



Queensland Health

# Capital Infrastructure Requirements

Volume 2 Functional Design Brief

Section 2.3 Specifications



Queensland Government



## **Capital Infrastructure Requirements - Volume 2 Functional design brief—Section 3: Specifications**

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An electronic version of this document is available at <https://www.health.qld.gov.au/system-governance/policies-standards/doh-policy>

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# How to use this document

This section of the Capital Infrastructure Requirements (CIR) suite of documents has two parts.

'Part 1: Design specifications', explains Queensland Health's approach to design specifications and describes where to find health facility design specifications.

'Part 2:' is example text for each of the sections in a strategic and full functional design brief. The purpose of providing this example text is to give an idea of the type of content and level of detail to include when completing the functional design brief template for a project.

The scope for capital infrastructure projects will vary widely, covering many kinds of clinical, clinical support and non-clinical services. Provided here is a:

- completed example of a strategic level functional design brief, which assumes that the project is for a new facility. The strategic level functional design brief sections are:
  - introduction and overview
    - project background
    - project scope
    - strategic policy and direction
    - facility profile
    - key operational and design principles
    - facility wide approaches
    - functional description and relationships
    - workforce
    - accommodation brief.
- completed example of a clinical service which would be provided for a full functional design brief
- completed example a clinical support service which would be provided for a full functional design brief
- completed example of a non-clinical service which would be provided for a full functional design brief.

When finalised for a project, the full functional design brief will have a section for each of the functional units covered by the scope of the capital project. Note that while an example of each type of service is provided here, in some cases a project may only have services of a single type. For example, the project may be a new kitchen and hotel services block so there will not be any clinical services included.

## Part 1: Design specifications

Design specifications in the context of the functional design brief relates to the Australasian Health Facility Guidelines (AusHFG). Queensland Health has endorsed the AusHFG as the recommended source of information on health facility design and specifications. All health capital projects in Queensland are required to use the AusHFG as the basis of department and room planning and design.

The AusHFG enable planners and designers of health facilities throughout Australasia to use a common set of guidelines and specifications for the base elements of health facilities. The use of the AusHFG offers the following benefits

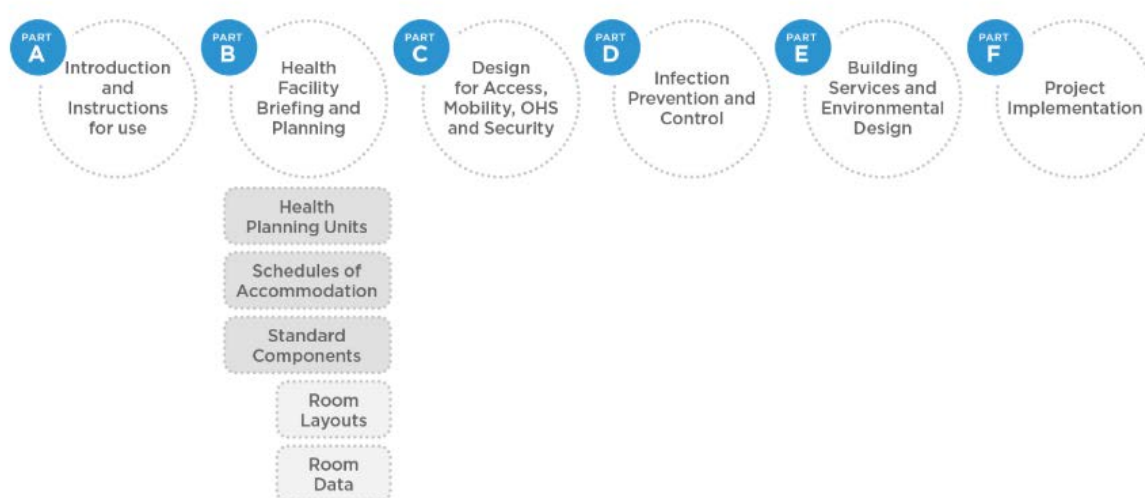
- Australasian best practice approach to health facility planning
- access to standard spatial components (available in BIM formats; Autodesk Revit and Industry Foundation Classes .IFC)
- a flexible tool responsive to changes in the delivery of health care.

Facility planners, architects and engineers using the AusHFG are still required to ensure the health facility complies with relevant legislation, other building and design standards and codes and that facilities are designed to balance maximum efficiency with minimum asset management and maintenance costs.

The main aims of the AusHFG are to:

- assist with the design of design of safe health facilities that provide privacy and dignity for patients, support contemporary models of care and the needs of carers, visitors and staff
- maintain public confidence in the standard of health facilities
- achieve affordable solutions for the planning and design of health facilities
- promote built solutions that minimise recurrent costs and encourage operational efficiencies.

The AusHFG are made up to six Parts. Part B contains the Health Planning Unit (HPU) documents, schedules of accommodation and all standard component room layouts and room data sheets as depicted below:



- The AusHFG website has extensive information and resources for health facility design specifications, including a library of guidelines covering most types of health facilities, a reference library, links to other Australian websites and the latest guideline updates.

The guidelines are based on the HPU which is defined as:

*All the rooms, spaces and internal circulation that make up a particular health service department and that are necessary for that department to function<sup>1</sup>. The standard components are a range of standard rooms that make up a department.*

The guideline library has a number of PDFs ready for download which provide extensive detail on HPUs and their standard components, including for example, room types, recommended room layouts and equipment and specialised provisions, such as infection prevention and control, and technical requirements of rooms and spaces.

To support and promote the use of Building Information Modelling (BIM), the AUSHFG has modelled all Standard Components in BIM. There are multiple formats available, including the Open BIM format, .IFC. This resource represents the greatest innovation and upgrade of the AusHFG information. Through provision of this information, Australasian Health Infrastructure Alliance has responded to the needs of the industry and is supporting the use of building information modelling throughout the health infrastructure sector.

The design specifications accessible through AusHFG website are not replicated in this document as they are constantly being updated. The AusHFG website should be accessed when design specifications are required to ensure their currency.

## Part 2: Example functional design brief

The examples provided in this functional design brief do not contain as much detail as might be provided if actually undertaking a brief for a genuine project.

The content is by way of example only and provides information for a strategic level and full functional design brief.

# 1 Strategic level introduction and overview

## 1.1 Purpose and context of the functional design brief

The HHS *Health Service Plan 20xx–20xx* sets out the health service and facility infrastructure requirements for the population over that period. A HHS model of care document was

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<sup>1</sup> AusHFG, available at [www.healthfacilityguidelines.com.au](http://www.healthfacilityguidelines.com.au)

prepared in 20xx It included descriptions of contemporary HHS strategic and service level models of care and models of service delivery.

This functional design brief describes the scope of a new HHS health facility based on future projections for health service delivery demand as well as the methods or models for its delivery as they translate into built space form.

The design detail provided in this brief will be used to inform the site's strategic infrastructure assessment, concept planning and facility infrastructure. It will also be used in the development of the project assessment framework's strategic assessment business case documents.

## 1.2 Overview of the project

Stage one of the functional design brief for a facility describes the design requirements for a new purpose built standalone XX bed secondary facility, which will service the HHS.

The scope of the project includes a XX bed facility, standalone XX bed mental health unit, a central energy facility, childcare centre and public and staff car parking.

These new facilities are designed to meet the HHS level of health services projections to 20xx–xx.

The design approach for the new facilities will reflect contemporary practice as well as providing future proofing and flexibility of use for changing models of care.

## 1.3 Interpretation

The functional design brief must be read and interpreted in its entirety. The individual parts of the functional design brief are not stand alone or exhaustive provisions as to their subject matter and must be considered in light of and within the context of the other parts of the functional design brief.

Floor area calculations should be undertaken in accordance with *CIR Volume 1 Overview* and instructions on how to measure drawings.

## 1.4 Glossary

Commonly used acronyms used throughout this brief should be listed here.

# 2 Project background

The healthcare needs and medical care of Queensland's population are changing. Queensland has a growing, ageing, decentralised and diverse population. The demand for health services is increasing and there is a limited healthcare workforce supply. Continuous technological and pharmacological developments are likely to impact on the way services are delivered and located.

The HHS *Health Service Plan 20xx–20xx* indicates that a new facility is required to expand the HHS's range and capacity of clinical services to meet the growing and increasingly complex healthcare needs of its population. The HHS is located in the south east corner of the state where there is rapid population growth across all age groups. Investing in a new facility will assist in meeting the objectives of Queensland's health system reform.

The new facility services will include:

- clinical services: emergency department, overnight and short stay medical services, overnight and day stay surgical services, sub-acute care and rehabilitation, maternity, paediatrics, critical care, mental health and ambulatory care
- clinical support services: radiology and pharmacy
- non-clinical support: central energy plant, childcare centre, staff and patient car park.

The facility's patient-centred model of care will strengthen the partnerships with other facilities across the HHS and with agencies and sectors across Queensland's healthcare system. The model of care will improve efficiency by better meeting people's needs across the health continuum.

In 20XX a master plan was completed for the entire facility site. On the basis of the findings of that master plan, a short design brief was prepared for this facility the same year and submitted to the HHS executive. Elements of this functional design brief are based on the findings of that master plan and the 20XX design brief.

## 2.1 Vision for the project

The facility will deliver high quality health services in a modern setting which maximises its surroundings to the benefit of all patients and staff.

The facility will support innovation and implementation of the elements of the statewide health reform process for the HHS. The facility will continue to be actively involved with health faculties of associated universities by providing undergraduate and postgraduate education for health and related disciplines as well as playing a role in the vocational and educational training sector.

The facility will emphasise research in the design and delivery of care to the HHS community by including the concepts of the healing environment and advanced technology together with high quality medical care. The focus on patient-centred care will be embedded in the planning and design.

The facility will be designed as a healing environment that incorporates the use of gardens, water features, natural light, colour, artworks and views in its design while also providing for quiet and privacy. The high-quality environment throughout the grounds and the facility will be conducive to teamwork and help the HHS to attract and retain staff.

The facility will attract XX number of staff, treat XX number of outpatients per year and will provide overnight care to approximately XX number of inpatient admissions per year.

## 2.2 Project objectives

The project objectives are to:

- meet the health needs and expectations of the local planning catchment population
- develop health services in line with the objectives within the HHS and the statewide strategic health services plans
- complete stage one redevelopment of functional design brief facility
- provide an expanded facility by increasing the bed capacity to XX beds, increasing the range of clinical, clinical support and non-clinical support services, and increasing the level of clinical services capability of the existing services
- provide a contemporary healthcare facility that is designed to support the delivery of patient-centred evidence-based care in an environment that promotes healing and supports staff to deliver efficient and effective healthcare services.

These objectives will be achieved using the health service planning outcomes, relevant benchmarks, best practice, the design guidelines and technical information outlined in this brief.

## 3 Project scope

The scope of the project includes stage one development of the functional design brief facility that includes a XX bed facility, a new central energy plant, a XX bed standalone mental health and ambulatory service buildings, childcare centre and a new staff and visitor car park. Stage one development does not include development of the rehabilitation services building. Rehabilitation services will form part of the stage two development.

## 4 Strategic policy and direction

### 4.1 Facility or Hospital and Health Service overview

#### 4.1.1 Hospital and Health Service health service planning

The HHS covers an area of 4847 square kilometres in the south east corner of Queensland. The majority of the HHS is classified as metropolitan and regional with no areas classified as rural and remote.

HHS health service planning undertaken in 20xx indicates a 25 per cent increase in the network's overall population by 20xx.

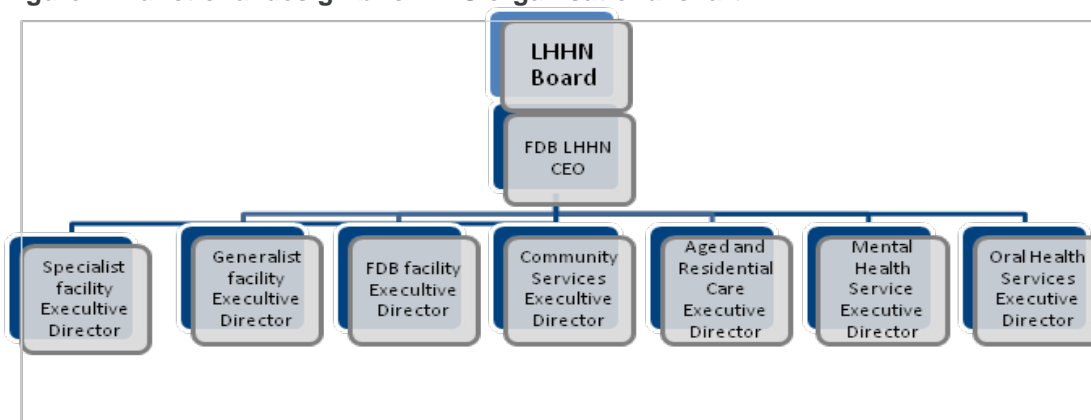
The HHS's population will increase across all age groups with the most significant growth in the over 65 year age group. Nearly a fifth of the population within the HHS area (18.9 per cent) were born overseas. Nine percent of the HHS population speak a language other than English at home. Indigenous Australians make up 1.6 per cent of the network's population, which constitutes 8.7 per cent of Queensland's total Indigenous population.

## 4.1.2 Organisational chart

The HHS has a governing board to which a Health Service Chief Executive and other HHS executives service and other employees report. The HHS reporting structure is summarised in

Figure 1. Each of the facilities and services are governed by an executive director who has a reporting relationship to the Health Service Chief Executive.

**Figure 1: Functional design brief HHS organisational chart**



Source: HHS Health Service Plan 20xx–20xx

## 4.1.3 Hospital and Health Services

The HHS will continue to provide a range of services including:

- acute and subacute services
- residential aged care services
- primary healthcare services
- an integrated mental health service, including community and acute facility care
- statewide super specialty services
- major role in research, education and training.

## 4.2 Strategic models of care

The HHS health facilities and services operate under a clinical network governance structure. A range of services are provided across the HHS supported by and functioning in collaboration with the specialist facilities and services. Collaboration also includes primary and community sectors such as local general practitioners and private health services, and other government and non-government services. State wide outreach clinical services are provided to regional centres by specialists from metropolitan services. The HHS promotes

and supports integrated models of care ensuring that patients receive quality, coordinated care, and that gaps, duplication and fragmentation in the provision of services are minimised.

The future vision of the HHS facilities is an integrated healthcare approach where the primary focus continues to shift to the patient, rather than a system which focuses on the health service provider and health delivery setting. Patients will move seamlessly within the primary and secondary setting depending upon their health condition and its severity. This healthcare approach will not be limited to patient-care based on treatment and rehabilitation. Integration of care will also include activity between services, such as those provided by other Queensland Health services, with external providers and partners, and consumers, collaborating to deliver illness prevention and health promotion.

The key focus areas of the HHS strategic models of care include:

- prevention and promotion
- early detection and intervention
- integration and continuity of care
- self-management.

## 5 Facility profile

### 5.1 Demographics

Health service planning for the local planning catchment was undertaken as part of the HHS health service planning in 20xx. Population analysis for the catchment indicates that the population is projected to increase by 80,000 persons, an overall population increase of 51 per cent by 20xx. The age profile increases for all groups with the most significant increase in the over 65 years age group. These trends are similar to that of general population trends across Australia, suggesting an overall ageing population.

### 5.2 Activity projections summary

This section summarises the projected activity for functional design brief facility based on the service planning undertaken in 20XX. This activity data is the basis on which the facility is planned. However, actual activity, length of stay and bed occupancy rates are likely to differ from what is predicted as demand for services alters over time with population changes and the introduction of new models of care.

**Table 1: Current and projected inpatient activity 2020–21 to 2026–27**

<b>Summary of projected inpatient activity</b>		<b>2020–21</b>	<b>2025–26</b>	<b>2030–31</b>	<b>2035–36</b>
Adult separations	Same day				
	Overnight				
Paediatric separations	Same day				
	Overnight				
<b>Total same day and overnight separations</b>					



Overnight occupied bed days

Adult  
Paediatric

**Total overnight occupied bed days**

Source: FDB Facility Health Service Plan 20XX

## 5.3 Bed and bed equivalent projections

Bed requirements for the functional design brief facility were calculated using endorsed Queensland Health service planning benchmarks. Where no endorsed service planning benchmarks are available, benchmarks have been drawn from various sources, including Queensland Health statewide health service plans, Victorian Capital Planning Benchmarks and Australian College for Emergency Medicine. Current models of care, referral patterns and admission practices were applied.

Based on the projected demand for services, the facility bed and bed alternatives required are summarised in Table 2. The projections estimate that the facility's bed/bed alternative numbers will need to increase to XX by 2026–27.

**Table 2: Bed and bed alternative requirements FDB facility 2020–21 to 2026–27**

Item	Current capacity	2020–21	2025–26	2030–31
<b>Category A: Beds</b>				
<b>A1. Overnight beds</b>				
Medical				
Surgical				
Obstetrics (maternity)				
Paediatric				
Emergency department short stay—adult				
Emergency department short stay—paediatric				
ICU/PICU/HDU				
CCU				
Neonatal (Neonatal Intensive Care Unit/Special Care Nursery)				
Mental health—acute				
Mental health—non-acute aged care				
Sub and non-acute—palliative care				
Sub and non-acute—rehabilitation				
Sub and non-acute—geriatric evaluation management				
<b>Total overnight beds</b>				
<b>A2. Same day beds</b>				
Medical				
Surgical				
Obstetrics				
Paediatrics				
Sub and non-acute				
<b>Total same day beds</b>				
<b>A3: Bed alternatives</b>				

Item	Current capacity	2020–21	2025–26	2030–31
Chemotherapy chairs/trolleys				
Ante natal day assessment unit chairs				
Renal dialysis chairs/trolleys				
Surgical (including stage 2: recovery bays—adult)				
Stage 2: recovery bays—paediatrics				
<b>Total bed alternatives</b>				
<b>Totals for Category A</b>				
<b>Total A1 Overnight beds</b>				
<b>Total A2 Same day beds</b>				
<b>Total A3 Bed alternatives</b>				
<b>Total overnight, same day beds and bed alternatives</b>				
<b>Category B: Emergency Department treatment spaces</b>				
<b>Total emergency department treatment spaces</b>				
<b>Category C: Operating/intervention rooms</b>				
Medical imaging—CT scan				
Medical imaging—fluoroscopy				
Medical imaging—general X-ray				
Medical imaging—mammography				
Medical imaging—ultrasound				
Medical imaging—MRI				
Delivery suite				
Operating suite				
Endoscopy/bronchoscopy rooms				
Radiation oncology				
Cardiac catheter laboratory				
<b>Category D: Consultation/treatment/procedure rooms</b>				
Outpatient/ambulatory care unit clinics				

Source: FDB facility health service pan 20XX

## 5.4 Summary of facility departments/units

The functional design brief facility will provide the following services at the *Clinical Services Capability Framework* (CSCF) level detailed below.

**Table 3: Proposed FDB facility services and Clinical Services Capability Framework level**

Department/unit	Type	Brief description	Proposed CSCF level
Surgical unit 4a	clinical	30 bed inpatient unit (IPU)	4-5
Surgical unit 4b	clinical	30 bed IPU	4-5
Medical unit 3a	clinical	30 bed IPU	4-5
Medical unit 3b	clinical	30 bed IPU	4-5
Renal unit	clinical	16 chair unit	4
Mental health unit	clinical	30 bed IPU	5
Maternity unit	clinical	30 bed IPU	4
Neonatal unit	clinical	12 bed IPU	4
Paediatric unit	clinical	30 bed IPU	4
Emergency department	clinical	24 treatment spaces	5
Operating room suites	clinical	12 operating rooms	5
Intensive care unit	clinical	10 bed IPU	4
Oncology unit	clinical	30 bed IPU	4
Medical imaging	clinical support	diagnostic and interventional service	4-5
Pathology	clinical support		4-5
Anaesthetic unit	clinical support		4-5
Pharmacy	clinical support	inclusive of production	5
Food services	non-clinical	production kitchen	
Security	non-clinical		

Source: FDB facility health service plan 20XX

# 6 Key operational and design principles

## 6.1 Facility design objectives

The key design objectives for this facility are:

- safe, high-quality patient-centred care
- equity of access
- efficient and effective care
- a spatial environment that is contemporary, salutogenic, flexible and adaptable
- teaching and research that is integral to the facility's service, governance and models of care
- attraction and retention of a high quality workforce
- facilitation of new best practice models of care

- effective working relationships with other healthcare providers.

## 6.2 Operational principles and design

A primary objective in the planning and design of this project is that services should be safe, of high quality and patient-centred. The overarching principles that underpin this objective are:

- that high-quality care is supported by leadership, organisational culture, research, systems and processes as well as the physical environment
- design of physical form should be a balance of staff, patient and operational needs
- design must facilitate:
  - evidence based separation of flows
  - efficient patient, staff and services flows
  - privacy and dignity for all patients
  - avoidance of healthcare associated infection
  - accurate identification of patients, staff, equipment and medications
  - avoidance of medication errors
  - collaborative efficient and effective clinical handover
  - timely access of services
  - prevention of falls and adverse events
  - minimised travel time for staff
  - patient safety, and ensure high indoor environment and safe water quality.
- evidenced based design based on the following:
  - overall spatial planning that supports standardisation of the configuration and fit-out of clinical areas
  - integration of ergonomic principles into design
  - clear visual connection between patients and staff
  - connectivity to external environment
  - control over natural and artificial light by staff and patients
  - design features that facilitate safe and effective care for people with disability and behavioural issues.
- design that is salutogenic, that is, is a cause of good health and maximises use of positive elements related to natural light, colour, images of nature, access to fresh air, visual arts and music, and 'spiritual' spaces
- spaces should have visual connectivity with pleasant views.

## 6.3 Patient environment

Specific design of patient bedrooms is covered by the AusHFG and in following sections on clinical IPUs.

General design considerations in relation to the patient environment are:

- all patient areas both inpatient and ambulatory to have access to the outdoors
- windows and doors are located to balance privacy with need for clinical observation
- access to private space for patients, carer and staff discussion

- facilitate patient safety, and ensure high indoor environment and safe water quality
- inclusion of spaces for assembly of groups of family and friends both inside and outside the building
- maximum features that allow patient control of their environment:
  - variety of lighting options appropriate for all times of the day and year
  - control of lighting on a room by room basis
  - treatments that include or exclude light
  - easily operated doors
  - minimisation of unwanted noise.

## 6.4 Staff environment

Design features to be incorporated to facilitate a positive experience of working in the facility to ensure that:

- the facility is an attractive place to work
- collaboration opportunities are enhanced
- a sense of community is engendered
- staff are easily able to supervise and observe patients
- staff are safe and not unnecessarily isolated during their shift
- all work and break spaces are designed to have windows or reference to natural light
- access to external pleasant views
- access to non-patient spaces in break times
- circulation routes both inside departments and throughout the facility are easy to navigate and understand and minimise travel time
- patient safety is facilitated and ensure high indoor environment and safe water quality.

## 6.5 Interior design

The interior design must ensure that spaces are clearly and intuitively organised, arranged in a pattern or hierarchy that promotes individuals' privacy and at a scale and proportion that complements the activity they contain.

## 6.6 Equity of access

Design will comply with the *Disability Discrimination Act 1992*. Health facilities are visited and used by people from across the entire community. Special consideration needs to be given to ease of access to the facility for the elderly, parents with children, people with a range of disabilities. Access design should specifically address the purpose of the facility which is to assist those who are unwell and may be less able to easily negotiate facilities and organisations.

## 6.7 Education and research

Teaching and research are integral to the governance and delivery of patient-care. All staff throughout the facility are encouraged and supported to participate in teaching and research activities. The overarching policy in relation to use of space is that meeting rooms and teaching spaces will be shared to maximise flexibility and promote access to a variety of learning modes. Education, research and meeting spaces across the facility will be bookable and have flexibility in their use.

The design principles to support this facility wide approach include:

- spaces must be developed to meet the education and research needs of staff and students (both undergraduate and postgraduate) and the organisations to which they belong
- a centralised skills, academic and research centre with a range of space types
- decentralised education and research spaces within or adjacent to individual units
- multipurpose meeting rooms throughout the facility
- spaces in patient areas, such as consulting rooms and patient bedrooms to undertake education and research in the clinical setting.

## 6.8 Future proofing flexibility and technology

Design must incorporate 25 per cent overall shell space for future configuration. This may be provided as a block area or through provision of additional non specified spaces adjoining a department or unit.

In selected areas a buffer of 10 per cent should be provided to allow for changes in models of care, new technologies and adaptability of use over the long-term.

# 7 Facility wide approaches

## 7.1 Access and hours of operation/zones

### Access—public

Public access will be between the normal hours of 6 am and 10 pm, seven days, via the main entrance, emergency department and mental health unit.

Access after-hours will be from 10 pm to 6 am and only via the emergency department and security monitored and access into the birthing unit. All other external doors and access points must be capable of being closed and locked after hours.

In general, design must facilitate and control after-hours access by authorised persons, through systems that are linked to staff bases. Staff must control entry and be able to identify the person prior to allowing entry.

Design must provide for central monitoring and after-hours access to all buildings on the facility site.

Control of access to all building areas will be centralised, using networked electronic systems and will be the responsibility of security staff.

## Access—staff

Design must enable staff access through public entrances as well as dedicated staff access points controlled by security staff. A separate staff entry away from public view must be provided in the emergency department, which will be used by all after hour's rostered staff.

Design must allow for casual and agency staff to access the facility after hours. Areas that staff will have access to after-hours include: the library, café, staff amenities, car park and bike lockers. Staff will have access to clinical and non-clinical areas based on need. Design must provide for safe passage from car parking to the staff entrance at all hours.

There must be secure after hours parking for on call staff.

## Hours of operation

Hours of operation are divided into three zones for the purposes of their design and management. While areas within each zone may be used and accessed 'out of hours', the design that supports occupation, use, management and control of these zones will be based on their designated hours of operation as detailed in Table 4.

**Table 4: Hours of operation by zones**

Zone	Departments/units	Hours of operation
1	Administration and management, education and training, non-clinical, supply	9 am to 5 pm, Monday to Friday
2	Reception/main entrance, ambulatory units, pharmacy, catering, housekeeping/facilities management	7 am to 7 pm, Monday to Friday
3	Emergency, IPUs, operating room suite, pathology, medical imaging	24 hours, seven days

The operating days and hours by functional or clinical areas are summarised in the following table.

**Table 5: FDB facility operating days and hours by functional space**

Functional space	Operating days	Operating hours
<b>Clinical Areas</b>		
Emergency	Every day	At all times
IPUs	Every day	At all times
Technical suites	Monday to Friday	8 am to 6 pm
Outpatient areas	Monday to Friday	8 am to 6 pm
Day areas	Monday to Saturday	7 am to 7 pm
<b>Clinical Support Areas</b>		
All clinical support areas (unless specified below)	Monday to Saturday	7 am to 7 pm
Central sterilising department	Every day	At all times
Equipment pool	Every day	7 am to 7 pm
Imaging—emergency	Every day	7 am to 7 pm
Imaging—outpatient areas	Monday to Saturday	7 am to 7 pm
Imaging—inpatient areas	Every day	7 am to 7 pm
Pathology	Every day	At all times
Pharmacy	Every day	At all times

Multi faith centre	Every day	7 am to 7 pm
<b>Non-clinical support areas</b>		
Main entry	Every day	At all times
Amenity	Monday to Saturday	7 am to 7 pm
Research	Monday to Friday	8 am to 4 pm

## 7.2 Admissions and discharges

Admissions and discharges are managed as per the HHS policies and procedures. All admissions and discharges will be managed centrally and through a networked electronic information system. The emergency department and day of surgery admission centre will admit and discharge patients within the whole of facility management process.

## 7.3 Building services

Building services will be monitored and managed through an integrated information system. Services on the system include electric power, illumination, HVAC, security and access, fire alarms, lifts, other mechanical and electrical building systems.

## 7.4 Car parking

Car parking will be provided for staff, patients and visitors to the facility. Reference should be made to the *Queensland Health Statewide Hospital Car Parking Framework*, the *Queensland Health Health Service Directive: Hospital Car Parking Provisions (#QH-HSD-042-2014)*, the *Queensland Health Standard: Hospital Car Parking—Patient and Carer Concessions (#QH-HSDSTD-042-2:2017)* and the *Guideline: Hospital Car Parking—Provision of Staff parking (#QH-HSDGDL-042-1:2014)* as well as the HHS endorsed Access and Car Parking Strategy (required under the Health Service Directive).

Design of car park will include consideration of the following:

- ease and safety of access to the site and facilities on the site
- dedicated parking for patients adjacent to ambulatory services, such as renal dialysis chairs
- location of clinical staff parking in accordance with Queensland Health and HHS policy
- safety within the car park and surrounds and transit path to and from the facility
- provision of excellent visibility, transparency and lines of sight
- provision of all-weather access to the car park from the facility.

## 7.5 Commercial and retail

A variety of functions may be provided by the commercial or retail sector. These include:

- food outlets
- café
- retail pharmacy



- post facilities
- florist/gifts/toys
- private doctor's rooms
- private pathology
- concessions for mobile vendors
- car parking.

There are some Queensland Health guidelines and policies on functional and design requirements:

- Queensland Health, Food Safety Programs
- design approach and considerations required for commercial and retail spaces
- location to be in a publicly accessible area
- security of individual premises to be separate while being within overall context of facility
- design not to include internal fit-out—shell space only will be supplied
- services provision for ICT, power, air conditioning and water supply as per functional requirements of the space type, for example a café requires exhaust vents
- flexibility of future configuration of space, such as combining two areas into one
- adjacency to outside areas is essential
- location to be based on hours of operation, such as after-hours café accessible to public
- provision for naming rights or signage
- provision for delivery of mail.

## 7.6 Disaster provision

This facility will have a role in the disaster and post disaster management for the HHS and local government area. That role in relation to incidents and disaster management will be determined and agreed during project planning.

Minimum facility design requirements to support disaster management are:

- a designated emergency operations centre in a large meeting room no less than 40m<sup>2</sup>
- a designated backup emergency operations centre in an alternative location
  - capacity to manage contaminated patients and staff outside the emergency department prior to being moved into the facility as per AusHFG
- surge capacity to triage and treat patients outside the emergency department
- ability to lock down the emergency department for a chemical, biological or radiological event
- emergency vehicle access to the facility site especially the emergency department
- a landing area to provide air access to the site, such as helipad or car park area
- capacity to operate autonomously for 48 hours. Provide detail of how essential services including water quality will be maintained in the event of a disaster.

Features of the emergency operations centre to include:

- capacity to satisfy Australian emergency management requirements
- ability to directly access communications and bed management systems for the whole facility
- be adjacent to office areas and staff amenities, centrally located within the building and above ground floor level
- high-level of redundancy for data and voice communications with two dedicated and switchboard independent outside lines
- data and voice ports to be pre-configured and labelled for use
- storage for communications equipment, fax and copying facilities, stationery and up to date copies of the relevant disaster plans for the HHS.

## 7.7 Environmental services

The environmental services department will provide all facility cleaning services with the exception of periodic deep clean of designated areas and cleaning of retail and commercial areas.

## 7.8 Food services

The food service will provide food and beverages to inpatients and outpatients of the facility. The food service will be a combination of fresh and frozen meals.

Retail outlets will provide hot and cold food and beverages to staff and visitors to the facility.

## 7.9 Infection prevention and control

Infection prevention and control requirements are informed by the Queensland Health infection control management plans, the HHS policy and procedures and the AusHFG infection control requirements.

The specific design elements that are required to facilitate these infection prevention and control practices must include:

- providing safe water quality including sufficient residual disinfectant to prevent microbial contamination in the water supply systems
- sensor taps are to be provided in clinical areas as well as at the entries to units/departments
- hand basins are to be provided as per the AusHFGs as follows:
  - ‘clinical’ standard hand basins defined as have non-touch electronic taps and minimum splash design, to be located in all bedrooms, utility rooms and treatment spaces
  - clinical hand basins to be located at entrances of units and in corridors with a small shelf above to place items while cleaning hands
  - hand basins not to be fitted with overflow valves.

- use of visual prompts/signs/aids to remind and direct staff and visitors to hand basins
- personal protective equipment (PPE) dispensers to be placed next to all hand basins
- non-detergent hand hygiene rub dispensers must be provided in all clinical units where there is patient contact and clinical area interfaces
- the AusHFG, *Part D: Infection Prevention and Control*, as well as the Handbook 260–2003 *Hospital acquired infections – Engineering down the risk* guide to requirements for isolation rooms
- requirement for control of contagion and infection control is supported by use of standard single rooms with dedicated ensuite, as well as by use of positive and negative pressure isolation rooms. All standard and special single bedrooms as defined by the AusHFGs can function as Class S isolation rooms
- Class P positive isolation rooms are single rooms with a dedicated ensuite. They are designed to reduce the risk of airborne transmission of infection to susceptible patients are profoundly immune compromised such as allogenic bone marrow transplant recipients. This room would be used for oncology and transplant patients. Class P positive pressure rooms must operate at a pressure higher than the surrounding rooms. Air exhausted from these rooms does not require filtration
- Class N rooms are single rooms with an anteroom, clinical basin for staff in both bedroom and anteroom, and access to a dedicated ensuite. Class N rooms are provided for patients who require airborne droplet nuclei isolation such as varicella or tuberculosis, through negative pressure isolation.

## 7.10 Information communications and technology services

ICT services changes rapidly and the design process must acknowledge continuous development of policy and the impact it may have on implementation. Reference should be made to Queensland Health, Health Services Information Agency. Relevant policy and standards must be applied.

Examples of the whole-of-facility approaches relating to ICT services include but are not limited to:

- extent of wireless coverage inside and outside buildings and other infrastructure on site including tunnels
- pneumatic tube system configuration, design and security requirements
- capacity to use passive, active and semi active radio frequency identification with consideration to environmental compatibility and safety issues
- ceiling mounted pendants to house services and medical equipment, their type, configurations, locations and design requirements
- integrated nurse call system. Consider whether it must be the same system across the facility and all buildings on site
- audio-visual services—digital or analogue, level of integration throughout facility, range of uses (e.g. telehealth)

- non-clinical/management software applications, such as central booking and scheduling of space and patient attendances, automated admissions
- digital and automated information displays and wayfinding
- workforce technologies can assist staff to undertake their work safely and in a manner that also supports their skills and knowledge base. Technologies can assist in the provision of safe care to our patients by avoiding rework, as well as automating routine tasks or reassigning them to alternate staff
- the information technologies to be applied facility wide include software for the following:
  - drug calculation, dispensing, distribution
  - order entry
  - access to results
  - general distribution and storage systems including goods and services
  - just in time supply chain system to the point of use.

Change management strategies are being developed both across Queensland Health and at HHS level to maximise the opportunities presented by the new facility.

## 7.11 Linen

All facility linen is supplied and managed through the central linen service with the exception of specific requirements of some clinical units, such as paediatric inpatients, mental health and the dementia unit. A limited on site facility laundry will be provided for the needs of these units.

One patient and family access laundry with one washing machine and dryer will be provided.

## 7.12 Mail

Incoming and outgoing mail will be managed centrally by administrative services from a mail room on ground floor which has ease of access. Provision will be made for retailers to receive their mail separately.

## 7.13 Medical imaging

Most medical imaging services will be provided from one centralised location with the addition of two satellite services, one in the emergency department and one in the operating theatre suite. Services include: general x-ray, ultrasound, fluoroscopy, computed tomography and magnetic resonance imaging. Mobile x-ray units will be located in the intensive care unit (ICU), operating theatre suite and in one medical IPU, to provide a mobile service where required.

A networked radiology information system and picture archiving and communication system will manage data collection, retrieval and reporting throughout the facility. X-ray film viewing screens are only to be provided in medical imaging (MI) reporting rooms and one in the emergency department. All x-ray films will be converted to digital media immediately on presentation at the facility.

## 7.14 Medication management

The medication management model for the HHS requires a consistent and standardised comprehensive management approach to be applied throughout the facility. The medication management service will include the following:

- electronic information systems to manage procurement, storage, medication knowledge, prescribing
- centralised management of medications
- imprest system in all clinical units in the clean utility including storage of medication trolleys
- storage of patient medications in individual bedside or other in room lockers
- provision for the safe storage and easy access by patient to their own medications
- both in-ward discharge dispensing and private space for discharge medication training at pharmacy to facilitate pharmacist involvement throughout the patient stay
- capacity for future pharmacy automation systems.

## 7.15 Patient flow

The following principles apply to the whole-of-facility patient flows:

- provide access to patients and members of the public without disrupting workflow of clinical and operational staff
- separate patient and public flows in all clinical units and give preference to separation of patient and public when transiting between clinical units
- provide a dedicated lift for hotel services including delivery of goods and removal of waste and dirty linen, and delivery of food and clean linen
- no access for patients and public to any back of house areas
- preference to be given for 'back of house' pathway for the deceased
- for specialist units:
  - interventional suite requires separation of dirty and clean flows
  - provide a peripheral area for arrival and de-boxing of goods for interventional suite
  - provide a dedicated staff entry to units including: interventional suite, intensive care, coronary care, medical imaging and emergency department dedicated entry.

## 7.16 Patient safety and quality

The design of the facility will support patient safety and quality through the following:

- use of modular design
- standardised location of equipment, technology, supplies and room layout
- reduce ambient and specific noise sources
- visibility of patients to staff

- design to minimise patient falls, such as unobstructed corridors and space around patient bed
- immediate accessibility to information particularly that needed for decision making, close to the point of service
- use of adaptive systems that will allow introduction of future technology and ICT systems
- ensure high indoor environment and safe water quality.

## 7.17 Pneumatic tube system

The facility is to include a pneumatic tube system (PTS) to enable cylindrical containers to be propelled through a series of tubes to key locations around the facility. Small bore PTS (around 160–300mm diameter) will distribute pharmaceutical goods, specimens and the like. All clinical and clinical support departments/units will have stations. The following units must have dedicated point to point transfer:

- emergency to pathology
- intervention suite to pathology
- intensive care unit to pathology
- birthing suite to pathology.

## 7.18 Room configurations and percentage of single rooms

The minimum target percentages for general acute and sub-acute (non-specialist) inpatient room configurations are as follows:

Single rooms	60 per cent
Double rooms	20 per cent or as clinically required
Quad rooms	20 per cent or as clinically required.

The percentage of single rooms includes positive and negative pressure isolation rooms.

Each single room will have a dedicated ensuite and will be designed to facilitate:

- patient privacy and dignity both physical and communication
- patient control of viewing windows
- acoustic privacy
- reduced incidence of hospital acquired infections
- reduced incidence of patient falls through ease of direct access to the ensuite, space for two staff to assist a patient to the ensuite, provision of adequate space around the bed for transfer and a direct line of sight from the bed to the ensuite
- ease of access from both sides of the bed when up to four people may be in the room
- capacity for family and carers to stay overnight where appropriate
- capacity to provide treatment and therapy at the bedside
- visibility of the patient's head from the corridor

- access to outdoor spaces
- ability to turn double rooms into single rooms.

## 7.19 Security

While the philosophy of the HHS is that both management and staff must take joint responsibility for protecting themselves and others, the design approach and built environment plays an important role in safety of staff, visitors and patients.

A security risk assessment process must be applied to this project using ‘security by environmental design considerations’ and crime prevention through environmental design principles and other methodologies.

Functional areas that have specific requirements for security services and secure design features are:

- emergency
- helipad
- mental health unit
- pharmacy
- operating room suite
- women’s and children’s services
- mortuary
- aged acute (psychogeriatric) mental health unit.

## 7.20 Shared space approaches

There are instances where taking a communal or shared approach to the use of space, is more efficient and promotes better use of space overall. A communal approach is one in which the spaces are not owned by a specific department or unit and may be used by any unit that would normally occupy similar spaces. This is facilitated by using a central booking system. The following are types of spaces which will be shared in the facility:

- waiting and reception areas for ambulatory services
- ambulatory consult and treatment rooms
- education and teaching rooms, facilities and spaces
- meeting and conference rooms
- staff amenities with the exception of units secured on a 24 hour, seven day basis, such as operating theatre suite.

## 7.21 Staff amenities

In general, staff amenities will be co-located as much as possible to avoid duplication and inefficiency. Access to staff amenities including toilets, showers, change rooms and lockers will be supplied as per the regulatory requirements and on the basis of Queensland Health

policy for all staff. Notwithstanding provisions of industrial agreements, lockers will be provided on a shift share basis and will not be allocated to individuals.

## 7.22 Telehealth

The facility network will be designed to provide for use of Telehealth technologies throughout the facility in a variety of settings. Telehealth equipment and operation will be managed as part of the ICT service and will be available to all services and units as required.

## 7.23 Transport and access of patients, staff and visitors

Design will give consideration to facilitating the easiest pathway and wayfinding from public transport to the main entry and emergency department.

In the driveway outside the main entry and emergency department, provision must be made for:

- drop-off and pick-up short-term parking
- volunteer patient transport services, both car and minivan, short-term parking
- taxis.

## 7.24 Visiting hours

Visiting hours for the facility will be X to X in the morning and X to X in the afternoon/evening. Clinical units that may vary visiting hours on an as needs basis are intensive care unit, special care nursery, maternity and paediatric IPUs.

Design must always provide the capacity to manage visitors on the basis of patient condition and preference.

Generally, visitors will have the ability to stay overnight. However, intensive care unit, special care nursery, and maternity and paediatric IPUs will have dedicated, but limited facilities for visitor overnight stay. Alternative non-facility provided overnight stay arrangements will be available.

## 7.25 Waste management

All aspects of waste throughout the facility will be managed by the HHS operational services department within policy, standards and procedures.

The following principles apply to waste management:

- preference for 'back of hours' routes for all waste removal including clean, contaminated, and hazardous wastes
- provision is made for removal, transit and storage of hazardous wastes using specialist equipment.



## 7.26 Occupational health and safety

Occupational health and safety (OHS) requirements are outlined in Queensland Health policies including the *Health, safety and wellbeing policy (QH-POL-401:2018)* and various implementation standards (QH-IMP-401-x). In addition, there are numerous Queensland Health guidelines, protocols and implementation standards as well as HHS policy and procedures.

Design must have the safety of staff and patients as a prime objective.

Specific design requirements include:

- integration of OHS outcomes into all aspects of design to minimise illness, injury and damage to property
- incorporation of a risk management approach to design, through hazard identification and reduction, risk assessment and control processes
- design features that specifically mitigate known risks including:
  - falls, slips and trips
  - hazardous materials handling
  - needle stick and body fluid exposure
  - radiation hazards
  - patient handling
  - manual handling
  - violence within facility boundaries
  - occupational stress
  - shift work and fatigue.

## 7.27 Workstations and office accommodation

Workstations and office accommodation will be provided as per the Queensland Health *Workplace and Office Accommodation Guidelines (QH-GDL-057-2008)*.

Core facility wide administrative functions, such as general, nursing and medical administration, finance and human resources will be co-located in one location with all necessary support services.

Provision will be made for centralised general administrative functions, workstations and offices in one location for clinicians who work across the facility and to provide flexibility of use into the future.

Office accommodation will not be provided more than once per eligible individual.

For identified clinical staff, workstations and offices will be located within or adjacent to clinical areas where possible. The primary design objective will remain as the efficiency of clinical departments.

Offices will be provided as summarised in Table 6.

**Table 6: FDB facility workstation and office provisions**

Office resident	Configuration	Office size
Board chair	Dedicated	18m <sup>2</sup>

Health Service Chief Executive and senior executive of HHS	Dedicated	18m <sup>2</sup>
Executive member of HHS	Dedicated	15m <sup>2</sup>
Service director	Dedicated	12m <sup>2</sup>
Pathologist offices, includes 3m <sup>2</sup> for microscope	Dedicated	12m <sup>2</sup>
Staff specialists/senior clinician including medical department heads	Dedicated	9m <sup>2</sup>
Nursing directors	Dedicated	9m <sup>2</sup>
HHS senior nurses	Dedicated	9m <sup>2</sup>
Nurse unit managers with supervisory responsibilities	Dedicated	9m <sup>2</sup>
Business managers with supervisory responsibilities	Dedicated	9m <sup>2</sup>
Various shared office	Shared 2 persons	12m <sup>2</sup>
	Shared 3 persons	15m <sup>2</sup>
	Shared 4 persons	20m <sup>2</sup>
Open plan workstations	Dedicated workstation	5m <sup>2</sup>
Hot desks	Shared workstation	4m <sup>2</sup>

*NB: Table contents are example only*

### 7.27.1 Design considerations

Design of workstations and offices will be modular and repeatable, meaning that there will be one set of options available for application across the entire facility.

Open plan workstations will be provided where possible.

Where open plan areas are provided, adjacent meeting rooms must be provided.

Maximum access to natural light and windows must be afforded to all open workstation and office residents.

Office support functions such as multifunction devices must be located within easy reach of all staff.

Non-installed window treatments must not be used.

Where hot desks are located, easy access to lockers must be provided.

## 8 Functional description and relationships

### 8.1 Functional areas

Functional areas or zones are all of the areas within a HPU, clinical support or non-clinical support service, such as a HPU may include the following:

- main entry, reception, clerical area
- assessment, procedural area
- staff offices, administrative and management area
- staff amenities area
- inpatient area, including outdoor areas.

### 8.2 Nature of functional relationships

Functional relationships are defined throughout the brief to describe the co-dependencies and interdependencies of areas within the facility as a whole, and of individual functional planning units, clinical support and non-clinical support services. Certain relationships are required to determine the configuration of the facility. Key functional relationships to services and units are provided to describe the internal and external physical relationship of functions and the flow of movement.





The basic form of the facility includes the following functions:

- inpatient functions
- outpatient, ambulatory functions
- diagnostic and treatment functions
- administrative functions
- service functions, such as food and supply
- research and teaching functions.

### 8.3 Specification of functional relationships

The specification of the flows and access for functional relationships has been classified using the terms, symbols and definitions summarised in Table 7.

**Table 7: Functional relationship classifications, symbols and definitions**

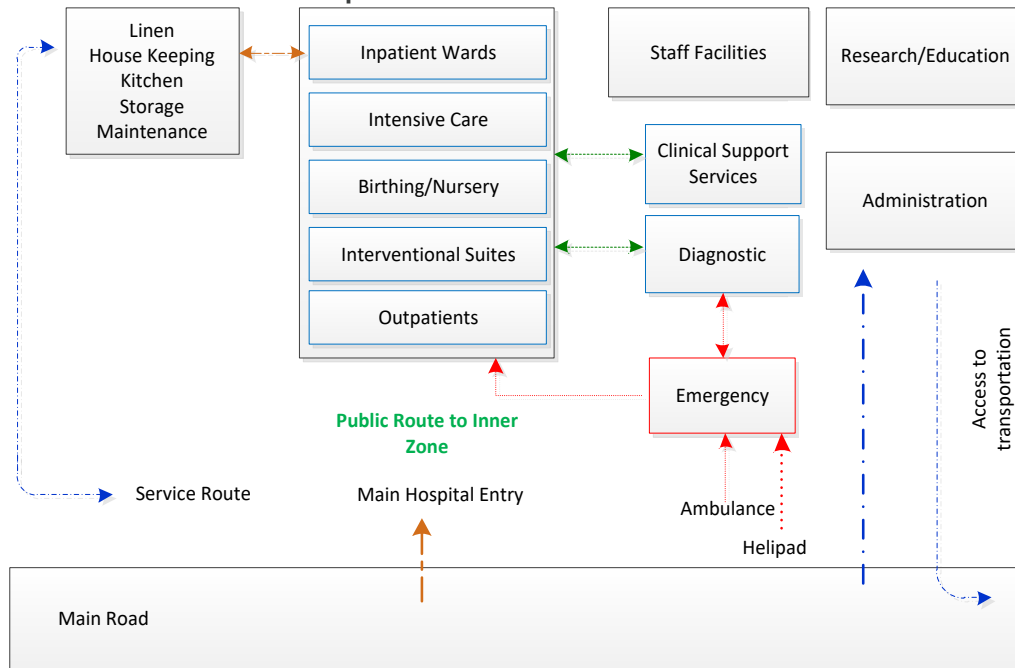
<b>Access</b>	<b>Line Type</b>	<b>Definition</b>
Immediate (<1 minute)		Indicates a required adjacency, being the shortest direct, horizontal route.  The route must be an unimpeded.  Door to door travel time between the two areas or services identified as having an 'immediate' functional relationship must not exceed one minute.
Direct (<2 minutes)		Being a direct horizontal or vertical route.  The route must be an unimpeded.  Door to door travel time between the two areas or services identified as having a 'direct' functional relationship must not exceed two minutes and there must be minimal corner turns between the two areas or services.
Ready (<5 minutes)		Being a horizontal or vertical route.  Door-to-door travel time between the two areas or services identified as having a 'ready' functional relationship must not exceed five minutes.
Routine (5 or > minutes)		Being a horizontal or vertical route.  Door-to-door travel time between the two areas or services identified as having a routine functional relationship with access five minutes or greater.

The terms in the table have the following meanings:

- horizontal means on the same floor of the facility
- vertical means via a lift or stairs within the facility
- travel time means the travel time achievable at an average walking pace of 5 km per hour
- unimpeded route means travel between areas or discrete services are not obstructed by security doors; do not require travel through busy or crowded areas, do not require movement between different buildings; allow for unrestricted movement of a critical patient, biomedical equipment and accompanying staff.

Whole-of-site functional relationships are summarised in Figure 2.

Figure 2: Whole-of-site relationships



Example Flows



## 9 Workforce

### 9.1 Current and projected

As of 20XX the total current workforce for the facility is XX staff representing XX Full Time Equivalent (FTE).

Future staffing numbers will change dependent on the model of care, increasing number and configuration of beds and other patient spaces.

The HHS is aware of the need for redesign of health workforce roles and has participated in role redesign implementation, such as advanced nursing roles, physician assistants, anaesthetic assistants and lifestyle coordinators.

The key focus of the HHS model of care is the patient-centred approach. To support the implementation of the patient-centred approach the facility design must facilitate a greater staff focus on direct patient-care and less on the administrative tasks that take them away from the patient. To enable greater patient focus:

- the management of documentation and records must be able to be undertaken in or near the patient bedroom
- requirements for patient-care, such as information, test results, order entry, medication, linen and general supplies must be available in the patient bedroom or be stored in a manner that does not take clinical staff away from the patient
- physical design must also allow for staff-staff interaction as well as patient-staff interaction as clinical team interaction is crucial to the provision of appropriate and safe care.

Workforce planning is predicated on the application of new technologies that will assist staff to undertake their work safely in a manner that supports their skill and knowledge base.

To meet health service activity projections, it is estimated that the workforce will need to grow over the next XX years (or between 2012 and 20XX) as follows:

- Administrative, management      XX%
- Facility management                XX%
- Health practitioners                 XX%
- Medical                                 XX%
- Nursing                                 XX%
- Operational                            XX%
- Technical                                XX%

## 9.2 Clinical, clinical support and non-clinical workforce profile

The current and projected whole-of-facility workforce profile by FTE and number of people is summarised in detail in Table 8.

**Table 8: FDB facility clinical, clinical support and non-clinical workforce profile**  
**Whole of facility Staff Profile**

Type	Classification	Current FTE	Current no people	Projected FTE 20XX	Projected no people 20XX
Nursing	Grade 12	1.00	1		
<b>Sub total</b>					
<b>Medical</b>					
Senior staff specialist	L29				
Staff specialist	L26				
Senior registrar	L13				
Registrar	L4				
Resident medical officer	L2				
Intern	L1				
<b>Subtotal</b>					
<b>Health practitioner</b>					

<b>Subtotal</b>		
<b>Professional stream</b>		
<b>Subtotal</b>		
<b>Technical stream</b>		
<b>Subtotal</b>		
<b>Operational stream</b>		
<b>Subtotal</b>		
<b>Dental</b>		
<b>Subtotal</b>		
<b>Building engineering and maintenance</b>		
	HBEA	
	Engine driver	
	Apprentice	
<b>Subtotal</b>		
<b>Management/administrative</b>		
<b>Subtotal</b>		
<b>Non Queensland Health service providers</b>		
Ambulance		
officers		
Police officers		
Volunteers		
<b>Subtotal</b>		
<b>TOTALS</b>	<b>106.80</b>	<b>150</b>

### 9.3 Impact on design

Provision must be made for the projected increased workforce FTE and staff numbers in terms of the following:

- car parking
- staff amenities—at unit level and overall throughout the facility
- security—access management
- sign on areas.

## 10 Accommodation brief

The following table is a summary of area requirements for each of the departments/units provided in example chapters. Allowance is made for associated functional units and spaces such as outdoor enclosed areas which might be included in scope.

Table 9: FDB facility accommodation brief

Service area	Room/space type	Number
<b>Inpatient areas</b>		
<b>General surgery IPU</b>	High acuity and acute recovery beds	30
	ICU/CCU/NICU beds	-
	Mental health beds	-
Total		
<b>Emergency service</b>		
	Diagnostic assessment unit—patient bays	-
	Trauma and resuscitation—patient bays	-
	Observation—patient bays	-
	Treatment area—patient bays	-
Total		
<b>Perioperative</b>		
	Operating rooms	-
	Procedure rooms	-
	Recovery bays	-
	Interventional imaging—cardiac catheter	-
	Interventional imaging—MRI	-
	Endoscopy procedure rooms	-
Total		
<b>Outpatients</b>		
	Generic consulting rooms	-
	Generic treatment rooms	-
	Specialist rooms	-
Total		
<b>Day areas</b>		
	General day beds	-
	Renal beds	-
	Cancer beds	-
	Day surgery	-
Total		
<b>Imaging modalities</b>		
	General X-ray and fluoroscopy	5
	CT	2
	MRI	1
	Ultrasound	4
	OPG	1
	Gamma cameras	-
	Mobile X-ray	5
	Cardiac catheter laboratory	1
	Vascular procedure room	1
Total		

Functional unit	Input parameter
Production kitchen	350 beds@.85% occupancy x 3 meals/day
Car park—basement, covered and uncovered	N/A
Central energy facility	N/A
Childcare centre	N/A
Outdoor enclosed space	400m <sup>2</sup>



# 11 Clinical service department/unit example

The following clinical service department/unit content is by way of example only.

## 12 Adult surgical inpatient unit

The primary purpose of the surgical IPU is to provide suitable accommodation for the delivery of healthcare services by multidisciplinary teams to admitted patients.

Healthcare services include diagnosis, surgical interventions, treatment, care and education. The unit also provides a suitable working environment for staff and amenities for families, carers, visitors, staff and students.

### 12.1 Scope of service

The unit is a 30 bed adult surgical IPU offering a range of surgical specialties at CSCF level 4–5. The unit will cater for patients 18 years and older and requiring an overnight stay in an inpatient environment. The surgical services provided on the unit include:

Specialty/sub specialty	CSCF level
• General surgery	4
• Upper gastro-intestinal tract	4
• ENT	4
• Orthopaedics	4-5
• Vascular	4
• Urology	4-5

Clinical networking arrangements with other HHS facilities enable access to specialty surgical services not available on-site. The following networking arrangements have been established for specialist services:

- neurosurgery, cardiovascular and spinal surgery will be provided at the HHS specialist facility
- plastics, reconstructive and ophthalmology services will be provided at the HHS general facility.

Patients assessed as requiring urgent advanced surgical management above the CSCF level of the service are transferred in accordance with HHS medical retrieval arrangements—either to the specialist facility or wherever an intensive care unit bed is available.

Patients requiring rehabilitation will be referred to the rehabilitation IPU. Access to rehabilitation beds is currently limited and often results in patients spending increased days in acute inpatient areas. The rehabilitation IPU is planned for the stage two development.

## 12.2 Model of care

The unit will provide multidisciplinary case management for acute surgical care for booked and emergency adult patients. Patients will come from the local planning catchment and from bordering planning catchments by referral. The patients admitted to the unit will require a minimum overnight stay with the average length of stay being 2.58 days.

The unit on most occasions will be dedicated for surgical patients. On some occasions medical patients may need to be accommodated in the unit depending on demand. When possible, medical patients will be allocated to a dedicated area within the unit. Male and female patients will be accommodated and separated through single rooms. Multi-bedrooms will accommodate patients of the same gender where possible.

A patient centred approach will be provided and will require:

- the inclusion of patients and their family/significant other in the planning and delivery of care. Care planning and patient and family education will commence at pre-admission
- admissions will generally be on day of surgery, with a small number of patients requiring admission the night before surgery. For example, in cases where there is a pre-existing medical condition or long travel distances
- focussing care services around the patient and within their bed area
- providing treatments or therapies either at the patient's bed or in the unit's treatment and/or therapy room
- holistic multidisciplinary care involving integrated healthcare teams including medical, nursing, allied health, operational and administrative staff
- tailored nursing models of care to suit the needs of the patient and/or cohort of patients
- an integrated model of care across both teams within the facility and primary care settings, such as emergency department, general practitioners and community settings. This will include follow up care of patients at high risk of readmission with a focus on prevention and early intervention to minimise risk
- clinical handover at the bedside, involving the patient in the care process and assisting to minimise clinical error
- discharge planning for all booked admissions will commence at pre-admission prior to the day of surgery.

## 12.3 Workforce of the department/unit

Workforce requirements are detailed in Table 11.

**Table10: Current and projected workforce requirements for surgical inpatient unit**

Type	Department/Functional Unit Staff Profile		Current FTE	Current No People	Projected FTE 20XX	Projected No People 20XX
	Classification					
<b>Nursing</b>						
Nurse practitioner	Grade 8		1.00	1	1.00	1
Nurse unit managers/CNC	Grade 7		1.00	1	1.00	1
Clinical nurses	Grade 6		5.00	7	5.00	7
Registered nurses	Grade 5		12.00	24	12.00	24
Enrolled nurse	Grade 3		15.00	20	15.00	20
Undergraduate nurse	Grade 2		2.00	3	2.00	3
Assistants in nursing	Grade 1		1.00	1	1.00	1
<b>Sub total</b>			37.00	57	37.00	57
<b>Professional stream</b>						
	L4		1.00	1	1.00	1
<b>Subtotal</b>			1.00	1	1.00	1
<b>Operational stream</b>						
	OO4		1.00	1	1.00	1
<b>Subtotal</b>			1.00	1	1.00	1
<b>Management/administrative</b>						
	L3		1.00	2	1.00	2
<b>Subtotal</b>			1.00	2	1.00	2
<b>Non Queensland health service providers</b>						
Volunteers	N/A			4		
<b>Subtotal</b>						
<b>TOTALS</b>			<b>40.20</b>	<b>65</b>	<b>40.2</b>	<b>65</b>
<b>Legend</b>						
FTE	Fulltime equivalent					
FT	Full-time					
PT	Part-time					
N/A	Not applicable					

## 12.4 Policies impacting on built environment

All facility wide policies impact on the surgical IPU and there are no other specific policies that impact directly on the surgical IPU.

## 12.5 Operational description

The design of the IPU will facilitate the operational practices of the facility. These are detailed below.

## Hours of operation

The IPU remains open 24 hours per day, 365 days of the year. Elective surgery ceases for four weeks over the Christmas period, resulting in reduced activity in the IPU. The surgical IPU activity is directly impacted by the hours of operation in the operating theatre suite, as outlined below:

- operating theatres are open 24 hours per day, 365 days of the year
- elective surgery 7 am–4 pm, Monday to Friday
- emergency surgery 4 pm–12 am
- on-call emergency surgery 12 am–7 am
- weekends 7.30 am–12 pm.

Hours of operation impacting upon the IPU are likely to expand, due to an increase number of operating theatres, and growth in operating theatre and procedural activity.

## Access

The unit will have two access points, one for staff and one for visitors. After-hours access to the unit will be controlled through proximity swipe cards.

## Patients

Admissions will be via the following:

- booked admissions will mostly be through the day of surgery admissions unit on the day of surgery
- direct ward admissions will be limited to transfers from other facilities
- admissions will be accepted from emergency department
- transfers from intensive care unit will occur on a routine, urgent or emergency basis.

Patients will be allocated a bed based on clinical need.

Patient care will be provided within the patient's bedspace in most instances. A high proportion of patients will be aged 65 years or older, many of whom will have co-morbidities, and some may be confused or have dementia. The inpatient environment also needs to support the management of patient who may be confused or wandering.

Patients will have access to a shared lounge area within the unit.

The unit will have therapy/consultation and treatment spaces for unit patients.

## Staff

There will be a central reception and staff station next to the unit entrance from which dedicated unit administration staff will work. Administration staff will provide overview of the unit entrance, reception duties, records management, patient admission and discharge processes and filing.

Dedicated unit staff will require a secure property bay area for storage of personal belongings behind a staff controlled perimeter. Staff change rooms will be centralised within the facility.

The nurse unit manager will have an office in the unit for accessibility to staff, visitors and patients.

While the nursing model may change over time, at opening it is planned that nursing staff will be allocated to a group of patient rooms throughout their shift. Nursing shifts will be a combination of 8.5, 10 and 12 hours.

Visiting staff to the unit, such as medical and allied health will work across the entire unit and will need access to collaboration space and a temporary workspace.

Allied health staff will use the therapy room frequently throughout their shifts primarily between 7.30 am and 6 pm.

Wards persons assisting in patient care, and technical staff providing equipment maintenance, will routinely access the unit.

Staff meal breaks will be taken outside the unit in the staff amenity area or commercial facilities.

## Visitors

Visiting hours will generally be between 8 am and 8 pm but will be extended to 24 hours for relatives and careers of critically ill or dying patients. At all times visiting will be in accordance with patient condition, preference and unit safety.

Visitors will not have access to any staff areas within the unit.

All visitors will take universal infection control precautions, including hand washing and use of disinfection products in all patient rooms including isolation rooms.

## Education

Provision needs to be made for access to continuing education and relevant professional development for medical, nursing, allied health, administrative, support staff and students.

A multipurpose meeting room with access to a phone, computer and video screen functionality is required within the department for the following activities:

- staff meetings, training and education
- student education room
- patient education.

## Information and communications technology

Trained staff will access integrated clinical information systems, including imaging, pathology, and electronic health record systems at the bedside, write-up bays, staff station, staff base and clinical handover/staff collaboration room.

Nursing staff will utilise a clinical handover/collaboration room for shift handover. The total number of staff at shift handover will be equal to that of the two shifts for example the afternoon handover will comprise of staff on the morning shift and the afternoon shifts.

The clinical handover/collaboration room will be equipped for education and training and in-service activities.

The nurse call system will be integrated into the facility network.

## Clinical support services

### Pathology

The unit must have access to a pneumatic tube system for clinical samples and blood products. The visiting phlebotomy service to the unit will use the pneumatic tube system.

### Pharmacy

Patient medications will be stored in a dedicated lockable storage unit in close proximity to their bedroom area. Other medications will be secured in a lockable clean utility room with secure card access.

### Non-clinical support services

Individual patient meals will be received directly to the unit on trolleys. Space to store food trolleys during meal times is required.

Drinks and snacks will be accessible from a beverage bay throughout the day and evening. A small kitchenette will have provisions for storage of snacks and beverages.

### Equipment and materials

A large proportion of the ward medical equipment will be accessible from the centre equipment store located outside of the unit.

Storage for general and equipment stores will be required within the unit as per the AusHFG standards.

Consumables supply will be delivered by supply staff directly to the unit into the allocated store room.

### Information and communication

Telemetry from the surgical IPU to the intensive care unit for cardiac monitoring is required.

There is to be provision for one fixed PC per two beds and a fixed PC in the clean utility/medication room.

There is to be one mobile PC per four beds and full wireless connectivity in treatment and office areas.

There needs to be an increase in printers to allow patient education/patient information on discharge to be provided. Printers need to be accessible from each patient pod on the unit.

### Waste

Provision for separate general, contaminated and recycled waste needs to be made in each room/multi-bedroom.

## 12.6 Functional relationships

The 30 bed surgical IPU configuration will be as follows:

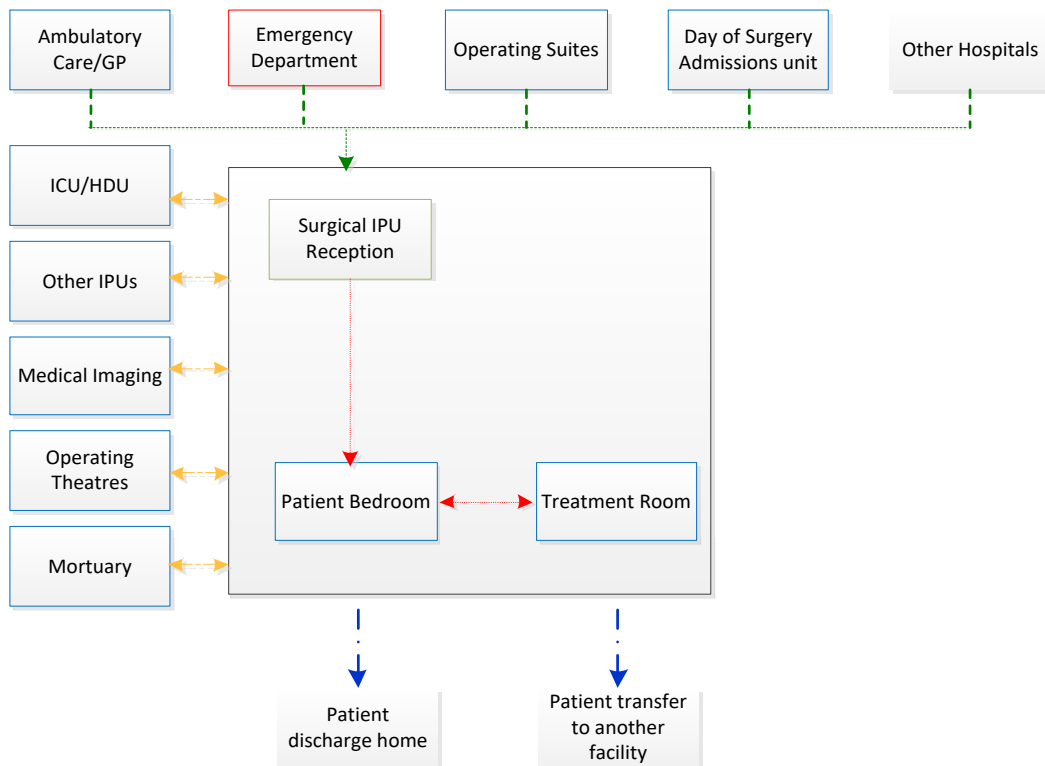
- 18 single bedrooms with non-shared ensuite comprising of:

- one single class N isolation room with anteroom
- two single bariatric rooms
- 15 standard single bedrooms.
- two double bedrooms with shared ensuite
- two quadruple bedrooms with shared ensuite.

‘Figure 3’ sets out the key external relationships for the surgical IPU. The unit must achieve the functional relationships set out below.

### External relationships

Figure 3: Relationship of areas/units external to the surgical IPU

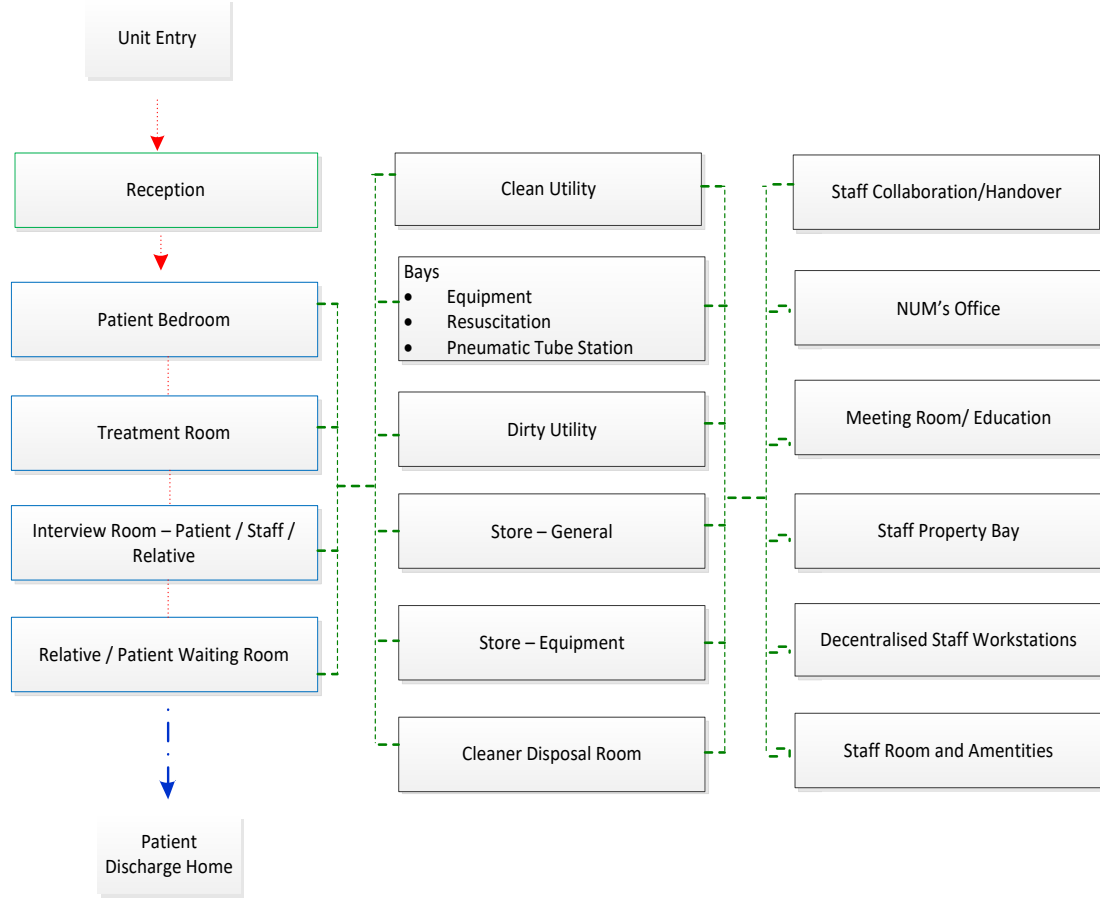


#### Example Flows



# Internal relationships

Figure 4: Relationship of areas within the surgical IPUs



**Example Flows**





## 12.7 Staging of built capacity

The surgical IPU must have convenient access to a covered patient drop off area for ambulances and the public for when patients are being admitted and discharged.

## 12.8 Future service developments and innovations

Future service developments and innovations to be accommodated include:

- provision for eHealth integration. This includes patient point of care terminals in each single room and one for each bed in a multi-bedroom
- provision for scanning devices to be accessible throughout the unit
- hand held devices that require docking stations, GPOs and data points
- capacity for future patient bedside access to the internet.

## 12.9 Specific design requirements

The design will be consistent with the elements described in the AusHFG with specific design considerations as summarised below.

### General

The design of the surgical IPU is to convey a patient centred healing environment with welcoming surrounds.

The unit is to be designed for patient and staff safety, bariatric care and be an 'elder friendly' environment. The requirements include:

- continuous coloured floor coverings
- non-slip floor coverings in wet areas
- a nurse call system with ease of operation
- low level lighting in corridors
- large font clocks
- hand basins in ensuites to be at a height to accommodate wheelchairs/shower chairs
- space for walking aids around bed areas
- communal spaces to be used for patients to socialise, a meal area and patient lounge.

Natural light and views from patient rooms to be maximised.

The design of the unit is to be standardised with the other IPUs throughout the facility to assist staff to orientate to the clinical environment.

The design of each pod within the unit is to support flexibility of nursing allocation and bed management to enable clear visibility when working across two areas. This will ensure areas can:

- be managed efficiently during periods of low activity

- accommodate medical patients in a designated area in times of high demand.

One negative pressure (Class N) isolation room is required in the unit with clear patient visibility into the room from the corridor and also the anteroom.

The patient bed area must provide appropriate space for the carers and relatives.

Patient privacy must be achieved and balanced with maximum visibility into the patient bedrooms from the corridors and nursing/staff stations.

## Architectural and building

Mobile equipment, linen and resuscitation bays must be located in the unit and positioned in the same layout as other IPUs throughout the facility.

Ceiling mounted lifting devices are to be included in the isolation room and specialising rooms within the unit. They are to be capable of lifting 350 kg. The ceiling tracks must be positioned over the bed and into the ensuite.

## Bedrooms, bedhead and ensuites

- The unit consists of two multi-bedrooms accommodating four patients with the remaining configuration of beds contained within single rooms.
- All beds require direct access to an ensuite shower/toilet or separate shower and toilet compartment.
- Larger super ensuites are provided for bariatric patients.
- There will be a standard bedhead with services such as nurse-call, light and telephone accessible to patients on one side. There will also be services such as medical gases and emergency call accessible to staff only on the other.

## Infection control

- Infectious patients or those requiring protective isolation will be nursed in single rooms.
- One (Class N) negative pressure isolation room will be located within the unit with PPE area and ensuite.
- All patient-care and utility rooms will be equipped with general staff hand basins (Type B). Generally, staff should not be more than 10 –12 metres from a hand basin.
- Gel and glove dispensers will be located in all patient-care areas and utility rooms.
- Materials used in the furnishings of the unit must meet infection control standards.

## Building and information and communication technology services

- An audio-visual intercom must be provided for after-hours access to the unit. The system is to be linked to all staff bases to enable communication with the public and to provide remote access into the unit through an automatic release door mechanism.
- Videoconferencing service capability is required in the staff collaboration/education rooms.

## Communication and security

- Card operated telephones will be beside each patient bed. Telephones for staff will be located at all staff bases and administrative areas as well as offices on the wards.

- Clinical information systems will be accessible from all staff bases, offices, treatment areas, interview rooms and education/meeting rooms. In the future, access will be via patient entertainment systems and mobile devices.
- Patient call system will provide the following call components: patient to staff, staff to staff and emergency to staff. The call points will be at every patient bed, ensuite, treatment room and patient lounge.
- Staff working in the unit are to have access to duress alarms at all workstations.

## Waste

- A dirty utility room will be required in an accessible location away from public and administration areas.
- Waste management should be in accordance with AS/NZS 3816 and as detailed in AusHFG, Part D.

An outdoor enclosed area is required for recreational and therapeutic purposes. This area will be shared with four other IPUs.

## 12.10 Schedule of accommodation

The following table summarises the surgical inpatient schedule of accommodation. This is not a comprehensive summary and is by way of example only.

**Table 11: Surgical IPU schedule of accommodation**

3000	1 BR-ST	1 bedroom–standard	Y	15	x 15	= 270	1 patient, 1-2 staff, 1-2 visitors	see standard room	nil	
30010	1 BR-IS-N	1 bedroom – isolation – negative pressure	Y	15	x 1	= 15	1 patient, 1-2 staff, 1 visitor	see standard room	nil	
30012	ANRM	anteroom	Y	6	x 1	= 6	1-2 staff	see standard room	nil	
30050	ENS-ST	ensuite – standard	Y	5	x 15	= 60	1 patient, 1-2 staff	see standard room	nil	
30006	1 BR-SP-A	1 bedroom –special	Y	18	x 2	=36	1 patient, 1-2 staff	see standard room	bariatric room	
30065	ENS-SP	ensuite –super	Y	6	x 2	=12	1 patient, 1-2 staff	see standard room	bariatric ensuite	
30014	2 BR-ST	2 bedroom	Y	25	x 2	=50	1 patient, 1-2 staff	see standard room	nil	
30016	4 BR-ST	4 bedroom	Y	42	x 2	=84	1 patient, 1-2 staff	see standard room	nil	
30020	BBEV-OP	bay beverage	Y	4	x 1	= 4	1-2 staff	see standard room	open bay includes ice machine	
30039	DTUR-12	dirty utility	Y	12	x 1	= 12	2 staff	see standard room	dual access	
30043	OFF-S9	office – single person NUM	Y	9	x 1	= 9	1 staff	see standard room	NUM office plus clinical personnel	
30046	STEQ	store – equipment	Y	20	x 1	= 20	4 staff	see standard room	size depends on equipment stored and no. of bays	
<b>Total</b>						<b>xxx.0 m<sup>2</sup></b>				

## 12.11 Summary of changes to model of care

There are no significant changes to the model of care in stage one development that will impact on design. Relevant facility wide approaches will apply to the surgical IPU and need to be considered.

## 13 Clinical support service department/unit example

The following clinical support service department/unit content is by way of example only.

## 14 Medical imaging

### 14.1 Scope of service

The medical imaging service will be a CSCF level 5 service and will provide a tertiary referral service to other facilities within the HHS. This service will provide radiology including diagnostic and interventional services for inpatients and outpatients of all facility departments and units as well as some external referrers. The service will provide 24-hour reporting on diagnostic tests. Services will be provided on both an elective planned and emergency basis.

The medical imaging department will require the following modalities

**Table 12: FDB facility medical imaging modality requirements**

<b>Modality</b>	<b>Number</b>
General x-ray	4
Ultrasound–general and doppler	4
Computed tomography	2
Magnetic resonance imaging	1
Fluoroscopy	1
OPG	1
Mobile x-ray–ICU, emergency department, one IPU, operating room suite plus one	5
Cardiac catheter laboratory–in the operating room suite	1
Vascular procedure room–in the operating room suite	1

### 14.2 Model of service delivery

The MI department will operate as the primary centre for the HHS, supporting services at all other HHS facilities.

While the majority of services will be provided in the department, a mobile service will also be provided to the intensive care unit, IPUs, operating theatre suite, mortuary and antenatal clinics.

A satellite services will operate in the emergency department and the interventional suite within the operating theatre suite.

It is anticipated that MI will act as a primary centre to the whole HHS for radiology reporting services.

Interventional radiology procedures will be undertaken in the interventional suite. The following services are provided:

- radiography including mobile imaging and procedures
- magnetic resonance imaging
- computed tomography
- ultrasound
- fluoroscopy
- dental scanning
- clinical photography
- picture archive and communication system (PACS)
- cardiac angiography
- vascular angiography.

Exclusions from the medical imaging service include:

- mammography
- paediatric CT/MRI requiring anaesthesia.

Activities undertaken for training and research are detailed in the education and research section.

## 14.3 Workforce of the department/unit

The workforce calculations are based on the following assumptions:

- medical staff numbers include directors, consultants, registrars, residents and interns providing both direct and indirect care
- nursing staff numbers include nurse managers, educators, clinical facilitators, equipment nurses, research and data nurses
- health practitioners includes radiographers and sonographers
- administration staff dedicated to the department
- operational staff includes wards persons who are dedicated to the department
- students include medical, nursing and health practitioners on placement
- staff located in satellite imaging areas are included in the workforce table.

Staff both current and future projected to 20XX is detailed in Table 13.

Table 13: FDB facility medical imaging workforce requirements

Department/functional unit staff profile: imaging					
Type	Classification	Current FTE	Current no. people	Projected FTE 20XX	Projected no. people 20XX
<b>Nursing</b>					
Nurse unit managers/clinical nurse consultants	Grade 7	1.00	1	1.00	1
Clinical nurses	Grade 6	3.00	5	3.00	5
Registered nurses	Grade 5	12.00	16	12.00	16
Enrolled nurses	Grade 3	12.00	15	12.00	15
Undergraduate nurse	Grade 2	1.00	3	1.00	3
AINs	Grade 1	3.00	1	3.00	1
<b>Sub total</b>		<b>32.00</b>	<b>41</b>	<b>32.00</b>	<b>41</b>
<b>Medical</b>					
Staff specialist	L26	5.00	5	5.00	5
Staff specialist	L22	12.00	12.00	12.00	12
<b>Subtotal</b>		<b>17.00</b>	<b>17</b>	<b>17.00</b>	<b>17</b>
<b>Health practitioner</b>					
	HP6.2	1.00	1	1.00	1
	HP5.4	10.00	10	10.00	10
	HP4.3	25.00	30	25.00	30
	HP3.2	12.00	15	12.00	15
	HP2.1	10.00	10	10.00	10
<b>Subtotal</b>		<b>56.00</b>	<b>67</b>	<b>56.00</b>	<b>67</b>
<b>Operational stream</b>					
	OO4	10.00	10	10.00	10
	OO5	5.00	6	5.00	6
<b>Subtotal</b>		<b>15.00</b>	<b>16</b>	<b>15.00</b>	<b>16</b>
<b>Management/administrative</b>					
	L6	1.00	1	1.00	1
	L4	3.00	3	3.00	3
	L3	10.00	15	10.00	15
<b>Subtotal</b>		<b>14.00</b>	<b>19</b>	<b>14.00</b>	<b>19</b>
<b>Non-Queensland Health service providers</b>					
Students		3.00	3	3.00	3
<b>Subtotal</b>		<b>3.00</b>	<b>3</b>	<b>3.00</b>	<b>3</b>
<b>TOTALS</b>		<b>137.00</b>	<b>163</b>	<b>137.00</b>	<b>163</b>

**Legend**

FTE	Fulltime equivalent
FT	Full-time
PT	Part-time
N/A	Not applicable

## 14.4 Policies impacting on built environment

There are a range of policies, standards and legislation impacting on the medical imaging built environment. Some of these include and are not limited to:

- Relevant legislation includes the Queensland *Radiation Safety Act 1999*, Radiation Safety (Radiation Safety Standards) Notice 2010 and Radiation Safety Regulation 2010. Department of Health, *Health, safety and wellbeing policy* (QH-POL-401:2018).

## 14.5 Operational description

The operational practice of the medical imaging department and satellite services will be as follows:

### Hours of operation

Radiology reporting service to emergency department and intensive care unit will be provided on a 24-hour, seven days a week.

Medical imaging department will operate from 7 am to 7 pm.

The satellite service to the interventional suite will operate from 8 am to 6 pm, Monday to Friday and on an emergency basis.

Mobile services to IPUs and outpatients clinics will operate from 8 am to 8 pm, Monday to Friday.

A limited after hour's service will be provided between 7 pm to 7 pm.

### Patient flow

All inpatients will be registered by reception.

Inpatients may arrive on beds, trolleys, wheelchairs or on foot through the inpatient only entrance.

Inpatients will be accompanied by a clinical staff member.

Inpatients will be taken directly to the modality sub waiting area or to the scanning room dependent on their condition and urgency of procedure.

Inpatients on trolleys and beds will always travel on a separate pathway to the general public and be placed in an area with privacy screening.

Outpatients will arrive via the reception area and will either wait in the general waiting room or once directed to a modality waiting area.

After hours all patients will be escorted within the department.

### Staff flow

Staff will arrive in the medical imaging department through dedicated secure staff entries which includes at least one entrance with direct access to staff amenities and adjacent offices.



Staff providing mobile services will be stationed within medical imaging department and will travel to and from the department as required.

Satellite service staff will have the medical imaging department as their primary base and will be rostered to the satellite as required.

### Visitor flow

Visitors will be restricted to the reception and general and sub wait areas.

Parents and carers of paediatric patients will be allowed to enter clinical areas under supervision.

### Other flows

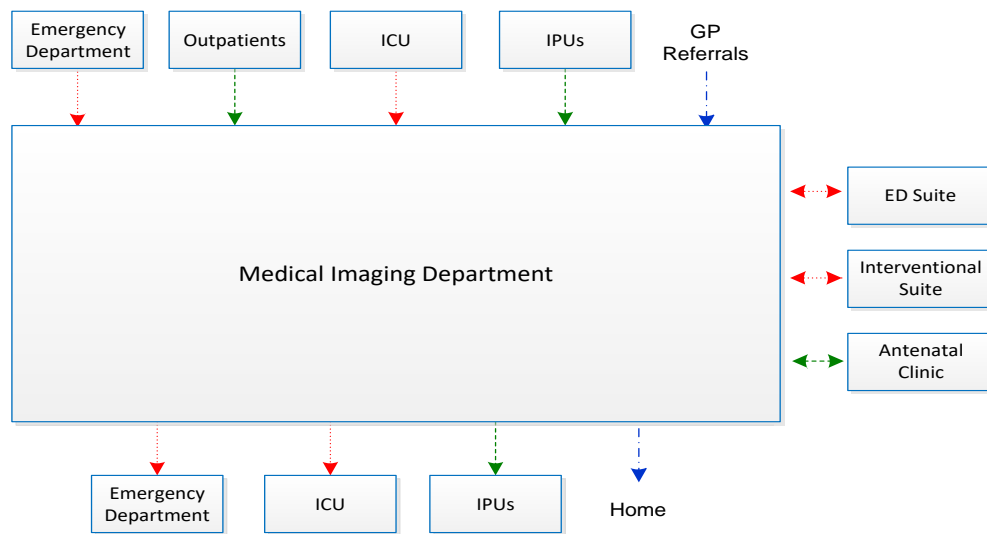
Clinical and non-clinical support services and flows are as per the AusHFG.

Equipment must be capable of being maintained, repaired and replaced without undue interruption to service delivery. In particular, large equipment items such as MRIs must be able to be moved without damage to structures and other assets.

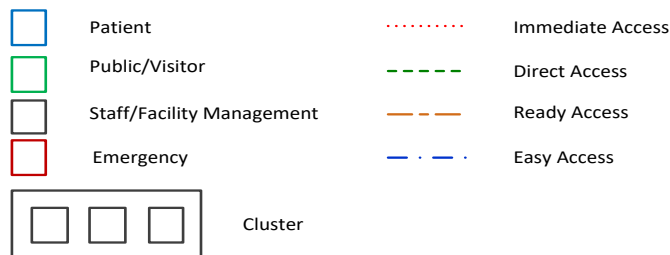
## 14.6 Functional relationships

### External relationships

**Figure 5: External functional relationships—medical imaging**

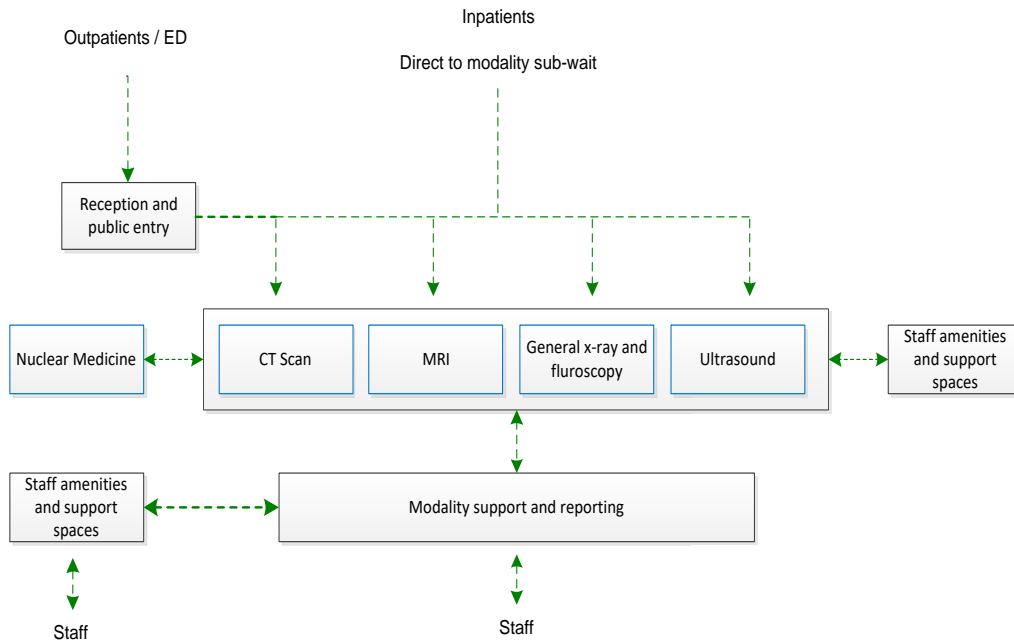


#### Example Flows



## Macro internal relationships

**Figure 6: Internal relationships (macro)—medical imaging**

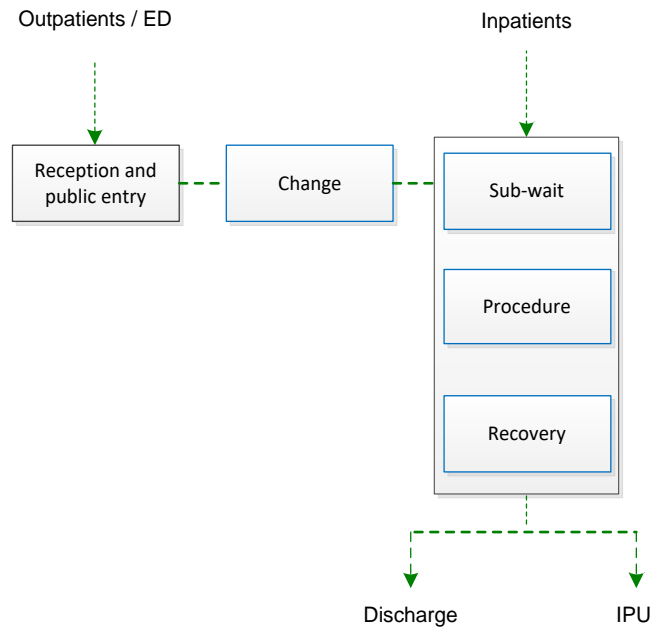


### Example Flows



## Micro internal relationships

**Figure 7: Internal relationships (micro)—medical imaging**



### Example Flows



## 14.7 Staging of built capacity

There is no staging required for this department as all modalities will be part of one stage.

## 14.8 Future service developments and innovations

Recent experience has shown that rapid and continuous change may be expected within the medical imaging modalities and service. Interventional and therapeutic options are growing and will continue to expand. This growth may require special consideration of infection control, monitoring, outpatients review and resuscitation.

Design must consider future developments and provide flexibility for expansion or change of modality such as positron emission technology or future MRI capacity.

## 14.9 Specific design requirements

### General

The main department waiting area must be adjacent to and in full view of reception. It should include a children's play area.

The department layout scheme must provide for separation of patient and staff flows to protect privacy and confidentiality.

Modalities are to be located adjacently by type.

All procedure rooms will comply with relevant AusHFG requirements including specific infection control provisions.

Adequate space and services must be provided for storage of mobile equipment bays throughout the department.

Space for resuscitation trolley bays must be provided next to the patient holding space near to the staff station.

The department must be designed to facilitate the maintenance and replacement of major imaging equipment items throughout their anticipated life span without disrupting service delivery or damaging assets by impacting on the building structure and services. Rooms housing such equipment must be located to allow easy access and include structural reinforcement along the routes of travel. Access from the exterior of the building must be provided for equipment replacement without the need for unplanned structural change.

Provision for future proofing of building services must be considered.

It must be possible to easily move and accommodate beds, trolleys and wheelchairs throughout the department.

The whole department perimeter will be capable of being secured and controlled from the reception and staff station.

Digital patient entertainment must be provided in wait areas and clinical rooms.

## Information and communication technology

All patient data, reports and images will be stored on the radiology information system (RIS) and PACS servers. RIS and PACS servers are to be located in an ICT dedicated server room within the facility to assure uninterrupted data integrity and availability. RIS and PACS data will be available on a common network throughout the facility.

Provision must be made for a mass storage server to facilitate direct link to three-dimensional anatomical imaging. This server may be located in a server room elsewhere within the facility.

The department must be capable of receiving external telecommunication downloads from other facilities and remote locations.

High speed links to other HHS facilities, referring facilities in other HHSs and external referring doctors must be provided.

The quality of monitors will be dependent on the primary purpose for accessing data. Diagnostic quality dual monitors are provided where qualified staff are usually based and the number will be based on maximum number of qualified staff working at any one time. At a minimum, they are provided in MI department reporting rooms, one set in the emergency department and one set in ICU. All other monitors to be of sufficient standard to review and view images.

## Patient areas

The patient holding area must include provision for sedated patients.

Nursing staff must be able to observe all patients easily from a central workstation with uninterrupted views to all holding bays.

Sub waits are required for general x-ray and fluoroscopy, CT and MRI with ultrasound sharing a wait area with the adjacent modality.

General x-ray and fluoroscopy rooms.

Rooms must be sized appropriately for safe work practices and allow easy movement of staff and patients. Adjacency of patient toilet and change room is required for fluoroscopy.

## MRI and CT Rooms

Cabling in all control rooms must be accessible throughout.

MRI scanners will be a minimum of 3 Tesla.

MRI and CT scanner room design must meet manufacturer and statutory requirements for the models being installed, including provisions for exclusion zones, radiation shielding and floor reinforcement, venting for gases, appropriate monitoring and alarms.

Based on the model to be installed, the weight of individual MRIs must be taken into consideration in designing floor loads.

MRI scanners rooms must include magnetic field shielding from other equipment.

CT and MRI rooms require ceiling mounted shadowless lighting with dimmable lighting provided in all examination rooms.

In MRI magnet rooms, one wall must be an external wall or adjacent to large enough circulation space for future replacement of the magnet.

Noise attenuation is required for shared control rooms, as well as ability to direct voice to the correct room with minimal interference of background noise.

## 14.10 Schedule of accommodation

The following table summarises the medical imaging department schedule of accommodation. This is not a comprehensive summary and is by way of example only.

**Table 14: Medical imaging department schedule of accommodation**

Room tag	Room code	Room name	Standard room	Briefed area m <sup>2</sup>	No of rooms	Subtotal of briefed area m <sup>2</sup>	Occupancy	Functional description	Comments
61000	Wait-30	Waiting	Y	35	x 1	= 35	25 people	see standard room	25 seats/ wheelchairs
61006	RECL-12	Reception	Y	12	x 1	= 12	2 staff	see standard room	Reception and clerical area to be adjacent
61016		PACS server room	Y	12	x 1	= 12		see standard room	
61022	GENXR	General X-Ray	Y	30	x 5	= 150	1 patient, 1 staff	see standard room	
61034	CHPT	Change cubicle – patient	Y	2	x 4	= 8	1 patient	see standard room	
61036	ULTR	Ultrasound Room	Y	12	x 4	= 48	1 patient, 1 staff	see standard room	Non-interventional procedures
61045	CTPR	CT Scanning room	Y	45	x 2	= 90	1 patient, 1 staff	see standard room	
61047	CTCR	CT Control room	Y	12	x 2	= 24	2 staff	see standard room	
61049	COEQ	CT Computer room	Y	12	x 2	= 24	2 staff	see standard room	
61053	PBTR-H-8	Patient bay – holding	Y	8	x 10	= 80	10 patients	see standard room	
61096	MEET-L-30	Meeting room – large	Y	30	x 1	= 30	6-8 staff	see standard room	
61104	BPTS	Bay – pneumatic tube station	Y	1	x 1	= 1		see standard room	
61097	SRM-20	Staff room	Y	20	x 1	= 20	8 -10 staff	see standard room	
<b>Total</b>						<b>xxx.0 m<sup>2</sup></b>			

## 14.11 Summary of changes to model of service delivery

A mobile service may be provided in the future to the antenatal clinic.

# 15 Non-clinical services department/unit example

The following non-clinical support service department/unit content is by way of example only.

## 16 Food services

### 16.1 Scope of service

The food services department will provide food and beverages to facility inpatients and outpatients for a 350 bed facility and a limited event catering capacity. A commercial facility will be available within the facility for patients, staff, visitors and the public and for alternative event catering.

### 16.2 Model of service delivery

#### Facility wide

The facility will have a central food production kitchen on site which will prepare meals from both fresh and cooked frozen deliveries. Two hot meals per day, lunch and dinner, will be centrally hot plated for immediate distribution to wards on trolleys with thermal controls.

All IPUs with the exception of specified units will receive hot plated meals. The mental health unit, midwifery, psychogeriatric and paediatric IPUs will have hot serving of meals from bains-marie or trolleys.

Hot meals with special dietary requirements will be supplied to patients as required.

Meals and sandwiches will be available to units not receiving a hot meal service. This includes units that holds patients over mealtimes and also provided to patients who have missed mealtimes.

All IPUs will have a pantry, stocked by food services, with items for mid-meal beverages and snacks. Trolleys will be stored in the pantry for distribution of beverages.

All central kitchen trolleys, food receptacles, food trays, water jugs, crockery and cutlery will be returned to the kitchen for cleaning.



A menu management information system which manages all food and groceries procurement will be in use.

The food service department will have the capacity to store on site meals and food requirements for the whole facility for a period of two days in case of post disaster.

### Production kitchen

All hot meals are to be prepared in the central kitchen. The food service will use a variety of food types, including special diet items prepared off site and purchased in bulk as well as fresh foods.

For IPUs continental style breakfasts will be assembled in the kitchen. The exceptions to this are mental health unit, midwifery, psychogeriatric and paediatric IPUs which will prepare breakfasts in the unit.

The kitchen will have the capacity for the preparation of sandwiches, snacks and meals. This includes: special events, units who don't receive hot meals or for meals required outside of normal meal times.

### Event catering

The food service department will cater to meetings, functions and events held on-site.

Facility staff are able to order catering food from either the central kitchen or alternative commercial suppliers.

## 16.3 Workforce of the department/unit

**Table 15: FDB facility food service workforce requirements**  
**Department/functional unit staff profile: food services**

Type	Classification	Current FTE	Current no. people	Projected FTE 20XX	Projected no. people 20XX
<b>Health practitioner</b>	HP5.4	1.00	1	1.00	1
	HP4.3	5.00	7	5.00	7
	HP3.2	1.00	2	1.00	2
	HP2.1	1.00	2	1.00	2
<b>Subtotal</b>		8.00	12	8.00	12
<b>Operational stream</b>	009	1.00	1	1.00	1
	007	2.00	3	2.00	3
	006	3.60	5	3.60	5
	005	5.00		5.00	
	003	15.00	20	15.00	20
	002	5.00	6	5.00	6
	001	12.00	20	12.00	20
<b>Subtotal</b>		43.00	55	43.00	55
<b>management/administrative</b>	L6	1.00	1	1.00	1

	L4	2.00	3	2.00	3
	L3	1.00	1	1.00	1
	<b>Subtotal</b>	4.00	5	4.00	5
	<b>TOTALS</b>	<b>55.00</b>	<b>72</b>	<b>55.00</b>	<b>72</b>

## 16.4 Policies impacting on built environment

Relevant legislation, policy and standards include:

- Department of Health—*Health, safety and wellbeing policy* (QH-POL-401:2018)
- *A Better Choice*—Healthy Food and Drink Supply Strategy for Queensland Health Facilities
- *Food Act 2006*
- Australia and New Zealand Food Standards Code
- Hazards Analysis Critical Control Point (HACCP).

## 16.5 Operational description

Food services will operate from 6 am to 8 pm, 365 days.

There will be three main meal times, breakfast, lunch and dinner and mid meal beverage times in the morning, afternoon and evening.

An integrated bedside meal ordering system will be provided for patients to order meals, which will be managed from the central kitchen.

A staff corridor will be provided for access to the central kitchen.

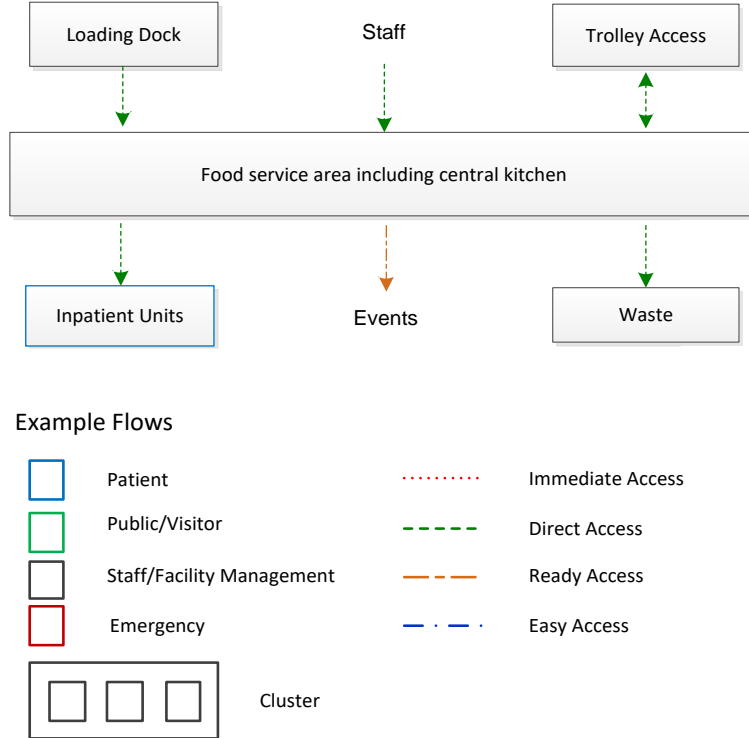
A clean corridor will be provided for transport of meals to IPUs.

Materials and consumables will be supplied on imprest from the materials management service and stored in the food services store rooms on a 'just in time' basis.

## 16.6 Functional relationships

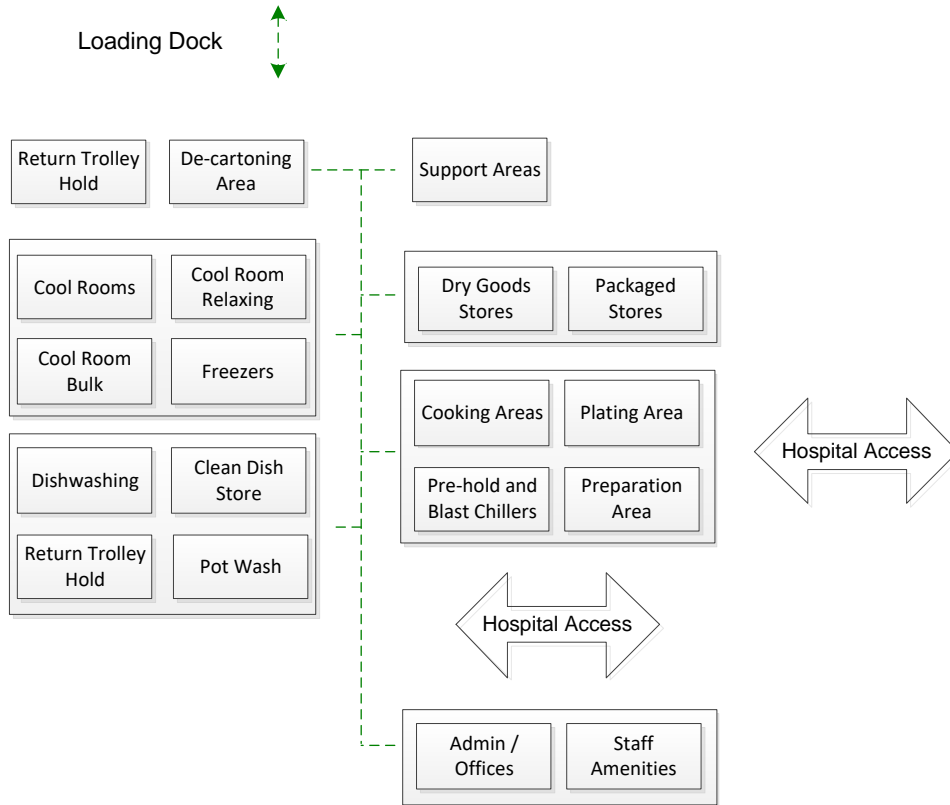
### 16.6.1 External relationships

**Figure 8: External relationships—food services**



### 16.6.2 Internal relationships

*Figure 9: Internal relationships—food services*



Example Flows



## 16.7 Staging of built capacity

Once construction is complete this department will be fully operational from day one.

## 16.8 Future service developments and innovations

Future capacity must be enabled through the integrated food management system, including ordering, invoicing, food safety and reporting functions.

Capacity must be provided for bar code reading and automated data entry at each bed side using a wireless network.

Smart cards will be supplied for staff to use at food and commercial outlets and vending machines.

## 16.9 Specific design requirements

The following specific design requirements for food services are based on a fresh cook service solution:

- design must allow for a functional, efficient operational flow incorporating receipt directly off the food service dedicated loading dock into cold and dry storage areas. This should be in proximity of preparation, cooking and plating/tray line areas and separate wash-up area
- there must be sufficient circulation space for the movement of stores and trolleys
- clean and dirty dedicated trolley areas with direct access to a trolley washing bay is required
- there must be single use packing and waste to be recycled with a minimum requirement for dishwashing
- there must be a trolley park area sufficient to hold all IPU trolleys at one time
- a storage area with capacity for all meal trays is required
- a number of segregated storage areas including refrigeration, freezer, dry goods and chemicals are required
- there must be separate storage areas for cooked and raw foods to support safe food handling
- specific temperature controls must be applied as per the use of certain areas of the kitchen
- a separate dietary formula area must be provided near the kitchen and will include areas for preparation and storage. Special requirements include refrigeration and an ICT support area to print labels
- there must be efficient distribution routes from the kitchen to all patient areas

- main kitchen must have appropriate storage, including cool rooms, freezers, separate dry and chemical stores and area assembly washing areas. Waste processing must have ready access to the loading docks and service corridors
- access to a separate de-boxing room
- storage for chemical and non-food items as per regulations
- design must comply with all current Queensland Health and food handling guidelines, including HACCP
- all temperature controlled rooms to have emergency power supply backup
- freezers and cool rooms need to maintain temperature control and be monitored with recording and alarm system connected to the Building Management System (BMS)
- food production and delivery areas must have secured controlled access points by use of proximity card or similar with authorised access only. This area must be capable of being overseen by staff
- support areas must include waste holding area, cleaner’s room and staff amenities.

## 16.10 Schedule of accommodation

The production kitchen schedule of accommodation will be undertaken by a specialist kitchen consultant.

## 16.11 Summary of changes to model of service delivery

There are no specific changes to the model of service delivery.

## **APPENDIX A      REFERENCED DOCUMENTS**

Refer to CIR Volume 1.0, section 10 for details of referenced standards and other documents.

## **APPENDIX B      ABBREVIATIONS AND ACRONYMS**

Refer to the CIR Volume 1.0, section 9.

## APPENDIX C SUMMARY SCHEDULE OF ACCOMMODATION

### FDB facility development

### schedule of accommodation

Net briefed department area	m <sup>2</sup>
Target circulation	%
Gross briefed Department area	m <sup>2</sup>

Room type	Total briefed area m <sup>2</sup>	Total no. of rooms	Subtotal of briefed area m <sup>2</sup>	Occupancy	Functional description	Comments
Main entrance and Public spaces	x m <sup>2</sup>	x x	= x m <sup>2</sup>			
Emergency Department	x m <sup>2</sup>	x x	= x m <sup>2</sup>			
Critical Care	x m <sup>2</sup>	x x	= x m <sup>2</sup>			
Operating Room Suite	x m <sup>2</sup>	x x	= x m <sup>2</sup>			
IPUs	x m <sup>2</sup>	x x	= x m <sup>2</sup>			
Ambulatory care	x m <sup>2</sup>	x x	= x m <sup>2</sup>			
Clinical support units	x m <sup>2</sup>	x x	= x m <sup>2</sup>			
Non-clinical units	x m <sup>2</sup>	x x	= x m <sup>2</sup>			
Outdoor enclosed areas	x m <sup>2</sup>	x x	= x m <sup>2</sup>			
Plant and travel allowance	x m <sup>2</sup>	x x	= x m <sup>2</sup>			
<b>Total</b>		<b>xxx</b>	<b>x m<sup>2</sup></b>			
Carpark			x m <sup>2</sup>			