



# Reference IPU

## Briefing Guidance – Summary

**Te Kāwanatanga o Aotearoa**  
New Zealand Government

**Health New Zealand**  
Te Whatu Ora

# Purpose

This presentation summarises the principles and design outcomes from the development of reference 32-Bed Adult Inpatient Unit.

The intent of this reference design is that it can be used (and adapted as appropriate) as a reference baseline configuration for regional projects across New Zealand.

It is based on the Adult Acute Inpatient Unit Functional Design Brief developed across the Regional Hospital Redevelopment Programme (RHRP) and its corresponding Schedule of Accommodation, which is based on the use of standard component extracted from the Australasian Health Facilities Guidelines (AusHFG) with New Zealand specific overlays.



Reference IPU – Finalised Test-to-Fit

# Summary of Process

The development of the Reference IPU involved three key phases:

- Collation and analysis phase:
  - Gather and study benchmark examples.
  - Development of functional design briefs across multiple sites
- Workshop Phase:
  - Architects, Clinical Health Planner, Engineers and HNZ representatives
  - Confirm AusHFG components.
  - Develop a robust set of planning principles.
  - Agree on items that could be shared between IPU's.
- Reporting Phase:
  - Distribute draft report for comments.
  - Engagement with stakeholders including, Infrastructure and Investment Group (IIG) and user groups across the Regional Hospital Redevelopment Programme
  - Feedback incorporated

# Background

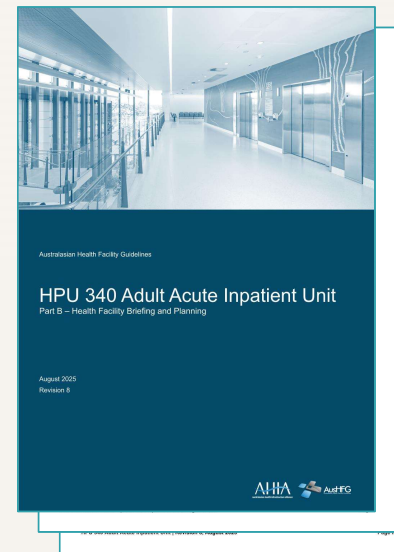
The guidance developed as part of the Reference IPU is an extension of the AusHFG's, and has been developed in line with the AusHFG principles, in particular;

- Part B - Health Facility Briefing and Planning
- Part C - Design for Access, Mobility, OHS and Security
- Part D - Infection Control and Prevention,
- Part E - Building Services and Environmental Design

In addition to the AusHFG Health Planning Unit (HPU) for an Adult Acute Inpatient Ward, Health New Zealand undertook wide user group engagement to further develop a New Zealand specific Inpatient Unit Bed mix typology.

This includes:

- 50% Single Rooms – 16 x single rooms, inclusive of:
  - 1 x Class N (Negative pressure) bed
  - 2 x Standard bariatric beds
- 50% 2-Bed Rooms = 16 x beds
  - Side-by-side configuration
- Patient lifters – Hoists (2 x bariatric + 2 x single) giving a 1:8 ratio
- Beds podded into 8 beds.
- Inboard ensuites



# Building Principles

## Structural Grids

A 8.4 x 8.4m structural grid layout has been used to develop the reference ward. It provides the most alignment with Inpatient Unit AusHFG Standard Components as well as other HPU Standard Components that may sit adjacent/beneath.

## Floor to Floor Heights

A 4.5 meter floor-to-floor has been utilised to develop the reference ward. It provides the most alignment for horizontal connectivity across other building typologies on campus.

## Structural Systems

By applying innovative structural solutions, the above 'ideal system' can be realised. 3 systems have been highlighted for further investigation, including:

- Option 1 - Structural steel frames with metal deck (Comflor or Traydec) flooring system considering either a combination of moment frames and EBFs or EBFs in both directions
- Option 2 - Structural steel frames with a CLT flooring system considering either a combination of moment frames and EBFs or EBFs in both directions
- Option 3 - Structural steel frames (one-way moment resisting frames in both directions) with a CLT flooring system

# Health Planning Modules



Room Type	AusHFG Code	Size (sqm)	Room Arrangement Decisions
1 Bedroom	1BR-ST-A2	16.5 sqm	<ul style="list-style-type: none"> <li>Inboard ensuite</li> <li>Bedhead opposite entry side</li> <li>Mirrored (rather than same handed rooms) to enable a shared entry threshold to pairs of rooms.</li> </ul>
2 Bedroom	2BR-ST-A2	29 sqm	<ul style="list-style-type: none"> <li>Inboard Ensuite</li> <li>Bedhead opposite entry side</li> </ul>
Sub Staff Station	-	5 sqm	<ul style="list-style-type: none"> <li>Sub staff station is accommodated opposite 2x 2 bedrooms with the ability for higher observation closer to a 4-bed cluster</li> </ul>
Ensuite Configuration	Various	5 sqm	<ul style="list-style-type: none"> <li>Generally inboard, but for Bariatric rooms and Isolation rooms, these are to align with AusHFG configuration</li> </ul>



Key Functional Zones in AusHFG 1 & 2 Bed Room Standard Component

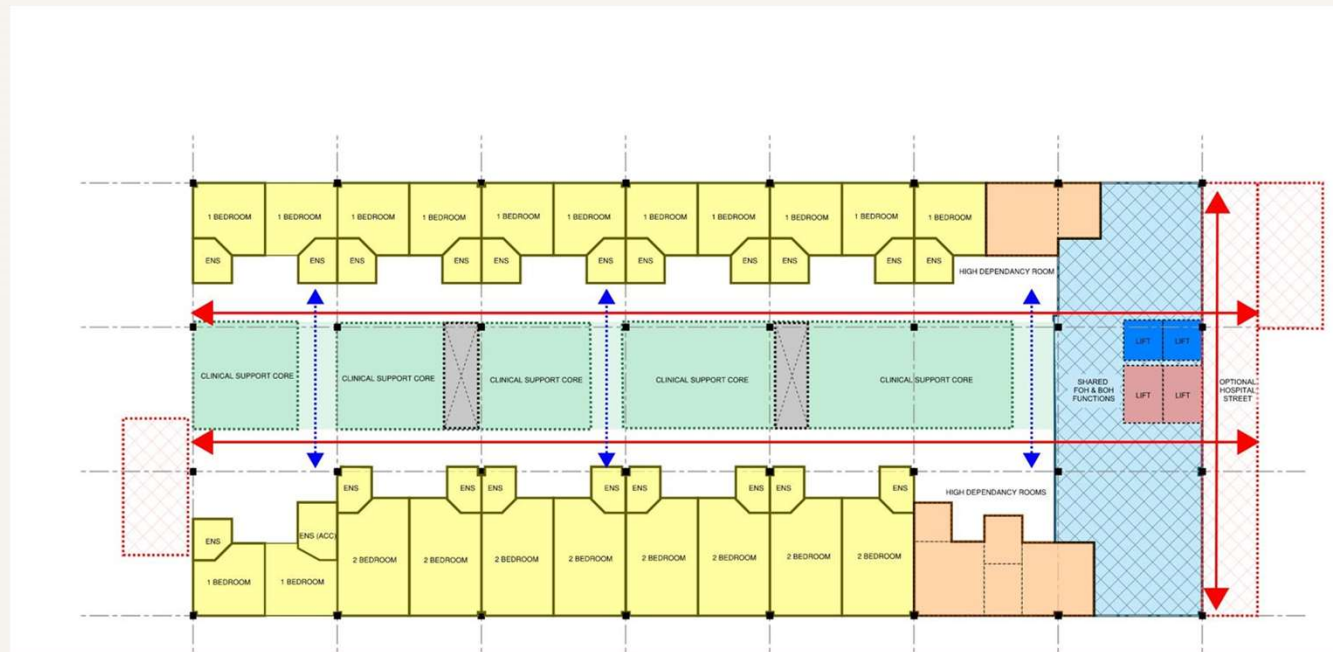
# Planning Principles

## Racetrack or Single Corridor Design

- Racetrack configuration chosen as preferred layout. Clear separation between front of house (FOH) lifts and facilities, and back of house (BOH)/patient bed lifts.

## Bed Distribution / Typology Grouping

- 1 Bedrooms / 2 Bedrooms grouped on opposite sides of race-track
- Some 2-Bed rooms near the staff stations for higher acuity observation,
- High dependency rooms (isolation and bariatric bedrooms) grouped close to patient bed lifts and unit entries



Key Functional Zones within Reference IPU

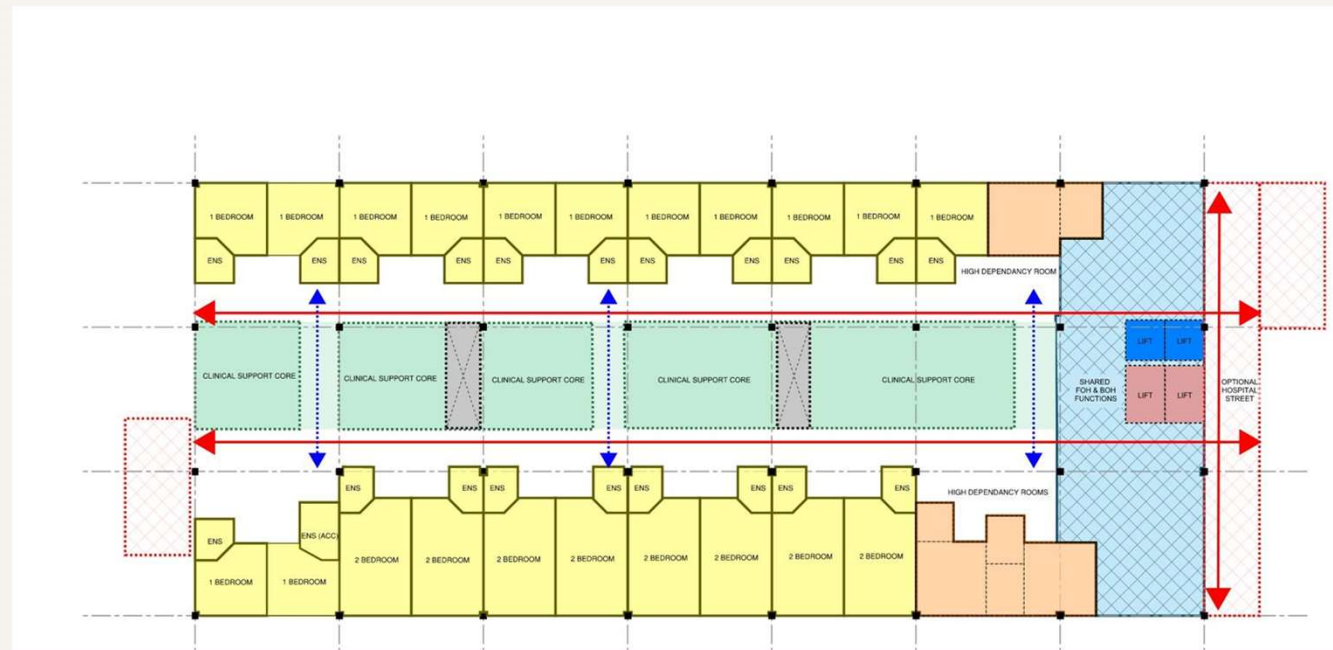
# Planning Principles

## Staff Station utilisation and distribution

- Staff Station (and clinical workroom) at the front of the unit. Allows inclusion of the ward clerk at the staff station.
- Secondary staff station observing a pair of 2 bed rooms (for high observation).

## Utility space distribution

- Clinical Support Cores created in the central zone of the racetrack design
- Preference for access via both patient corridors.
- Allows a degree of flexibility in location/sizing of services risers and cross circulation corridors.

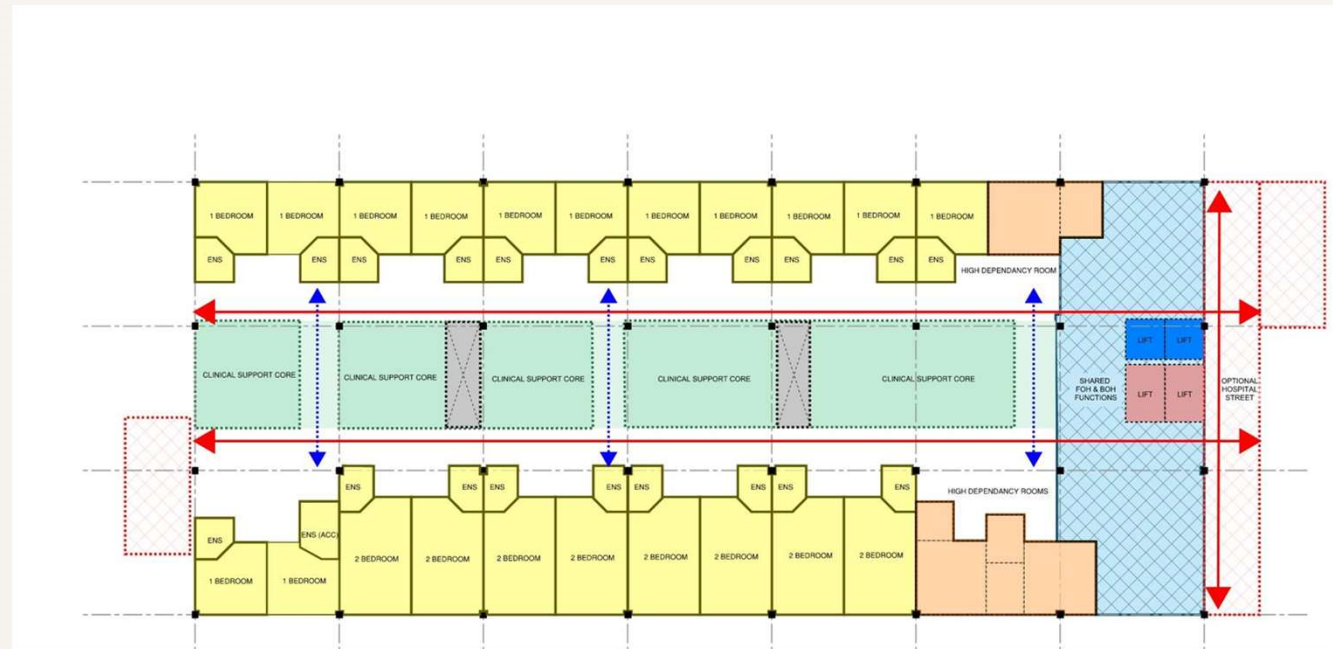


Key Functional Zones within Reference IPU

# Planning Principles

## Shared Spaces

- 1x Grid (1x3) worth of functional space able to be shared when reference IPU layout considered in conjunction with a second inpatient ward tower or acute services building.
- FoH shared spaces – noted these could be located in the shared zone between departments
- BoH shared spaces – note staff toilets/showers could be shared between departments. Showers are not required if there is a sitewide end-of-trip facility.



Key Functional Zones within Reference IPU

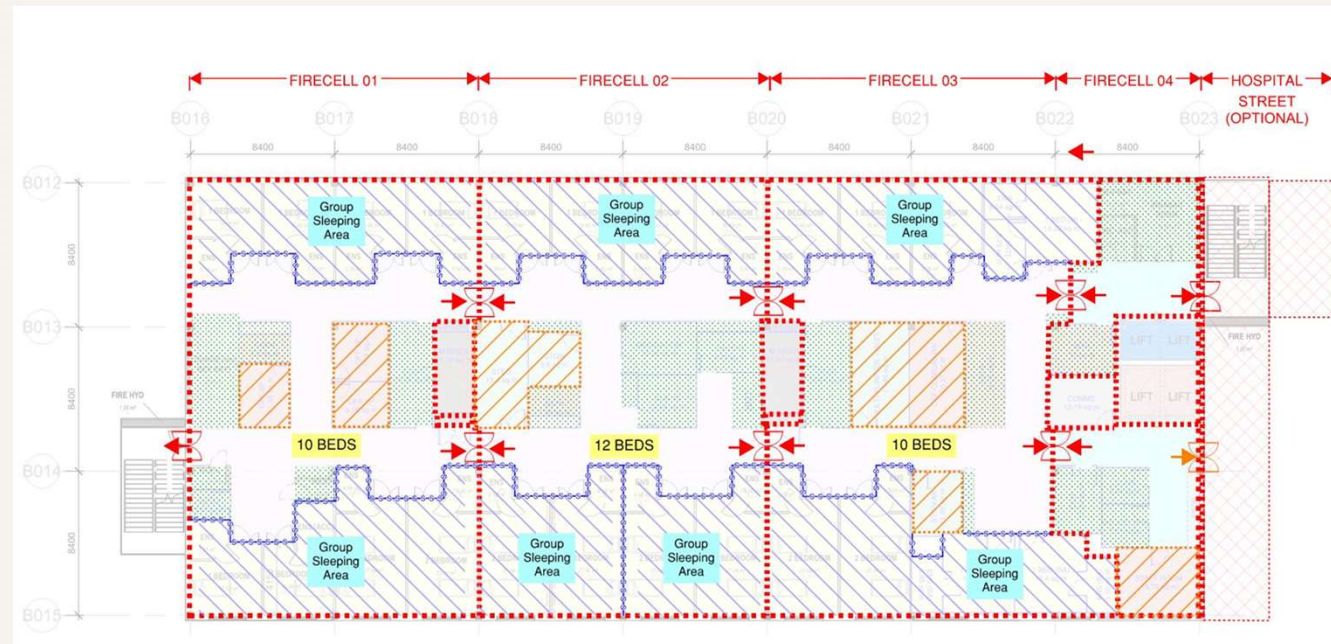
# Fire Strategy

## Assumptions

- The patients accommodated in the IPU are expected to be P2 or P3 categorisation under the DGN. P1 occupants are not allowed for.
- The building the reference ward is located in is limited to an escape of 18 metres. For a building with a 4.5 metre floor-to-floor height this is a maximum of 5 levels only.

## General Principles (Size of Firecell)

- The 32 bed ward will need to be subdivided into a series of individual firecells to enable patients to be initially evacuated horizontally to an adjacent firecell. The size of this cell is determined on bed numbers, with a maximum area per cell of 500 sqm.
- The number of beds per firecell is dependent on the availability of staff within the HPU, who are located such that they can immediately commence evacuation of patients. The DGN gives the following guidance:
  - 6 or greater staff available = 20 beds
  - 4 – 5 staff available = 12 beds
  - 2 – 3 staff available = 8 beds

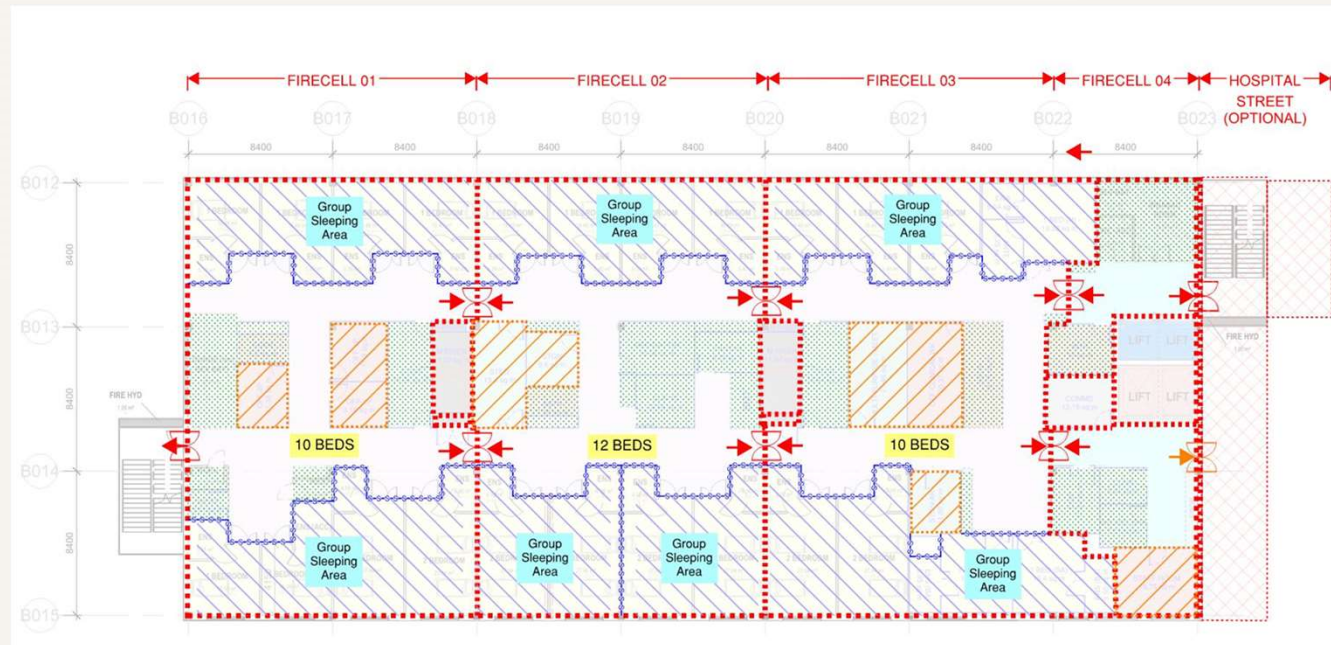


Potential firecell compartmentation breakdown (based on minimum 4 staff)

# Fire Strategy

## General Principles (Means of Escape)

- Each of these firecells should have two separate means of escape. This can either be achieved via escape into:
  - two different adjacent firecells or,
  - one adjacent firecell, and the other into a stair egress route
- The reference ward is designed as a 'group sleeping area'. Many ancillary and support spaces can be in the same firecell as group sleeping area ('Direct Support Functions'), but some are required to be fire separated ('Communal Service Functions').
- If a group sleeping area firecell has more than 6 beds then all walls subdividing the space are required to be smoke walls. If it has 6 beds or less, then they can just be normal non fire or smoke rated walls.



Potential firecell compartmentation breakdown (based on minimum 4 staff)

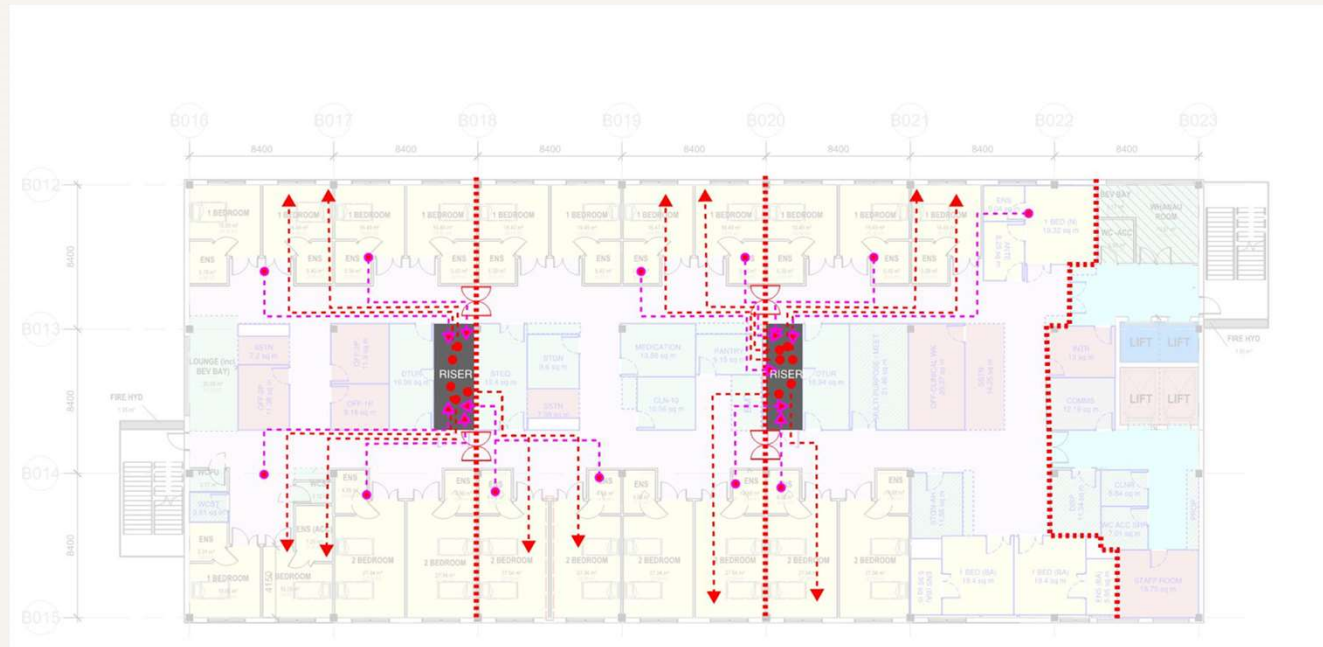
# Engineering Principles

## General Principles

- Plant Rooms located on the building rooftop. Additional considerations are required for split or on-floor plant.
- Services runs located in the corridors (where possible) with access via the ceiling.
- Minimum 1.2m clearance (underside of beam to ceiling) in-ceiling for services reticulation through the department.
- Combined pipework riser to run the entire vertical length of the building containing Mechanical, HHW/ CHW, Medical gases, Hydraulic DHW/DCW. Co-location of other like services to maximise floorplate efficiencies where available.

## Mechanical

- HVAC plant to be located on the roof (Max 5 floors with the top floor served directly from the roof, not through a riser).
- Dedicated AHU/s per floor per 32 bed
- Main ventilation risers to be geographically separate and matched to fire compartment designation where possible.
- Floor riser to have minimum 3 sides clear and not reticulate under wet areas when rolling services out



Potential service riser configuration (based on central riser strategy)

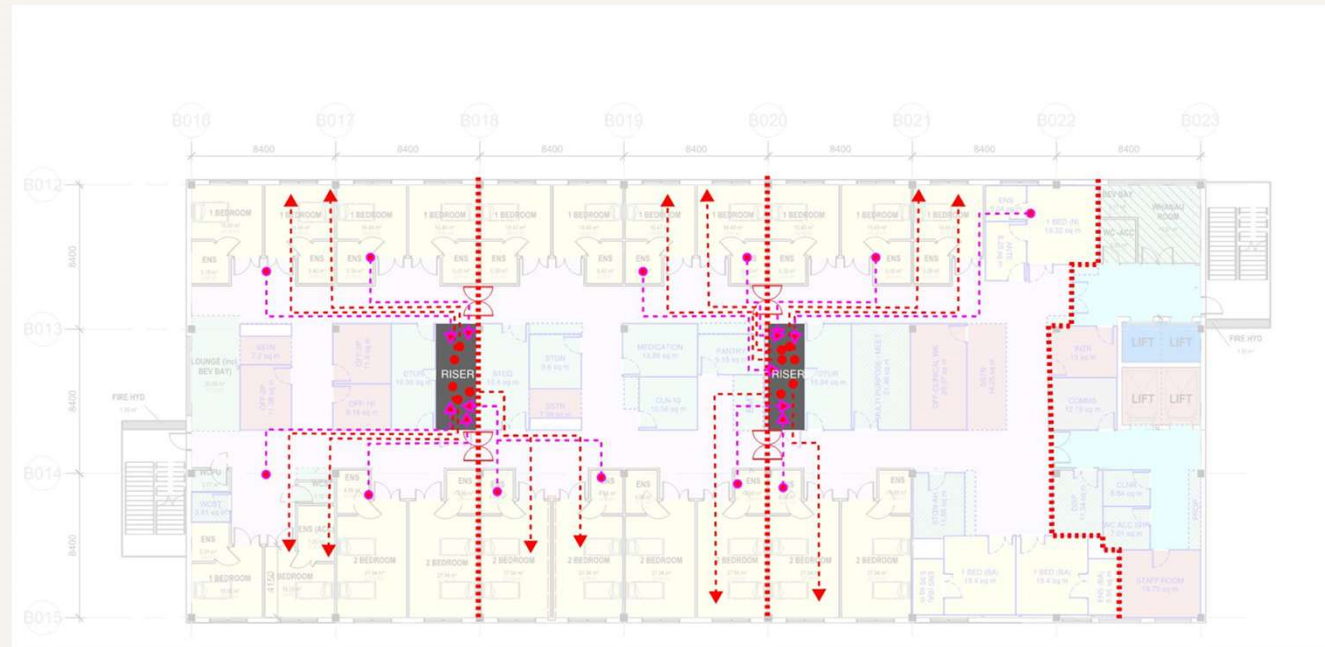
# Engineering Principles

## Electrical/ICT

- Floor Distribution Room (FDR) 1x Floor Distribution Room (FDR) Comms room per 32 bed IPU and to double as a riser (FDR Room stacked on top of each other).
- Minimum area = 12m<sup>2</sup>. Refer to HISO-10105-2025 for typical room arrangements and layouts. Maximum design distance of 60m to furthest room.
- Distribution Board cupboards to be located in the off main clinical circulation corridors where possible.
- Maximum distance of 30m radius of the furthest point

## Hydraulic

- Hydraulic stacks to be within columns wherever possible. Where this cannot be achieved, additional Hydraulic stacks may be required.



Potential service riser configuration (based on central riser strategy)

# HPU 0340 – Revision B

In August 2025, the AusHFG's released an updated Adult Acute Inpatient Unit (HPU 0340, Revision 8). Following this revision, the reference ward Schedule of Accommodation has been updated to reflect the latest requirements.



Alternative Test-to-fit layout using central riser strategy, 4 fire compartmentation, and updated HPU

# Design Statistics

## Points of Care

### Single Beds:

- 12x Standard 1 Bedroom
- 1x Standard 1 Bedroom with Accessible Ensuite
- 2x Bariatric Bedrooms
- 1x Negative Pressure Bedroom

### Double Beds:

- 16 (8x 2 Bedrooms)
- Ability for 2x Rooms to be combined into 1x 4 Bedrooms

Staff Workpoints = 16

## Schedule of Accommodation

Total GFA = 1535 sqm

Total Circulation = 385 sqm

Total Engineering = 44 sqm

Total Travel = 132 sqm





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