

**Refuse Storage and Collection
Building (Refuse Storage and Material Recovery Chambers
and Refuse Chutes) Regulations**

Access for Refuse Collection Vehicle

When planning the location of refuse storage and material recovery chambers (RS&MRC), and making arrangements for ready access thereto, the limiting specifications of refuse collection vehicles (RCV) currently in use by the Food and Environmental Hygiene Department, taking the 'worst case scenario' for planning purposes, are as follows:

- (a) Overall length of RCV **11 m**;
- (b) Overall width of RCV (mirror to mirror) **3 m**;
- (c) Overall height of RCV **4 m**;
- (d) Minimum headroom required for bin-lifting operation **4.5 m**;
- (e) Minimum ground clearance **0.24 m**;
- (f) Minimum angle of departure under full laden condition (i.e. angle of the rear overhang of RCV (including bin lifting device) that will not contact with the ground when RCV departs) **10 degrees**;
- (g) Turning circle diameter (wall to wall) **20 m**;
- (h) Gross vehicle weight **26 tonnes**;
- (i) Maximum gradient for access **1:10**;
- (j) Minimum width of access road preferably be **4 m** but no less than **3.5 m**; and
- (k) Parking space for refuse collection operation **5 m x 12 m**.

2. Unless RCV can leave the area of an RS&MRC in a continuing forward direction, it may be necessary to provide basic 'hammer-head' turning facilities of **27 m x 9.5 m** with an approach **10.9 m** wide. Alternative measures may be designed based upon the limiting vehicle specifications provided above. Appendix A illustrates two alternative designs for general reference.

3. The planned RCV access and exit routes from a public street to the RS&MRC should be indicated on the building plans. RS&MRC which are intended to be visited by refuse collection vehicles should be located on the ground floor or podium floor with direct vehicular access from the street without passing through intervening floors.

Building (Refuse Storage and Material Recovery Chambers and Refuse Chutes) Regulations

4. The Building (Refuse Storage and Material Recovery Chambers and Refuse Chutes) Regulations (B(RS&MRC&RC)R) cover, inter alia, the provision of material recovery chambers (MRC), RS&MRC and refuse storage and material recovery rooms (RS&MRR), as well as the requirement on mechanical ventilation and air-purifying facilities for these chambers and rooms.

Material Recovery Chambers, Refuse Storage and Material Recovery Chambers and Refuse Storage and Material Recovery Rooms

5. When submitting plans for buildings of the type referred to in the Schedule to regulation 3 of B(RS&MRC&RC)R, calculation showing the usable floor space or aggregate usable floor space, the minimum floor space for any chamber required, and the actual size of any proposed chamber should be provided.

6. Every RS&MRR should have adequate provisions for fire prevention and fire fighting such as fire alarm and sprinkler. The room should be separated from the remainder of the building by walls having a fire resisting rating (FRR) of not less than -/120/120 and the access door thereto should have an FRR of not less than -/60/60. The self-closing mechanism to the door should not permit the door to be held in an open position. Appendix B provides details of typical layouts and minimum dimensions for RS&MRR.

7. Subject to satisfactory planning, the area of MRC, RS&MRC, RS&MRR, refuse chutes and hopper rooms (where provided) may be excluded from gross floor area (GFA) calculations under regulation 23(3)(b) of the Building (Planning) Regulations (B(P)R).

Mechanical Ventilation and Air Purifying Facilities for Material Recovery Chambers, Refuse Storage and Material Recovery Chambers and Refuse Storage and Material Recovery Rooms

8. Where a centralised ventilation system is adopted, a single air purifier may be installed before final discharge into the atmosphere. Alternatively where there is no particular odour problem, a mechanical fan coupled with a particulate filter at each MRC/RS&MRR, may be considered.

9. The main exhaust outlet for a centralised ventilation system should be located at upper roof level away from other buildings. However in the case where the building is surrounded by taller buildings, the discharge may be located at the main RS&MRC.

10. The noise level of the system should conform with the Technical Memorandum published under the Noise Control Ordinance (Cap 400). Fire dampers should be provided if the system has exhaust grilles and ducting at each floor.

11. Air purifying devices such as chemical air scrubber, bio-oxygen generator, photo-oxidation generator or other appropriate devices should be provided within an RS&MRC.

Alternative Provision of RS&MRR

12. Regulation 3A of B(RS&MRC&RC)R requires the provision of an RS&MRR on every floor of a domestic building or the domestic part of a composite building, except in the circumstances as provided for in regulations 3A(2), (3), (4), (5) and (6).

13. To cater for the increasing demand for recycling services and spaces, the Building Authority (BA) is prepared to accept an alternative provision of a refuse storage room (RSR) on each floor together with a centralised recycling corner (RC), instead of the current requirement for an RS&MRR on each floor in new building developments. Subject to compliance with the requirements set out in Appendix C, the BA will consider favourably an application for modification of regulation 3A of B(RS&MRC&RC)R, and the area of RSR and RC may be excluded from GFA calculations under regulation 23(3)(b) of B(P)R.


(YU Po-mei, Clarice)
Building Authority

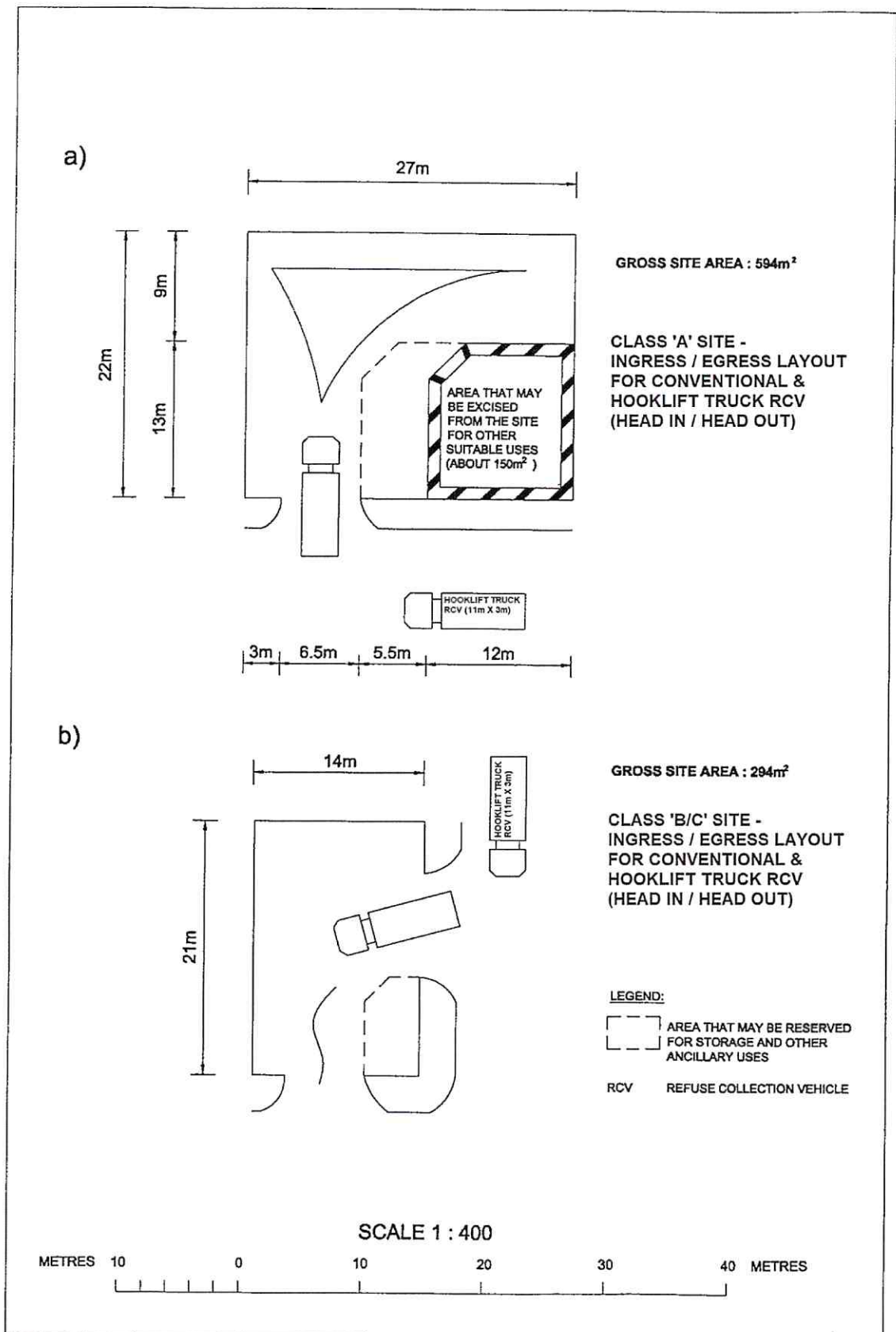
Ref. : BD GP/BREG/RC/1 (IV)

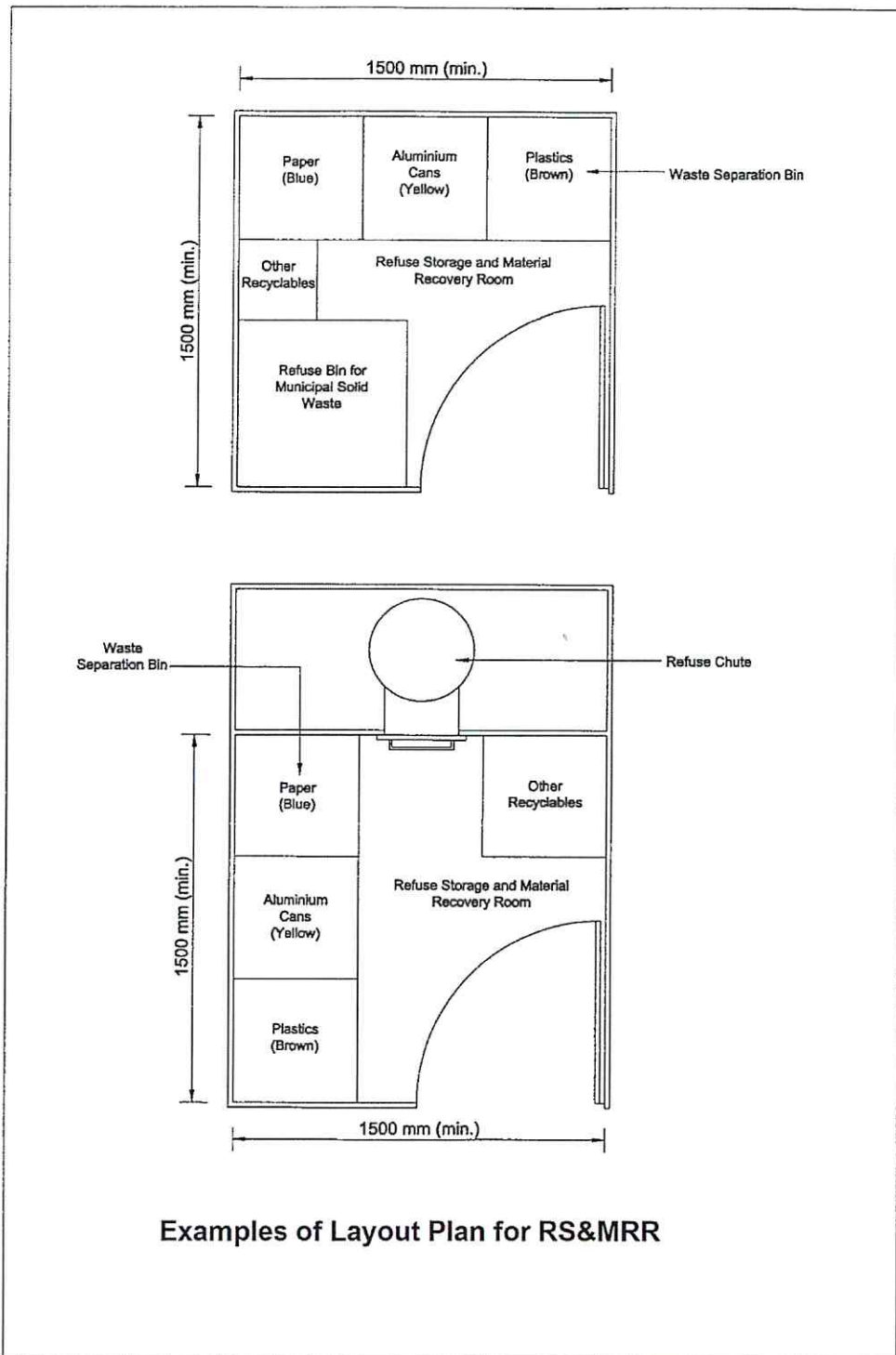
This PNAP is previously known as PNAP 98

First issue November 1983

Last revision August 2008

This revision December 2022 (AD/NB1) (General revision)





**Alternative Approach for
Provision of Refuse Storage and Material Recovery Rooms (RS&MRR) in a
Domestic Building or the Domestic Part of a Composite Building**

For a domestic building or the domestic part of a composite building with total usable floor space (TUFS) of 1,320m² or more, the Building Authority is prepared to accept the provision of a refuse storage room (RSR) on every domestic floor together with a centralised recycling corner (RC) meeting the requirements in paragraph 2 below as an alternative to the provision of RS&MRR required under regulation 3A of the Building (Refuse Storage and Material Recovery Chambers and Refuse Chutes) Regulations (B(RS&MRC&RC)R). The arrangement of refuse collection under the alternative approach is shown in Annex 1.

2. With the aim to centralise the material recovery areas, RSR on each floor will be used for refuse storage only and all the recyclables should be collected in the centralised RC which offers more space for placing collection bins for different recyclables (e.g. paper, plastics, metals, glass, regulated electrical equipment, small electrical appliances, rechargeable batteries, fluorescent lamps and tubes, food waste, etc.) to facilitate residents to participate in recycling more effectively. Design requirements of RSR and RC are as follows:

(a) RSR

Every RSR should have a minimum dimension and floor area of 1 m and 1.5 m² respectively. RSR should be so designed to comply with the requirements of RS&MRR as set out in regulations 12A, 12B and 12C of the B(RS&MRC&RC)R and this PNAP. Sample layout of RSR is shown in Annex 2.

(b) RC

Location

- (i) Subject to item (v) below, each building or building tower should be provided with one RC for the convenience of its residents. It should be located at the main entrance/exit level for the residents, such as at the podium or ground level of the building.

/(ii) ...

- (ii) RC should solely be used for recycling purpose, i.e. collection of recyclables, and should be designed to serve the residents of the building. To ensure proper management and maintenance, RC should be located in an area designated as common parts in a Deed of Mutual Covenant (DMC) or falling within the definition of “common parts” under the Building Management Ordinance (Cap. 344). In case there is no DMC formed at the time of application for approval of general building plans, the developer or owner is required to submit an undertaking to the Buildings Department to include the said areas as common parts in the DMC whenever one is formed.

Size and design

- (iii) The size of RC should be based on the TUFs of each domestic building or domestic part of a composite building and should fall within the range as specified below.

TUFs Level	TUFs per building tower/ group of buildings* (m²)	Size range of RC (m²)
Low	$1\,320 \leq \text{TUFs} \leq 7\,260$	10 – 14
Medium	$7\,260 < \text{TUFs} \leq 13\,200$	14 – 16
High	$\text{TUFs} > 13\,200$	16 – 21

* “TUFs per group of buildings” would be adopted for a shared RC.

Table 1: Size range of RC

- (iv) RC should be readily accessible to persons with a disability. No RC should have any dimension less than 1.5 m, and an adequate manoeuvring space (minimum clearance of 1.5 m x 1.5 m) should be provided inside. Sample layouts of RC are shown in Annex 3.

Shared RC for buildings on the same site

- (v) If the building has TUFs less than 1 320 m² and there are other buildings within the same site, RC may serve more than one building, provided that the TUFs for the buildings that RC serves is not less than 1 320 m²; the horizontal distance between the main entrance/exit of each building and the shared RC does not exceed 75 m; and the size of the shared RC is within the range specified in Table 1 above.

Mechanical ventilation and air purifying facilities

- (vi) RC should be provided with a mechanical ventilation system which should be capable of supplying fresh air to all parts of RC at a rate of not less than 3 air changes per hour and air purifying facilities to the exhaust part of the mechanical ventilation system, to the satisfaction of the Building Authority. Where a centralised ventilation system is adopted, a single air purifier may be installed before final discharge into the atmosphere. Alternatively where there is no particular odour problem, a mechanical fan coupled with a particulate filter at each RC may be considered.

Adequate lighting

- (vii) RC should have an illumination level of not less than 120 lux measured at the finished floor level. Additional electricity supply with socket(s) should be provided for future operating equipment (e.g. smart bins for collection of recyclables).

Fire prevention and firefighting

- (viii) RC should have adequate provisions for fire prevention and firefighting such as fire alarm and sprinkler. RC should be separated from the remainder of the building by walls having a fire resisting rating (FRR) of not less than -/120/120 and the access door thereto having an FRR of not less than -/60/60. The self-closing mechanism to the door should not permit the door to be held in an open position.

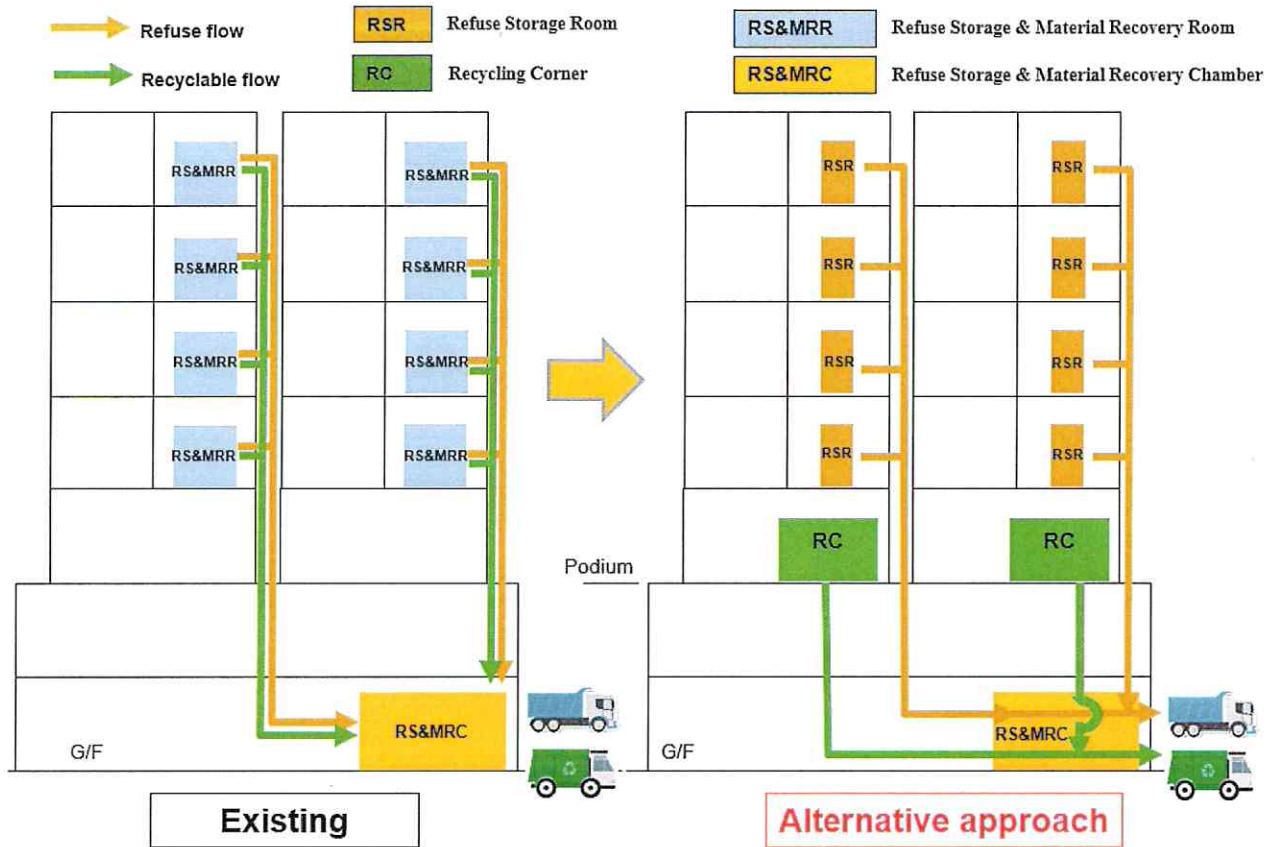
Water supply

- (ix) Water supply point(s) and sink should be provided for the purpose of cleaning.

Drainage provision

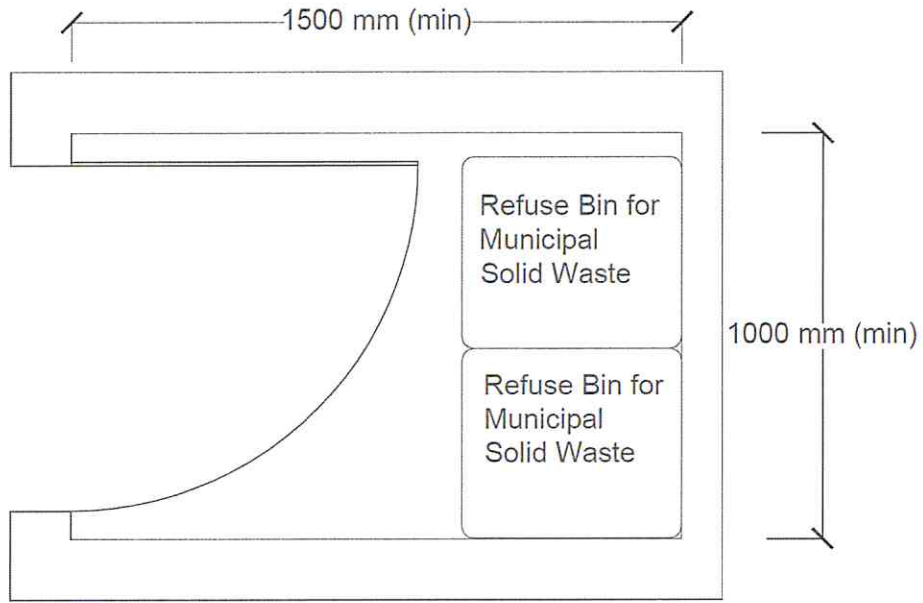
- (x) An outlet drain in the floor should be provided in RC. Every such drain should be provided with a grating and connected, by means of a pipe having an internal diameter of not less than 100 mm, to a back inlet trapped gully. Such gully should be in a position immediately outside the RC, fitted with an airtight cover to provide access to the gully for inspection and cleaning, and connected to a drain provided for the carriage of foul water.

Annex 1 of Appendix C
(PNAP APP-35)



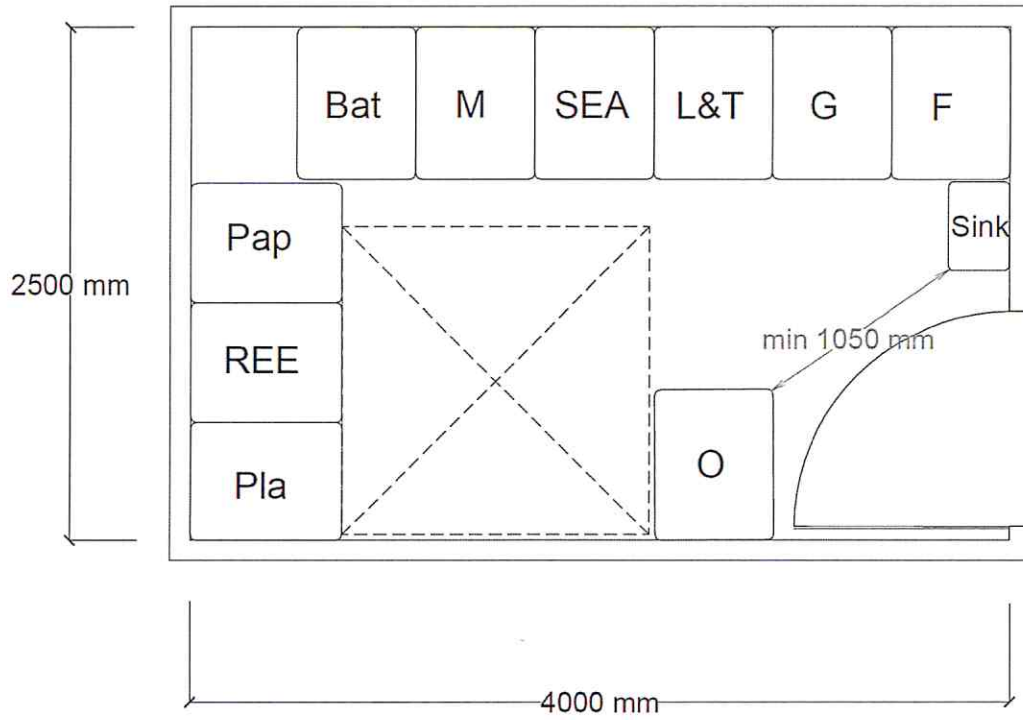
Arrangement for Refuse Collection

Annex 2 of Appendix C
(PNAP APP-35)

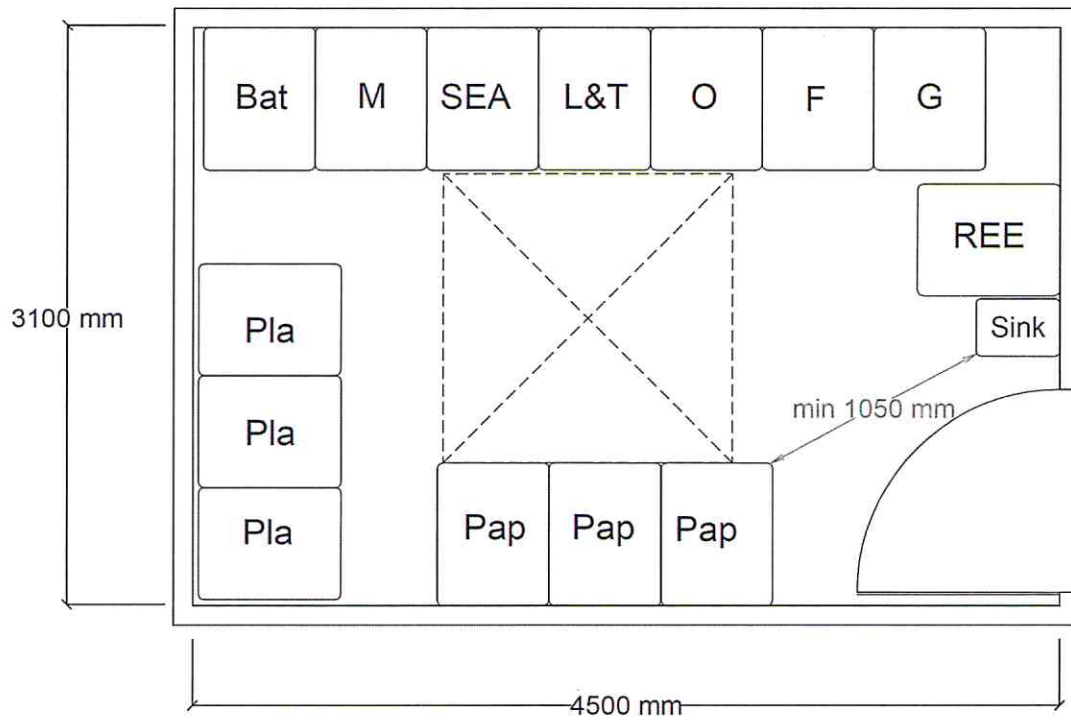


Sample Layout of RSR

Annex 3 of Appendix C
(PNAP APP-35)

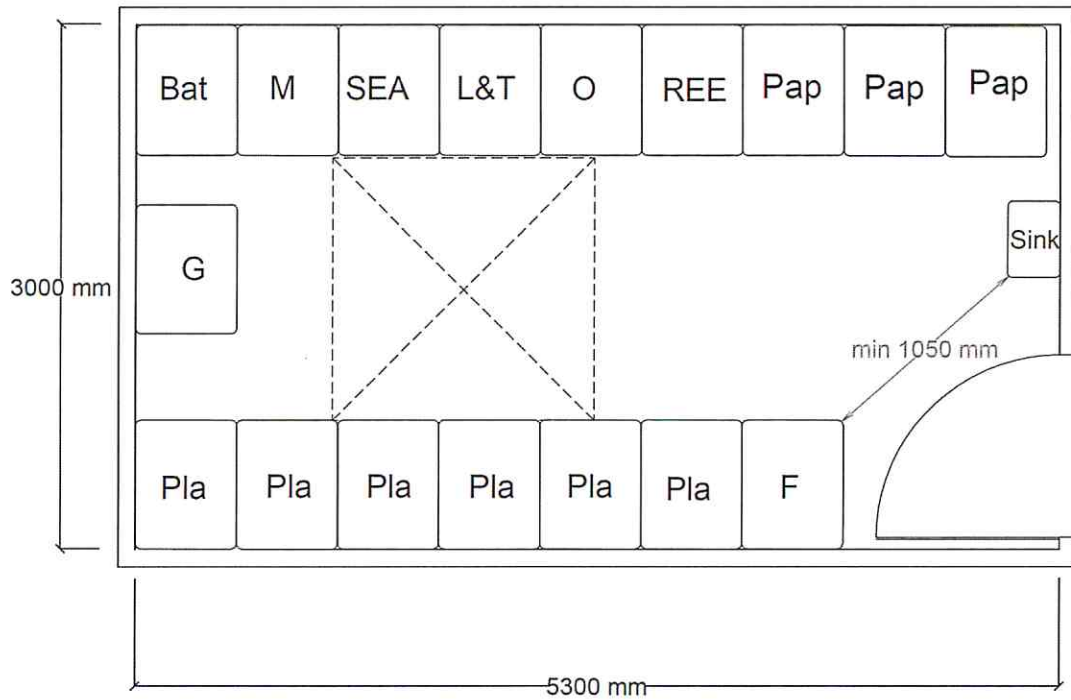


Sample Layout of 10m² RC



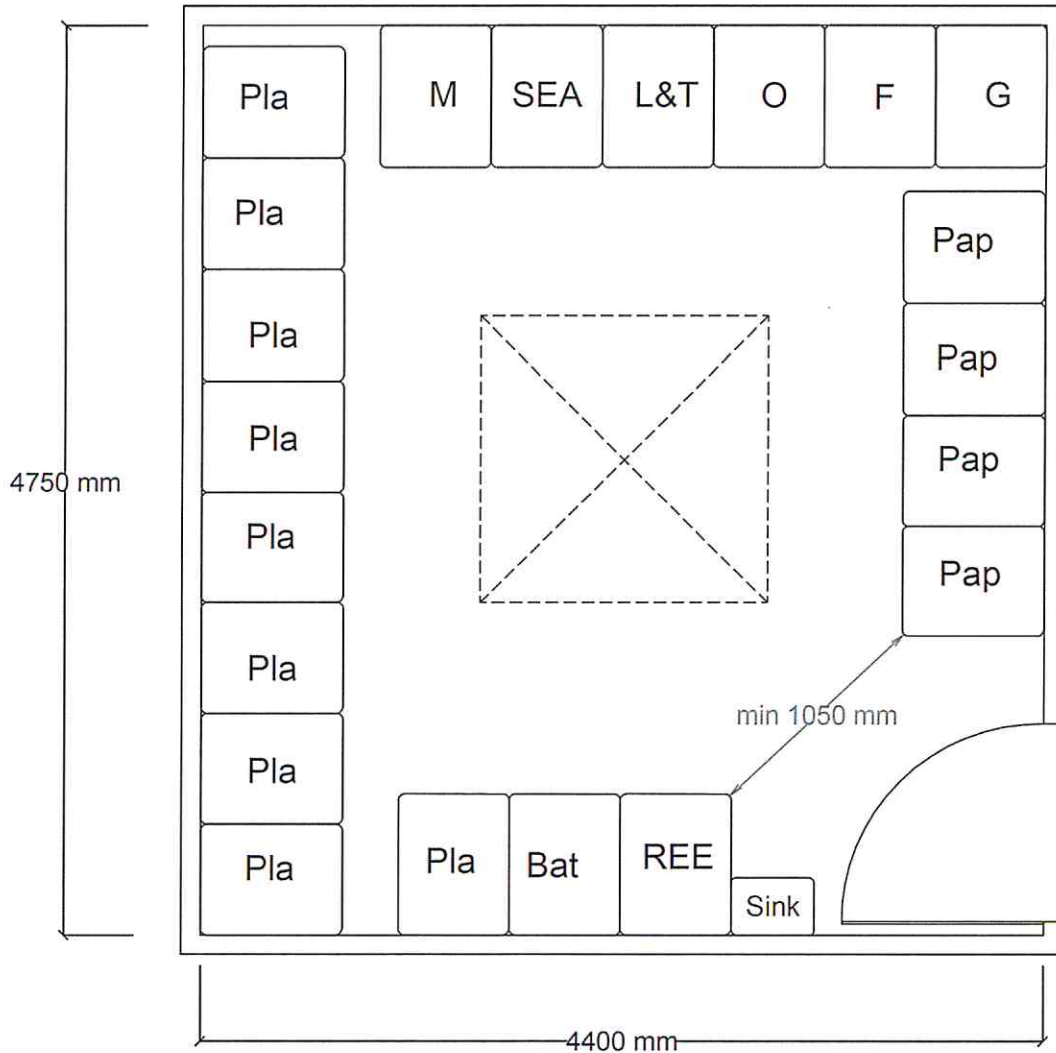
Sample Layout of 14m² RC

Annex 3 of Appendix C
(PNAP APP-35)



Sample Layout of 16m² RC

Annex 3 of Appendix C
(PNAP APP-35)



Sample Layout of 21m² RC

Index:

- Pap -- 240L Recycling Bin for Paper
- Pla -- 240L Recycling Bin for Plastic
- M -- 240L Recycling Bin for Metal
- G -- 240L Recycling Bin for Glass
- REE -- 240L Recycling Bin for Regulated Electrical Equipment
- SEA -- 240L Recycling Bin for Small Electrical Appliances
- Bat -- 240L Recycling Bin for Rechargeable Batteries
- L&T -- 240L Recycling Bin for Fluorescent Lamps and Tubes
- F -- 240L Recycling Bin for Food Waste
- O -- 240L Recycling Bin for Others Recyclables
-  1.5m x 1.5m manoeuvring space

(12/2022)