

Home ownership has responsibilities. Once the building work is completed you'll still have to keep certain things properly maintained. This means knowing that materials will deteriorate and cost you a lot of money to replace or repair unless you carry out timely maintenance.

Most people know that repainting is required every 7–10 years and every 2 years for stained timbers. Other materials may need greasing, servicing or inspecting. Termite management is a key area which needs really careful periodic checking and risk assessment.

We have included technical information to help you maintain and keep you home safe including

- Maintenance Check
- Roof Check
- Safety Check
- Timber Pest Check



MAINTENANCE Check

Numbers relate to items on the drawings

Every year you spend lots of money on servicing your car.

House maintenance makes even more sense than car maintenance because it saves you money during ownership and especially if you sell.

Your Prepurchase Report tells you lots of helpful things about your property including early warning about future problems.

Maintenance keeps things working properly and can stop unnecessary disasters such as flooding of basement if drains are not cleaned.

The trick is not to spend too much money but to deal effectively with all the **necessary** maintenance.

What to LOOK for

1. clean window sills and thresholds, aluminium finishes and coatings to windows and door frames
2. replace light bulbs especially the hard to get to exterior lights
3. lubricate sliding door, window, shower screen and flyscreen rollers, drawer runners
4. lubricate gate hinges/latches
- ease sticking/binding doors
5. clear drains and sumps
   flush small drains if possible
   clean open/dish drains including behind basement walls
- check pumps
6. replace faulty tap washers (reseat washer in all cases)
   clean mixer/spout filters
   clean washing machine inlet hose filters
   repair leaks in pipework, hose fittings
7. test hot water pressure relief valve as instructed by manufacturer
- refit loose conduits and cables
8. check seals around windows, meter box, doors, benchtops and vanity basins
9. service garage door guides to manufacturer's instructions
- service locks and hardware
- clean anodised aluminium carefully with soap and water
10. sweep chimney
11. check and refit loose cladding, weatherboards, decking
12. regrout tiles where grout missing
13. remove mould from finishes
- clean exhaust fan cover and range hood recirculating filters
- arrange service of air conditioning units
- prime any previously painted bare timber
- prepare and prime any rusted steel
  remove any rusty steel embedded in masonry or concrete
  replace rusted screws
- seek expert advice for any concrete cancer ie rust staining from concrete
14. remove large trees from behind garden and retaining walls
    clear trees/plant growth over the roofs or close to overhead electrical wires in your property
15. check condition and support for the bracket holding electrical wires (called your point of attachment)
- seal holes in walls, eaves against vermin mainly rats, mice and bird entry
- repoint eroded masonry mortar
16. repair any leaking/defective downpipes or drains
- pool and pool equipment

Where to find help

- *Property Maintenance Handbook* by Tony Ransley & Jerry Tyrrell

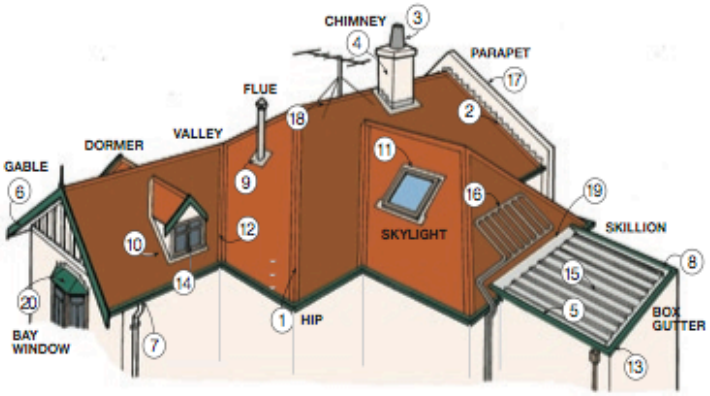
ROOF Check

Numbers relate to items on drawing.

Roofs are meant to keep out the rain, wind and animals. Most people will put up with problems in their buildings, but no one likes a leaking roof. Besides, a leak can cost you a fortune if it damages paintwork, carpet or those irreplacable momentos.

So every year and after any really wild weather (especially hail) it pays to carefully check your roof for problems.

Usually any major problems will be obvious because the roof will leak. Minor problems can take time to show especially if they only leak when the rain comes from a particular direction. Other issues will occur as materials age and need maintenance or replacement.



What to LOOK for

From inside

- ◯ obvious leaks or damp patches on the ceiling
- ◯ mould and staining to paint
- ◯ staining/blistered paintwork around chimneys, skylights
- ◯ water marks/leaks under joints between original building and any extensions
- ◯ cracks in skylights or roof glazing

It helps to look more closely at the areas directly above these signs for the cause of the leaks. In the most difficult cases, it may be necessary to inspect the underside of the roof during rain.

From the ground (use binoculars if necessary)

- ◯ slipped or missing tiles/slates
- ◯ big gaps under edges of tiles which will let water blow in – this can mean the tiles are eroding
- (1) slipped capping especially at lower end of corners (called hips)
- ◯ lifting edges of metal sheets
- (2) loose or lifted flashings
- (3) missing or leaning chimney pots
- (4) gaps in chimney mortar
- ◯ stains to the lining under the edge of the roof
- (5) severe corrosion to any sheeting or capping
- (6) rot to ends of timber/loose timber edges where nails have rusted
- ◯ condition of paintwork especially ends of rafters and fascias
- (7) drips/staining from joints in gutters or downpipes
- ◯ sagging of gutters especially at corners
- (8) plants growing in gutters or out of the roof especially at edges

If you are brave enough to get inside the roof

WARNING
It is easy to slip off ceiling joists or bump your head. Be careful not to drop in unexpectedly!

Looking at the underside of a roof can help you work out where it might be leaking:

- ◯ if you can easily see daylight through any part of the roof, rain will probably easily get in and birds certainly will
- ◯ the top surface of the ceiling insulation for spotting of drips of water from leaks through roof
- ◯ the crushed orange dust on the surface of the ceiling especially under any cut tiles is a sign of terracotta tiles falling apart
- ◯ deterioration to underside of slates (and their nails), tiles, metal roofing/valleys that can be impossible to spot from the outside

On the roof

WARNING
Experts rarely get on a roof without a safety harness (called a fall arrest system). Slate, shingles or older terracotta roofs should not be walked on. Do not get onto a roof unless you are trained to use ladders and are used to working on roofs. Wear non slip rubber soled shoes such as Dunlop Volleys.

Look more closely for the problems you have already looked for from the ground.

- (9) cracks in flashings and sealants around any pipes, flues, TV, skylights/roof windows/roof vents penetrating the roof
- ◯ condition of mortar pointing to tile capping
- (10) cracks in long length lead flashings
- (11) leaves/rubbish stuck behind or down the side of skylights, chimneys or in box gutters (and eaves gutters) and valleys, annex fascia gutters, and at the flashing or joint between two different roofs, or where the slope of the roof changes
- ◯ balls/plastic bags stuck in gutters
- (12) any rusted surface/pipe or flue where the rust is powdery/very rough and uneven especially older valleys and box gutters or frames around skylights
- (13) cracks in sealants to joints in box gutters especially where joined to downpipes
- (14) condition of hard to get to rotted timber especially sills/frames around dormer windows or highlight windows
- ◯ crush damage/breakage to soft or brittle roofs, eg aluminium, fibreglass, metal tiles, asbestos sheeting
- ◯ severely weathered asbestos cement sheeting or gutters/downpipes
- (15) loose or corroded screws, fixings
- ◯ support to air conditioning and solar hot water systems mounted on the roof
- (16) leaks/corrosion from solar pool heaters or water heaters – salt water quickly rusts steel products
- ◯ rot/rust to frames supporting air conditioners
- (17) loose bricks/render to chimneys and parapets
- ◯ condition of paintwork to parapets, walls above roofs, chimneys, gables
- (18) loose or missing support wires to TV antennas, flues, flagpoles
- (19) poorly detailed flashings between 2 different roofs
- (20) condition of awning/bay window/porch roofs especially size of drainage

Membranes

- ◯ bubbles/blisters/splits in the surface of membranes
- ◯ missing or displaced gravel topping on top of membrane
- ◯ bird damage to membranes
- ◯ weatherproofing of any joint that looks complex

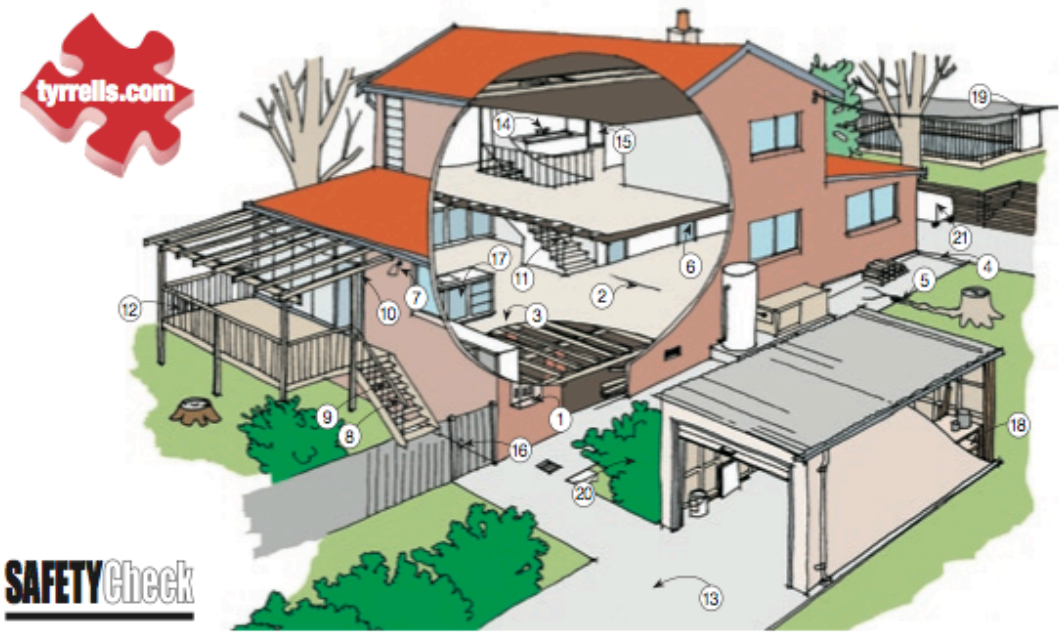
And what do you do if something is wrong

Fix it yourself if it is safe to do so and you have the appropriate skills and tools.

Seek advice from a licensed roofing plumber or tradesman experienced with this type of work.

Basic tools and materials for roof maintenance

- Ladders
- Roof anchor bolts
- Safety harness
- Sealant gun
- Silicone sealant – for flashings and metals
- Polyurethane sealant – for flashings and masonry
- Rivet gun and stainless steel or aluminium rivets
- Tinsnips
- Cordless screwdriver with roofing screw socket and drills for removing rivets
- Scrapers and aluminium oxide sandpaper
- Anticorrosive primers, eg zinc or aluminium
- External acrylic paint



Numbers relate to items on the drawings

Preventing and minimising accidents is very important to occupants and visitors to your property.

You can do this by being vigilant and identifying the obvious hazards that will periodically occur. The Diagram shows many of the typical things to look for.

Every time you see something unsafe, do something about it immediately. And if you are unsure about what to do, get advice from an expert.

What to LOOK for

Test

(1) RCD (safety switch)

Flooring

(2) fix down loose carpet/vinyl edges or joints
◯ fit non slip backing to mats
(3) no slippery surfaces especially glazed or polished marble
◯ apply a non slip coating to known slippery surfaces

Avoid storing knives within reach of children
Tie up cords on blinds if infants present
Fit childproof plugs to power points

Paving

(4) avoid single steps
◯ remove any moss growth immediately
(5) remove tree roots that are lifting paving or are trip hazards
◯ upgrade drainage to eliminate seepage onto paving
◯ remove any trip hazards, eg raised pavers, half steps

Toilet doors

(6) make sure toilet doors can be opened from outside toilet

Stairs

(7) install lighting so all steps are clearly visible at night
(8) fit non slip nosing or grooves to edge of all steps
(9) close any gaps in stairs that allow infants to fall through

Visibility

◯ avoid planting which obscures the footpath when leaving the property or safe entry to the front door

Security

◯ provide secure locks to entry doors and ground floor windows
◯ use remote control night time entry to garages
(10) provide good night lighting to entry

Railings

◯ check adequacy of fixings
(11) fit railings to ALL stairs including any difficult to see step, side of ramps or driveway or any drop more than 600mm
(12) redesign railings and avoid placing furniture, pots etc that could allow child access over or through balcony railings or windows

Vehicle barriers

(13) install wheel stops to carspaces where vehicle can damage structures or drive through railings
◯ install crash barriers or bollard where vehicles can drive into trouble
◯ fit speed humps in longer flat driveways

Hotwater

(14) fit temperature limiting devices to showers, baths and basins

Glass

(15) fit safety glass to entry and balcony doors or sidelights, windows in stairs or above baths, shower sceeens

Hazardous materials

◯ identify any asbestos products
◯ anticipate lead in paint films over 20 years old

Pool

(16) service gate latch and self closing device
◯ check that neighbours' fences do not allow child entry
◯ fence all water features or place stainless steel mesh just below surface of water to eliminate hazard

Street drains

◯ request your local Council to fit childproofing to any open drains, pits or culvert

Storage of dangerous products

(17) fit safety catches to sink cupboard
(18) store cordless tools without drills or blades and battery detached
◯ ladders should be lying down
(19) pool chemicals, pesticides, garden herbicides, petroleum products should be stored in childproof location

Gardens

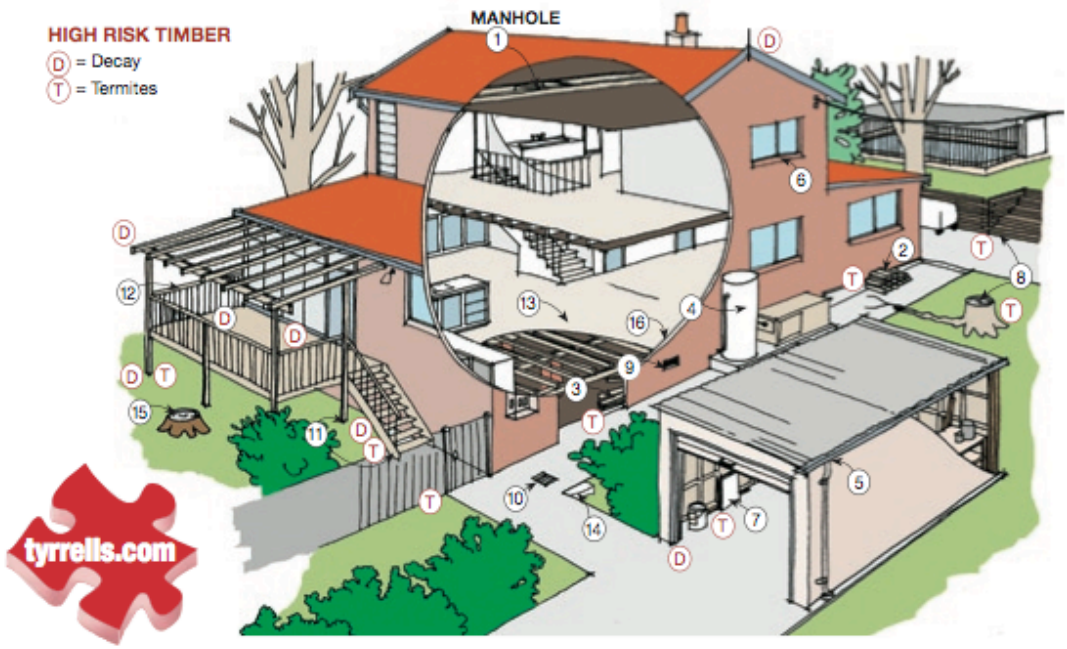
(20) identify and remove poisonous trees, eg oleanders, privet, asthma weed
◯ remove accessible spiky plants
◯ install softfall to areas around children's playground equipment
◯ fit tight fitting weathersesals to base of external doors and insect screens in known funnelweb spider areas
◯ do not store shoes and clothes outside
◯ remove hanging ropes from trees and buildings
◯ assess stability of trellises, arbors, pergola supporting plants

BBQs

(21) storage cylinder should have up to date compliance
◯ turn off or remove cylinder after use if BBQ is auto start

Fire safety

◯ test smoke alarms
◯ check closers fitted to entry doors
◯ check fire resistance of walls to adjoining buildings
◯ remove obstructions/stored goods from fire stairs escapes
◯ fit fireproofing to flammable walls around gas cooktops
◯ keep fire blanket in kitchen



TIMBER PEST Check

Numbers relate to items on the drawings

If you have timber in your house, it can easily be damaged by rot and insects pests. That's why we have advised periodic timber pest inspections.

You can limit any timber pest damage by keeping an eye out for all those obvious signs of insect activity or damage.

Don't worry about damage which has not happened, keep looking at the high risk parts of the building such as timber built into ground.

What to LOOK for

Access

(1) make sure every possible part of the building is accessible for inspection, ie cut openings, trapdoors and manholes where necessary

◯ where no access available, consider removable panels, skirtings or reliance on careful periodic inspection. Access door to subfloor and roofs should be minimum 400mm wide by 600mm high.

◯ ensure clearance (including removal of soil, garden, paving where necessary):

- from ground to underside of floor structures
- to top of slab edges from ground or paving
- from soil to underside of posts and stair bases
- to visible edges of antcaps
- to areas where attachments may bridge the physical barriers
- of gardens and plants bridging the physical barrier or obstructing visual inspection

Reduce risk of timber pest damage

(2) do not store firewood under or against building

(3) do not store cellulose or timber products in the subfloor, under the house or against a basement wall

(4) repair leaks in taps, shower bases, hot water pressure relief valves

(5) repair leaking gutters, downpipes

(6) maintain paintwork to external timbers especially sills, joints and ends

(7) remove untreated timbers in ground contact

◯ remove old formwork under suspended concrete, eg stairs, bathrooms, porchs, fireplaces

Locate colonies in trees, stumps and landscape timbers

(8) eradicate if the termite species is destructive

Ventilation

(9) clean/clean ventilators. Remove planting obstructing air flow.

◯ increase ventilation where necessary especially where ground level is close to flooring, at junction of slab on ground and timber floors, where missing at corners, or if existing ventilators are inadequate

◯ fit fan assisted ventilation where natural ventilation is unsatisfactory

Drainage

(10) inspect and verify that the existing stormwater system is working

◯ grade (or fill with concrete mix) areas where ponding of water is occurring in the subfloor

◯ provide drainage pipework where necessary. Installation of subsoil drainage on the uphill side of the main building may help stop water entering under the house

◯ grade paving and external soils away from the building

Termites

(11) carefully check any timber in ground contact especially landscape timbers, post/stair bases, soft masonry without antcaps, ANY untreated structures above ALL slabs on ground where slab edge is not visible for inspection.

Wood rot

(12) carefully check joints/ends in all weather or moisture exposed timbers especially handrails, windows and doors, roof timbers, bottom of door frames, bottom of posts/stairs in ground contact, timbers built into masonry/tiles, ends of stair treads, weatherboards, under leaking showers/baths, older timbers

Borers

(13) carefully check pine flooring, stair timbers, fireplace timbers, older lining boards, cupboard shelves, pine furniture

Bait stations

(14) install bait stations to perimeter of main structures to provide early warning of termite activity

(15) concentrate in gardens close to building and in line with main risk areas such as trees or known colonies

Periodic inspection

(16) be especially vigilant about termite entry at vertical joint between masonry and timber, breakout in isolated areas inside cupboards, top of skirtings and at edge of floor under carpet

◯ obtain professional advice if any activity detected

● carry out a timber pest inspection in accordance with AS 4349.3 at no more than 12 monthly intervals

◯ inspect bait stations every 3 months

Where to find help

● *Pest Pack* — a consumers' guide to do-it-yourself pest inspections (Tyrrells Property Inspections)

● *Keeping Pests out of Buildings* (Standards Australia)

UNIT 16 **DISPUTES**

Lots of little problems arise during a building job. These can easily be sorted out between reasonable people. At worst, a few things may not be quite right or what you expected. However, serious issues can arise when there are personality clashes or you just selected the wrong person to do the job.

The first stage is when the problem escalates into a complaint to the contractor. This usually gets a defensive response from the people involved. Sometimes people can takes sides and you will not know what to do.

If the complaint cannot be resolved, you may need to talk to the contractor's licensing authority who may be able to provide someone to inspect and comment on the issue.
If things don't get better, you've got a dispute on the boil!

16.1 When a complaint becomes a dispute

Good communication is the first step in finding resolution. Often the basis of a disagreement is a simple misunderstanding or honest mistake. In which case it is important to use an experienced third party such as a building consultant who is impartial and can provide a balanced view. Be wary of advice from friends.

The following is a tried and tested process

1. Clarify the issues – check that what you are concerned about is an issue and what you are asking the contractor to do is his responsibility. If in doubt, consider getting independent advice or chat to your 'buddy'.
2. If there is a problem, politely invite the contractor to fix or complete the issue.
3. Listen to any reasonable alternative solution.
4. Seek advice from the Office of Fair Trading regarding their complaint procedure.
5. If the contract has home warranty insurance discuss tactics with the home warranty insurer.
6. Simply work with the contractor to fix the problem without further delay even if it costs you a little bit more than is fair.

If the contractor is rude, or is unreasonable, etc. print out the claim form from the Office of Fair Trading website. Complete the form and attach a building consultant's report. Copy the form and report and send it to the contractor with a brief covering letter saying that if the defects are not rectified within 7 days you will file the claim form with the Tribunal. If the contractor hasn't agreed to rectify the defects or replied to your letter within the 7 days, file the claim immediately.

16.2 If things get nasty

You may need to prepare for a mediation or Tribunal hearing. If you wish to have your lawyer present you generally need permission (special leave) from the Tribunal if the claim is under the minimum amount required.

If there is something wrong, focus on getting it right without anger, blame or delay. Financial issues need quick action so that you and the contractor know who is paying for what.

ALERT ***Getting help***

Building disputes don't need to occur if you get the right tactical advice. The emotional, financial and time cost of a dispute can be easily avoided or minimised with experienced professional help.

The formula will vary but in most cases you should

- *identify the issues – get technical advice quickly and NOT from relatives and know it alls*
- *discard those complaints that are unreasonable or will not be supported by evidence or industry practice*
- *seek legal advice from solicitors who should advise resolution at all costs.*

And, if the complaint escalates into a dispute use either mediation or check your rights with the Office of Fair Trading. Most residential building work is protected by legislation or insurance.

Useful websites

Australian Building Codes Board

www.abcb.gov.au

BASIX

www.basix.nsw.gov.au

Building Designers Association of Australia

http://www.bdaa.com.au

Building Designers Association of NSW

www.bdansw.com.au

Consumer, Trader & Tenancy Tribunal

http://www.cttt.nsw.gov.au

NATSPEC

www.natspec.com.au/Products_Services/publications.asp

Royal Australian Institute of Architects

http://www.architecture.com.au

Workcover NSW

www.workcover.nsw.gov.au.

Refer also to the list at 9.1 and Table 9.1.

FEEDBACK

Tyrrells is interested in getting feedback from you about the Handbook. Please send any comments to ownerbuilder@tyrrells.com

References and Acknowledgements

Tyrrells Property Inspections would like to acknowledge the use of resource material available from

- Office of Fair Trading New South Wales
- WorkCover New South Wales
- Australian Building Codes Board
- Victorian Building Commission (Guide to Standards and Tolerances)
- BASIX
- Gosford and Blue Mountains Councils
- Planning New South Wales
- NATSPEC