WASTE MANAGEMENT REPORT

FRESH HOPE- PENRITH INDEPENDENT LIVING UNITS

REV – 30-APR-2020

SMITH & TZANNES

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PROJECT	**FRESH** HOPE- Penrith Independent Living Units 19_086
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SMITH & TZANNES

1 INTRODUCTION

1.1 PROPOSED DEVELOPMENT

This report has been prepared by Smith & Tzannes on behalf of the applicant and land owner Fresh Hope to support a Development Application for Independent Living Units at 154-162 Stafford Street Penrith.

The Plan details the management of waste during the demolition and construction phases of the Penrith Retirement Living (154-162 Stafford Street, Penrith) development.

The proposed development involves site preparation infrastructure to support the development, and the construction of a building including:

- Thirty three x 1 and 2 bedroom retirement living units;
- Community Spaces
- Supporting infrastructure including basement carparking, waste storage and services.

The Plan has been developed with consideration of Penrith City Council's Penrith Development Control Plan 2014 and other Authority's requirements. It is intended to inform the design of the waste services by identifying the estimated waste profile for the development and providing the total area required by the recommended equipment/systems.

The Demolition Waste Management Plan has been developed to ensure that all waste resulting from demolition activities is managed in an effective, safe and environmentally aware manner. Specifically,

- to minimise the generation of waste to landfill
- to maximise waste material avoidance and reuse on site
- to ensure that where practicable, an efficient recycling procedure is applied to waste materials
- to raise awareness among employees and subcontractors of their waste management responsibilities.

Management strategies reflect current best-practice requirements, and relevant Sections of the Protection of the *Environment Operations Act 1997* and the NSW Environment Protection Authority *Waste Classification Guidelines, Part 1: Classifying Waste*, as well as consideration of industry best practice for this type of development. In particular there will be compliance with *Australian Standard AS2601: The demolition of structures*. This in summary requires that the demolition of structures:

- sets out requirements for the planned demolition of buildings and certain other structures so that the risk of injury to workers, other site personnel and the public, and the risk of damage to adjacent property and the immediate environment is minimised,
- covers the methods and safety procedures applicable to demolition work in general as well as procedures for some types of structures,

- deals with manual and mechanical demolition techniques including those employing specialised earth-moving type machinery,
- includes informative appendices covering some contractual considerations, a checklist for contractors and qualifications for site personnel,
- safety and health issues are addressed under the headings of:

Health and safety of the public - covering general requirements, lighting, falling materials, fencing, hoardings and warning notices, scaffolding, overhead protection for footpaths, and hazardous materials and conditions.

Safety and health of site personnel - covering general safety, personal protective clothing and equipment, cutting and welding, fire protection, first aid, amenities, removal of hazardous material and electrical safety.

Protection of adjoining buildings and protection of immediate environment - covering requirements relating to access and egress, damage and structural integrity, vibration and concussion, weatherproofing, burning, dust control, noise control, protection of public roads and protection of sewers and water courses; and protection of the site.

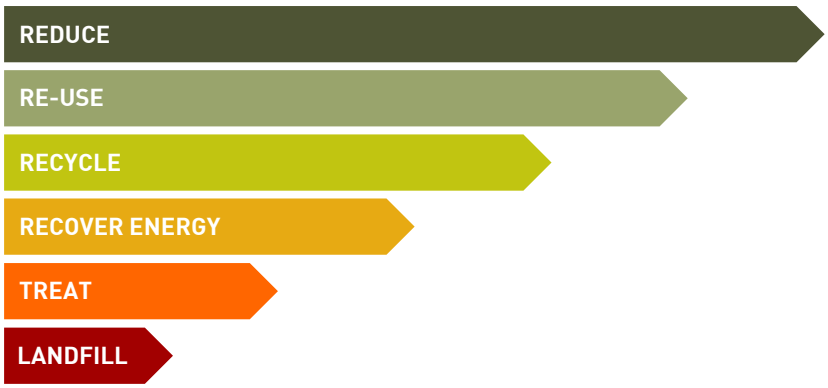
Adherence to AS2601 is required under the **Environmental Planning and Assessment Regulation 2000**.

Section 143 of the Protection of the Environment Operations Act 1997 requires waste to be transported to a place that can lawfully accept it. It will be the responsibility of the site developers to ensure all contractors clearly specify where all wastes are to be transported, the capacity of the nominated facilities to receive/manage the waste and to ensure that reports on management aspects (types, quantities and disposal pathways) are provided.

Note: Testing and classification of any excavated material is not covered in this report. Where necessary separate specialist testing is to be commissioned by the project managers.

2 DEMOLITION WASTE MANAGEMENT PRINCIPLES

The following waste hierarchy will be used as a guiding principle:



2.1 AVOID AND REDUCE

Minimise the production of waste materials in the construction process by:

- Assessing and taking into consideration the resultant waste from different design and construction options.
- Purchasing materials that will result in less waste, which have minimal packaging, are pre-cut or fabricated.
- Not over ordering products and materials.

Reuse

Ensure that wherever possible, materials are reused either on site or offsite.

- Identify all waste products that can be reused.
- Put systems in place to separate and store reusable items.
- Identify the potential applications for reuse both onsite and offsite and facilitate reuse.

Recycle

Identify all recyclable waste products to be produced on site.

- Provide systems for separating and stockpiling of recyclables.
- Provide clear signage to ensure recyclable materials are separated.
- Process the material for recycling either onsite or offsite.

Note: In some cases, it may be more economical to send the unsorted waste to specialised waste contractors who will separate and recycle materials at an offsite location.

2.2 DISPOSAL

Waste products which cannot be reused or recycled will be removed and disposed of. The following will need to be considered:

- Ensure the chosen waste disposal contractor complies with regulatory requirements
- Implement regular collection of bins

2.3 WASTE SOURCES

The principles outlines above are applied to the expected waste sources for the development as follows:

Excavation Material

Earthworks will be completed over the site as required to achieve proposed levels. Where feasible, removed earth will either remain on-site for reuse or disposed off-site.

Bricks, Tiles, Concrete

Bricks will be stockpiled and reused wherever possible. Unusable bricks will be collected and recycled at an appropriate brick/rubble recycling facility to be used in aggregate gravel products.

Timber

Recyclable timber (untreated) will be collected and recycled at appropriate timber yard. Unrecyclable (treated) timber will be disposed at landfill. Timber that is not of the standard for reuse will be transported to a site for chipping for use as garden mulch if acceptable for this process.

Metals

All metal materials will be reused or recycled as follows:

- Metal drums and packaging to be returned to the supplier
- Any metal suitable for recycling will be separated and stored in a designated scrap metal bin for transport to a metal recycling facility

Paper and cardboard

Cardboard and paper from packaging materials and office paper waste should be disposed of into designated recycling bins and collected regularly.

Liquid Waste

Liquid waste may be produced on site for environmental control measures such as:

- Site and vehicle cleaning
- Dust control waste

The following measures will be taken to minimise the impact of liquid waste:

- Ensure water is used in moderation and no taps are left continuously running

- Only discharge clean water into storm water

2.4 STORMWATER POLLUTION PREVENTION

Actions to avoid pollution entering stormwater drains and for litter generation will include:

- Prior to commencement of any works a Safe Work Method Statement will be completed and reviewed to determine potential for stormwater pollution and/or litter generation.
- The contractor is to develop a management strategy to manage the potential for these issues to be realised.
- Site inspections are to be conducted during the working day to monitor potential for stormwater pollution generation. Works to cease in the case of pollution and appropriate controls are to be implemented prior to works recommencing
- Wastewater and storm water will be managed and disposed of in accordance with Water Authority requirements.

2.5 LITTER MANAGEMENT

- Daily site inspections will be conducted to identify litter and investigate the cause so as to reduce the potential for the issue to occur in the future.
- Sufficient quantities of bins / bin space to be provided to avoid dumping of materials outside bins
- All waste/recycling bins to have covers so as to ensure that waste cannot be blown out during windy conditions. This will also apply to relevant stocks of materials to be used in construction.
- Personnel will be allocated the role of litter management in that they will periodically inspect the site and surrounds for litter and if identified collect and dispose of it.

2.6 RECORDS

- Records will be kept of all wastes and recyclables generated and either used on site, or transported offsite.
- It will be a condition of appointment, that all waste/recycling contractors provide these records and that they also contain details of the types of materials weights/volumes and the facilities that the materials are transported to.
- These records will be made available to Council or any relevant government agency on request.

2.7 WASTE/RECYCLABLES STORAGE (ON-SITE)

All waste and recycling materials will be stored in bins provided by the appointed contractor(s). These bins will be appropriately coloured and signed to indicate what materials are to be deposited into them and located so as to maximise the recovery of reusable/recyclable materials.

As demolition and construction activities progress, the designated bins may be re-located so as to maximise the collection of materials that will be diverted from landfill. This will also involve relocating signage advising as to correct waste management.

All locations where waste/recycling bins are located will be designed so as to avoid contaminating surface/stormwaters and have active litter control measures.

2.8 WASTE/RECYCLABLES TREATMENT (ON-SITE)

There will be no treatment of wastes or recyclables on-site except for possible removal of contaminants prior to forwarding to off-site recyclers.

3 DEMOLITION MATERIALS

The table below details the different waste streams expected in the demolition phase. The relevant disposal/recycling facilities will be identified when a contractor and sub-contractors have been appointed for the project.

All waste contractors/sub-contractors will be required to detail all intended disposal facilities to ensure that legislative and safety requirements are met, the guiding principles of the waste hierarchy are upheld and maximum diversion from landfill is achieved. As previously stated, records will be required to be maintained by all contractors and made available to Council so as to validate management pathways.

The potential for reuse of materials on-site will depend on the quality of the materials once demolition proceeds.

Re-use is to be encouraged for both demolition activities as well as considering what could be used for the construction phase of the development,

The following table details the estimated composition by m^3 of demolition waste to be generated and management strategy. It is important to note that these are estimates All materials are to be managed so as to avoid wherever possible disposal to landfill. This process and the management of any excavation and removal of contaminated soil and waste (if identified), from the site will be undertaken and managed by qualified contractors and consultants in accordance with all the relevant standards and regulations and is not addressed in this report.

3.1 WASTE MANAGEMENT SYSTEMS – DEMOLITION

MATERIALS ON SITE			DESTINATION	
Type of Material	**Estimated Volume** (m^3 /tonnes)	**On-site** (Reuse or recycle)	**Off-site** (Detail contractor and recycling facility)	**Disposal** (Detail Contractor and Landfill site)
EXCAVATION MATERIAL (noncontaminated soil and rock)	200m^3	Will either be stockpiled for use during construction if required and if not disposed off-site.	Excavation materials will be collected and used as clean fill by the appointed contractor with appropriate notification as to location and/or forwarded to various facilities such as garden landscapers, or roadworks.	No disposal to landfill Asphalt
ASPHALT	5Sm^3	Separated on site and crushed for use in pavement and/or temporary access road construction where possible.	Collected by contractor and disposed at recycling facility.	No disposal to landfill
CONCRETE	4Sm^3	Separated on site and crushed for use in pavement and/or temporary access road construction where possible.	Collected by contractor and disposed at concrete recycling facility.	No disposal to landfill
TILES	40m^3	Tiles will be stockpiled and	Acceptable quality tiles collected by a	Facility TBA upon appointment of

MATERIALS ON SITE			DESTINATION	
Type of Material	**Estimated Volume** (m^3 /tonnes)	**On-site** (Reuse or recycle)	**Off-site** (Detail contractor and recycling facility)	**Disposal** (Detail Contractor and Landfill site)
		reused wherever possible.	contractor and sold for reuse. Unusable tiles will be collected and recycled at an appropriate recycling facility.	contractor[1]
BRICKS	120m^3	Bricks will be stockpiled and reused wherever possible.	Acceptable quality bricks collected by a contractor and sold for reuse. Unusable bricks will be collected and recycled at an appropriate. brick/rubble recycling facility to be used in aggregate gravel products.	Facility TBA upon appointment of contractor[2]
TIMBER	6Sm^3	No on-site reuse	Recyclable timber (untreated) will be collected and recycled at appropriate timber yard. Unrecyclable timber will be disposed at landfill.	Facility TBA upon appointment of contractor
PLASTERBOARD	20m^3	No on-site reuse	Collected by the waste subcontractor on a weekly basis (or as required) for recycling. Possible use as soil improver with gypsum etc removed by recycler	Facility TBA upon appointment of contractor
METALS (roofing, etc)	45m^3	No on-site reuse	Collected by specialist metal subcontractor for recycling. Facility TBA upon appointment of contractor.	No disposal to landfill
GREEN WASTE (Vegetation, Trees)	35m^3	All green waste material will remain onsite and be reused in landscape areas around the development.	Collected and disposed at green waste/mulching facility	No disposal to landfill
MIXED HARD PLASTICS	30m^3	No on-site reuse	Collected by contractor for recycling. Facility TBA upon appointment of contractor.	No disposal to landfill
GLAZING	12m^3	No on-site reuse	Recyclers consulted as to potential for recycling and if suitable separated for recycling.	Facility TBA upon appointment of contractor
CARPET	30m^3	No on-site reuse	This will be disposed of into a designated bin and collected regularly	Facility TBA upon appointment of

[1] The actual site will be finalised once waste/recycling contractors have been appointed.

[2] The actual site will be finalised once waste/recycling contractors have been appointed.

MATERIALS ON SITE			DESTINATION	
Type of Material	**Estimated Volume** (m^3 /tonnes)	**On-site** (Reuse or recycle)	**Off-site** (Detail contractor and recycling facility)	**Disposal** (Detail Contractor and Landfill site)
			as required for recycling if of the required quality or disposal to landfill.	contractor
MIXED RECYCLABLES (paper / cardboard commingled)	$45m^3$	No on-site reuse or recycling	Separated onsite into dedicated receptacles. Collected by the waste subcontractor for recycling. Facility TBA upon appointment of contractor.	To be advised
GENERAL WASTE	$85m^3$	No on-site reuse or recycling	Separated onsite into dedicated receptacles. Collected by the waste subcontractor for disposal to landfill with the facility TBA upon appointment of contractor.	Disposed into general waste bins onsite and collected by the waste contractor for disposal. Facility (TBA) upon appointment of contractor.

OTHER MATERIALS

Other materials present on the site in the course of demolition will be dealt with as follows:

POTENTIALLY RECYCLABLE MATERIALS:

To be separated and stored on-site for appointed waste/recycling contractor to inspect and to determine the suitability of the material for recycling or reuse.

If approved for either action, then the contractor can then remove the items.

MATERIALS NOT POTENTIALLY ABLE TO BE REUSED OR RECYCLED

To be disposed of at a landfill licenced to receive those specific materials.

4 HAZARDOUS WASTE MATERIALS

4.1 MANAGEMENT PROCEDURES

Prior to their appointment, contractors employed to manage any identified hazardous wastes will be required to demonstrate their compliance with NSW EPA and WorkSafe requirements for management of the specific materials they are contracted to manage.

The following are the recommended approaches for managing the wastes and other materials that were identified during the site analysis.

The key principles that need to be adhered to are[3]:

1. All hazardous wastes need to be correctly identified and managed in accord with all relevant legislation and Codes of Practices.
2. Hazardous materials need to be separated into their individual categories and not mixed with any other materials.

Prior to commencing any demolition or clean-up activities, a Workplace Health & Safety Plan will be developed, implemented and monitored with all relevant site personnel receiving specific training in management of hazardous waste materials (including suspected hazardous materials).

In regards to potentially contaminated soil, a Remedial Action Plan is being prepared to ensure that this material is to be managed in accord with applicable regulations.

4.2 ASBESTOS

A Preliminary Contamination Report has been prepared for the site by EIS.
During the site inspection numerous fragments of fibre cement (suspected asbestos containing material -sACM) were identified at the ground surface in the eastern, northern and central section of the site. The sACM were located at the ground surface generally within bare patches of soil. None of the fragments could be broken by hand pressure (i.e. the fragments were considered to be bonded, not friable).EIS removed the observed fragments from the site. The Preliminary Contamination Report requires an emu-bob to be carried out on site

The presence of ACM at the site is widespread and poses a risk to human receptors. The ACM should be removed from the site prior to future development. EIS recommend that ACM observed on the surface of the site are removed via an emu-bob by a suitably licenced asbestos contractor and all ACM disposed of to a NSW EPA licenced facility as soon as practicable. A visual surface clearance should be undertaken by a SafeWork NSW licenced asbestos assessor following completion of the emu-bob and prior to demolition of buildings/structures at the site. Following demolition of site structures, another emu-bob should be undertaken for ACM, followed by a visual surface clearance by a SafeWork NSW licenced asbestos assessor. Additional testing for waste

[3] Reference should be made to the NSW EPA publication, Waste Classification Guidelines Part 1: Classifying Waste.

classification is recommended to confirm the final classification for off-site disposal of soil.

There is considered to be a relatively low potential for contamination-related unexpected finds to occur at the site during the proposed development works. Unexpected finds would typically be able to be identified by visual or olfactory indicators and could include:

- Waste materials in fill, including building and demolition waste;
- Fibre cement fragments (e.g. ACM);
- Stained fill/soil;
- Odorous soils (e.g. hydrocarbon odours); and/or
- Ash, slag and/or coal wash.

The following should be implemented in the event of an unexpected find:

- All work in the immediate vicinity should cease and temporary barricades should be erected to isolate the area;
- A suitably qualified contaminated land consultant1 should be engaged to inspect the find and provide advice on the appropriate course of action; and
- Any actions should be implemented and validated to demonstrate that there are no unacceptable risks to the receptors.

If additional asbestos material is found in the process of demolition, the process for managing what has been suspected of being or containing asbestos waste is as follows:

1. Treat the material as asbestos unless proven otherwise.
2. Do not disturb the material (ie., shift or place into a container) at all.
3. Seek advice from a suitably qualified laboratory to test the material(s) to determine if it is or is not asbestos.
4. If determined not to be asbestos, then it can be managed as an inert waste.
5. If determined to be asbestos then managed by a licenced contractor for packaging, removal and disposal.
6. If the material has accidently been uncovered, then the area should be cleared, barriers erected to prevent access, NSW WorkSafe and EPA notified, and if broken, covered with a fine spray/mist of water.

For what has been conclusively identified as asbestos containing materials (including soils), a specialist/licenced asbestos contractor will be used. As required, only workers trained in asbestos removal techniques will be allowed to manage the removal of asbestos contaminated soil and any contained on the buildings.

In regard to disposal of asbestos containing materials, there are regulatory requirements under clause 42 of the Protection of the Environment Operations

(Waste) Regulation 2005 that apply to the management of asbestos waste **are to be adhered to.**

These include:

- Waste must be stored on the premises in an environmentally safe manner.
- Non-friable asbestos material must be securely packaged at all times.
- Friable asbestos material must be kept in a sealed container.
- Asbestos-contaminated soil must be wetted down.
- All asbestos waste must be transported in a covered, leak-proof vehicle.
- Asbestos waste must be disposed of at a landfill site that can lawfully receive this waste. Always contact the landfill beforehand to find out whether asbestos is accepted and any requirements for delivering asbestos to the landfill.
- It is illegal to dispose of asbestos waste in domestic garbage bins.
- It is also illegal to re-use, recycle or dump asbestos waste

5 CONSTRUCTION MATERIALS

The table below details the types, quantities (m3) and system of management for construction materials generated during the construction phase of the development.

The type and quantity of waste materials are estimates and therefore the systems that will be put in place need to incorporate flexibility to allow for variation in the total quantities generated. Active site management during the construction phase will ensure waste/recyclable materials are managed appropriately. Waste receptacles are to be of sufficient capacity to manage onsite activities.

Finalisation of the system/s that will be implemented for the recovery of materials and for disposal of others to landfill will occur following appointment of contractor/s Contactors will be required to confirm the proposed disposal (eg., materials, volumes and final disposal site), as well as a validation process for this information.

The appointed contractor/s will also be responsible for sourcing speciality recycling facilities for the materials that cannot be reused on site.

5.1 WASTE MANAGEMENT SYSTEMS - CONSTRUCTION

MATERIALS ON SITE			DESTINATION	
Type of Material	**Estimated Volume** (m^3 /tonnes)	**On-site** (Reuse or recycle)	**Off-site** (Detail contractor and recycling facility)	**Disposal** (Detail Contractor and Landfill site)
CONCRETE	25m3	Separated on site and crished for use in pavement construction where possible	Collected by contractor and disposed at concrete recycling facility	Facility TBA upon appointment of contractor
TIMBER (formwork)	55m3	Separated and re-used where possible.	Separate and stockpile unused material Specialist timber subcontractor to collect for recycling	Facility TBA upon appointment of contractor
FERROUS METALS	25m3	No onsite re-use	Specialist metal subcontractor to collect for recycling	Facility TBA upon appointment of contractor
NON-FERROUS METALS (eg., wiring/cables)	10m3	No onsite re-use	Specialist metal subcontractor to collect for recycling	Facility TBA upon appointment of contractor
PLASTERBOARD	25m3	No onsite re-use	Place in designated bin and collected for recycling. Poor quality / damaged / remnants – disposal to landfill	Facility TBA upon appointment of contractor
MIXED HARD PLASTICS	15m3	No onsite re-use	Contractor appointed to collect and recycle	Facility TBA upon appointment of contractor

MATERIALS ON SITE			DESTINATION	
Type of Material	**Estimated Volume** (m^3 /tonnes)	**On-site** (Reuse or recycle)	**Off-site** (Detail contractor and recycling facility)	**Disposal** (Detail Contractor and Landfill site)
MIXED RECYCLABLES	30m3	No onsite re-use	Contractor appointed to collect and recycle	Facility TBA upon appointment of contractor
GENERAL WASTE	80m3	No onsite re-use	No recycling or re-use	Facility TBA upon appointment of contractor

6 CONTRACTS AND PURCHASING

Each subcontractor working on the site will be required to adhere to this Waste Management Plan.

The Head Contractor will ensure each subcontractor:

- Takes practical measures to prevent waste being generated from their work
- Implements procedures to ensure waste resulting from their work will be actively managed and where possible recycled, as part of the overall site recycling strategy or separately as appropriate
- Ensures that the right quantities of materials are ordered, minimally packaged and where practical pre-fabricated.
- Excess materials are returned to the supplier.
- Implements source separation of off cuts to facilitate reuse, resale or recycling.

The Site Manager will be responsible for:

- Ensuring there is a secure location for on-site storage of materials to be reused on site, and for separated materials for recycling off site.
- Engaging appropriate waste and recycling contractors to remove waste and recycling materials from the site
- Co-coordinating between subcontractors, to maximise on site reuse of materials
- Monitoring of bins on a regular basis by site supervisors to detect any contamination or leakage
- Ensuring the site has clear signs directing staff to the appropriate location for recycling and stockpiling station/s. And that each bin/skip/stockpile is clearly sign posted
- Proving training to all site employees and subcontractors in regards to the WMP as detailed in section 7 below.

Should a subcontractor cause a bin to be significantly contaminated, the Site Manager will be advised by a non-conformance report procedure. The offending subcontractor will then be required to take corrective action, at their own cost. The non-conformance process would be managed by the Head Contractors' Quality Management Systems.

7 TRAINING AND EDUCATION

All site employees and sub-contractors will be required to attend a site specific induction that will outline the components of the WMP and explain the site specific practicalities of the waste reduction and recycling strategies outlined in the WMP.

All employees are

- to have a clear understanding of which products are being reused/recycled on site and where they are stockpiled.
- to be made aware of waste reduction efforts in regards to packaging.

The site manager is to :

- post educational signage in relation the recycling activities on site in breakout areas, lunch rooms etc.

8 OPERATIONAL WASTE PLAN

8.1 ONGOING MANAGEMENT OF PREMISES

Waste management on-site after the development is finished will be by a Private Contractor engaged by Fresh Hope Care.

Waste storage is located in the building basement. Please see table 8.2 below describing the volume of waste.

Access for residents is via lifts to basement. Buildings B and C have lifts to basement. Building A residents will access via Building B / Main Entry lifts.

Waste collection vehicles will be private 'Mini Waste' vehicles which will access the Waste Room via the basement carpark entry from Stafford Street, Entry and Exit is to be in a forward direction. Refer to Traffic Report for swept path analysis.

FIGURE 1: Mini Waste Vehicle

8.2 WASTE FROM ONGOING USE OF PREMISES

Type of Material	Collected By	Estimated Volume (L)
RESIDUAL*	Private contractor	2 dwellings / 240L bin – 16 bins Twice weekly = 8160L
RECYCLABLES*	Private contractor	2 dwellings / 240L bin – 16bins Weekly = 4080L
GREEN WASTE*	Private contractor	4 dwellings / 240L bin – 4bins Weekly = 2040L
BULKY GOODS	Private contractor	16m2 – collection as required / per Fresh Hope Management

***Green waste and recyclable allocation may be increased and Residual Waste decreased depending on user uptake of recycling and green waste.**

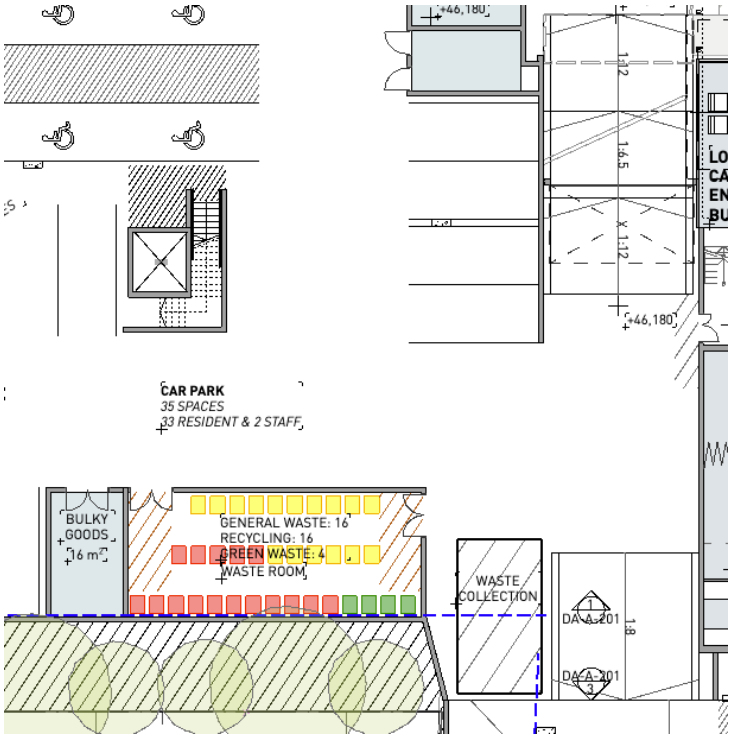


FIGURE 2: PLAN OF BASEMENT WASTE STORAGE AREA & BULKY GOODS