Home*Smart* Renovations

Project Management for Participants

Beacon

Creating homes and neighbourhoods that work well into the future and don't cost the Earth

Project Management for Participants

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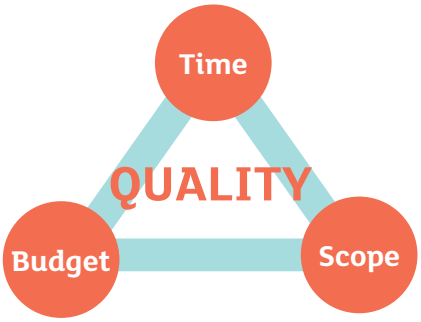
1. Introduction

- What is project management?
- Who is the project manager?
- Project management stages?

In this document we will give you advice on managing your Home*Smart* Renovations Plan. You'll find tips and links for each stage of your Plan and information to help you decide whether to project manage your renovation yourself, or to employ someone else to do it for you.

What is project management?

Project management is the art of organising, running and completing a piece of work. The theory is simple: the project should be completed on time, on budget, match what was originally planned (the scope), and be completed to an acceptable quality. In practice it's far more complex and involves a fine balancing act between the conflicting corners of this triangle.



Who is the project manager?

You can be the project manager or you can hire someone else. To a certain extent, the scale of your renovation will influence who project manages the work; a small project such as insulating the walls or ceiling could by managed by you or the main tradesperson. However, for a large project, such as a full-scale renovation of your home, it may be better to use a specialised building project manager.

If you are the project manager, you will need to make all the decisions about budget, materials, hiring tradespeople and managing contracts, obtaining consents, monitoring work quality, keeping to schedule, and getting consent sign off. **Think very carefully about whether you have the time and expertise to project manage your own renovation.**

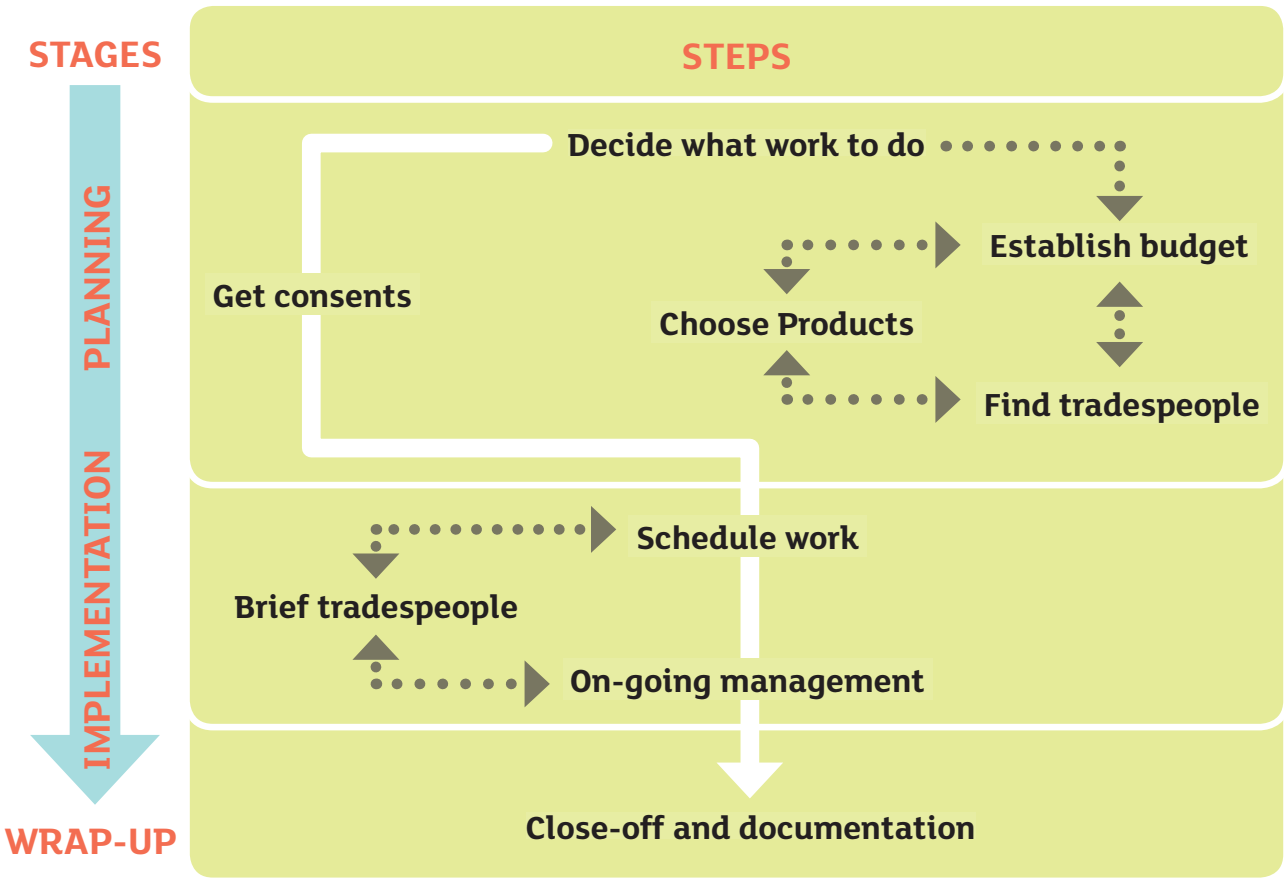
If you hire someone, they will follow a process very similar to the one described below. Professional project managers deal with all the day-to-day jobs including finding, hiring and organising tradespeople, obtaining materials and checking work quality. While it will cost more to hire someone else as project manager, they could pick up on expensive mistakes or have the knowledge to finish the work better. Your project manager could be the Beacon Renovation Partner organisation who provided your Home*Smart* Renovations Plan, an experienced builder or head contractor, a quantity surveyor, an architect or a specialised building project manager.

Even if you are not the project manager, you will still need to confirm budgets, keep an eye on progress and, most importantly, talk regularly with them. You may still need to be on-site occasionally during working hours.

At the end of this document you'll find a checklist of project management tasks which you can work through to decide who will take responsibility for them.

Project management stages

Managing any project runs through three stages: planning, implementation and wrap up. Your Home*Smart* Renovation will need you to make a number of decisions within each stage. You'll notice that the flow chart below is not linear. Often you may need to revisit earlier decisions in order to balance the project management triangle. For example, you may have set your budget and on receiving quotes find that you can't afford to complete everything as originally planned.



Project Management Flow Chart

2. Deciding what work to do

- Setting priorities
- Coordinating stages
- Timing

Setting priorities

- Read through your Home*Smart* Renovations Plan. Do you understand why each item is there? If not, contact the Beacon Renovation Partner who provided you with the Plan.

- Decide which parts of the Home*Smart* Renovations Plan are priorities for you. Your Beacon Renovation Partner can give advice if you're not sure, or you could talk to your Council's Eco-Design Advisor if they have one.

Coordinating stages

- There is a natural order to some renovations. Take advantage of opening your walls for insulation to also check your wiring and plumbing. Similarly, it is better to do plumbing or wiring work in the ceiling cavity or under the floor before laying down insulation. Depending on your priorities, you may choose to work first on certain parts of your home, like the ceiling cavity, or certain areas such as the front rooms.

Timing

- House renovations can take a long time. Think about family events or likely household changes over the next year or two, and plan your renovations around this.

- At times you will need to be on-site during work hours and you may need to set aside some annual leave for this.

- You are likely to need building or resource consents for some types of work. We discuss these in more detail later, but remember that it not only takes time to get consent but also some are only valid for work done during certain periods. It pays to find out your consent requirements before starting detailed planning.

- A common renovation problem is "the renovation that never ends". Think carefully about your budget and your priorities at the very start. It is easy to get sucked into doing more than you planned. If the project starts to balloon, take a step back and consider if the work is really necessary at that time.

3. Budgeting

- At the very start, work out your total budget. You will need to consider savings, loans, cost of repayments, value of capitalisation on your home, and what sort of renovations you plan to complete from your Home*Smart* Renovations Plan.

- Now, use your Renovation Plan to figure out how much your renovation could cost. It is quite probable that your dream plan won't fit within your budget. Use your priorities to decide what parts of the renovation to delay or revisit your budget to see if anything can be stretched.

- If you plan to hire a project manager, don't forget to add an amount for their fees. It is common for project managers to charge a handling percentage when they pass on subcontractor or material costs.

- When creating your budget, include a contingency amount. This is back-up money, so don't plan to spend it but make sure it is available if you need it. As a rule of thumb an additional 10–15% contingency is common. Establish some rules about when and how this contingency money can be spent.

- Keep your budget up to date, and keep matching it against your actual and planned expenses. This is especially important whenever circumstances change, e.g. a new occupant or a change of job. You can do this on paper or using a spreadsheet as simple as this:

1. Item	2. Budget ($)	3. Quote ($)	4. Actual ($)	5. Notes
Rangehood	*$400*	*$379*	*$379*	*On time*

- You need to maintain cash flow to pay bills on time. When you plan your budget, consider when you'll need access to larger amounts of money and plan your loan or savings around this.

4. Who will do the work?

- Finding a tradesperson or project manager
- Quotes, insurance and contracts

Finding a tradesperson or project manager

- A good project manager or tradesperson will be happy to show you examples of their work or supply references for you to contact. It is worth checking out their track record. They also will be happy to give you time to make a decision, and won't pressure you to sign them up on the spot. If you choose an external project manager, they will take over finding and organising tradespeople for you.

TIP BOX: What is a quantity surveyor?

If you have a large renovation planned, you might use a quantity surveyor to assess the size of your project, estimate the quantity of materials needed and how much it should cost. This should help you get an accurate quote and improve your understanding of what lies ahead. Just like any other tradesperson, you should talk to several quantity surveyors; find out their charges, insurance, availability and qualifications.

If you are considering DIY for parts of your renovation, you must be aware of some legal restrictions around what you can do. Consumer Build (www.consumerbuild.co.nz) provides a clear description of what you can and can't do. Otherwise contact the Department of Building and Housing.

Any person can call themselves a tradesperson but you'll want one who knows what they are doing. Licences and qualifications are one way of checking this. Look for membership with reputable associations such as Registered Master Builders Federation, Certified Builders Association, or Master Plumbers. Electricians should be registered with the Electrical Workers Registration Board, and plumbers and gasfitters with the Plumbers, Gasfitters and Drainlayers Board. Solar water heater installers must be accredited by the Solar Industries Association and wood or pellet burner installers must be accredited by the NZ Home Heating Association. Heat pumps use refrigerants and therefore installers should have both electrical and refrigerant certification (HVAC engineer). The Department of Building and Housing has just started a Licensed Building Practitioner Scheme which has a list of all registered tradespeople. Under new building laws, tradespeople must be registered with this scheme by 2010 in order to do certain kinds of work.

TIP BOX: How to find a good tradesperson

Word of mouth is still the best way – ask your family, friends or neighbours for any recommendations. Another possibility is to look at websites where people can post reviews of tradespeople, but remember that this can't guarantee accuracy. Try asking the trade associations for local members. It is best to check out several tradespeople rather than taking on the first one you stumble on.

Quotes, insurance and contracts

- Make sure you get a quote or estimate in writing. An estimate is a guess only, and is not binding. The more detail you can provide, the more accurate any quote or estimate will be. This reduces the need for variations later. Ask at least three tradespeople for quotes so you can compare for accuracy, but beware: the cheapest quote is not always the best! Think about qualifications, reputation, guarantees and when they can do the work.

TIP BOX: Legal requirements for quotes

A quote is a legal document which binds the tradesperson to a certain price. There may also be clauses about hourly rates for any additional work, provisional sums if the work is uncertain, progress payments as work is completed or the option for a contract variation for any unplanned changes to the work. It should be written, dated and signed by the tradesperson. You will also sign to indicate acceptance. Before you accept any quote, make sure you understand what the clauses mean. Consumer Build's website has a good explanation or talk to your local Citizens Advice Bureau. If the contract is for a large amount of work, you may want to consult with your lawyer.

- Any time a tradesperson is working on your home, you will need insurance cover. Often a tradesperson will have their own insurance – you should check this and understand the level of cover before you sign any contract. If they don't have sufficient insurance, make sure you organise your own. In any case, you should always advise your own house insurer before any work begins.

- Don't assume that you are covered by any trade guarantees. Specifically ask the tradesperson and find out if you need to apply or pay a fee. Check carefully the level of cover and understand how the complaints procedure works.

5. Choosing products

- Your Home*Smart* Renovation Plan may recommend installing certain products, such as a pellet burner. However, the specific brand or model is your choice.
- Most major suppliers have websites about their products, or you can check with stores. Ask around your family, friends and neighbours for their experiences with different products.

TIP BOX: Environmentally friendly products

Beacon recommends that you use environmentally friendly products. There are many claims about just how environmentally friendly a product is, but consider the following:

- Look for low or no VOC levels in paint, glues, polyurethane and carpets.
- Look for sustainably sourced products, e.g. timber from a sustainably managed forest
- Minimise resource use; choose products which are long lasting and don't waste materials.
- Use materials with low embodied energy i.e. the total energy used to extract the raw material, the manufacturing process, transportation costs, etc.
- Consider products which are either made from recycled materials, are renewable or which can be recycled themselves

Products are often labelled with manufacturer's own environmental claims. Several highly regarded independent labels are Environmental Choice NZ, Forest Stewardship Council, and Energy Star, or have a look at the Ministry for Economic Development website for their directory of Ecolabels. You'll also find helpful information on product selection on the Smarter Homes and Level websites.

The Consumer Guarantees Act should cover any faulty goods but find out if you have to register to obtain a special guarantee or warranty. Sometimes the manufacturer requires the product to be installed by a registered tradesperson.

TIP BOX: Tradespeople and product choice

It's a good idea to research products before engaging a tradesperson. Tradespeople often have a relationship with certain product suppliers and can provide them at a cheaper price. Some tradespeople will only work with a specific product, and some suppliers will only allow you to use a particular tradesperson.

If you are discussing products with a tradesperson, find out if they have any such relationships with suppliers. You need to decide whether this is actually a product you want, and if you are happy with the tradesperson before you sign a contract. It is generally better to favour a skilled tradesperson over a specific product as even the best of products will suffer if the quality of installation is poor.

6. Consents

- Overview
- Who is responsible?
- Consent needs for most popular renovations

Overview

- The Building Act 2004 sets out the law on building work. The Building Regulations contain the mandatory New Zealand Building Code, and also the rules about building consents and building inspections. The Building Code details performance standards that all building work must meet, and covers fire safety, access, moisture control, durability, services and facilities.

- The Resource Management Act 1991 (RMA) deals with natural and physical resources, including land use. Each city or district council has a District Plan, which identifies the consent requirements for various activities. These will vary depending on your district or city council.

- When applying for a building consent and/or resource consent you may need to give detailed plans and information about the proposed work. This could include details of materials and methods of construction. Depending on the level of detail you may wish to use a building professional to develop the building consent or even a planning consultant for the resource consent.

Who is responsible?

- You are responsible for identifying and obtaining whether building consent is required. Your tradespeople may know whether building consent is required. It is the same for resource consents: you are responsible for finding out if consent is required and for obtaining it. You must get consent prior to starting work. Talk to your local district or city council for more information.

Consent needs for most popular renovations

- It is more likely that you will require building consent than resource consent. However, it depends on the scale of work you are undertaking.
- You will need a building consent for any major work such as construction, alteration, demolition and site works. However, rules for whether you need a building consent for smaller work, such as plumbing and drainage work, are changing. Council requirements for building consents also vary: some councils require a building consent for rainwater tanks, for example. Always check with your building consent authority (usually your local council) about a building consent before commencing your renovation.
- You may need resource consent to construct a deck or to extend your house.

TIP BOX: More information about consents

- Further information about the Building Act and requirements for building consent can be found at http://www.consumerbuild.org.nz/publish/buildact-consents.php or at your local building authority – city or district council.
- Further information about resource consents can be found at http://www.mfe.govt.nz/publications/rma/everyday/consent-apply/consent-apply-jun06.pdf. A guide to the RMA is available at: www.rmaguide.org.nz . Further information is available from your local council.
- Planning consultants and building professionals can be found in the Yellow Pages.

7. Scheduling

- Scheduling the work
- Scheduling you

Scheduling the work

- Talk to the tradesperson about when they intend to do the work and how long it is likely to take. Have a think about whether this will conflict with any activities of your own.

- Some work requires several tradespeople, for example, installing a solar hot water system requires both a plumber and electrician. It is much easier if the tradespeople work together as you will need to coordinate their visits. This will make progress faster, and help to avoid mistakes and rework.

- If it is a big job, create a written schedule with the tradesperson and include milestones along the way. This easily shows you if things are falling behind. Keep an eye on progress, and if delays look likely, have a chat with the tradesperson. It is better to keep on top of small changes before they cause big problems.

Scheduling you

- Expect delays and plan for unexpected changes. Just as you have contingency money for financial changes, you should also allow for delays to your time budget. Your contract with the tradesperson will include clauses about deadlines and costs of delays. Make sure you are aware of these.

- Plan ahead to minimise disruption in your home. Can you shut off part of the house while it is being worked on? Can you store your possessions elsewhere, or at least cover them with dust or moisture cloths? Think about whether your kitchen or bathroom will be out of action.

- Plan ahead to minimise disruption in your life. Think about upcoming events when you need the house to be tidy. Are there school holidays or celebrations to consider? When do you expect to be away? Is anybody coming to stay with you? Do you have small children or pets who could be at risk on the renovation site? Renovations can lead to a disorganised messy house, so reduce pressure by thinking ahead.

8. Briefing tradespeople

- When you deal with a tradesperson, the most important thing to do is communicate. At the very start, be clear about your expectations and make sure you understand theirs. Some things, like quotes and contracts, must be in writing, but it can be worthwhile noting down other items like schedules or any housekeeping rules. Keep talking to your tradesperson as the work progresses: make sure you know if anything changes and let them know if you need to alter anything.

- Create a key contact person with each company. Try to ensure this person is the foreman or supervisor. Tradespeople will often work in a team, so it is better to talk with the person in charge. Make sure you have an emergency after-hours number for them in case something goes wrong after they have gone home.

TIP BOX: Establishing housekeeping rules during renovations

Unlike a new build, you are likely to still be living in your home during the renovation. Create some ground rules with the tradesperson right from the start. Consider the following: hours of work, emergency contacts if you are not home, allowing music or smoking, sharing the driveway or carpark, storage of equipment or machinery, timing of noisy or dusty work, disposal of rubbish, end-of-day sweep-up, and any use of the toilet, kitchen or garden.

- Your Home*Smart* Renovation is not just any renovation. It is planned to make your home more sustainable and keep your family drier, warmer, and healthier. Your renovation may also be large and complex. When you engage tradespeople, you may want to explain the project to them so that they can understand why certain actions have been chosen.

- When you obtained quotes and signed a contract, you will have been provided with a brief describing work to be done. Before the tradesperson makes a start, confirm that the brief is still accurate. As work progresses, inspect their progress and compare it to what was in the brief. If things don't match up, talk to the tradesperson first.

TIP BOX: Renovation jargon and (mis)communication

Tradespeople can use a lot of jargon, and it pays to learn their terms yourself. Consumer Build's website has a good glossary or get a book on building from the library. If you don't understand what the tradesperson means, then ask again. Demonstrations, diagrams and photos can also help clarify things.

9. Ongoing management of renovations

- Tradespeople
- Site
- Documents

Tradespeople

- No matter what the work, you should regularly inspect progress. Let the tradesperson know at the start that you will inspect their work. There is a Quality Checklist at the end of this document which gives you tips on what to look for. Taking photographs can also be useful. If you find a problem, talk to the tradesperson first.
- If trouble is looming, the first thing to do is try and resolve it with the tradesperson. If that doesn't work, talk to their supervisor, then their firm or trade association. At this point, you will want to collect your contracts and any records or photographs which document the problem. Consider whether work should stop while the problem is resolved. If you want to stop work, check your contract first for any penalties. You may want to consider the Disputes Tribunal or legal action; in this case it is best to contact the Citizens Advice Bureau or your lawyer for advice.
- If you have progress payments included in your contract, you will need to pay these on time. The tradesperson should provide you with a progress claim in writing. However, before you pay, check that all work has been completed to an acceptable quality. If there are any issues, talk to the tradesperson first. Remember, that you are legally bound to provide payment within the notification period. If you are considering non-payment for any reason, you should check your contract and seek legal advice within the notification period.

Site

- Sometimes a renovation will reveal major problems with the house. This might be corrosion, dangerous wiring or plumbing or structural problems with the roof or piles. You may be able to reschedule your renovation to fit the new work in. Stop and rethink your renovation priorities, and examine your budget. If the problem is severe, you may have to postpone renovations.
- Building sites and renovations generate large amounts of waste. Encourage your tradespeople to reduce waste and to reuse or recycle what they cannot reduce. Keep any materials out of the way and out of the weather to prevent damage or theft. There are a number of online websites where you can swap building materials which otherwise would go to landfill – www.rebri.org.nz provides a list of these sites.
- Site security is important, especially if you are not home during renovations. If you are doing a large renovation, develop a site security plan. Make sure you know who will be on site and when. A whiteboard in a prominent place is a good way to keep track of tradespeople. Keep tools and materials out of sight from the road, or lock them away when they are not needed.

- Health and safety is also important on-site and is controlled under the Health and Safety in Employment Act. Responsibility for health and safety rests with the person controlling the work (usually the project manager or head contractor) who is known as the Principal. The Principal must have a health and safety plan showing how they will eliminate, isolate or minimise hazards. If you are living at home during renovations and are not controlling the work, you are not considered a Principal.

Documents

- If you needed a building consent, it is likely that an inspector will visit to check off work as it progresses. Know when this has to happen, and coordinate timing with the inspector to prevent hold ups.

- Keep a record of all guarantees or warranties supplied with materials, products or work. In some cases you may need to register your warranty with the supplier.

- Contact Beacon each time you start or complete work on your Renovation Plan. This is important so that we can identify why there may be changes in your monitoring data.

10. Close off and documentation

- Official documents

- In a large renovation, some tradespeople will finish at different times. If you are managing all contracts yourself you will need to inspect all work done by them before final sign off. You need to understand the relationship between work completed by each tradesperson – the work completed by one must be compatible with the work to be completed by another. You also need to consider any inspection requirements of the local building authority.

- You should review the work completed on your property against your original agreement with each tradesperson, including any variations agreed during the course of the work. For a large project you may wish to compile a "snagging list" (also known as a punch list or maintenance schedule). This is a list of any defects that you find in the work. The list helps you identify any areas which need to be rectified. There are two areas of snagging:

  1. Functionality — does everything in your renovation work as it should? and

  2. Aesthetic — is the work finished to an acceptable standard?

Official documents

- Your building consent, if required, will include provision for a final sign off by the building authority. You will need to arrange for this inspection to occur, in conjunction with the relevant tradesperson. The building inspector can ask you to complete additional work if they are not satisfied.

- A code compliance certificate is a formal statement under the Building Act that the building work complies with that building consent. You must apply for a code compliance certificate after all work in the building consent is complete. If no application is made within 2 years from being granted, the building consent authority must decide whether to issue the code compliance certificate. You can agree with the building consent authority to extend the time frame above.

- Even if building consent was not required, completed work, such as electrical work should have a certificate of compliance from the tradesperson.

- Make sure you keep copies of any building consents, certificates of compliance or resource consents in a safe place within your property. These should be given to the new property owner if you sell your home.

11. Further information

Much of the advice in this document can be found in more detail on the following websites:

- www.sorted.org.nz provides general tips about budgeting and financial help.
- www.consumerbuild.org.nz is a very comprehensive New Zealand website hosted by Consumer NZ. Great for information on the renovation process, including health and safety.
- www.consumer.org.nz requires a subscription to access, but this is very worthwhile during the planning stage when you are looking at products.
- www.dbh.govt.nz is the website of Department of Building and Housing and it contains a wealth of information on the Building Act and dispute resolution.
- www.mytradesman.co.nz A site which hosts reviews of New Zealand tradespeople.
- www.smarterhomes.org.nz Smarter Homes has lots of tips on choosing sustainable designs, products and materials, as well as health and safety.
- www.level.org.nz Level is all about sustainable building. It is maintained by BRANZ and, while aimed at building professionals, there is a lot of information for the home renovator too.
- www.med.govt.nz/ecolabels provides information on Ecolabels in New Zealand.
- www.rebri.org.nz has useful documents and advice on reducing building waste.
- www.trustyguides.com/home-renovation.html The legislation is American but it includes handy checklists.
- www.traderscams.co.uk Good hints on how to spot a rogue tradesperson even though the legislation is only relevant to the UK.
- www.gib.co.nz offers checklists for the building process, case studies and virtual room design feature.

If you don't have access to the internet, try the following:

- Citizens Advice Bureau can help with budgets and initial guidance on legal issues. See the Yellow Pages for your local office.
- Your local council can advise on questions you may have on building and resource consent, see the front of the White Pages for contact details.
- The Department of Building and Housing can provide advice over the phone and has some useful pamphlets:
  - 0800 606 050 for questions relating to Licensed Building Practitioner Scheme
  - 0800 242 243 for question relating to the Building Act and limits to DIY work

12. Checklists

- Project Management Checklist
- Quality Checklist

Project Management Checklist

The following checklist helps you to identify the tasks and responsibilities of the project manager. If you are the project manager, make sure you understand each task. If you are hiring a project manager, go through the tasks with them and confirm who will do what.

Project Management Task	Who is responsible?
Confirm what work will be done	
Confirm budget	
Confirm contingency amount, and the rules about when it can be used	
Advise insurer of house renovations	
Research tradespeople	
Research products	
Obtain estimates and quotes for tradespeople and products	
Check on tradesperson qualifications, work history and insurance	
Obtain building and resource consents	
Confirm tradespeople, contracts, insurance and guarantees	
Brief tradespeople	
Confirm products and any warranties or guarantees	
Manage contractor schedules	
Inform Beacon at the start and end of actions on the Renovation Plan	
Develop and maintain a Health & Safety plan	
Develop and maintain a site security plan	
Oversee and record work quality	
Collect and safely store all documents and records	
Arrange building inspector visits and confirm sign off	
Arrange any resource consent inspections and confirm compliance with any conditions	
Confirm quality finish (use a “snagging” list if appropriate)	
Arrange contractor payment	
Obtain Code Compliance Certificate	

Quality Checklist

The following checklist gives you some pointers to see if the work has been done to an acceptable quality. Remember, nothing is too simple or too obvious to check for quality.

Check	Complete (sign)	
	PM/ tradesperson	Homeowner
Insulation		
Installers are very experienced		
Product used in correct place, e.g. no wall insulation in the ceiling		
Even installation, no holes, gaps or sagging		
At least a 25 mm gap between insulation and roofing material		
Electrical wiring either needs to be visible, or its path marked on the insulation		
Non CA rated downlights have 150 mm clearance		
Insulation is not compressed		
Wall insulation does not fill ventilation cavities		
When renovating walls, check that wall underlay or building paper is used to protect the insulation from damage by condensation		
Electrical wires are protected from polystyrene sheets, as the electrical wires' PVC sheaths react with expanded polystyrene		
Pipe lagging is enclosed in hot water cylinder wrap		
Labels identifying the product specifications are visibly secured to each product		

Check	Complete (sign)	
	PM/ tradesperson	Homeowner
Rainwater and greywater systems		
Appropriate building consents have been obtained and signed off		
Installer of the greywater system is an experienced plumber		
Greywater is plumbed separately from other wastewater		
Guttering and downpipe to a rainwater tank has a first flush (diverter) device or a screen fitted, to keep out leaves and debris		
Storage tank is positioned in a shaded area, away from trees, and away from solid fuel burner flues		
Tanks are secured from animals and children		
Ensure all required pipes and guttering are attached and that grates or grills prevent leaves etc. from entering tanks		
Make sure that the overflow systems are connected to the sewer or stormwater system as appropriate		
Check that the greywater system can divert water to the sewer system when faecal matter may be in the water, for instance, after washing nappies, and bathing children		
Greywater system is set up so that any greywater which is not used within 24 hours goes to the sewer		
Make sure that the greywater tank can not be accessed for drinking water		
Greywater is discharged under the soil (not on top) and not discharged in areas where food plants grow		
Installer has left you with a comprehensive manual		

Check	Complete (sign)	
	PM/ tradesperson	Homeowner
Extraction fans and rangehoods		
Installer is a registered electrician		
Fan is adequate size for the size of room, and not too big (as this can cause draughts)		
That extractor fan/rangehood is well placed i.e. on the ceiling or high on a wall, as close as possible to the source of the steam or polluted air, and opposite the point in the room where replacement air enters		
The fan unit of ducted models should be mounted well above the ceiling in the roof cavity to reduce noise		
Exhaust air is vented to the outside, not the ceiling or wall cavity		
Exhaust vents are not located next to a window or air intake		
All ducts are sealed from both the inside and out		
External cover plates prevent water from entering		
Automatic 10 minute timer connected to bathroom fan's manual on/off switch		
Electrical work certified with certificate of compliance		
Solar hot water system or wetbacks		
Installer is a registered plumber and accredited with the Solar Industries Association		
Installers have documentation showing their experience and competence to install the named products		
Building consent has been obtained and signed off		
Ensure that the solar water heating system is a "complying product" (you can check on www.solarindustries.org.nz). A "complying product" has been tested and meets required standards for durability and safety		
That the design can cope with electricity supply interruptions		

Check	Complete (sign)	
	PM/ tradesperson	Homeowner
The solar collector has a ten year warranty or more		
Solar panels face north and installed at an angle that is greater than the latitude of where your house is located (± 20% is acceptable) and not shaded		
Where the cylinder is placed on the roof or in the roof cavity, the installer should provide a structural design or building permit for fixing specifications, particularly on roofs with a steep inclination		
Hot water cylinder should have earthquake strap		
Cylinder and solar panel are located as close as possible to most used taps		
Check that copper pipes have been used (most areas)		
Check seals in solar collectors and note any misting or wetness		
Check the overflow pipe is located where potential damage is minimised		
Check cylinder thermostat is set to no more than 60°C		
Ensure a controller for supplementary energy is installed, and that it is working correctly so that you use the sun's heat when available and an electrical connection as back-up only		
A tempering valve has been fitted to produce the recommended safe temperature of 55°C from the tap		
Cylinder and exposed pipes are insulated		
The installer has explained clearly how the system works, answered your questions, given you a manual and informed you of any post-installation service		
Electrical work signed off with certificate of compliance		

Check	Complete (sign)	
	PM/ tradesperson	Homeowner
Wood or pellet burner		
The installer is a registered plumber and accredited by the NZ Home Heating Association. In Canterbury the pellet burner installer is accredited by Natures Flame Pellet Burners		
That the building consent has been obtained and signed off		
That installer has discussed all your heating needs and whether a heat transfer system needs to be installed		
Chosen wood or pellet burner from MfE approved list		
Wood burner is located in the centre of the house rather than outside when possible		
The pellet burner is located near a properly wired outlet of the correct voltage, ground, and polarity and that the circuit to be used has a properly rated circuit breaker		
The pellet burner is vented using PL vent pipes		
If an existing chimney is used, that the chimney has been inspected, cleaned, is mechanically sound and meets local safety requirements		
Location of pellet burner vents are not obstructed by nearby obstacles		
The burner is large enough to cope with space heating as well as water heating if wetback connected		
That the installer has allowed more than the minimum clearance from walls in order to operate and service the burner easily		
That a building consent has been obtained and signed off for the wetback		
Copper piping only is used for a wetback (in most areas)		
The installer has demonstrated how the fire operates and is assured that the fire operates correctly		
Proper shutdown settings and procedures for pellet burners have been discussed		

Check	Complete (sign)	
	PM/ tradesperson	Homeowner
The installer has left you with the manual and is confident you know how to operate the appliance		
Check with the NZ Home Heating Association if you are concerned about the quality of the installation		
Double glazing		
Correct glazing installed		
That sealed air gaps are between 6mm and 22mm		
Check seals and flashings – ensure glazing is installed using putty glazing or wetbedding procedures		
That glazing has a durability of a minimum of 15 years to meet the NZ Building Code		
Ensure windows can be smoothly opened, closed, and that catches are secure		
Look for any misting between panes		
Heat transfer systems		
Installer is a registered electrician, who certifies work with a certificate of compliance		
The fan size is matched with the area to be heated		
The transfer fan is located away from noise sensitive areas and the system has vents that can be closed in rooms that are only used occasionally		
The vent is installed opposite the source of heat so that the room is heated enough before heat is transferred to other rooms		
The system includes a thermostat so it operates once the main room has heated to the desired temperature		
The ducting system is short with as few bends as possible		
Where there are bends check they are only “sweeping” bends, not acute bends, thus ensuring free flow and reduced noise generation		
You have been left with a manual		

Check	Complete (sign)	
	PM/ tradesperson	Homeowner
Heat pumps		
Installer is a qualified electrician with appropriate electrical certification and equipment to work with refrigerants (a HVAC engineer).		
The heat pump is Energy Star rated		
That the heat pump refrigerant does not contain CFCs		
The installer has considered all factors about your house and household behaviour and needs, before choosing the size of pump		
The installer has discussed the range of heat pump options		
There are no obstructions near the outside unit, nor restricted air flow		
The outside unit is located to minimise the unit's noise from the household and neighbours		
A reverse cycle heat pump is located near ceiling level		
A heat only heat pump is located near floor level Installer has certified the work with a certificate of compliance		
Installer has explained how to operate the heat pump efficiently, how to maintain it, and has left you the manual		

Check	Complete (sign)	
	PM/ tradesperson	Homeowner
Installing ground vapour barrier to prevent damp rising		
Installer is experienced		
Perimeter and joins are secured with 25mm weed mat pins, particularly where exposed to wind		
Ground vapour barrier is secured around all piles with black tape		
General construction		
Check that nails or screws have not missed beams or split the attached material. Make sure they are smooth against the wall		
Plastering		
Smooth finish, no holes or gaps or lumps		
Check corners, and around fittings and edges carefully. Look under overhangs		
Painting		
Smooth finish, no holes or gaps or lumps		
Check corners, around fittings and edges carefully. Look under overhangs		
Renovation and construction material waste		
Project manager has instigated a waste management plan		
Waste management plan is being monitored regularly		
There are Materials Safety Data Sheets for appropriate products to guide disposal options		