

MASTER BUILDERS SMART WASTE GUIDE

A guide for commercial and residential builders, subcontractors
and clients in metropolitan Perth and Peel regions.

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- ✓ Avoid wasting money on landfill disposal
 - ✓ Reduce purchasing costs
 - ✓ Lead the way in environmental responsibility
 - ✓ Cut transport costs
 - ✓ Create a safer workplace
 - ✓ Stay ahead of environmental regulation
-



As builders and contractors, we face increasing pressures to reduce construction waste going to landfill in WA.

We are confronted by increasing costs of disposing to landfill. The landfill levy has increased, so cutting waste will save you money.

We have contractual, planning and government tendering requirements to reduce wastes going to landfill. There are also some clients asking for waste management plans to demonstrate the environmental credentials of their buildings.

I recommend that you read through this guide and see what you can do on your sites to avoid, reduce, reuse and recycle your waste materials.

It may be beneficial to implement your new waste reduction processes gradually. You will need to customise your initiatives as you determine what works best for you.

This guide will be available online via mbawa.com. Any updates will be accessible online.

If you succeed in reducing the amount of waste you create and send to landfill, you will assist our industry to avoid more onerous waste management regulations in the years ahead. Plus, you will be reducing the industry's environmental footprint, which you should feel good about!

My thanks to Master Builders staff, contractors and other contributors for the work they have put into producing a valuable guide for our industry.

Your efforts in waste reduction initiatives will benefit your business and our community.

John Ripp

PRESIDENT OF MASTER BUILDERS ASSOCIATION
OF WA AND DIRECTOR OF EMCO BUILDING



The Western Australian Waste Strategy: *Creating the Right Environment*, has landfill diversion targets for municipal solid waste of 65 per cent by 2020; for commercial and industrial waste of 70 per cent by 2020; and for construction and demolition (C&D) waste of 60 per cent by 2015 and 75 per cent by 2020, up from 38 per cent in 2012. Currently half the material being wasted in landfills in Western Australia is C&D waste. It is clear that the WA construction industry has significant scope for reducing waste by recycling material and using recycled products in construction.

I am very happy to hear reports of the increasing interest in recycling from builders in Western Australia. There are some notable recycling champions in the industry and the Waste Authority wants to promote their work and make it easier for others to follow their lead. Many of them have been open to guidance from leading sustainability consultants who have shown the way with practical advice on changing the way builders do business. The Waste Authority applauds this work.

The Waste Authority currently supports a range of awards in the residential building sector and has itself awarded winner and highly commended awards to large commercial construction companies for their initiatives in waste minimisation in the 2012 and 2013 Infinity Awards. I hope others in the construction and demolition industry will use this Guide and the fine examples already being set for reducing waste and ensuring valuable materials are not wasted in landfills.

The Waste Authority is pleased to have funded a two-year program of work with the Master Builders Association for a concerted and practical approach to making the industry aware of reuse and recycling options, and for achieving long-term behavioural change in the commercial and residential construction industries.

Marcus Geisler

CHAIRMAN OF THE WASTE AUTHORITY



"We have our cabinet makers conduct onsite measurements and then fabricate offsite, which reduces the amount of waste we create."

HIGHBURY HOMES

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BENEFITS OF WASTE REDUCTION

"We reused the bricks from the demolition of a home, as a feature wall inside a new home, reused the pavers for use in the courtyard and driveway, and reused the timber for the fencing and garden shed."

RIGHT HOMES

✓ REDUCE YOUR COSTS

- Enjoy lower disposal costs by reducing the amount of waste materials created.
- Cut back on purchasing costs by understanding what materials you are over ordering.
- Enjoy lower disposal costs for some separated wastes.
- Lower volumes of waste will cut waste transport costs.
- Receive payment for some separated wastes (potentially metals, aggregates and sand).
- Cut back purchasing costs by re-using existing waste materials onsite.
- Improve efficiency with a tidier site giving workers easier access to their workspace.

✓ MEET REGULATORY REQUIREMENTS

- Create a safer workplace as required under safety legislation.
- Comply with planning approval requirements in some local government areas.
- Limit risks of littering and subsequent clean up costs and fines.
- Avoid environmental protection penalties.

✓ YOU WILL REDUCE ONSITE RISKS

- Decrease the chance of worker injuries due to waste left onsite.
- Improve the visual impact of your project on the surrounding community.
- Reduce the risk of illegal dumping.
- Comply with any quality assurance obligations.
- Reduce the risk of theft on site.

✓ REDUCE YOUR ENVIRONMENTAL FOOTPRINT

- Divert waste from landfill and protect land resources.
- Reduce pollution and carbon emissions.
- Help conserve natural resources (eg. sand), by allowing materials to be reused in manufacturing or onsite.

✓ MEET CONTRACTUAL OBLIGATIONS AND RATING/ACCREDITATION TARGETS

- Comply with WA Government tendering requirements.
- Help achieve Master Builders Green Living program accreditation.
- Ensure clients meet corporate social responsibility (CSR) commitments.
- Assist developers achieve EnviroDevelopment certification (leaf) icons.
- Gain a higher Green Star rating.

✓ PROMOTE YOUR BUSINESS' WASTE REDUCTION SUCCESSES

- A clean site gives existing and potential clients a good impression.
- Highlight waste reduction initiatives to existing and potential clients and use as a business differentiator.
- Inform others in the industry or the community through print or other media, including via the Master Builder magazine.
- Celebrate achievements with your staff and contractors.
- Enter awards for recycling to promote your business.

✓ HELP TO AVOID ONEROUS NEW COMPULSORY REGULATIONS

- By minimising waste and encouraging recycling now, the construction industry can help avoid more punitive regulations or higher waste levies in the future.



HOW TO REDUCE WASTE

SOME MATERIALS WITH A RECYCLED CONTENT THAT CAN BE USED ON SITE:

- sand and soils
- reinforcement
- bricks
- timber products
- plastics
- aggregates
- concrete
- paving
- insulation

"We process waste and surface water onsite and use it for dust suppression." BROOKFIELD MULTIPLEX

As a builder or subcontractor, it is recommended that you follow these steps to reduce the amount of waste created on your project:

- 1 AVOID
- 2 REDUCE
- 3 REUSE
- 4 RECYCLE

1 AVOID

waste by careful planning at the design, drawing and documentation stages. It is at this stage that the greatest reductions in waste can be achieved:

- Select building materials and systems with low waste rates. In particular, consider modular and prefabricated construction materials that minimise onsite waste.
- Choose a method of construction to minimise cut and fill.
- Design with life-cycle assessment in mind, considering end of life uses.
- Use dimensions that suit standard material sizes. Plan the use of materials better to reduce the volume of waste (especially off-cuts).
- Reduce waste allowance in the planning stage, eg. decrease concrete waste allowance from 5% to 3%.
- Appropriate storage and management of materials onsite will minimise damage from weather or machinery, or theft, and will eliminate the need for replacement and waste generation.
- Minimise the time between delivery and installation of materials, to reduce the risk of damage and subsequent waste.
- Check quantity, condition and quality of goods on delivery. Reject inferior goods if their quality will result in additional waste. Refuse over-supply as compensation for inferior quality or condition.

2 REDUCE

by limiting waste when purchasing. You can:

- Purchase materials with minimal packaging.
- Control purchasing to limit over ordering and to encourage buying of recycled or recyclable materials where appropriate.
- Improve site security to reduce theft of materials thus allowing the reduction in the over ordering margin.

3 REUSE

by finding available recycled materials from demolition works, civil works, suppliers or nearby locations, especially sand.

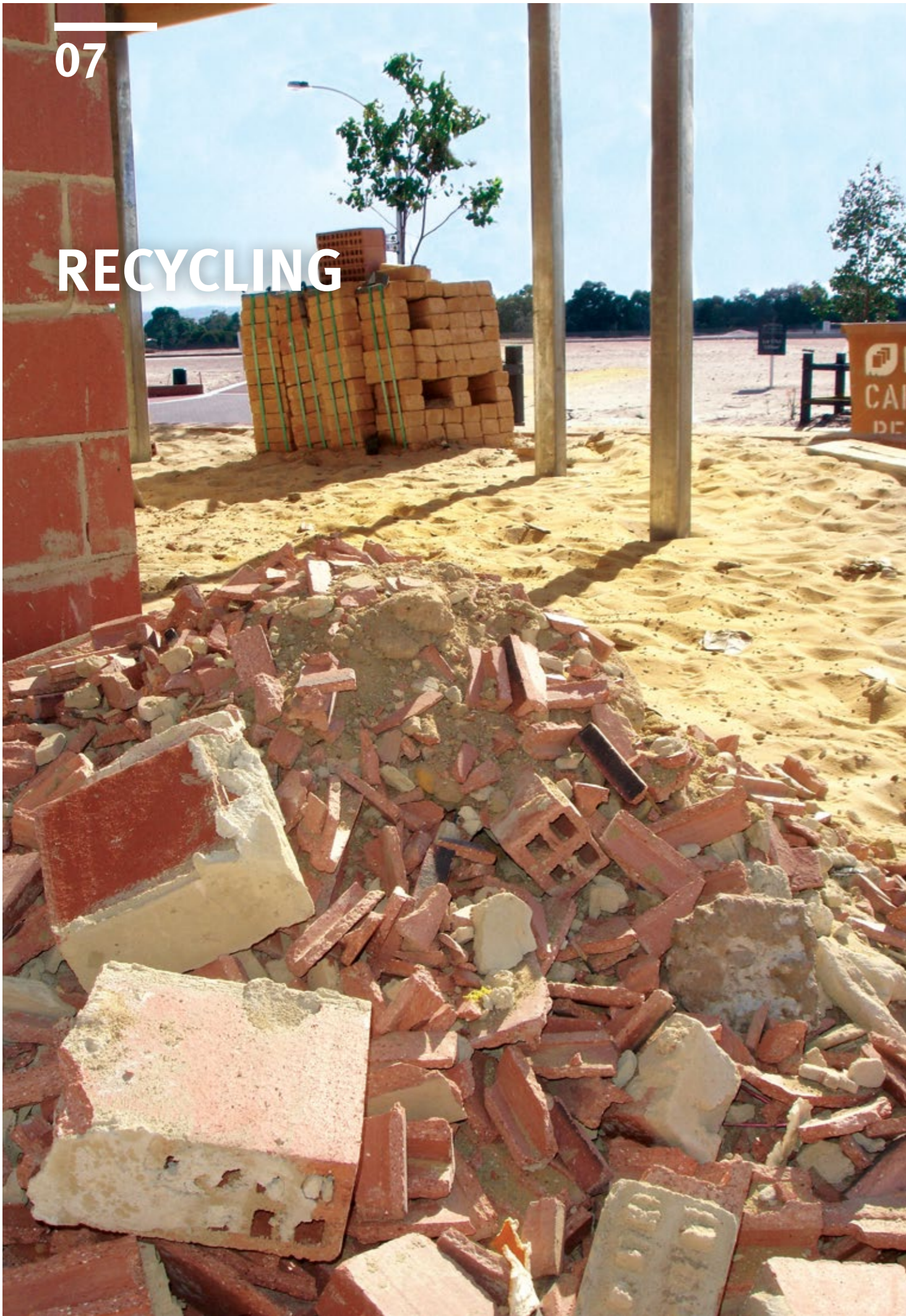
- Identify, source and specify recycled materials, or materials with a recycled content, to be used during construction.
- Materials that can be reused or used on future projects include surplus sand / soil (siteworks), PVC & plumbing fittings (pre-lay), formwork & accessories (slab), waterproof membrane (WPM), reinforcement & accessories, bricks, bags of cement / lime, brickwork hardware, windows, door frames, timber (treated & untreated), timber fixings & accessories, metal roof sheeting, roof tiles, fascia, gutters & downpipes, fibre cement sheeting, doors, plasterboard & accessories, paints, paving bricks and reticulation.

4 RECYCLE

by implementing a waste management plan, incorporating bins and any space on your site drawings.

- Determine whether you will separate your waste materials onsite, use a co-mingled recycling company and place all waste in one bin, or employ a combination of both methods.

RECYCLING



"Site Managers use all of the suitable left over materials from the previously constructed homes before ordering new materials." HOMEBUYERS CENTRE

Onsite source separation and offsite co-mingled recycling – what is the difference?

Onsite source separation – waste is separated onsite and placed in separate bins, bags or piles. It is then either deposited at recycling facilities or collected by recyclers or suppliers.

Offsite co-mingled recycling – all waste streams (generally apart from hazardous materials) are placed in one bin and are separated at an offsite recycling facility.

	Onsite source separation	Offsite co-mingled recycling
Number and size of bins	Will usually require multiple smaller bins. Smaller bins may allow for more flexibility on smaller lots.	Majority of waste materials are placed in one bin. Single bin location usually used.
Onsite area	Requires more planning to coordinate multiple bins, especially on smaller lots.	Requires less planning to coordinate bins.
Education	Greater training is needed to educate on what materials are placed into each bin.	Less training is required, however there are always some waste materials that cannot be placed in the single bin, which workers need to be aware of.
Public image	General public and client can see that builder is recycling.	General public often doesn't know that the materials are being recycled offsite.
Payments	Can receive payment for some waste materials like metals. Some materials will be free to dispose of under certain conditions.	Will not receive payments for co-mingled waste materials.
Suppliers	Separated waste streams can be recycled by some suppliers eg. bricks.	Suppliers do not take mixed waste back.
Subcontractors	Individual trades can see their waste stream being recovered.	Recycling is offsite and is not visible.
Contamination & separation	Multiple bins increase scope for contamination.	Co-mingled bin systems cope better with contamination.
Visibility	Can see at a glance which type of waste stream is most wasted.	More difficult to observe which waste streams are creating more waste.

HOW TO IMPLEMENT AN ONSITE SOURCE SEPARATION RECYCLING PROGRAM

- 1 Decide if you would like to follow the steps in this guide or engage a consultant to undertake the work for you. See p.29.
- 2 Adopt a team approach, engaging the client, designer and contractor. Allocate staff responsible for introducing and overseeing a waste management plan. See p12.
- 3 Prepare a waste management plan (p12) before tender so any waste avoidance savings or management costs are factored into the price.
- 4 Identify the materials likely to be discarded and at what stage of the project. This should be carried out prior to the commencement of the site works. This involves looking at your construction program and the project design and identifying material in-flows and outflows. Estimate the quantities by using normal ordering margins. This will give you the information you need to schedule bin numbers, sizes and likely changeovers.
- 5 You may be able to share the costs of recycling with other builders on adjacent sites by sharing space and bins.
- 6 Estimate the amount of waste that will be avoided, reduced, reused and recycled. See p17 for details.
- 7 Evaluate the options for recycling in the area of your site. You may need to talk to a number of recycling facilities to find out what opportunities exist to lower disposal costs. See p22 for a list of recycling options in Perth.
- 8 Allocate adequate space on the site for the storage of recyclables and the access required to collect them.
- 9 Provide recycling bins with clear signage. Colour code or label waste bins and protect them from contamination, rain and wind where feasible.
- 10 Provide regular waste bins for food scraps and household waste during construction.
- 11 Work with suppliers, consultants, recycling companies or Trade365.com.au to take or sell separated waste streams.
- 12 If possible, secure recycling bins at night and weekends to prevent rubbish dumping in recycling bins – especially at Christmas time. Your load could become contaminated and rejected from a recycling company.
- 13 Decide what wastes will be separated. Some options are:
 - Heavies: sand, bricks, tiles, concrete, rock, plaster
 - Lights: packaging, bags and glass
 - Timber
 - Paper & cardboard
 - Metals
 - Plastics (including brick straps)
 - Plasterboard
- 14 Implement processes to ensure the separation of chosen wastes by contractors. Ensure that everyone is aware of their obligations and responsibilities. Conduct training during site inductions if possible. Inductions should cover the materials to be separated, explaining the importance of removing contaminants, and getting any ideas from staff as to how sorting can best be done onsite. Master Builders staff can help you with your inductions.
- 15 Include waste minimisation and recycling performance clauses in subcontractor contracts. Consider back-charging a contractor who doesn't separate their wastes, or reward those for proper separation.
- 16 Oversee the plan to ensure its success throughout the project and make adjustments if needed.
- 17 Measure the amount of waste that has been avoided, reduced, reused and recycled. See p17 for details.
- 18 Review the program after completion. Share findings with staff and contractors. Celebrate any successes. Consider displaying outcomes on a notice board on site for all to see. You can publicise outcomes through the Master Builder magazine and other media.

HOW TO IMPLEMENT AN OFFSITE CO-MINGLED RECYCLING PROGRAM

- 1 Incorporate a team approach, involving the client, designer and builder. Allocate staff responsible for introducing and overseeing a waste management plan. See p12.
- 2 Prepare a waste management plan (p12) before tender so any waste avoidance or management costs are factored into the price.
- 3 Employ a co-mingled bin contractor and investigate their claimed recycling rates. Determine what materials cannot be placed in the single bin.
- 4 Visit the recycling facility.
- 5 Allocate adequate space on the site for the co-mingled recycle bin and general waste bin and clearly sign them.
- 6 If possible, secure bins at night and weekends to prevent rubbish dumping in recycling bins – especially at Christmas time.
- 7 Ensure that everyone is aware of their obligations and responsibilities. Conduct training during site inductions if possible. Inductions will cover the materials that cannot be placed in the co-mingled bin. Master Builders staff may be able to help you with your inductions.
- 8 Oversee the plan to ensure its success throughout the project and make adjustments if needed.
- 9 Compile reports on the amount of waste that has been avoided, reduced, reused and recycled. See p18 for details.
- 10 Review the program after completion. Share findings with staff and contractors. Celebrate any successes. Consider displaying outcomes on a notice board on site for all to see. You can publicise findings through the Master Builder magazine and other media.

QUESTIONS TO ASK A RECYCLING COMPANY

WHERE ARE YOU LOCATED?

Remember to factor in the distance you or the recycler (if they offer a pick-up service) will need to travel to dispose of the waste materials. The closer a recycling company is located to your site, the lower the transport costs will be.

DO YOU PROVIDE BINS OR BAGS AND A COLLECTION SERVICE?

An integrated bin collection, transportation and recycling service will reduce your workload. Recyclers may not offer collection, but can recommend a skip company who will take material to them. Alternatively, you can ask your usual skip operator to take the material directly to the recycling facility.

WHAT MATERIALS DO/ DON'T YOU ACCEPT?

It may also be useful to find out what the tolerance to contamination in the bins is.

DO YOU RECYCLE ALL OF THE MATERIALS YOU ACCEPT?

Just because a company accepts a certain material stream, it doesn't mean they recycle it. Check what materials the company actually recycles.

ARE THERE DIFFERENT COSTS FOR ANY SEPARATED WASTES?

Do your collectors implement litter management controls at all times? Eg. covering loads during collection, handling and transportation of materials.

CAN YOU PROVIDE ME WITH DETAILS OF YOUR RECYCLING STATISTICS AND THE PROPORTION OF RECEIVED MATERIALS THAT ARE RECYCLED?

This will allow you to determine how much effort they actually put into recycling and diverting waste from landfill. Recycling companies use percentage of residual to landfill as a KPI. Ask about offsite recycling procedures and facilities – you may be able to access reports.

WASTE MANAGEMENT PLAN



"Rather than adding to landfill, we have an offsite storage unit that houses leftover materials for later use on construction sites. The stock is reviewed regularly, and surplus or damaged items are recycled." VENTURA HOMES GROUP

What is a waste management plan?

A waste management plan is an important document to assist builders to meet contractual, budgetary and environmental goals by reducing waste from their projects. It sets out responsibilities and targets for waste management through the project from the design stage through to completion.

Waste management plan checklist

This checklist can be downloaded from www.mbawa.com

Project Name
Project Location
Responsible Manager

Project stage	Checklist questions	Tick if yes	Action proposed	Tips
Internal Planning	Have you internally agreed on the need for a waste management plan and allocated staff responsibility?			Responsible staff need sufficient enforcement powers to make sure others comply with the plan.
	Have you checked any tendering, contractual or rating tool requirements for a waste management plan?			Check with the tendering documents, Green Building Council, or other rating body, to determine what is required to meet any targets.
	Have relevant subcontractors agreed to follow the waste management plan?			Share responsibility for waste management with subcontractors.
Design	Have material quantities been selected to minimise over ordering?			Minimise wastage allowances.
	Has consideration been given to the use of secondary and recycled materials?			Consider ordering from recycling facilities. Investigate whether you can reuse materials from your other construction jobs.
	Can unwanted packaging be returned to the supplier for recycling or re-use? Can unused materials be returned to the supplier or used on another job?			Choose suppliers who will take back packaging and off cuts and recycle them. Ask suppliers to backload wastes.
Design	Have designers used standard material sizes wherever possible?			

Project stage	Checklist questions	Tick if yes	Action proposed	Tips
Project Planning	Has responsibility for waste management planning and compliance with environmental legislation been communicated to all staff and identified subcontractors?			Documentation in subcontract orders is desirable. Provide for back charges if waste is not separated.
	Have you identified likely waste arising (how much, when, and what types)?			Use bills of quantities and previous experience.
	Has an area of the site been designated for waste management and bins?			This may require more planning on small sites.
	Has the time between delivery of materials and installation been minimised, to reduce the risk of damage to materials, which turns into waste?			Check quantity, condition and quality of goods on delivery, reject inferior goods if their quality will result in additional waste. Refuse oversupply as compensation for inferior quality or condition.
	Have waste targets been set for the different types of waste likely to arise from the project?			
	Have measures been put in place to deal with any hazardous waste?			Note obligations under the Contaminated Sites Act to report sites containing material harmful to humans or the environment. Controlled wastes, which include asbestos, clinical or related waste, tyres and batteries, cannot be disposed of at many landfill sites and should be separated.
	Have you considered the implications of the disposal of liquid wastes such as wash-down water and lubricants?			Set aside an area for wash downs. Protect storm drains from liquid wastes.
	Have you checked any requirements for water wastes with the Water Corporation or Swan River Trust (if applicable)?			It is best to prevent any silty or other discharge at source rather than causing a problem. The best way to prevent discharge is to ensure that stormwater and drainage is properly managed.
	Have opportunities been considered for re-use or reprocessing of materials onsite?			Consider having onsite crushing or compacting equipment. (Government approval may be required).
	Have opportunities been considered for re-use or reprocessing of materials offsite?			Consider using unwanted fill on other sites.
Project Planning	Have you researched disposal costs for separated waste that may have a commercial value?			Remember that there may be lower disposal costs for separated wastes. Some wastes will be accepted at no charge by recyclers and some waste streams may even attract a rebate eg. metal.
Recycling	Has responsibility for waste management onsite and compliance with environmental legislation been assigned to a named individual regularly onsite?			

Project stage	Checklist questions	Tick if yes	Action proposed	Tips	
Project Planning	Have toolbox talks or inductions been planned for all site personnel about waste management onsite?			Include a waste training component in site inductions.	
	Are selected waste materials separated to allow best value to be obtained from recycling waste management practices?				
	Are containers/bins clearly labeled to avoid confusion/contamination?			Locate bins for different waste streams close to the work places generating material for recovery.	
	During operations, have you monitored that waste is being placed in the bins correctly?			Make sure the bins do not overfill and ensure that all workers know their obligations.	
	During site operations, are barriers to good waste management noted for incorporation into the post-completion review?				
	Have you made sure that the bins are, where possible, removed from view, to help avoid illegal dumping of rubbish?			Take special care to secure bins around Christmas time when illegal dumping becomes more frequent.	
	Post	Has a final report of use of recycled materials, waste reduction, and separation, with costs and savings identified, been completed?			
		Have key waste management successes been considered for action at future projects?			
		Have you considered promotional opportunities for any successes eg. awards programs, local media, industry media (eg. Master Builder magazine) or in staff newsletters?			Submit successes to mba@mbawa.com. Distribute media releases to local newspapers or organise an interview with a local radio station to discuss your achievements.

Waste management plan template

This template can be downloaded from www.mbawa.com

Note that you will need to tailor this plan to allow for the type of waste that your job is likely to produce, and to suit the type of wastes that you decide to separate, if you use the source separation recycling system.

Project
Site Address
Subcontractors involved
Responsible site manager

	Material Quality							
	Total waste	Reused onsite	Reused offsite	Recycled for use onsite	Recycled for use offsite	Sent to recycling facility	Sent to landfill	Contractor used
Soil/fill sand								
Rock/rubble								
Concrete								
Plaster/Plasterboard								
Tiles								
Bricks & pavers								
Timber								
Plastics/PVC								
Metal								
Green waste								
Paper + Cardboard								
Glass								
Other								
Hazardous (paint, oil, asbestos)								
Totals								
% of total	100%							
Target %								

ILLEGAL DUMPING

HOW TO REDUCE YOUR RISK:

- Clean building sites are less likely to be targeted by illegal dumpers.
- Display warning signs on your building site. Building sites with no warning signs to deter illegal dumping are far more likely to be targeted by illegal dumpers.
- If you are concerned about where your waste is being deposited, ask for weighbridge tickets to be produced.
- Be aware that Christmas and holidays see spikes in illegal dumping.

WHAT DO TO IF YOU ARE A VICTIM OF ILLEGAL DUMPING:

The Environmental Protection Act provides for fines for individuals or corporations of up to \$62,500 and \$125,000 respectively for illegal dumping.

If you are a victim, you can call your local council or the illegal dumping hotline on 1300 766 541. Alternatively, you can report the complaint online at www.kabc.wa.gov.au/illegal-dumping

You will need to report the following information:

- Street location of illegally dumped material.
- Types of dumped materials and whether you believe that this may be a hazard.
- Date and time of dumping.
- Name, addresses and car registration (if applicable) of the people responsible.
- Photograph of the incident to assist in any investigation or prosecution.
- It is also helpful if the dumped material is left in the state it is found, if possible, because it is evidence that could be used in court.

DID YOU KNOW?

- **1,155,411 tonnes of construction & demolition (C&D) waste was recycled in the 2011-2012 financial year in WA** (Hyder Consulting).
- **The C&D sector made up the highest proportion of recycling activity by weight during 2011-12, accounting for over 45% of the material recovered for recycling in WA** (Hyder Consulting).
- **Between 2009/2010 and 2011/2012, Western Australia's recovery rate for C&D waste increased by more than 31%** (Interpolated from Hyder Consulting).

MEASURING WASTE REDUCTION

"We use a Computer Assisted Design (CAD) system that allows us to calculate exact quantities of materials needed, such as bricks, timber, concrete and steelwork, to ensure accuracy when ordering. We are able to operate at a waste level of 2-5%." CELEBRATION HOMES

WHY MEASURE WASTE REDUCTION?

- Demonstrate what and how much waste has been reduced to demonstrate the success of your efforts.
- Keep staff engaged and motivated by providing regular updates on achievements. You could demonstrate recent and ongoing achievements by displaying a graph or a set of figures.
- Meet possible recycling requirements as part of your contract or requirements to achieve Master Builders Green Living Program accreditation or Green Star ratings.

HOW TO MEASURE WASTE REDUCTION

The following steps can be followed to measure the amount of waste that is reused and reduced on site:

- 1 Quantify materials used in the project.
- 2 Compare to amount that would have been produced if normal ordering margins had been used.
- 3 Estimate the amount of waste that is avoided, reduced and reused onsite and record these amounts in your waste management plan.

The following process can be followed to measure the amount of waste that is recycled:

SOURCE SEPARATION

- 1 The data must be collected in the form of invoices or dockets received from the recycling facility at the point of material drop off at each facility for each load.
- 2 The quantity by weight should be recorded for all waste and recyclables leaving the site. Some facilities are unable to provide tonnages and instead provide the quantity in cubic metres. This data must be converted to weight so that a standard measure is used. The calculation used to convert a known volume of material to weight is specific to the waste stream type and level of compaction. Consult your recycler.
- 3 It's useful to store the information in a simple spreadsheet so that you can track how much is being recycled and calculate recycling rates (as a percentage of all waste removed from site).

HOW TO CALCULATE RECYCLING RATES

Recycling rates can be measured by weight and are calculated out according to the equation:

$$\text{Recycling rate (\%)} = \frac{R \text{ (tonnes)} \times 100}{W \text{ (tonnes)}}$$

Where: R = material recycled (tonnes) i.e. all of the recycling streams added together

W = total material collected in tonnes (for both waste and recycling)

It is important that R and W are calculated over the same time frame and should include all waste streams.

In order to allow credible, robust reporting of the recycling rate, data should be collated each month that detail:

- Total waste and recycling deposited at a recycling facility or landfill (given in tonnes).
 - The percentage of contamination where this data relates to recycling streams and is available.
 - A summary of total waste (in tonnes) and total recycling (in tonnes) collected.
- 4 You can consider appointing a quantity surveyor or consultant to undertake this work for larger projects.

CO-MINGLED WASTE

- 1 You can ask your co-mingled recycling company to provide you with reports, detailing what materials were recycled and what percentage of the material they received was recycled.
- 2 You will also need to estimate the amount of waste (if any) that could not be sent to the co-mingled recycling company.

HANDY HINTS FOR SUBCONTRACTORS



"We keep materials in their packaging for as long as possible and store them on flat solid ground, to reduce the risk of them being damaged and turned into waste." BROOKFIELD MULTIPLEX

Make sure you are aware of any waste reduction initiatives the builder is undertaking before starting the job.

BRICKLAYING

- Have bricks dropped around the perimeter to save damage in transporting to place of use and to minimise costs.
- Use appropriate mortar strength - softer mortar saves cement and helps in recycling.
- Set aside brick straps for recycling.
- Use a brick supplier who actively recycles their waste and uses recycled materials in their packaging eg. stickless packs.
- Use the designated area for mixing and washdown.

CARPENTRY

- Use engineered timber products that make efficient use of materials where possible.
- Use sustainably sourced timber.
- Prepare accurate cutting lists before ordering.
- Give joiners a copy of the cutting list. Ensure that carpenters have a complete cutting list to allow efficient timber use.
- Use joinery profiles that can be easily and invisibly joined to reduce off-cuts.
- Use off-cuts wherever possible.

CONCRETING

- Use concrete with recycled aggregate where possible.
- Utilise reinforcement made from recycled steel.
- Form up accurately and minimise wastage. Up to 10 percent is regularly wasted.
- Return surplus to the supplier for recycling.
- Buy from plants that wash out cement to allow recycling of sand and aggregate.
- Crush/smash remnants into small pieces before final set to allow later use as backfill or recycling.

- Always form up an area of path or low grade slab ready to accept remnants.
- Use the designated area for mixing and washdown.

ELECTRICAL SERVICES

- Use sub-boards and plan wiring to reduce wiring distances, quantities, waste and cost.
- Recycle off-cuts. Strip insulation from copper which can be sold.
- Use PVC free insulated cable - it lowers leachate toxicity.
- Consider pulse switching and intelligent controls to reduce cabling and energy use.

GLAZING

- Separate construction glass from other glass such as drink bottles.
- Glass can also be recycled as aggregate, talk to your recyclers.

*Please note that glass recycling is currently limited in WA.

PAINTING

- Never clean brushes or rinse paint containers into a street gutter or drain.
- When you are finished working, squeeze out excess paint back into the paint tin.
- Seal the lid securely and store the paint upside down, which creates an airproof seal around the lid. Keep excess paint for future touch-ups.

PLASTERING/PLASTERBOARD

- Buy plasterboard from suppliers who recycle.
- Sort off-cuts and store on site for return to recycler.
- Keep off-cuts clean and dry.
- Carry useful sized off-cuts to other work areas.
- Metal screws and fixings should be kept out of separated bins.

RECYCLING FACILITIES IN PERTH

"We carry out regular waste audits to identify areas where we are over ordering." CELEBRATION HOMES

FACILITIES THAT RECYCLE SINGLE MATERIAL LOADS


View the most up to date recycling facilities at mbawa.com

Material that can be recycled	Contact	Waste accepted
<p>Aluminium and metal: is 100 percent recyclable. Recycling aluminium reduces embodied energy by 95 percent.</p> <p>Tin and other metals can be recycled too.</p> <p>Payments are sometimes made for metals by recyclers.</p> <p>Steel: Recycling furnaces produce reinforcing bar, mesh and sections from steel scrap. Recycling steel reduces embodied energy by an estimated 72 percent.</p>	<p>ALLIED METAL RECYCLERS</p> <p>FERROUS YARD 35 Felspar Street, Welshpool, WA 6106 P: 9451 6818</p> <p>ROCKINGHAM 22 Crompton Road, Rockingham, WA 6168 P: 9591 2424 www.alliedmetalrecyclers.com.au</p>	<p>All metals of metallic nature, lead based batteries, brass, copper, aluminium, all clean steel.</p> <p>Offers a bin/collection service. Charges may apply.</p>
	<p>C.D. DODD SCRAP METAL RECYCLERS</p> <p>521 Dundas Road, Forrestfield, WA 6058 P: 9352 8014 cindy@recyclers.com.au www.recyclers.com.au</p>	
	<p>COLLINS RECYCLING</p> <p>16 Kembla Way, Willetton, WA 6955 P: 9457 3973 wisey2001@bigpond.com www.collinsrecycling.com.au</p>	<p>All metals, electrical cables, copper tubes and brass tap wear.</p> <p>Builder or contractor must take recyclable materials to facility.</p> <p>Will pay builders for non-ferrous materials.</p>
	<p>GO RECYCLE</p> <p>69a Windsor Road, Wangara, WA 6065 P: 0487 337 886 mike.gorecycle@bigpond.com www.gorecycle.com.au</p>	<p>Ferrous and non-ferrous scrap metals and batteries.</p> <p>Offers a bin/collection service or builder can take recyclable materials to facility. Call to discuss.</p> <p>Will pay for some metals.</p> <p>Opening hours: Mon-Fri 7:00am-4:00pm Sat 8:00am-12:00pm.</p>
	<p>SIMS METAL MANAGEMENT</p> <p>PERTH 200 Barrington St, Spearwood, WA 6163 P: 9434 2222 F: 9418 5030</p> <p>PERTH 150 Welshpool Rd Welshpool, WA 6106 P: 94519877 F: 9458 5919</p> <p>KALGOORLIE 100 Forest St Kalgoorlie, WA 6430 P: 90211041 F: 90913326</p> <p>PORT HEDLAND 15 Peawah St, Wedgefield, WA 6721 P: 91722460 F: 91723213</p> <p>KARRATHA 2526 Coolawanya Rd, Karratha, WA 6714 P: 91852277 F: 91441193</p> <p>In all cases e-mail is simswa@au.sims-group.com www.au.simsmm.com</p>	<p>All ferrous and non-ferrous metals including steel, aluminum, copper, lead, brass, cable, car bodies, car batteries, white goods and many more items.</p> <p>Offers a bin/collection service. Free of charge if quantities are sufficient.</p>

Material that can be recycled	Contact	Waste accepted
<p>Bricks (and tiles): can be re-used where appropriate or crushed on site or offsite for backfill, aggregate and gravel. Portable crushing plants can be used for large projects.</p> <p>For information on brick strap recyclers in Perth, please see the 'plastics' section of this directory.</p>	 <p>AUSTRAL BRICKS Armadale and Bellevue Brickworks P: 9261 9999</p>	<p>Bricks and bristle, and clay tiles but must be strictly uncontaminated.</p> <p>Offers a pick-up service – cost shared with builder.</p>
	 <p>MIDLAND BRICK MAIN RECYCLING FACILITY MIDDLE SWAN</p> <p>102 Great Northern Hwy, Middle Swan, WA 6056 Takes trailer loads or small trucks up to 5 tonnes.</p> <p>JANDAKOT 4 Armadale Rd, Jandakot, WA 6164 Takes one standard trailer or utility load per person.</p> <p>JOONDALUP 16 Franklin Lane, Joondalup, WA 6027 Takes one standard trailer or utility load per person.</p> <p>OSBORNE PARK 8 Parkland Rd, Osborne Park, WA 6017 Takes one standard trailer or utility load per person.</p> <p>For larger quantities of material that is suitable for recycling please contact Alf D'Angelo on 0401 896 840 prior to making any arrangements or arriving at the main yard. P: 13 15 40</p>	<p>Clay bricks, clay pavers, clay roof tiles and clean brick rubble. Also accepts a small amount of plastic strapping that is used to pack bricks.</p> <p><i>It is a requirement that all returned product is free from contaminants such as cement, wood, paper (including lunch wraps and newspaper), cardboard, metal and other building materials.</i></p> <p>Builder must take recyclable materials to facility. No cost in taking bricks back.</p>
	<p>RED SAND SUPPLIES 92 Hope Valley Rd, Hope Valley, WA 6165 P: 9417 9068 M: 0418 896 655 redsands@amnet.net.au www.redsandsupplies.com.au</p>	<p>Clean clay bricks (colours separated), clean terracotta roof tiles, clean limestone blocks and steel.</p> <p>Does not accept demolition waste, clean fill or asbestos.</p> <p>Materials can be co-mingled, however higher charges will apply.</p> <p>Builder can deliver recyclable materials to facility or company will provide a collection service for large loads.</p>
	 <p>CAPITAL RECYCLING BAYSWATER</p> <p>34 Jackson Street, Bayswater, WA 6053</p> <p>HENDERSON Lot 313 Abercrombie Rd, Postans, WA 6167</p> <p>WELSHPOOL 39 Briggs Street, Welshpool, WA 6106 P: 9279 4599 www.capitalrecycling.com.au</p>	<p>Rubble, concrete, bricks, bitumen, sand, glass and rocks.</p> <p>Builder must take recyclable materials to facility.</p>
<p>Concrete: set concrete can be crushed and recycled as aggregate for new concrete or road base and fill. Un-set concrete can be “washed” out at the plant to remove cement. Sand and stone can be reused.</p>		






Material that can be recycled	Contact	Waste accepted
<p>Glass: can be cut and reused or recycled as aggregate for concrete. Recycling glass reduces embodied energy by 20 percent. Please note that construction glass recycling opportunities in Perth are limited.</p>	<p>GLASS SANDS 13 Glassford Rd Kewdale, WA 6105 M: 0450682902 karl@keywee.com.au</p>	<p>Currently accepting container glass. Expect to be accepting plate glass. Please ring to ascertain their acceptance of glass.</p> <p>Also accept steel and aluminium. \$35/tonne.</p> <p>Builder must take recyclable materials to facility.</p>
	<p>PERTH GLASS RECYCLERS 53 Felspar Street, Welshpool, WA 6106 Mitch: 0400 848 658</p>	<p>Container glass.</p> <p>Soon to be accepting and recycling construction and demolition glass. Please call for details.</p> <p><i>Note: container glass needs to be kept separate from window glass. If ceramic material is included with container glass, it is contamination and the whole load of glass may be rejected from recycling.</i></p>
	<p>Paper/Cardboard: Uncontaminated paper and cardboard materials can be recycled in Perth.</p>	<p>ORORA RECYCLING Deliveries: 3 Bell Street, Canning Vale, WA 6155 Head office: 3 Madison Street, Canning Vale, WA 6155 P: 9256 6103 M: 0418 306 002 annette.debenham@ororagroup.com www.ororagroup.com</p>
	<p>RECYCLING WASTE SOLUTIONS 53 Felspar Street, Welshpool, WA 6106 Mitch: 0400 848 658 www.recyclingwastesolutions.com.au</p>	<p>Paper and cardboard. Offers a bin and pick up service.</p>
<p>Plasterboard:</p>	<p>C-WISE 139 Nambeelup Rd, Nambeelup, WA 6207 P: 08 9581 9582 info@cwise.com.au www.cwise.com.au</p>	<p>Plasterboard off-cuts, must be completely clean.</p>
	<p>REGYP Bushmead road, Hazelmere, WA 6055 P: 1300 473 497 orders@regyp.com.au www.regyp.com.au/perth</p>	<p>Gyprock, plasterboard, virgin gypsum board off-cuts, gypsum ceilings, floors, walls and cornice and chemical precipitate gypsum (eg FDG).</p> <p>Materials must be clean.</p> <p>Offers a collection service.</p>

"On one site, we had our organic materials stripped from site and taken to an organic fruit farm for composting and reuse." Highbury Homes


Material that can be recycled	Contact	Waste accepted
<p>Plastics (including brick straps): Many plastics can be granulated and re-used to make new plastic products and include:</p> <ul style="list-style-type: none"> • High Density polyethylene (HDPE): rubbish bins, buckets and traffic cones. • Low Density polyethylene (LDPE): shrink wrap and bubble wrap • Polystyrene: containers, insulation, UPVC pipes, fittings and flooring. <p>Commercial companies with a large quantity of ongoing plastic waste, may consider employing compacting technologies onsite, that could save the builder money in the long term.</p>	<p>CLAW ENVIRONMENTAL 5 Forge Street, Welshpool, WA 6106 (rear factory) P: 9333 4888 admin@clawenvironmental.com www.clawenvironmental.com</p>	<p>Plastic Codes 2, 4, 5 and 6. Please feel free to enquire for other codes. Charges and rebates vary depending on cleanliness of the material and whether there are multiple plastics mixed together. CLAW Environmental is available to visit your site and advise on the plastics available for recycling. Shredding and granulation services are available. <i>*Strapping needs to be clean, free from contaminants and metal clips etc.</i></p>
	<p>DCG RECYCLING 4 Hyne Rd, South Guildford, WA 6055 P: 9277 1500 gavin@damiencole.com.au www.dcgrecycling.com.au</p>	<p>Plastic – bulk or baled. Recycling codes 2,4,and 5. Must be clean and free of all contaminants and segregated by code. Cardboard – bulk or baled. Must be clean and free of all contaminants. Provides a bin and collection service.</p>
	<p>FIBOPOST Unit 1, 8 Iron Street, Malaga, WA 6090 P: 9341 8306 I M: 0433 182 278 ajw@fibopost.com www.fibopost.com</p>	<p>Code 1 plastics, including brick straps and loose bottles. Provide bag and pick up service at central location. Builder can also deliver recyclable materials to facility. Free of charge for collections over two tonnes.</p>
	<p>SINO PLASTIC RECYCLING 157 – 159 Welshpool Road Welshpool, WA 6106 P: 9451 5005 admin@sinoplasticrecycling.com.au</p>	<p>Accept and recycle Code 1 (PET) including brick straps, Code 2 (HDPE), Code 4 (LDPE) and Code 5 (PP). Provide a bin/bag and pick up service. Builder can also deliver recyclable materials to facility.</p>
<p>Soil: Can be stockpiled for reuse as fill.</p>	See 'multiple waste recyclers'.	
<p>Timber: Can be reclaimed, reused, or re-processed into flooring or horticultural mulch (where permitted under local regulations).</p>	<p> RJD CONTRACTING (MASTER BUILDERS MEMBER) Ryan Davies: 0439 703 010 rjdcontract@gmail.com www.rjdcontracting.net.au</p>	<p>All timbers apart from H3 and H4 and 'green timbers' (fallen trees etc). Offers a pick-up service.</p>
	<p>EMRC HAZELMERE RECYCLING CENTRE 77 Lakes Road, Hazelmere, WA 6055 P: 9274 7807 www.emrc.org.au/hazelmere-resource-recovery-park.html</p>	<p>Grade 1: separated untreated timbers (softwoods and hardwoods separated) including pallets, packaging and crates, off cuts (<math>\leq 1.5\text{m}</math>) and particle board/chip board and low pressure laminated board. \$80/tonne. Grade 2: Large and heavy separated untreated timbers (softwoods and hardwoods separated). \$90/tonne Contaminated. \$250/tonne. Builder must deliver recyclable materials to facility.</p>

"We level and cut sites when the slab is laid, to remove any excess sand, so that it can be used as clean fill, rather than becoming contaminated waste." CELEBRATION HOMES

FACILITIES THAT RECYCLE MULTIPLE SINGLE MATERIAL LOADS

Material that can be recycled	Contact	Waste accepted
<p>Multiple waste materials: Accepts multiple separated waste streams</p>	<p> ALL EARTH GROUP 42 Kelvin Road, Maddington, WA 6109 P: 08 9459 9588 www.allearth.com.au</p>	<p>Cardboard, plastics, steel, rubble, sand and concrete. Clean fill sand (free of charge). Offers a bin delivery and pick up service.</p>
	<p> EARTH CARE 10 Whyalla Court, Bibra Lake, WA 6163 P: 9434 2500 francis@earthcare.net.au www.earthcare.net.au</p>	<p>Metals, timber, paper and cardboard, roof tiles, gyprock, plastic, cement (must be separated).</p>
	<p> INSTANT WASTE MANAGEMENT 50 Clune Street, Bayswater, WA 6053 P: 9379 2111 www.instantwaste.com.au</p>	<p>Rubble, sand, brick and concrete.</p>
	<p> SOLO RESOURCE RECOVERY 59 Burlington Street, Naval Base, WA 6165 P: 0437 205 761 www.solo.com.au</p>	<p>All waste materials except liquid waste can be placed in bins. Can organise for removal of liquid waste. Offers a bin delivery and pick up service.</p>
	<p> VEOLIA ENVIRONMENTAL SERVICES P: 9418 9300 www.veoliaes.com.au</p>	<p>Timber, steel, cardboard, general waste etc must be separated. Can organise for removal of hazardous waste.</p>
	<p>ADVANCE WASTE DISPOSAL Malaga P Nth: 9249 8289 P Sth: 9339 1491 Irene@advancewastedisposal.com Trevor@advancewastedisposal.com www.binhireperth.net</p>	<p>Bricks, sand, concrete, timber, scrap steel, paper and cardboard (large volumes) and plastics (large volumes).</p>
	<p>JUMBObAG P: 03 9681 7838 jumbobag.com.au</p>	<p>Accepts all waste streams. Bags can either be collected from a retailer, or sent from Jumbobag. Offers a pickup service.</p>
	<p>THE BIN GUYS 9 Rogers Way, Landsdale, WA 6065 P: 1800 884 884 / 9300 3400 thebinguys@westnet.com.au www.thebinguys.com.au</p>	<p>Accepts timber that is not painted or CCA (copper chromium arsenic) treated, paper and cardboard, gyprock, green waste, metals, plastics, bricks, concrete and sand. Offers a bin pick up service.</p>

CO-MINGLED BIN RECYCLING CONTRACTORS

Contact	Waste accepted
 ALL EARTH GROUP 42 Kelvin Road, Maddington, WA 6109 P: 08 9459 9588 www.allearth.com.au	All materials can be placed in the bin except liquid waste including oil and paint, asbestos and food scraps.
 INSTANT WASTE MANAGEMENT 50 Clune Street, Bayswater, WA 6053 P: 9379 2111 www.instantwaste.com.au	All materials can be placed in the bin except oil, paint, asbestos and food scraps.
ADVANCE WASTE DISPOSAL MALAGA P Nth: 9249 8289 P Sth: 9339 1491 Irene@advancewastedisposal.com Trevor@advancewastedisposal.com www.binhireperth.net	All materials except asbestos, tyres, paint, liquids, large tree stumps, food or hazardous waste.
CLEAN SITE BINS Mike Moore: 0429 907 565 www.cleansitebins.com.au	All materials can be placed in the bin except sand, concrete and asbestos, however they can arrange for these materials to be removed from your site.
JUMBOBAG P: 03 9681 7838 jumbobag.com.au	Accepts all waste streams.
MATERA WASTE 23 Lionel Street, Naval Base, WA 6165 P: 1300 246 766	Accepts all materials except asbestos, food waste, oil, paint, gas bottles, tyres and batteries.
RSV GROUP Lot 1314 Great Northern Hwy, Bullsbrook, WA 6084 P: 08 9443 3777	All materials placed in the one bin except liquid waste, tyres, batteries, chemicals or poisons and asbestos. Also has a drop off facility - does not accept loads with more than 2% timber/cardboard products or 2% general rubbish/plastics.
THE BIN GUYS 9 Rogers Way, Landsdale, WA 6065 P: 1800 884 884 / 9300 3400 thebinguys@westnet.com.au www.thebinguys.com.au	All materials except hazardous wastes, liquids, asbestos, tyres and LPG cylinders.
CARRAMAR RESOURCE INDUSTRIES Neerabup P: 9405 3877 www.crisands.com.au	Concrete, bricks, topsoil, green waste and clean fill. No bin or bag service. Builder must take waste materials to facility.

WASTE TRANSFER/LANDFILL STATIONS THAT RECYCLE SOME MATERIALS

Transfer Station	Accepts	Recycles
BAYSWATER RECYCLING FACILITY - CLEANAWAY 271 Collier Road, Bayswater, WA 6053 P: 9272 5572 Mon-Fri 7:30am-4:00pm and Sat-Sun 10:00am-4:00pm	All construction materials except asbestos or hazardous waste. Charges for all waste apart from clean cardboard.	Metals, cardboard, plastic and glass bottles. Metals should be placed on top of waste and cardboard must be clean and separated from the rest of the waste.
WASTE STREAM MANAGEMENT CLASS 1 LANDFILL AND RECYCLING CENTRE Ratcliffe Road, Kwinana, WA 6167 33 Kew Street, Welshpool, WA 6106 P: 9439 1300	All construction and demolition waste. Charges for all waste applies.	Concrete, bricks, bitumen, clean sand, limestone and steel.
NON-ORGANIC DISPOSALS - CLASS 2 LANDFILL Lot 1441 Furniss Road, Landsdale, WA 6065 P: 9302 1205	Bricks, sand, metal, concrete.	Bricks, sand, metal and concrete.
CITY OF ARMADALE LANDFILL AND RECYCLING FACILITY Hopkinson Road, Hilbert, WA 6112 P: 9399 3935 Mon-Sun 8:00am-7:45pm www.armadale.wa.gov.au	All construction materials. Either sorted or unsorted, however unsorted is much more expensive. Scrap metal and cardboard (flattened and clean), if separated, can be disposed of for free. Only accepts asbestos between 8:30am and 12:30pm.	Cardboard, scrap metal, sawn timber, clean sand, brick rubble and concrete.
RCG TECHNOLOGIES P: 9407 5069	All construction materials except plastics, timber, tin, green waste. All materials can be brought in same trailer, apart from asbestos, which must be wrapped and taped securely and transported legally.	Clean fill.
ECO RESOURCES 165 Postans Rd, Hope Valley, WA 6165 P: 1300 798 785 M: 0488 011 108 ecores@bigpond.com www.ecoresourceswa.com.au	Bricks, concrete, timbers, metals, cardboard, plastics, glass, polystyrene, sand and green waste. Does not accept asbestos, liquids (paint, oils etc), hazardous chemicals, municipal waste (food scraps). \$30.00/(m ³) + gst - please call for current prices.	Bricks, concrete, timbers, metals, cardboard, plastics, glass, polystyrene, sand and green waste.
CITY OF CANNING Lot 502 Ranford Road, Canning Vale, WA 6155 P: 08 9231 0716 bburnett@canning.wa.gov.au www.canning.wa.gov.au/W/waste-transfer-station 7 days 8:00am - 4:30pm	All construction materials except from putrescibles waste (capable of decomposition) food waste, wet waste, asbestos, flammable liquids, explosive material, contaminated material. Inert waste (neither chemically or biologically reactive and will not decompose) \$145 per tonne. Mixed waste \$167 per tonne.	Scrap metal and green waste (if easily separated).
WELSHPOOL CENTRAL WASTE - TRANSFER STATION 33 Kew Street, Welshpool, WA 6106 P: 9439 1300 admin@wastestream.com.au	All class one products and green waste. Loads can be mixed or separated. It is cheaper to dispose of loads if they are separated.	Concrete, bricks, road base, sand, steel, tyres and clean green waste.

"During construction, we use recycled sand under our housing slabs, which is important as the amount of basic raw materials in Perth is getting quite low." HOMEBUYERS CENTRE

DEMOLITION COMPANIES

Armadale Mini Loads	9390 8003	G&D House Strippers	9306 8055
Asbestos Masters	9531 4564	Ital Demolition	9440 0468
Auscon Metals	9497 1340	J&P Deconstruction	9725 5050
Becker Demolition	0404 892 462	Jag Demolition	9406 6800
Capital Demolition	9279 4599	Matrix Contracting	9446 2240
Civil & Demo	9370 1833	Mosman Recyclers	9339 6337
Coastal Demolition	9534 6827	Nateis Contracting	9312 2639
Crothers Construction	9964 2700	Sanders Contracting	0418 921 364
Delta Group	1300887555	Statewide Demolition	0418 928 210
Diacon Demolition	0379 2700	Swift Demolition	9404 6064
Diggers & Truckers	9382 2240	Thunderstruck Asbestos Rem	0416 348 566
Focus Demolition	0418 817 885	Vinsan Contracting	9279 5422

ENVIRONMENTAL CONSULTANTS

 EARTHCARE CONSULTING 10 Whyalla Court, Bibra Lake, WA 6163 P: 9434 2200 admin@earthcare.net.au www.earthcare.net.au	Services: <ul style="list-style-type: none"> • Prepare and develop waste management plans for developers and builders. • Prepare UDIA EnviroDevelopment waste criteria management and implementation plans.
 INSTANT WASTE MANAGEMENT 50 Clune Street, Bayswater, WA 6053 P: 9379 2111 www.instantwaste.com.au	Services: <ul style="list-style-type: none"> • Waste management planning for design approval and construction works. • Waste consultation services for major infrastructure and construction projects. • Waste education from site to procurement function.
DALLYWATER CONSULTING 122 Patersonia Road, Chittering, WA 6084 P: 9571 0332 nahrel@dallywater.com.au www.dallywater.com.au	Services: <ul style="list-style-type: none"> • Waste management design advice for architects, builders and proponents of new (and existing) developments. • Preparation of waste management plans to meet local and State Government planning and statutory processes for: <ul style="list-style-type: none"> - residential, commercial and mixed use developments including residential MUDs, multi-site facilities, high-rise developments, hotels, offices, restaurants etc. - the demolition, construction and operational phases of developments. • Residential, commercial and industrial waste and recycling audits (waste generation and compositional analysis). • Waste minimisation assessments of, and program development for, construction and demolition practices and building operations management. • Environment and waste minimisation education for companies and contractors. • A range of other waste, environment and environmental health services complimentary to the activities of the building sector.

ENVIRONMENTAL CONSULTANTS

ENCYCLE CONSULTING Level 1, 76 Roberts Street, Osborne Park, WA 6017 P: 9444 7668 info@encycle.com.au www.encycle.com.au	Services: <ul style="list-style-type: none"> • Waste assessments. • Preparing waste management plans for commercial constructions for the following phases: <ul style="list-style-type: none"> - design phase (including in accordance with the Green Building Council of Australia's Green Star - Office Design v3 Rating Tool). - construction phase. - operational phase. - demolition phase. • Waste management plan implementation assistance. • Performance monitoring and reporting.
eTOOL Level 1 40-44 Pier St Perth, WA 6000 P: 9467 1664 info@etool.net.au www.etool.net.au	Services: <ul style="list-style-type: none"> • Life cycle assessment. • Analysis and improvement of full life cycle impacts associated with the built form. • LCA in accordance with Green Star and EnviroDevelopment requirements.
GEO-ENVIRONMENTAL 3 Passfield St, Baldivis, WA 6171 M: 0419 851 970	Services: <ul style="list-style-type: none"> • Solid waste management planning and auditing. • Project approvals. • Implementation and auditing of environmental management systems (ISO 14001). • Contaminated site management. • Life-cycle analysis.
HYDER CONSULTING Level 2, Suite 1, 675 Murray St, West Perth, WA 6872 P: 9322 1677	Services: <ul style="list-style-type: none"> • Waste assessments and modelling. • Waste management plans. • Assist with tenders and sustainable purchasing. • Assist with approvals advice. • Design, engineering and drafting services
TALIS CONSULTANTS Level 1, Unit 8 / 663 Newcastle St, Leederville, WA 6007 P: 1300 251 070	Services: <ul style="list-style-type: none"> • Strategic waste management plans. • Waste minimisation, reuse and resource recovery strategies. • Waste collection and treatment tender preparation and management. • Waste awareness and education programs. • Waste data gathering and reporting frameworks. • Waste stream, markets and technology due diligence. • Waste auditing and compositional analysis. • Community consultation. • Feasibility and financial assessments. • Funding applications. • Waste services reviews.

We have been able to get our ordering margins down to 5% for bricks, 5% for tiles, 3% for concrete and 5% for plasterboard on some construction sites." HIGHBURY HOMES

WA REGULATIONS IMPACTING CONSTRUCTION WASTE

Below is a brief guide to regulatory considerations for risks associated with construction waste handling and recycling.

Activity	Potential result	Impact	Relevant Acts / Regulations
Site clearing	Dust & noise	Health Air pollution Amenity	Environmental Protection (EP) Act 1986 - Section 49 Causing pollution and unreasonable emissions. Conditions imposed under relevant planning approvals. Environment Protection (Noise) Regulations 1997.
	Loss of Biodiversity	Flora & fauna habitats	Environment Protection (Clearing of Native Vegetation) Regulation 2004. Environmental Protection Act 1986 – Section 50A (causing serious environmental harm).
Transporting materials to or from site or stockpiling of wastes or recycled products on site	Dust due to wind movement across unsealed areas	Dust due to wind movement across unsealed areas	Environmental Protection Act 1986 section 49 Causing pollution and unreasonable emissions. Environmental Protection Regulations 1987 (Licence may be required under Schedule 1 – Part 1 - Categories 13, 61A, 62 or 63).
Crushing, grinding or screening operations	Noise	Amenity	Environmental Protection (Noise) Regulations 1997.
Site operations or contouring that allows water to pond on-site	Odour	Health Amenity	Environmental Protection Act 1986 Section 49 - cause pollution and unreasonable emission.
Poor site maintenance practices	Mosquitoes, weeds, pests or vermin	Flora & fauna impacts	Environmental Protection Act 1986 – Section 50A if licensed, otherwise Section 182 of the Health Act 1911. Local Government Bylaws.
Uncontrolled or poorly managed site run-off. Poorly maintained or inadequate site access roads or drainage systems.	Surface water run-off resulting in transport of sediment, erosion	Water pollution	Environmental Protection (Unauthorised Discharge) Regulations 2004. Environmental Protection Act 1986 Section 49 - cause pollution and unreasonable emission.
Diesel, oil or other leaks or spills	Site or groundwater contamination	Land contamination	Contaminated Sites Act 2003. Environmental Protection (Unauthorised Discharge) Regulations 2004. Explosives and Dangerous Goods (Explosives) Regulations 1963.
Poor design or management of fuel or hazardous goods storage areas.	Diesel, oil enters drainage systems	Water pollution	Environmental Protection Act Section 49 - cause pollution and unreasonable emission. Section 50 - discharge of waste likely to cause pollution.

Activity	Potential result	Impact	Relevant Acts / Regulations
Asbestos contamination	Asbestos pieces pass through crushing operations	Air pollution	Environmental Protection (Unauthorised Discharge) Regulations 2004. Health (Asbestos) Regulations 1992 – Regulation 11 – Asbestos for disposal to be separated. Code of Practice for the Management and Control of Asbestos in Workplaces [NOHSC: 2018 (2005)]
	Asbestos from stockpiled material remains in soil	Land contamination	Contaminated Sites Act 2003. Contaminated Sites Regulations 2006.
Illegal Dumping	Additional charges	Financial	Environmental Protection Act 1986 (Maximum penalties for illegal dumping are \$62,500 for individuals and \$125,000 for corporations). Litter Act 1979.
Staff safety	Injury to people on site	Workers compensation claims Workplace safety breaches	Occupational Safety and Health Act 1984 and Regulations 1996.

"We use fully automated systems to ensure scheduling is as effective as possible, to minimise over ordering." SUMMIT HOMES GROUP

"We employ two contractors to take left over materials from one site, such as bricks, to nearby sites that requires the material, minimising the amount of waste that is created." – HOMEBUYERS CENTRE

PROTECTING OUR WATERWAYS

Impact:

- Water that flows from a building site and into the storm water system, eventually finds its way into creeks, rivers and the ocean.
- It is usually not treated in any way, and if care is not taken sediments, sand, soil, gravel, litter, paints and solvents can kill plants and animals in waterways.
- These materials can also lead to blocked drains and rivers, which will increase the chance of flooding.

What you can do to help:

- Keep mud off the road and foot paths.
- Cut materials onsite, away from stormwater drains.
- Cover stockpiles.
- Use bins with lids.
- Clean all equipment onsite and make sure the wash water stays onsite.
- Collect water from concrete mixers into a wheelbarrow for disposal onsite.
- Use a sediment control fence and gravel access point.

FURTHER INFORMATION

AUSTRALIAN PACKAGING COVENANT (APC)

The Australian Packaging Covenant (APC) is a sustainable packaging initiative that aims to change the culture of business to design more sustainable packaging, increase recycling rates and reduce packaging litter.

The Government of Western Australia is a signatory to the Australian Packaging Covenant. It works to ensure optimal resource conservation and recovery of consumer packaging and paper in households and away-from-home premises such as workplaces/commercial premises, industrial premises and public places.

www.wasteauthority.wa.gov.au/programs/funded-programs/australian-packaging-covenant/

www.environment.gov.au/topics/environment-protection/national-waste-policy/packaging-covenant

KEEPING OUR STORMWATER CLEAN – A BUILDER’S GUIDE

Information to help you control sediment and litter from your building site and comply with Council and State regulations.

www.clearwater.asn.au/resource-library/policy-and-guidelines/keeping-our-stormwater-clean-a-builders-guide.php

LIFE CYCLE ASSESSMENT

Life cycle assessment (LCA) is the determination of the environmental impacts of a product resulting from all stages of its production, use and disposal.

The waste hierarchy is based on life cycle assessment, which takes into account the total environmental impact of different management options, including the direct and indirect impact of material use, water and energy.

www.wasteauthority.wa.gov.au/media/files/documents/Waste_Hierarchy_2013.pdf

www.environment.gov.au/archive/about/publications/economics/consumption/lessons.html

PRODUCT STEWARDSHIP

Product stewardship is an approach to managing the impacts of different products and materials. It acknowledges that those involved in producing, selling, using and disposing of products have a shared responsibility to ensure

that those products or materials are managed in a way that reduces their impact throughout their lifecycle, on the environment and on human health and safety.

www.wasteauthority.wa.gov.au/publications/western-australian-waste-strategy-creating-the-right-environment

www.environment.gov.au/topics/environment-protection/national-waste-policy/product-stewardship

THE RESOURCE EFFICIENT BUILDER

Smart ways to become a more efficient builder, have a cleaner, safer site and in the process, produce less waste, recycle more, save money and protect the environment.

www.mbav.com.au

WASTE AVOIDANCE AND RESOURCE RECOVERY ACT 2007 (WARR)

This is a primary piece of legislation for waste management in Western Australia.

www.wasteauthority.wa.gov.au/about/legislation/

WESTERN AUSTRALIAN WASTE STRATEGY – CREATING THE RIGHT ENVIRONMENT (MARCH 2012)

Creating the Right Environment, the Waste Authority’s inaugural Waste Strategy, developed under the Waste Avoidance and Resource Recovery Act 2007, aims to engage the Western Australian community over the next decade in moving to a low-waste society by providing the required knowledge, infrastructure and incentives to change behaviour.

www.wasteauthority.wa.gov.au/publications/western-australian-waste-strategy-creating-the-right-environment

USEFUL WEBSITES

Master Builders Association of Western Australia
www.mbawa.com

Waste Authority
www.wasteauthority.wa.gov.au

Green Living program
www.mbawa.com/green-living-program

Building Products Innovation Council
www.bpica.asn.au

Department of Environment Regulation
www.der.wa.gov.au

Demolition Industry Association (DIA)
www.demolitionindustryassociationwa.com.au

Ecospecifier
www.ecospecifier.com.au

EnviroDevelopment
www.envirodevelopment.com.au

Forest Stewardship Council
<http://au.fsc.org>

Green Building Council of Australia
www.gbca.org.au

NATSPEC
www.natspec.com.au

Recycling Near You
www.recyclingnearyou.com.au

Trade 365
www.trade365.com.au

Your Home
www.yourhome.gov.au

WALGA
www.walga.asn.au

Waste Management Association of Australia
www.wmaa.asn.au

These websites are provided for further investigation. Master Builders, nor the Waste Authority endorse or recommend these websites. Readers should make their own enquiries about the content on these websites.

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www.encycle.com.au/kit.php

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www.yourhome.gov.au

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Available from www.wasteauthority.wa.gov.au/media/files/documents/WA_Recycling_Activity_11_12.pdf

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www.mbawa.com/green-living-program

Master Builders Association of Western Australia, 2008 Commercial construction waste management guide.

www.mbawa.com/wp-content/uploads/2013/08/Waste-Management-Guide.pdf

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