



Queensland Health

Capital Infrastructure Requirements

Volume 2 Functional Design Brief

Section 2.2 Manual



Queensland Government

Capital Infrastructure Requirements - Volume 2 Functional design brief – Section 2: Manual

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<https://www.health.qld.gov.au/system-governance/policies-standards/doh-policy>

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How to use this document

Interpretation

This volume defines the standard format for the functional design brief component of the Capital Infrastructure Requirements (CIR).

Examples of completed functional design brief are in Volume 2, Section 3. It is recommended while reading this manual to refer to the examples to facilitate understanding of the required information.

This volume is a template containing three types of text.

The **first type of text** is the text in the blue box. This text box describes the nature of the content in that section and indicates the phase of the project.

Example of a content text box:

Content

Write a brief description of the project which might include:

- scope of the project
- how the project fits into the state wide and Hospital and Health Service (HHS) health service infrastructure
- *Clinical Services Capability Framework (CSCF)* levels
- desired outcomes
- special points of interest.

The **second type of text** is normal text. This text box contains the rationale for the section, or the explanation of why this section is required by planners, architects and engineers. The rationale will be found in every section of the template.

Example of rationale text:

Rationale

The description of the project provides a brief and succinct overview that creates a picture of the project for the first-time reader. It describes the scale of the project for the planners, architects and engineers and indeed anyone involved in the project.

It provides a reason for the project and explains how it meets the state and facility or HHS health service requirements.

The **third type of text** is in a clear text box. This text box is a checkpoint or stage in the process that needs particular attention, as it has implications which can impact on the process or final outcome. It is only found in some sections.

Example of a clear text box:

Checkpoint

The models of care are critical elements in the functional design brief. Clinical services are described as a model of care and non-clinical services are described as a model of service delivery.

Functional design brief stages

The functional design brief will be completed in two stages. The first stage is completed at a strategic level and is developed as the first step in the facility design process. The strategic level functional design brief relies upon a number of other documents and processes, for example the health services plan and strategic asset planning. The strategic level functional design brief is used in the strategic infrastructure assessment process and may be used in the strategic assessment of service requirements.

The second stage is the full functional design brief. If a decision has been made to progress the facility project, the full functional design brief is completed. The full brief will require a review of the material in the strategic level with the addition of a section for each relevant department or unit section also completed. The full brief is used in the preliminary evaluation and in master planning of the facility site. See Figure 1.

Strategic level functional design brief

The strategic level functional design brief consists of the following sections and is completed for all capital infrastructure projects:

- introduction and overview
- project background
- project scope
- strategic policy and direction
- facility profile
- summary of facility departments/units
- key operational and design principles
- facility wide approaches
- functional description and relationships
- workforce
- accommodation brief
- approach to BIM.

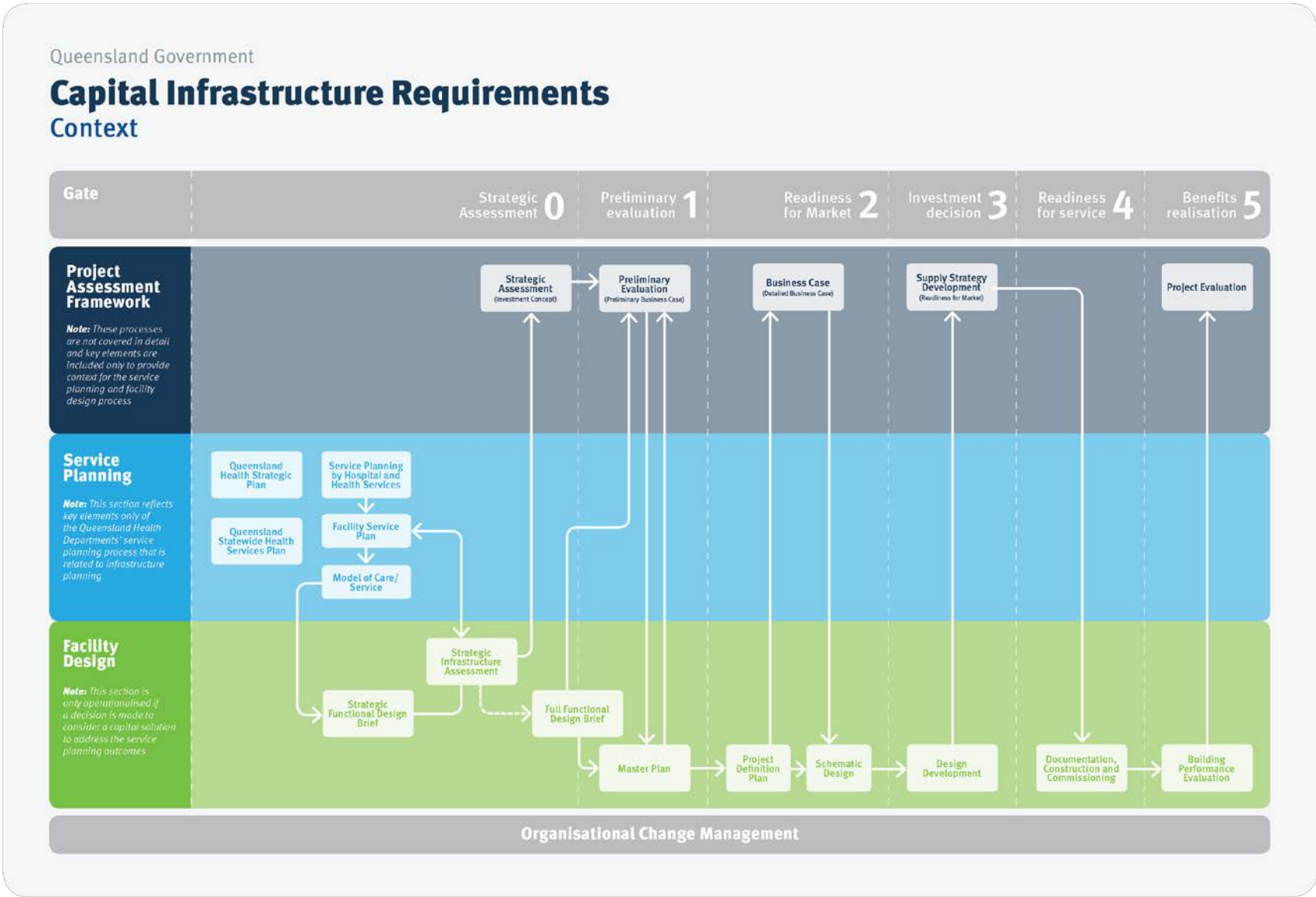
Full functional design brief

The full functional design brief is made up of all of the sections in the strategic functional design brief plus a section for each relevant clinical, clinical support and non-clinical service within the scope of the project. The information provided in the strategic functional design brief provides the context for the detailed briefing of each functional unit.

The sections to be completed include:

- review of material provided in the strategic level of the functional design brief
- scope of service
- model of care/service delivery
- workforce
- policies impacting on built environment
- operational description
- functional relationships
- staging of built capacity
- future service developments and innovations
- specific design requirements
- schedule of accommodation (SOA)
- summary of changes to model of care/service delivery.

Figure 1: Queensland Health CIR context



Service departments or units

A typical list of service departments and organisational units is listed in Appendix A. It is provided by way of example and as a guide only. Each facility and project will have its own organisational profile and relevant service unit list. Reference should also be made to the functional planning unit list in *CIR Volume 2 Functional design brief Section 1 Principles*.

Relationship to other volumes

This functional design brief format (*Volume 2 Functional design brief, Section 2 Manual*) must be read and understood in the context of the CIR. The *CIR Volume 2 Functional design brief Section 1 Principles*, provides the overall Queensland Health context for facility planning.

The functional design brief describes the facility from a functional point of view as distinct from the minimum technical requirements for the facility. The CIR architectural and engineering volumes set the minimum technical requirements for the facility and cross reference these to the functional design brief for detail on design requirements.

1 Strategic level introduction and overview

Content

Provide a brief overview of functional design brief methodology, limitations and intent. Also include reference to a glossary of terms and definitions used during development of design which is appended.

An example of intent: ‘the briefing information provided seeks to inform a design solution that enables efficient, accessible and safe delivery of service, future flexibility and adaptability in design, and that offers a pleasing, safe and comfortable environment for patients at all times.’

Rationale

CIR Volume 2 Functional design brief Section 2 Manual, may act as a single information source for some stakeholders to gain a general understanding of the project.

CIR Volume 2 Functional design brief Section 2 Manual, describes the scope of the new health facility as it translates into the built environment. This relationship between scope and design is based on an understanding of the projections for future service demand and models of service delivery.

CIR Volume 2 Functional design brief Section 2 Manual, describes at a high level the process by which the functional design brief has been developed. If there have been any limitations to information supplied that planners and consultants should know about, they are included in this section. Readers will also need to understand how this functional design brief is intended to fit into the whole-of-government capital approval process.

The design detail provided in this functional design brief will be used to inform strategic infrastructure assessment for the facility/site. It will also be used in the development of the project assessment framework, strategic assessment of service requirement document.

To enable the functional design brief document to be read and understood easily and without ambiguity; any terminology, definitions and abbreviations need to be explained.

1.1 Purpose and context of the functional design brief

Content

Provide a purpose statement for why the functional design brief is being developed and how it relates to health service planning, other facility or HHS level planning.

Rationale

The purpose of the functional design brief is to identify the department's minimum design and operational requirements for the facility. The strategic functional design brief is developed as part of the strategic assessment of service requirements of a potential project.

Once the project is funded or a decision to proceed is made, the full functional design brief is reconfirmed at the strategic level detail and is completed for each unit/department of the facility.

1.2 Overview of the project

Content

Provide a brief description of the project which might include:

- scope at summary level
- how the project fits into the state wide and HHS health service infrastructure plans
- CSCF levels at opening and projected changes
- total required capacity of services compared to extent of services at time of opening or initial project completion
- whether a redevelopment or new build
- desired outcomes
- special points of interest.

Rationale

The overview of the project provides a succinct description that clearly articulates the fundamental elements and creates a picture of the project for the first time reader. It

describes the scale of the project, for example number of beds, number and types of buildings, for the planners, architects and engineers and anyone key project members.

The overview provides the rationale for the project and explains how it meets the state and facility or HHS health service requirements.

In particular, the scope statement within the overview nominates the list of services and their CSCF levels for the facility, so that it may be translated into the built solution.

The overview includes clear statements about the size of the project and its service delivery expectations, through the articulation of the objectives and outcomes. These may be service delivery and design outcomes. Topics that could be covered include service continuity, connectivity and integration, seamless access to services between the original build and the new facility. Outcomes also indicate the desired aesthetic of the facility.

1.3 Interpretation

Content

Include any general instructions to assist in readability or transparency of the document. For example, references to:

- *My health, Queensland's future: Advancing health 2026 Queensland Health Strategic Plan 2019-2023*
- specific policy
- health service planning.

Rationale

Instructions and information may be required to assist readers in how to interpret and apply the contents of the functional design brief. For example, other volumes of the CIR may need to be referred to.

Where necessary, readers need to be aware that the functional design brief relies on other policies, guidelines, legislation and standards. The functional design brief does not negate the responsibilities under statutory requirements, legislation, codes and standards relating to capital infrastructure.

1.4 Glossary

Content

Provide an alphabetical list of items specific to the document with definitions or explanation.

Provide cross reference to any appendices that contain explanation of terms.

Rationale

A glossary will assist in consistent interpretation of the functional design brief by all disciplines in the key stakeholder and consultant groups over time.

2 Project background

Content

Provide information on the need for a service, including drivers and outcomes. Include a brief history of previous activities and decisions on the project, such as government commitments and prior planning documents.

List all planning and other documents which have preceded the functional design brief and have been used for background and content material. In particular provide detail of any approved model of care, health planning documents and any other master planning, functional or design briefing documents that may relate to the project.

Consider the operating environment, and key drivers for change in Queensland Health's future operations.

- The drivers for change comprise:
 - a growing and ageing population
 - economic, fiscal and health technology impacts
 - a growing burden of disease, particularly in relation to chronic conditions
 - the health impacts of socioeconomic disadvantage and cultural and linguistic diversity
 - the rate of burden of disease from all causes among Aboriginal and Torres Strait Islander Queenslanders
 - the dispersion of Queensland's population across the state
 - workforce challenges
 - climate change.

Rationale

It is important for readers to know about prior decisions by government or other authorities that impact the project. For example, election commitment statements may provide the basis of rationale for the project.

Planners, architects and engineers will need to know if there are other documents being relied upon that will provide more detail on the project.

Checkpoint

This information is important for the business case and provides background context for decision making.

2.1 Vision for the project

Content

Outline the vision for the project, that is, the aspirational future direction. Describe desired outcomes as they relate to the values of the organisation. The vision is a short statement—perhaps of one sentence or paragraph which will encompass ideas relating to:

- future directions
- benefit to the population
- desired quality to meet service requirements and models of care
- nature of the facility
- how the environment, innovation, research and concepts of design link to the delivery of care.

Rationale

Readers of the functional design brief will want to understand what values and aspirations the facility or HHS leadership has for the facility and what change the project will bring about. This helps designers create a mental image of the facility. The statement of vision assists in aligning consultant thinking with client requirements.

2.2 Project objectives

Content

Outline the aims and objectives for the project. Project objectives will be measurable, clearly defined, specific and achievable through a series of steps. Describe what the facility or HHS wants to achieve through the project—what will define its success.

The objectives will be a key link to benefits realisation plans and the building performance evaluation process.

The objectives should describe simply how the HHS will know that the project has succeeded in meeting its service requirements.

Rationale

The articulation of objectives provides detail, definition and clarity to the development of the functional design brief. All the participants of a project need to understand what the

organisation intends to achieve through the project. This is essential shared knowledge that will assist in leading everyone to a single solution.

3 Project Scope

Content

Outline the inclusions and exclusions of the project. These can include both infrastructure and service level activities. The level of detail in this section needs to be sufficient to provide input to both capital and operational costing models. Scoping detail will be informed by the health service plan.

Some examples of inclusions are (and should not be limited to):

- inpatient beds, multiday and single day
- numbers of ambulatory spaces
- number and type of operating rooms
- number and type of imaging modalities
- if there are several buildings within one project, they need to be described.

Some examples of exclusions are:

- components of facilities may be outsourced such as car parking and production pharmacy
- some parts or modalities of services may not be included such as mammography or Positron Emission Tomography
- the build may include a childcare centre but the operation will be outsourced.

Staging must be considered in describing scope. Facilities may have services gradually brought on line over a number of planning and construction phases. The scoping detail must include what is in each proposed stage, with clear articulation of the parameters for the current development.

Rationale

Planners, architects and engineers will use scope description as the basis of facility design, including building size, placement of buildings and their relationship to any existing facilities on the site. Scoping detail will provide the rationale for costing of the project. Once scope is matched to budget, it will have a direct relationship to design, and will inform any applications to vary the project. Clearly articulated project scope is also essential to the development of the facility site strategic infrastructure assessment and subsequent master planning for the site.

4 Strategic policy and direction

4.1 Facility or Hospital and Health Service overview

4.1.1 Facility or Hospital and Health Service health planning

Content

This section briefly summarises the facility level plan where it exists or HHS health service plan which has already been developed. A map of the facility or HHS should be provided. This section describes the role and capacity of the facility within the local, regional and state-wide context.

Rationale

This section is required to describe the context and geography of the facility or HHS in which the facility will sit so that planners, architects and engineers understand any particular design requirements relating to location, climate, distances travelled and so forth. It also explains how the facility fits into the other facilities and their services within the facility or HHS, and perhaps surrounding facility or HHSs. Design can be heavily impacted by factors such as site access, climate events, autonomy levels for operation of engineering services and disaster planning.

Architects will also need to understand the nature of spaces required for services based on their size, location of operation, how they are accessed and if they need to be physically or electronically linked.

4.1.2 Organisational chart

Content

Provide a pictorial overview or organisation chart of the facility or HHS governance and describe the key elements.

Rationale

All participants, both departmental staff and consultants will need to understand who is responsible for the functioning of each area of service delivery and for managing the project within the facility or HHS. Stakeholders will also need to understand the nature of the control mechanisms in place including decision making bodies and the head decision maker for the facility or HHS.

4.1.3 List of Hospital and Health Service services

Content

Provide a list in a table format of all the services provided by the whole facility/ HHS under the health service plan, their capacity and their CSCF service levels.

Rationale

This section explains how the project facility fits with other facilities and their services within the facility or HHS and may include surrounding facility or HHS.

Architects will need to understand the nature of spaces required for services based on their size, location of operation, how they are accessed and if they need to be physically or electronically linked.

Facility planners and architects will reference the *Australasian Health Facility Guidelines* (AusHFG) for the requirements of each level of service (referred to as role delineation in AusHFG, including their inter-dependencies).

Where a service is delivered across the facility or HHS, designers need to know which elements are required in the new or refurbished facility.

4.2 Strategic models of care

Content

Describe the services from the HHS perspective. What is the model for services within and across services within the HHS that determines the pathway or flow for patient movement. Strategic level services are those that govern or define other service delivery models, for example hub and spoke or a HHS wide service that covers more than one facility within the HHS.

What is the role of any clinical or service unit?

The design should promote and support an integrated model of care with the primary goals of ensuring that clients receive quality, coordinated care, and that gaps, duplication and fragmentation in the provision of services are minimised. The overarching vision in Queensland's future health facilities is an integrated healthcare approach where the primary focus continues to shift to the patient/consumer rather than a system which focuses on the health service provider and health delivery setting.

Within the department's framework, 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 departmental services/areas, with external providers and partners, and consumers, collaborating to deliver illness prevention and health promotion.

Rationale

There are options for the access and orientation of facilities within their sites and in the relative placement of functions and services to other facilities. An understanding of how it is intended that services are accessed and used by patients will assist architects and facility planners to design a facility layout that achieves the project objectives, for example patient-focussed care.

Planners and facility designers will use this information for the site facility strategic infrastructure assessment to determine which services need to be provided from the facility and which services may be provided from other sites. It will also inform requirements for expansion and future proofing.

The facility or HHS model of care will also form part of the rationale for the strategic business case.

Checkpoint

The models of care are critical elements in the functional design brief. Clinical services are described as a model of care and non-clinical support services are described as a model of service delivery. Figure 2 demonstrates the levels of hierarchy that are used to describe these models in a functional design brief. In the strategic level brief, the strategic and operational level models get described. In the full functional design brief, the local level models get described.

Three Levels for Models of Care or Model of Service Delivery

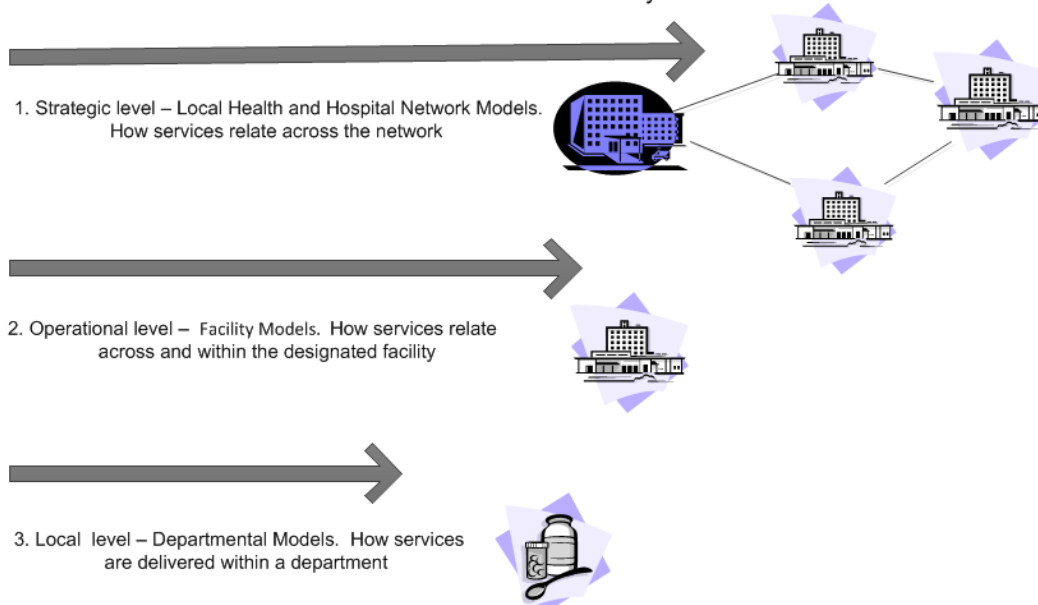


Figure 2: levels for models of care or model of service delivery

Each level in the model below needs to be described. The figure below illustrates the key elements that need to be captured for each model at each level. The designers need to know what the service is, how it is to be provided, who will provide it, where it will be provided and when it will be provided. These five elements are not exclusive but are the key elements for a functional design brief.

Elements of Models of Care and Models of Service Delivery

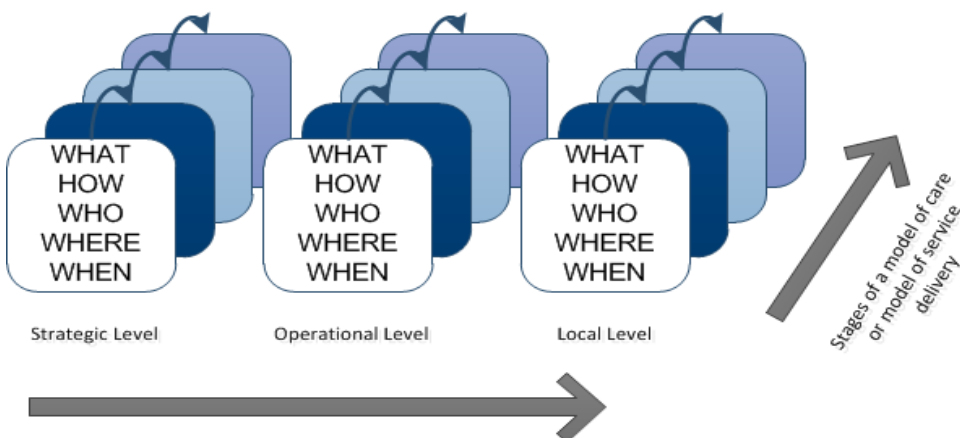


Figure 3: Elements of models of care and models of service delivery

5 Facility profile

The AusHFG defines a facility as ‘a complex of buildings, structures, roads and associated equipment, such as a facility or healthcare facility that represents a single management unit for financial, operational maintenance or other purposes.’¹

Overall, this section provides a mid-level summary of the health service plan elements, such as demographic profile, role delineation of services, access patterns, general service trends, for example length of stay, home based care and community needs.

Planners and designers use this section to describe the building blocks for the accommodation brief, that is, the type, number and sizes of spaces required for the facility. From this information, they can assemble an initial list of spaces required.

The facility profile is made up of information on demographics, activity projections summary and bed and bed equivalent projections as well as a summary of facility departments/units.

5.1 Demographics

Content

This section covers summary level population data and trends to explain the basis of the activity projections as it relates to the scope of works for the facility. The table of individual services by role delineation level is referred to.

Rationale

Where a service is delivered across the facility or HHS, designers need to know which elements or components of the service are required in the new or refurbished facility.

This detail also provides an understanding of possible design solution alternatives. The department requires design consultants to use the AusHFG for types, numbers and sizes of spaces for each service area. The AusHFG include specification of this spatial information for each role delineation level. Role delineation also sets a number of interdependencies between services which must be understood by architects in designing a whole facility.

¹ AusHFG 2010 Version 4, p 16 accessed at www.healthfacilityguidelines.com.au

Understanding the demographics of the population using the facility is important for planners, for example if the population is older, then the design needs to be responsive to an older population's needs.

5.2 Activity projections summary

Content

This section summarises the projected activity for the facility based on the service planning undertaken. Summarise any key points relating to actual activity, length of stay and bed occupancy rates and changes to models of care. Provide a table of projected activity, by current and future date targets. This information will be available in the health service plan.

Rationale

Facility planners and designers will need to understand projected activity figures in order to ensure that numbers and types of spaces planned are adequate to deliver the service now and into the future. They must develop an accommodation brief that has enough spaces for service delivery based on accepted standards and reasonable performance parameters. They must also turn individual space requirements into groups of spaces, that is, functional departments and units.

5.3 Treatment space projections

Content

In accordance with health service planning this section provides a further level of detail on functional spaces. Total bed numbers and treatment spaces are divided up into their types. Provide a table of beds, bed alternatives, imaging modalities, ambulatory and emergency treatment spaces. Define current and future capacities congruent with the health service planning.

Include figures for current capacity as well as projected capacity for the new or redeveloped facility.

Rationale

Facility planners and designers will use this detailed level of information to develop the SOA for each department/unit. They will also undertake some validation of activity projections to the numbers of rooms by their types, to ensure the overall size of the facility is capable of delivering the described services.

The SOA will facilitate additional costing detail. It will also be used to determine the gross floor area of the facility. This information will be used in the strategic infrastructure assessment and the strategic assessment level business case.

If a facility is being refurbished an exercise will be undertaken to look at ‘best fit’ within current floor plates.

5.4 Summary of facility departments/units

Content

Provide a table which details each facility organisational unit included in the project brief. Specify the CSCF levels where relevant. The following is provided by way of example:

Type	Planning department/unit	Brief description	CSCF level (if relevant)
Clinical	Medical unit 3A	30 bed inpatient unit	4
Clinical	Medical unit 3B	30 bed inpatient unit	4
Clinical	Surgical unit 4A	30 bed inpatient unit	4
Clinical	Surgical unit 4B	30 bed inpatient unit	4
Clinical support	Medical imaging	Diagnostic and interventional service	5
Clinical support	Pathology		5
Non-clinical	Food services	Cook chill with 350 bed capacity	
Non-clinical	Security	Whole of facility	

Rationale

Architects and engineers will use this information in the layout of the departments within the facility and within the department. These relationships are the building blocks of facility design. They will influence the shape, size and orientation of the departments within the building.

This information is a most important input into the strategic infrastructure assessment for the facility site.

Knowing this information at initial stages of a project may assist in preventing rework of design in later stages thereby saving cost to the project.

6 Key operational and design principles

Throughout this section, the key operational and design policies and principles used to underpin decision making and provide a point of reference during design are described.

The scope of this section covers the whole of facility. Where the scope of services for a project fit within an existing or proposed larger facility, this section will cover all of the operational elements that impact on design.

Individual units must be designed in the context of whole of facility policies and principles unless otherwise stated in the respective dedicated unit section. The design and functional requirements detailed for individual departments/units should therefore be read in conjunction with this section.

Planners and architects need to understand how the facility or HHS sees the facility performing in its role of service delivery. Statements of operational and design principles in the functional design brief assist in establishing this understanding at an early stage. Ultimately, principles translate into design features which may have cost implications that vary from the standard cost modelling. Some principles affect the whole of building design such as layout, choice of materials, finishes and choice of equipment. If these are known at functional design brief stage, they can be considered in the cost modelling.

Consideration should be given to the use of Building Information Modelling (BIM) and how key asset information outcomes should be defined at this stage. Refer to the Queensland Health *Project Information Requirements (PIR)* document for further details.

By stating operational and design principles, the facility or HHS provides direction on design priorities that are necessary to deliver on functional requirements. Architects and engineers are informed by these requirements. Clearer articulation of principles will support more relevant and effective design of the facility. Facility design objectives

Content

Describe any specific design objectives for this facility. Design objectives are a means to translate the intention of the models of care and service delivery into the built form.

These may be high level objectives for example the facility's relationship with the urban landscape, its building form and build quality, the desired building and engineering performance, construction and functionality.

Design objectives relate to performance outcomes for either the whole facility or for specific service units in the facility. If there are particular design features or outcomes that are desired, they may be stated in this section.

The more information provided at this stage the more likely it is that facility performance outcomes can be built from the objectives and translated into design.

Rationale

A wide range of people will benefit from the detail provided in this section. The architects and engineers will know in the initial stages of planning if there are special considerations to be included in design. Specific requirements can also be translated into facility design performance outcomes.

The strategic infrastructure assessment stage of planning prior to completion of the full functional design brief will provide advance information in relation to design objectives including their impact.

Cost implications may be considered in the early stages of the project and built into the budget. This will form part of the strategic assessment business case.

If design objectives are known from inception, they may be built into post evaluation tools.

Checkpoint

In completing this section, you should refer to *CIR Volume 2 Functional design brief Section 1 Principles, Sub-Section 9* which covers facility design criteria. This provides a good summary of issues that may influence facility design objectives.

6.1 Operational principles and design

Content

Describe in this section those principles that underpin the models of care and service delivery.

Things that might be included are aspects associated with:

- desired efficiency of patient flows within the facility
- separation of public, staff, patient, goods flows within the facility
- access
- safety and quality of service delivery
- staff safety and wellbeing
- way finding
- patient focussed care
- evidence based design
- ICT objectives
- innovation
- facilitating patient safety and ensuring high indoor environment and safe water quality.

Include detailed objectives for services that are new or will have a change of model or practice for example from centralised to decentralised model. Note specific design objectives or requirements for these services to meet the new model and include the critical factors relating to design. For example, the decision to have multiple medical imaging units rather than one centralised unit, will have significant impact on space, engineering services and ICT requirements.

Be specific for certain groups of patients who have defined requirements.

Rationale

Here the facility or HHS has the opportunity to directly influence the design of the facility. While some principles may seem obvious, translation into design and built environment needs to be facilitated by transparency of purpose. By stating them, architects and engineers are obliged to consider how they might be translated into performance outcomes for the facility. Embedding operational principles into the project objectives will significantly assist in them being implemented.

The cost implications of principles once known can be assessed and included in budget considerations.

Operational and design principles will also be used to inform transition and change management planning.

6.2 Patient environment

Content

Describe in this section, specific design considerations to support patient care and patient experience of the facility, especially as required to meet the models of care.

Make note of any differences between new build and refurbished areas and what outcomes are required in relation to these two situations.

Examples of patient environment considerations:

- all patient areas both inpatient and ambulatory will have access to outdoor areas
- facilitate patient independence
- areas suitable for assembly of large groups of family and friends to be provided
- provide features that will enable the patient to control their environment
- access to private discussion space between patients and staff must be provided throughout the facility
- facilitate patient safety and ensure high indoor environment and safe water quality.

Rationale

Here the facility or HHS has the opportunity to directly influence the design of the facility. While some principles may seem obvious, translation into design and built environment needs to be facilitated by transparency of purpose. By stating them, architects and engineers are obliged to consider how they might be translated into performance outcomes for the facility. Embedding patient environment principles into the project objectives will significantly assist in them being implemented.

The cost implications of principles once known can be assessed and included in budget considerations.

Patient environment principles may also be used to inform transition and change management planning.

6.3 Staff environment

Content

Describe in this section specific design considerations to facilitate the staff work environment and experience of the facility.

This could include things such as access to natural light, high indoor environment and safe water quality, or particular staff amenities, such as a breast feeding room or staff cafeteria.

Rationale

Staff environment principles can be used to inform design as well as transition and change management planning.

Here the facility or HHS has the opportunity to state design requirements to meet the workforce planning objectives of the facility.

Translation into design and built environment needs to be facilitated by transparency of purpose. Where the facility or HHS states desired design outcomes, architects and engineers will consider how they might be translated into performance outcomes for the facility. Embedding staff environment principles into the project objectives will significantly assist in them being implemented.

The cost implications of principles once known can be assessed and included in budget considerations.

6.4 Interior design

Content

Describe in this section, specific design considerations relating to interior design. This may relate to internal layout features or to materials, finishes and colours. This section may be approached on a default basis. Many specifications for interiors are already covered by legislation, policy and standards. This section provides any special additional points required to support function for the facility.

Rationale

While there are policies, codes and regulations that cover aspects of interior design, each facility is designed to suit its particular service requirements.

Translation into design and built environment needs to be facilitated by transparency of purpose. Where the facility or HHS states desired design outcomes, architects and engineers will consider how they might be translated into performance outcomes for the facility. Embedding interior design principles into the project objectives will significantly assist in them being implemented.

The cost implications of principles once known can be assessed and included in budget considerations.

6.5 Equity of access

Content

The *Disability Discrimination Act 1992*, other legislation and policy requirements as they relate to design must be met and need not be restated.

Describe in this section any considerations and design outcomes that are additional to legislated requirements. This section might include further discretionary principles to improve equity of access, or issues that pertain specifically to the facility.

The requirements of indigenous, multicultural services and interpreters need to also be considered in this section.

Rationale

The statement of design outcomes relating to access will assist in their translation into the built form.

The cost implications of additional access principles once known can be assessed and included in budget considerations.

6.6 Education and research

Content

Describe in this section any considerations that are specific to the facility that are needed to support the education and research functions and models of service delivery.

For example, are education spaces centralised or dispersed throughout the facility, and can meeting rooms be designed for use as education venues.

Content in this section needs to be cross-referenced to the content in the specific education and research department section.

Include consideration of simulation spaces for teaching and training, library/knowledge management and ICT requirements.

Rationale

Education and research models of service delivery and requirements differ from facility to facility. By stating the particular needs of the facility, they can then be translated into design.

These requirements are then included in the performance objectives and outcomes for the facility. Once they are embedded in the project objectives, it is more likely that the desired principles will be implemented.

The cost implications of principles once known can be assessed and included in budget considerations.

Education and research principles may also be used to inform transition and change management planning.

6.7 Future proofing, flexibility and technology

Content

Providing for future-proofing is the ability of the design to not prohibit but anticipate future expansion and future modification. It does not include the provision of future requirements, but rather the ability of the design to allow the future requirements to be added to the facility without major operational and cost impacts.

In this section, a range of flexibility and technology requirements covering the whole facility can be described, based on health service planning projections, horizon scanning of potential changes to models of care or technology developments. The list may initially be at high level with more detail being added as department/unit functional requirements are fully developed.

Some examples of future whole of facility functional requirements might include a provision for a certain percentage of expansion space, implementation of radio frequency identification technology, automated guided vehicles and self-registration kiosks.

At department/unit level particular treatments of spaces may be required to enable future revision of their use without disrupting service delivery unduly.

Technology considerations may be either clinical, clinical support or non-clinical in nature.

Rationale

Designing for service expansion or change in technology can have significant impact on spatial allocation and engineering services provision. These impacts translate into project costs. A full understanding of those implications will assist in achieving more efficient and effective design.

The emergence of new ideas and technology is growing at an increasing pace. Architects need to include the knowledge of facility or HHS staff on their specialist areas, particularly developments in clinical models.

This section presents in a summary form, a range of the future flexibility and technology items to planners, architects and engineers.

This section may also be used in the strategic assessment business case to describe how potential changes to future service delivery can be affected through the facility project.

7 Facility wide approaches

This section describes a variety of policies, models or functions that will apply across the whole facility. This includes a project where the functional design brief covers only part of a facility or is a unit within a facility. The headings provided are a starting point and may be expanded upon. The approaches will change over time and vary according to facility size, location and function. Other examples of facility wide approaches may include equipment management, volunteers, switchboard, management of revenue and chaplaincy.

This section of the functional design brief will provide a summary in one place of common facility wide approaches that must be considered by architects and engineers in design. In providing this information, it is expected that design will facilitate the implementation of these facility wide approaches. These items may have an impact on the accommodation brief and SOA.

The inclusion of these items in the functional design brief is one point in the implementation of policy and common standards.

Some of these items may impact the strategic infrastructure assessment. All facility wide approaches will be assessed for impact on the cost model.

Facility wide approaches need to be understood and developed within the context of the global facility service matrix for the facility and its context within the HHS.

Checkpoint

This is where models of care and models of service delivery are described at an operational level. The facility wide approaches define how many of the services relate across and within the facility or HHS. Describing these models of care and service delivery ensures that the interrelationships of services and facility functions are coordinated. This information is the second level in the model of care hierarchy. See Figure 2.

7.1 Access and hours of operation/zones

Content

In this section, requirements for access across the whole facility are covered. This includes hours of operation for public and for staff for specific areas of the facility.

This sub-section provides detail on hours and days of operation for all departments/units and services. Include hours for visitors to the facility.

Provide detail on which departments and entry points will be business hours and which will be 24 hours a day, seven days a week access.

Rationale

Facility designers will use this information to develop plans for zoning the facility for operational, engineering and security purposes. Architects apply information about hours of operation to the layout of the facility to promote efficiency of use and safety for all facility users.

The placement and control of public and staff access and movement throughout the facility will have operational implications for the life of the facility. This information will also be applied to planning for safety of staff and the public.

Architects, planners and engineers will use this information in the layout of departments and especially access routes and placement of entrances. Design and security are interlinked so information on operating hours is fundamental to planning of both these facility aspects.

7.2 Admissions and discharges

Content

Describe the model for managing admissions and discharges across the facility, including relevant policies. Where will admissions and discharges occur and how will they be managed. List the technology that is required.

Note any specific design requirements relating to the model of service delivery.

Factors to consider:

- planned and unplanned admissions
- preadmission policy and procedure
- discharge policy and procedure
- retrieval services
- transfer from ambulatory care to inpatient status rules:
 - over 23 hours
 - by length of stay
 - by type of procedure.
- whether there is a transit unit.

Rationale

Planners, architects and engineers will use this information in the layout of departments and services, and the development of the accommodation brief and SOA.

The approach and model for admissions and discharges management across the facility will be used in the strategic infrastructure assessment for the facility site.

The model of service delivery will also be costed for both capital and operational purposes. Costing information will be included in the strategic assessment and subsequent business cases.

7.3 Building services

Content

Provide in this section a summary list of common approaches relating to building services, across the facility, including, but not limited to, how water quality will be maintained. This includes a summary level description on what services are affected and any key design requirements. A summary of any future directions may be included, particularly as they relate to space, equipment and technology requirements.

The content of this section is cross referenced to other department level sections within the functional design brief.

Some examples of common approaches include security, placement and access to plant space, which services are reticulated and relationship of building information systems to ICT.

CIR Volume 4, Engineering and infrastructure, provides extensive detail on building services requirements, including common approaches.

Rationale

Planners, architects and engineers will use this information in the design of engineering services, layout of departments, and the development of the accommodation brief and SOA.

The approach and model for building services management across the facility will be used in the strategic infrastructure assessment for the facility site.

The model of service delivery will also be costed for both capital and operational purposes. Costing information will be included in the strategic assessment and subsequent business cases.

7.4 Car parking

Content

In this section, the approach for car parking management throughout the facility is described. This includes summary level description on what car parks are provided across the facility, how they are managed, the number of car spaces and as well as any key design requirements. Considerations to include:

- information on special parking requirements for particular patient or staff groups relating to adjacencies, for example emergency department and other temporary parking
- all drop off or set down off points
- requirements for security and access to car parks
- whether there are any commercial arrangements for car parking
- relevant departmental and facility or HHS level policies and procedures
- ambulatory care services locations, transit unit, women's services (birthing), emergency, renal and cancer patients.

Rationale

Planners, architects and engineers will use this information in the design of the facility overall, especially locations of access roads and staff and patient access routes. It will also be used in the development of the accommodation brief and SOA.

The approach for car parking management across the facility will be used in the strategic infrastructure assessment for the facility site.

Any specific requirements for car parking management will be costed for both capital and operational purposes.

Costing information will be included in the strategic assessment and subsequent business cases.

7.5 Commercial and retail

Content

Briefly describe the approach to commercial and retail spaces throughout the facility. This includes summary level description of commercial and retail i.e. rationale, what services will be provided across the facility and how they are managed as well as any key design requirements.

A summary of any future directions may be included, particularly as they relate to space, equipment and technology requirements.

Note any relevant departmental and facility or HHS level policies. Include information on what the project is responsible for providing for these areas, for example shell space, partial or total fit out, based on the anticipated commercial arrangements.

This section needs to be cross referenced to the non-clinical support services—commercial and retail chapter.

Rationale

The placement of commercial and retail tenancies has an impact on facility design. Retail functions, such as cafes and pharmacies have specific location and access requirements within the building. Planning for these inclusions is essential in the early stages of development.

Planners, architects and engineers will use this information in the layout of the facility and in design of access to the facility. It will also be used in the development of the accommodation brief and SOA.

The approach for commercial and retail management across the facility will be used in the strategic infrastructure assessment for the facility site.

Any specific requirements for commercial and retail areas will be costed for capital purposes.

Costing information, particularly projected revenue will be included in the strategic assessment and subsequent business cases.

7.6 Disaster provision

Key points

This section summarises specific requirements relating to disaster preparedness that may translate into spatial, building and ICT services or other technology impacts. Any relevant departmental and facility or HHS policies and whole-of-government obligations should be noted.

Provide detail of clinical areas that will be used for disaster functions.

Describe whether the facility has a role in a disaster or pandemic response.

Provide detail of how essential services, including water quality, will be maintained in the event of a disaster.

The provisions of the *Building Code of Australia* and referenced standards should be taken as default requirements.

Rationale

Each facility or HHS has its own requirements for disaster planning which need to be articulated in the functional design brief. There are a range of options that can be taken in relation to disaster planning, which have varying levels of cost.

The approach for disaster management across the facility will be used in the strategic infrastructure assessment for the facility site.

The specific requirements for disaster preparedness will be costed for both capital and operational purposes. Some options for disaster planning are very costly and will need to be assessed against relevant responsibilities and planning beyond the facility.

Costing information will be included in the strategic assessment and subsequent business cases.

Planners, architects and engineers will use this information in the layout of departments and specific spatial elements within departments, engineering services specifications and for equipment placement. It will be used in the development of the accommodation brief and SOA.

7.7 Environmental services

Content

In this section, the approach, model and/or operational requirements for cleaning/environmental services management throughout the facility must be described. This includes summary level description on what services are provided across the facility, how they are managed, how they will be delivered and any key design requirements. A summary of any future directions in cleaning and environmental management may be included, particularly as they relate to space, equipment and technology requirements.

The content of this section is cross referenced to other department level sections within the functional design brief and is assumed to be consistent with the section on non-clinical support services—environmental.

Points to consider:

- links to waste management
- whether the service, or part of it, is outsourced or not
- finishes requirements
- flammable materials
- management of courtyards
- infection prevention and control policies and standards
- after hours cleaning in clinical units
- water treatment and maintaining water quality.

Rationale

Models of service delivery for cleaning services vary between health facilities. The particular requirements of this facility need to be clearly understood by designers as there may be significant differences in spatial requirements and therefore cost to the project.

Planners, architects and engineers will use this information in the layout of departments and services, access routes and the development of the accommodation brief and SOA.

The approach and model for cleaning and environmental management across the facility will be used in the strategic infrastructure assessment for the facility site.

The model of service delivery will also be costed for both capital and operational purposes. Costing information will be included in the strategic assessment and subsequent business cases.

7.8 Food services

Content

The approach, model and/or operational requirements for food services management throughout the facility is described in this section. This includes summary level description on the model of service delivery—what services are provided across the facility, how they are managed, how they are ordered, how they will be delivered and any key design requirements. A summary of any future directions in food services management may be included, particularly as they relate to space, equipment and technology requirements.

Inpatient facilities have a need for some short order food preparation capacity, and this should be assessed in all cases.

The content of this section is cross-referenced to other department level sections within the functional design brief and is assumed to be consistent with the section on non-clinical support services—food services, loading dock, waste management, commercial/retail and all other department sections that are involved in the chain of food management.

Consideration should be given to food safety standards.

Rationale

The clear articulation of the food service model of service delivery is required to inform design for not only the food services department, but also every inpatient unit and every other department using their services.

Some food management models are more labour intensive and have specific fit out requirements. It is important that this information is known at the initial stages of planning to ensure that the facility is designed for any future requirements.

Options for delivering food services vary according to patient and staff requirements, refurbishment or new build, or degree of on-site preparation. These options have significantly different spatial and cost implications which need to be understood by designers. Having clear design requirements will assist in avoiding future design rework and the cost it incurs.

Planners, architects and engineers will use this information in determining the layout of departments and the development of the accommodation brief and SOA.

The approach and model for food services management across the facility will be used in the strategic infrastructure assessment for the facility site.

The model of service delivery will also be costed for both capital and operational purposes. Costing information will be included in the strategic assessment and subsequent business cases.

7.9 Information communications and technology services

Content

Provide a list of common approaches relating to ICT services, across the facility. This includes summary level description on what services are affected and any key design requirements. A summary of any future directions may be included, particularly as they relate to space, equipment and technology requirements and information security.

The content of this section is cross referenced to other department level sections within the functional design brief in particular non-clinical support services—ICT.

CIR Volume 4 Engineering and infrastructure provides some detail on ICT services requirements including common approaches.

The key source of information for this section will be the department's information directorate or its equivalent. There are many areas of policy and standards that need to be considered in ICT facility planning from communications requirements to hardware, software applications and records management.

Rationale

Planners, architects and engineers will use this information in the layout of departments and services, and the development of the accommodation brief and SOA

The approach and model for information and communications technology (ICT) services management across the facility will be used in the strategic infrastructure assessment for the facility site.

The model of service delivery will also be costed for both capital and operational purposes. Costing information will be included in the strategic assessment and subsequent business cases.

Checkpoint

ICT requirements are one of the complex and increasing cost elements of a facility project. The effective management of these requirements begins with their clear articulation in the functional design brief.

7.10 Infection prevention and control

Content

Infection prevention and control requirements are determined in the department's Prevention and Control of Healthcare Associated Infection (HAI) Policy, by the facility or HHS policy and procedures and the AusHFG infection control requirements. The design elements that are required to facilitate these infection prevention and control practices must include detail as illustrated by the following (but not limited to):

- sufficient disinfectant residual should be present in the water supply system to limit microbial water quality risk
- 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 AusHFG 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
- alcohol based hand rub dispensers must be provided in all clinical units where there is patient contact and clinical area interfaces.

Isolation rooms

- Provide detail on specific targets, that is, types and distribution of isolation rooms throughout the facility. Include a table if required. Reference should be made to the AusHFG, Part D: Infection Prevention and Control as well as the Australian Standards' HB 260–2003 Facility Acquired Infections–Engineering Down the Risk.
- Include projected need for Class N/Type 5 or Class P/Type 5 isolation room numbers as determined by the facility for example may be based on data collection over at least a one year period.

Content

Include the ratio of Class N isolation rooms for this facility as a number per beds.

Include where Class P isolation room will be provided for example one for emergency and one for the intensive care unit.

Consideration should also be given to the model of care for ambulatory infectious management.

Rationale

Each facility has models of care/service delivery relating to infection prevention and control as this is a primary element in patient safety. The particular requirements of the facility need to be clearly understood by designers and engineers as there are differing spatial impacts and costs for various options.

Architects require this information to design unit layouts and for the development of the accommodation brief and SOA. The requirement for a range of infection control mechanisms will form part of the capital and operational costing for the strategic assessment and subsequent business cases.

The number and placement of isolation rooms may also impact on model of care and require consideration in the change management plan.

7.11 Linen

Content

Describe the approach, model and/or operational requirements for linen management throughout the facility. This includes summary level description on what services are provided across the facility, how they are managed, how they will be delivered and any key design requirements. A summary of any future directions in linen management may be included, particularly as they relate to space, equipment and technology requirements.

The content of this section is cross referenced to infection control and other department level sections within the functional design brief and is assumed to be consistent with the section on non-clinical support services—linen, loading dock, waste management and all other department sections that are involved in the chain of linen management.

Rationale

Each facility operates within its own specific conditions. Considerations for the management of linen will be different between refurbished and new builds.

Designers will require the articulation of how the facility or HHS intends to manage linen across the facility, in particular any issues relating to movement between units and buildings.

Planners, architects and engineers will use this information in the layout of departments and services, access routes and the development of the accommodation brief and SOA.

The approach and model for linen management across the facility will be used in the strategic infrastructure assessment for the facility site.

The model of service delivery will also be costed for both capital and operational purposes. Costing information will be included in the strategic assessment and subsequent business cases.

7.12 Mail

Content

Describe the approach, model and/or operational requirements for mail services management throughout the facility. This includes summary level description on what services are provided across the facility, how they are managed, how they will be delivered and any key design requirements. A summary of any future directions in mail services management may be included, particularly as they relate to space, equipment and technology requirements.

If there are retailers or commercial areas within the facility, include a statement on how they will receive mail.

Rationale

Options for the management of mail vary. The model needs to be clear so that spatial requirements are fully understood by architects.

Planners, architects and engineers will use this information in the layout of departments as well as design of staff access routes. It will also be used in the development of the accommodation brief and SOA.

The approach for mail management across the facility will be used in the strategic infrastructure assessment for the facility site.

Any specific requirements for mail management will be costed for both capital and operational purposes.

Costing information will be included in the strategic assessment and subsequent business cases.

7.13 Medical imaging

Content

Describe the approach, model and/or operational requirements for medical imaging, including nuclear medicine if being provided, throughout the facility. This includes summary level description on what services are provided across the facility, how they are managed, how they will be delivered and any key design requirements. A summary of any future directions in medical imaging management may be included, particularly as they relate to space, equipment and technology requirements.

Include detail about the replacement of medical imaging equipment.

Include a table summarising modalities and their location. Note any services that are not in scope, that is, changes to current scope or that may be provided by external providers.

Points to consider:

- occasions of service projections by location of clinical service type
- centralisation or decentralisation of core services for example locate some modalities in emergency, operating rooms and ambulatory care rather than one central service
- locations and options for mobile equipment and services for example inpatient units, intensive care unit
- locations and options for satellite equipment and services for example emergency
- wireless requirements
- digitisation of medical imaging information and images
- access throughout facility to medical imaging radiology information systems and picture archiving and communications systems
- central storage of medical imaging information in data/server room
- relationship to nuclear medicine
- relationship to interventional medical imaging
- space and ICT requirements of future modalities
- access for maintenance, repair and replacement of modalities.
- the content of this section is cross referenced to other department level sections within the functional design brief and is assumed to be consistent with the section on clinical support services—medical imaging.

Rationale

There are a number of models for the distribution of imaging modalities and each has differing spatial and cost impact. The model required by the facility or HHS must be clear.

Architects and engineers will rely on this information in the layout of departments and services, access routes for patients, staff and technology and the development of the accommodation brief and SOA.

The approach and model for medical imaging management across the facility will be used in the strategic infrastructure assessment for the facility site.

The model of service delivery will also be costed for both capital and operational purposes. Costing information will be included in the strategic assessment and subsequent business cases.

7.14 Medication management

Content

Describe the model and operational requirements for medication management throughout the facility. This includes summary level description on what services are provided across the facility, how they are managed, how they will be delivered and any key design requirements. A summary of any future directions in medication management may be included, particularly as they relate to space, equipment and technology requirements.

Points to consider:

- current and future Queensland Health policy on medication management
- service requirements of the CSCF levels for the facility
- requirements for production pharmacy
- satellite pharmacies for example oncology
- method of managing drugs at individual inpatient level
- securing drugs of interest i.e. S4s that do not have dangerous drug provisions
- technology that assist in the prevention of medication errors, such as Pixus
- pneumatic tube system
- location of bulk iv store
- staff access to after-hours drugs
- managing payments for drugs
- relationship to private pharmacy, if any
- relative staffing for each service delivery model
- requirements of other facilities which rely on this service
- opportunities for adoption of new technology, for example automated dispensing
- the content of this section is cross-referenced to other department level sections within the functional design brief and is assumed to be consistent with the section on clinical support services—pharmacy and other department sections that are involved in the chain of medication management, such as loading dock, supply and cashiers.

Rationale

The clear articulation of the medication model of service delivery is required to inform design for not only the pharmacy department, but also every inpatient unit, operating room suite, emergency department and every other department using pharmacy services.

Some medication management models are more labour intensive and have specific fit out requirements. It is important that this information is known at the initial stages of planning to ensure that the facility is designed for any future requirements.

Having clear design requirements will assist in avoiding future design rework and the cost it incurs.

Planners, architects and engineers will use this information in determining adjacencies, the layout of departments and the development of the accommodation brief and SOA.

The model of service delivery will also be costed for both capital and operational purposes. Costing information will be included in the strategic assessment and subsequent business cases.

7.15 Patient and operational flows

Content

The following principles apply to the whole of facility patient and operational 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.

Rationale

Applying principles of patient, operational and material flows provides efficient and safe movement of patients, staff, the public, supply and waste. Options for flows of patients and materials can vary and have significantly different spatial and cost implications which need to be understood by designers. Having clear flow design requirements will assist in avoiding future design rework and the cost it incurs.

Facility planners, architects and engineers will use this information in the layout of the facility and in the design of access to the facility. This information will be used in the development of the accommodation brief and SOA.

7.16 Patient safety and quality

Content

Describe the approach to patient safety and state specific provisions for patient safety across the facility for both inpatients and outpatients.

Include consideration of particular patient groups, such as children and child protection cases.

The provisions of the legislation are taken as default requirements. Please list departmental and facility or HHS-level policies, procedures and standards that must be applied.

Consider specific requirements for mental health services.

Rationale

Each facility or HHS has requirements relating to patient safety that need to be clearly understood by architects and engineers. Stating them in the functional design brief will assist in their translation into the built design.

Planners, architects and engineers will use this information in the layout of departments and specific spatial elements within departments, as well as design of patient access. It will also be used in the development of the accommodation brief and SOA.

The approach for patient safety management across the facility will be used in the strategic infrastructure assessment for the facility site.

Any specific requirements for patient safety will be costed for both capital and operational purposes.

Costing information will be included in the strategic assessment and subsequent business cases.

7.17 Pneumatic tube systems

Content

Provide detail on what size tube system is required, what will be transported through the tube system, which department/units will have stations, where stations will be located within units, station model type in each location, placement of station control panels, any requirements for dedicated point to point transfers such as emergency to pathology, intervention suite to pathology, intensive care unit to pathology. System performance requirements should also be included, such as (not limited to) minimum transfer times for certain items, number of transfer stations permitted, limitations of travel distance.

Consideration needs to be given to existing pneumatic tube systems within the facilities and whether there needs to be a seamless integration of the existing system to the new one that is, the same brand and size system.

Consideration needs to be given for a large bore pneumatic tube system to allow for use for other purposes.

Rationale

Pneumatic tube systems have significant impact on design spaces and cost. This information will directly affect design options and layouts and the cost of the facility. The pneumatic tube system may have impact space required for plant.

The inclusion of a pneumatic tube system in a facility will have a range of implications for other service units and how they operate. Understanding this key technology component early in the project will assist in developing related models of service delivery.

7.18 Room configurations and percentage of single rooms

Content

Provide detail on targets for bed mix and patient room configurations required to support the model of care. These may vary between clinical units. Describe any performance features for patient accommodation such as special features for the inpatient bedroom, for example isolation rooms, bariatric rooms.

Rationale

Each facility will have particular models of care which need to be supported by specific department design features. Bed configurations need to be described so that they are effectively translated by architects into department layouts. This information will directly affect design options and layouts and the cost of the facility. These items may have an impact on the accommodation brief and SOA.

The inclusion of these items in the functional design brief is one point in the implementation of departmental and facility or HHS policy and common standards.

Costing information will be included in the strategic assessment and subsequent business cases.

7.19 Security

Content

Provide a summary of security approach for the facility. Note any areas or departments that require specific focus. Briefly summarise what services will be provided across the facility and how they will be managed. Include any security services that will be run from the facility to other facilities or services. Alternatively make note if the service is outsourced.

Make note of any specific design requirements.

In particular note considerations relating to refurbished areas and new build areas.

This section needs to be cross-referenced to the section for non-clinical support services—security and relevant whole of facility approaches, such as hours of operation.

Rationale

Security requirements are unique to each facility as they relate to physical layout, location, access points and many other factors. Security provisions are becoming increasingly reliant on technology and are increasing in cost. Understanding facility or HHS requirements will assist architects and engineers to achieve a more efficient and effective design.

Planners, architects and engineers will use this information in the layout of departments and services, design of security access and internal access routes. It will also be used in the development of the accommodation brief and SOA.

The approach for management of security across the facility will be used in the strategic infrastructure assessment for the facility site.

The model of service delivery will also be costed for both capital and operational purposes. Costing information will be included in the strategic assessment and subsequent business cases.

Checkpoint

Further information on security principles that impact design, is included in *CIR Volume 4 Engineering and infrastructure Section 1 Principles Sub-Section 4.4*. Refer to this section when completing the functional design brief for this area.

7.20 Shared space approaches

Content

Provide detail on specific requirements or targets for use of shared spaces throughout the facility, particularly as they might be required to support models of service delivery.

Some examples of shared space approaches are:

- entry points shared by services
- all meeting rooms are on a common booking system
- large meeting rooms may be used for public functions
- one common waiting space may be provided for several ambulatory units
- multiple use of ambulatory areas by more than one clinic type
- equipment stores
- centralised equipment store
- central bed store.

Rationale

This information will directly affect design options and layouts and the cost of the facility. These items may have an impact on the accommodation brief and SOA as there will be opportunities for creating efficiencies in use of space.

The inclusion of these items in the functional design brief is a stage in the implementation of policy and common standards where they have been developed to support models of service delivery.

7.21 Staff amenities

Content

Provide summary level detail of any specific design considerations or requirements for staff amenities. Generally, staff amenities will be supplied on the basis of relevant policy, legislation and standards so this section is for listing additional requirements.

Staff amenities includes consideration of access to breast feeding facilities, first aid equipment and room, staff lockers, change rooms, personal care rooms, car parking and bike parking. While architects are required to ensure that statutory requirements are met, any additional or specific requirements should be noted in this section.

Rationale

Staff amenities will be supplied of the basis of policy, legislation and standards. If there are additional requirements or a particular approach that the facility or HHS would like taken, then it needs to be documented in the functional design brief.

Architects require this information to design unit layouts and for the development of the accommodation brief and SOA. Architects are also able to respond early to any changes in model or operation, for example, changes to grouping of amenities.

The model of service delivery will also be costed for both capital and operational purposes. Costing information will be included in the strategic assessment and subsequent business cases.

7.22 Telehealth

Content

Briefly describe the approach for Telehealth throughout the facility. This includes summary level description on what services will be provided across the facility and how they are managed as well as any key design requirements.

Describe the role the Telehealth service in the facility plays within the broader health system.

A summary of any future directions may be included, particularly as they relate to space, equipment and technology requirements.

Note any relevant departmental and facility or HHS level policies.

This section needs to be cross referenced to the non-clinical support services—Telehealth section as well as education and research.

Rationale

There are multiple options for the delivery of Telehealth services. The designers will need to understand which options apply for the project.

Planners, architects and engineers will use this information in the design of the facility ICT services and layout of spaces affected. It will also be used in the development of the accommodation brief and SOA.

The approach for Telehealth management across the facility will be used in the strategic infrastructure assessment for the facility site.

Any specific requirements for Telehealth management will be costed for both capital and operational purposes.

Costing information will be included in the strategic assessment and subsequent business cases.

7.23 Transport and access for patients, staff and visitors

Content

Describe the model for managing patient transport to and from the facility and also how patients, visitors and staff gain access throughout the facility.

List the modes of transport that need to be considered. Include relevant policies.

Note any specific design requirements including emergency vehicle access.

Rationale

The facilities being planned will be in a variety of locations relative to their urban setting and other health services. Design of the facility and its site may be impacted by certain requirements for access, for example public transport.

Planners, architects and engineers will use this information in the layout of the facility and its services, road and pedestrian pathway access as well as internal access routes. It will also be used in the development of the accommodation brief and SOA.

The approach for management of patient transport and access of patients, staff and visitors across the facility will be used in the strategic infrastructure assessment for the facility site.

The model of service delivery will be costed for both capital and operational purposes. Costing information will be included in the strategic assessment and subsequent business cases.

7.24 Visiting hours

Content

Provide a summary of visiting hours to the facility, noting which departments/units have differing arrangements. A table could be provided. Include relevant policies.

Note any specific design requirements.

This section needs to be cross-referenced to other department level sections in the functional design brief that have details on visiting hours.

Rationale

Visiting hours vary between facilities and have an impact on planning of access routes as well as security considerations. An understanding of facility or HHS requirements is essential to effective design.

Planners, architects and engineers will use this information in the layout of departments and services, design of security access and internal access routes. It will also be used in the development of the accommodation brief and SOA.

The approach for management of visiting hours across the facility will be used in the strategic infrastructure assessment for the facility site.

7.25 Waste management

Content

Describe the approach, model and/or operational requirements for waste management throughout the facility. This includes summary level description on what services are provided across the facility, how they are managed, how they will be delivered and any key design requirements. A summary of any future directions in waste management may be included, particularly as they relate to space, equipment and technology requirements.

Note any relevant departmental and facility or HHS policies in particular infection prevention and control.

Consider the role and requirements of recycling within the facility or HHS.

The content of this section is cross referenced to other department level sections within the functional design brief and is assumed to be consistent with the section on non-clinical support services—waste, loading dock and all other department sections that are involved in the chain of waste management.

Rationale

There are a number of options for the management of waste in a facility which have differing spatial and cost impacts.

Architects and engineers will use this information in the layout of departments and services, access routes and the development of the accommodation brief and SOA.

The approach and model for waste management across the facility will be used in the strategic infrastructure assessment for the facility site.

The model of service delivery will also be costed for both capital and operational purposes. Costing information will be included in the strategic assessment and subsequent business cases.

7.26 Work health and safety

Content

Provide a summary of work health and safety approach for the facility. Note any areas or departments that require specific focus or design requirements. Briefly summarise what issues need to be managed in a common way across the facility and how they will be managed.

Note any specific and emerging design requirements such as bariatric care.

Note specific considerations relating to security of staff.

This subject area has comprehensive policy, legislation and standards which will be taken as default requirements. Specific departmental and facility or HHS policies should be listed.

This section needs to be cross referenced to all department level sections in the functional design brief.

Rationale

While statutory requirements will be met by architects, engineers and other contractors, each facility or HHS will need to state their own particular additional requirements.

Planners, architects and engineers will use this information in the layout of departments and specific spatial elements within departments. It will also be used in the development of the accommodation brief and SOA.

The approach for management of work health and safety across the facility may be used in the strategic infrastructure assessment for the facility site.

The model of service delivery will also be costed for both capital and operational purposes. Costing information will be included in the strategic assessment and subsequent business cases.

7.27 Workstations and office accommodation

Content

The implementation of the workstations and office accommodation as per the *Queensland Health Workplace and Office Accommodation Policy and Guidelines (2008)* is described in this section.

Describe the implementation of this policy across the facility, how workspaces will be arranged, for example, co-locations and indicators for workstations and offices adjacencies.

Include a table of what role designations get single or double offices and the size of office.

Include any specific design considerations, for example parameters for administrative support areas such as storage requirements and multifunction devices.

Rationale

The number of types of spaces required for administrative purposes will be specific to the facility. The facility or HHS needs to provide a description of how policy is to be applied.

Architects require this information to design unit layouts and for the development of the accommodation brief and SOA.

The model of service delivery will also be costed for both capital and operational purposes. Costing information will be included in the strategic assessment and subsequent business cases.

8 Functional description and relationships

Content

This section summarises the location of services within the facility including:

- vertical and horizontal adjacencies
- blocking and stacking of buildings
- key external relationships—illustrated in a bubble diagram to demonstrate zone and cluster relationships, patient flows
- key internal relationships— illustrated in diagrams to demonstrate internal clustering, patient and staff flows.

Rationale

This information is fundamental to the way the floor plate is developed. The floor plate or floor plan refers to the size and orientation of a building level. The size of a floor plate will depend on the maximum number of departments that must be collocated on that level.

Inside a department, the effectiveness of design in meeting the model of care/service delivery will depend on the clarity with which the facility or HHS is able to describe the relationship of internal functions and the flows of patients and staff.

Architects and engineers will use this information in the layout of the functional areas and departments within the facility and within the context of the site. These relationships are the building blocks of facility design. They will influence the shape, size and orientation of the building. BIM should be used (as per the *PIR* document) to help inform and communicate the design.

This information is an important input into the strategic infrastructure assessment for the facility site.

Ultimately the facility design will be costed and will inform the strategic assessment and future business cases.

8.1 Functional areas

Content

Functional areas may be defined as the spaces, zones and/or groupings of areas within a facility. A department may represent one functional area or be a combination of functional areas. The following is one typical way of classifying or grouping functions within a facility:

- clinical areas
 - emergency
 - inpatient areas
 - operating or procedural suites for example operating rooms, endoscopy
 - ambulatory areas
- day only areas
- clinical support areas, for example medical imaging, pathology, pharmacy
- non-clinical support areas, for example environmental, waste, food services, security, infection control, engineering and biomedical technical services
- administration only areas
- staff and shared staff areas
 - workspaces—in clinical and clinical support areas
 - teaching and learning spaces—central or distributed spaces
 - meeting rooms
 - research space—dedicated and shared
 - multipurpose space—flexible to accommodate a range of functions
 - amenity space—including staff and public amenities
- outdoor space—therapeutic multipurpose space and other landscaped surrounds
- commercial/retail space—designated commercial or retail areas
- circulation space that is not within a department, for example corridors, stairs, ramps, lift shafts
- car parking
- central energy facility.

Services provided, bed numbers and configuration and operational policies may vary the zoning required.

The groupings of spaces within each clinical, clinical support and non-clinical support area are listed in the description of each unit or service. AusHFG will guide functional areas/spaces.

Develop a list of functional groupings for the facility.

Rationale

Architects and engineers will use this information in the layout of the functional areas and departments within the facility and within the context of the site. These relationships are the building blocks of facility design. They will influence the shape, size and orientation of the building.

This information is an important input into the strategic infrastructure assessment for the facility site.

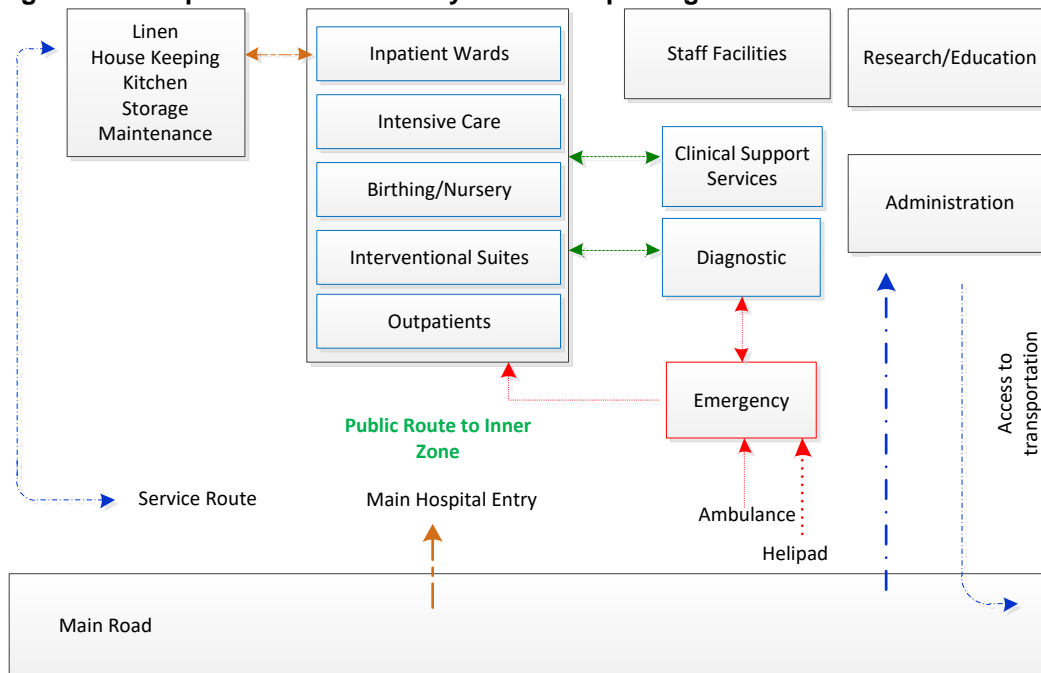
8.2 Nature of functional relationships

Content

Functional relationships describe the physical relationships required between different areas within the facility and describe a close relationship between discrete services which form part of the clinical services and clinical support services (for example, if patients or staff typically move between the two services on a regular basis).

The functional relationships within the facility describe the need for patient and staff movements within the facility or their interdependencies. They also support the delivery of clinical services and clinical support services in accordance with the facility's model of care.

Figure 4: example of whole of facility relationships diagram



Example Flows



Rationale

Architects and engineers will use this information in the layout of the functional areas and departments within the facility and within the context of the site. These relationships are the building blocks of facility design. They will influence the shape, size and orientation of the building.

This information is a most important input into the strategic infrastructure assessment for the facility site.

8.3 Specification of Functional Relationships

Content

Functional relationships may be either:

- key functional relationships between areas within the facility
- close relationships between the clinical services or clinical support services.

The functional relationships between areas within the facility and discrete services can be prioritised and quantified using a classification system as summarised in Table 1.

A table detailing the classification of relationships between departments is provided in this section.

Rationale

Architects and engineers will use this information in the layout of the functional areas and departments within the facility and within the context of the site. These relationships are the building blocks of facility design. They will influence the shape, size and orientation of the building.

This information is a most important input into the strategic infrastructure assessment for the facility site.

Table 1: Functional relationship classifications and definitions

Classification	Meaning
Immediate (<one minute)	<ul style="list-style-type: none"> • being the shortest direct, horizontal route • the route must be an unimpeded route • door to door travel time between the two areas or services identified as having an 'immediate' functional relationship must not exceed one minute.
Direct (<two minutes)	<ul style="list-style-type: none"> • being a direct horizontal or vertical route • the route must be an unimpeded route • 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 (<five minutes)	<ul style="list-style-type: none"> • being a direct 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 (>five minutes)	<ul style="list-style-type: none"> • being a direct horizontal or vertical route. • door to door travel time between the two areas or services identified as having a 'easy' functional relationship must not exceed ten minutes.

Rationale

Architects and engineers will use this information in the layout of the departments within the facility and within the department. These relationships are the building blocks of facility design. They will influence the shape, size and orientation of the departments within the building.

This information is a most important input into the strategic infrastructure assessment for the facility site.

Knowing this information at initial stages of a project may assist in preventing rework of design in later stages thereby saving cost to the project.

9 Workforce

9.1 Current and projected workforce

Content

This section gives a total figure for the current and future staffing profile of clinical, clinical support and non-clinical staff by full time equivalents (FTE) and approximate headcount. Include information about type and percentage or numbers of staff who require either a dedicated office, workstation, can share a workstation or use a hot desk.

Include a summary of percentage growth in each type of workforce. Describe the nature of future organisational structure and roles workforce planning/ workforce strategy. Include an explanation of the changes in models of service delivery or technology that will impact on workforce configuration.

Rationale

Workforce information is used by planners and designers for a variety of purposes: to design the size of common and public spaces, sizing of travel space or corridors, numbers of toilets, staff amenities, car parking, bike storage, retail and commercial space needs for example food court. The total size and nature of a workforce when fully understood, may lead to new and innovative ideas about use of common and shared space.

The nature of spaces in service delivery areas can change depending on the models of care underpinning choice of staff type, for example pharmacy model, nursing models. Designers need to know if staffing changes are based on new technology as it needs to be included in space and cost considerations.

Planners need workforce numbers to determine both capital and operational budgets for the facility. This information is required for strategic assessment of the project, both capital budget purposes and business cases.

9.2 Clinical, clinical support and non-clinical workforce profile

Content

For the facility scope of works, this section breaks down into the detail of each type of staff by their classification grade, giving total FTE and number of people, both current and projected.

For the purposes of the preparation of workforce information, the following definitions are used in this functional design brief.

Clinical staff grouping: refers to all staff that work within units providing direct patient care for example inpatient units, ambulatory care units, emergency department, allied health.

Clinical support staff grouping: refers to all staff who work within units that provide direct diagnostic and therapeutic support to clinical services, for example medical imaging, pathology, nuclear medicine, pharmacy.

Non-clinical staff grouping: refers to all staff that work within units that have no clinical service delivery role either direct or indirect for example housekeeping, waste management, food services, supply, and general administration.

Rationale

This level of information will be used to develop both capital and operational budgets for the facility.

Designers use this detailed information to undertake an initial validity check on the spaces required in both clinical and non-clinical areas.

This information may also be matched to individual department models of care, to better understand the full implications of any changes to operation that might translate into spatial design.

9.3 Workforce impact on design

Content

Describe any anticipated changes to facility design, either at department or whole-of-facility level, which may result from changes to workforce type or numbers. Include consideration of new or changing roles, award impacts and policy changes and work health and safety.

Rationale

Facility architects and engineers will need to know what impact changes in workforce numbers may have on design. Some of the areas that would be directly affected by staff numbers are, for example:

- car parking
- staff amenities—for example change facilities at unit level and overall throughout the facility
- staff accommodation, workstations and offices
- security—access management
- sign on areas.

One possible impact of workforce information is that alternative design solutions may be required where projected numbers cannot be accommodated within a refurbished building.

10 Accommodation brief

Content

The accommodation brief is a summary of the key spaces required by service type in the facility. This summary level information is only required at the **strategic level of the functional design brief**.

The following table provides example content:

Unit example	Treatment space* example	Number
Inpatient units	overnight beds	
	Intensive Care Unit/Coronary Care Unit/Neonatal Intensive Care Unit beds	
	Mental health acute beds	
Total		
Emergency department	acute treatment cubicles	
	resuscitation cubicles	
	chairs/trolleys	
	treatment cubicles	
Total		
Perioperative services	operating rooms	
	procedure rooms	
	stage 2 recovery bays	
	cardiac intervention rooms	
	medical imaging intervention rooms	
	endoscopy rooms	
Total		
Outpatient/ambulatory care units	consultation rooms	
	treatment rooms	
	procedure rooms	
Total		
Day unit	same day medical	
	same day surgical	
	renal dialysis chairs/trolleys	
	chemotherapy chairs/trolleys	
Total		
Medical imaging	general X-ray and fluoroscopy rooms	
	CT rooms	
	MRI room	
	ultrasound rooms	
	OPG room	
	Gamma cameras rooms	
Total		

There are a number of other functional areas which may or may not be external to a patient facility that, if in scope, will also be listed on the accommodation brief. These include:

Functional unit example	Input parameter example
Car park—basement, covered and uncovered	number of car spaces
Central energy facility	number of chillers
Child care centre	number of child care spaces

The inputs to the accommodation brief correspond to the inputs for the Victorian facility capital planning model which has been adopted by the department as the basis of the strategic level project costing method.

Note that the contents of this table must be cross referenced to the bed table or summary in the health service planning document.

Schedule of accommodation

A complete SOA, listing every room and space will be **developed for the full functional design brief**. This level of information will include a list of every single room/space in the facility by department, its AusHFG room name, size and a range of characteristics such as number of occupants, hours of use and special requirements.

The detail provided on the SOA will be usually be prepared by an architect as it requires the inclusion of statutory Building Code of Australia requirements.

*Room or space type is as defined by the AusHFG or otherwise agreed by the project.

Rationale

Strategic functional design brief

Planners and architects will use this information to formulate the first round of square metre areas for each department/function and for the whole facility. The total gross square metre area for the facility is essential input to the strategic infrastructure assessment for the facility site. Area measurements will be used for cost modelling of the project and setting of a budget.

The total gross square metre area and total budget for the project will be included in the strategic assessment business case.

10.1 Full functional design brief schedule of accommodation

Once the full SOA is produced it will be used as the basis of the total square metre area for the project. Assuming that the project scope remains the same, as it progresses through each stage, the total square metre area may be measured against this initial estimate. The SOA will be revised at each stage of the project and will be subject to change, usually up to the end of the design development stage.

The following sections outline the type of information required to complete the full functional design brief

In the following sections, an example chapter is provided for three different types of units: a clinical unit, clinical support unit and a non-clinical unit, as the content will vary between these types of unit.

The list of typical units provided in Appendix A is grouped by the following type of units.

1. Clinical service unit

A clinical service unit is defined as a service in the facility where clinical services are provided directly to inpatients and outpatients.

2. Clinical support service unit/department

A clinical support service is one with specific design requirements that supports direct clinical care to the patient. Examples include:

- medical imaging
- nuclear medicine
- pharmacy
- pathology.

3. Non-clinical unit/department

A non-clinical unit is defined as a service that has specific design requirements, is essential to the functioning of a health facility but has no clinical or clinical support role. Examples include:

- building engineering management
- food services
- hotel services
- security
- supply
- waste management.

11 Clinical service department/unit

11.1 Scope of service

Content

Describe the parameters of an inpatient or outpatient service and the types of clinical services provided as described in the CSCF. Include:

- what does this department/unit provide by types of service and numbers, for example type of inpatient bed (multiday or day only/bed or bed alternative)
- nominated CSCF level
- who is admitted to the beds from both internal facility and external sources—at a summary level
- note in particular, any exclusions to the scope of the project.

Rationale

Architects require this information to generate initial unit layouts and for the development of the SOA. This information is central to the costing model for the budget workup and included in the preliminary business case.

12 Model of care

Content

Describe the model of care which has been previously developed by the facility or HHS.

Describing the functional design brief can only proceed with a documented and preferably agreed model of care.

The model of care needs to describe:

- what services are provided
- who receives them
- where they are delivered
- how they are delivered
- when they are delivered.

Rationale

Architects require this information to design unit layouts for all the departments effected and for the development of the accommodation brief and SOA.

Depending on the model, square metre areas for each department may be quite different. It is essential to know at the full functional design brief stage, each department/unit area requirement as each department/unit will form part of an overall floor layout. Changes to models of care and service delivery and their impact on space requirements can be very costly to a project if they occur after initial facility layout has been determined. It is not always possible to expand a department area due to limitations on the size of a floor plate. Understanding the model of service delivery at the functional design brief stage will save avoidable rework later in the project.

Checkpoint

This is where models of care are described at a local level. Describing these ensures that the relationships and layouts within each department are organised to support the desired model of care. It is important to ensure that the models of care described allow for efficiency of service delivery and future flexibility of services provision. This is the third level in the model of care hierarchy. See Figure 2, levels of models and care and service delivery.

Models of care must reflect contemporary thinking and be supported by evidence. The models of care should not just be driven by the views of an individual clinician (particularly if it is not a contemporary approach) as health care design needs to respond to a range of workers and models over time.

12.1 Workforce for the department/unit

Content

Within the context of activity-based funding, provide a table of current and projected clinical service staffing needed to operate the unit, with the following detail:

- type of staff member by classification
- current FTE and number of people
- projected FTE and number of people.

Rationale

Unit level workforce detail is the source information which is collated into the whole-of-facility summary table. The summary workforce table should equal the sum of all the units detailed in the full functional design brief.

Planners and project team members will use this information to develop an operating budget and workforce and change management plan for the department which feeds into business cases.

Architects require this information to finalise the SOA with detail of numbers of toilets and other staff amenities, size meeting and collaboration spaces and match staffing numbers generally to spaces provided.

12.2 Policies impacting on built environment

Content

This section should include detail of any relevant departmental and facility or HHS policies, including state-wide legislation, policy and standards which may impact facility design for this particular department/unit. Some policies when applied to the design and development of either a new facility or refurbishment of an existing facility can have significant spatial and cost implications.

Consider the design impact from the application of policies, procedures and standards. For example; do they require more or less space, particular types of space, special or more costly equipment or ICT provisions?

Examples of policies and legislation that impact design:

- *Radiation Safety Act 1999* and *Radiation Safety Regulation 2010*
- Queensland Government, water risk management plan provisions under the *Public Health Act 2005* (<https://www.health.qld.gov.au/public-health/industry-environment/environment-land-water/water/risk-management>).
- Queensland Government, *Digital Enablement for Queensland Infrastructure – Principles for BIM Implementation (2018)*

Rationale

The project team including consultants must be aware of any policies, regulations and standards that the facility or HHS requires met. Policies, regulations and standards can have a significant cost impact on a project which needs to be built into the costing model.

By listing the policies, procedures and standards in the functional design brief, there is transparency of this information throughout the project and their impact can be readily understood.

12.3 Operational Description

Content

This section describes how the department functions in delivering its services. It includes hours of operation for various services, patient and staff flows such as how patients, staff and visitors arrive, move around and leave the department.

Points to consider where there are specific considerations or requirements that are different to the whole of facility:

- access
- admission and discharge
- amenities for staff
- amenities for patients and visitors
- consumables storage
- education and training
- equipment storage
- infection prevention and control
- medical gases
- medication management
- hotel services
- security
- waste
- water supply, quality treatment and safety.

Rationale

Architects require this information to design internal department layouts and for the refinement of the SOA.

Clearly stated requirements will provide a solid foundation for design by architects.

Providing this level of information, promotes clarity, avoids design rework and achieves better design outcomes for the department/unit.

12.4 Functional relationships

Content

Describe relationships based on those that happen most of the time i.e. 80 per cent of the time.

Describe the functional groups or relationships between the unit and outside departments. Group functions based on:

- where patients come from for example emergency department
- where patients go to and from while staying in the unit, for example medical imaging
- where patients go when they are discharged, for example, the transit lounge.

Describe the internal functional groupings or relationships within the department. Group functions based on:

- core clinical spaces, for example bedrooms
- spaces that support core clinical activities, for example clean utility
- non-clinical spaces that are within the clinical service delivery unit, for example workstations
- green spaces, for example open outdoor spaces.

Rationale

In this section, department or service staff describe what spaces they use and the relationship of spaces to one another. The articulation of functional relationships is best done by those people who understand the model of care and responsible for delivering care.

Architects use this information to design unit layouts and for the development of the accommodation brief and SOA. Architects are also able to respond early to any changes in model or operation, for example, changes to grouping of amenities.

12.5 Staging of built capacity

Content

If there is a proposal to build the service in stages over a period of time, this should be documented here. List any special considerations relevant to staging this service capacity. In particular, note specific design requirements.

Consider compatibility with existing/remaining facilities, impacts of capital infrastructure works when done in stages and timelines for staging.

Make note if a department/unit is not suitable for staging of built capacity, including the reasons for this.

Consider requesting BIM being used to graphically show staging, as defined in the *PIR* document.

Rationale

Architects require this information to design department layouts to facilitate future expansion or changes to area functions. Planning for this in the early stages of a project may avoid future rework.

For example, in large technical departments, such as medical imaging, maintenance and replacement of large complex equipment, needs to be factored into design of the department. This includes requirements to place some equipment on exterior walls to avoid undue damage to assets in future and disruption to delivery of services.

12.6 Future service developments and innovations

Content

Some service areas are experiencing rapid change in models of service delivery and use of new technologies. List any developments that are imminent or on the horizon that may have an influence on design, in particular, equipment and technology.

Innovation may be defined as introducing something new and previously untried. Innovation may involve a product, piece of equipment, new process or approach, new ICT or work method. Describe any innovations planned for the department/unit.

Rationale

The project team is required to future proof the facility and provide for expansion. This information is essential to understanding what design features are required to meet future changes to service delivery.

The impact of planned innovation needs to be assessed by facility planners, architects and other consultants. Impact assessment may include changes to spatial and design requirements, building services, furniture fit out and equipment and operating costs.

The cost impact of future service developments must also be factored into the project budget, both capital and operational.

12.7 Specific design requirements

Content

This section can be approached on the premise that design requirements in the AusHFG, relevant legislation and standards will be met by default.

List any design requirements that may be additional to the AusHFG or which are not covered by the AusHFG for this facility.

List requirements due to changes in the model of care that are not covered by the AusHFG or that are considered a high priority or major concern.

Consider accommodation of families/parents within the model of care.

Include any items that require special focus. Points to consider include:

- impact of shielding on clinical and non-clinical wireless enabled equipment
- observation rooms
- radiation protection
- specific acoustics
- specific technology or services
- pendants for lighting, equipment and services
- lighting
- ICT
- medical emergency team call
- water quality.

Rationale

There are a variety of options for the design of clinical units to meet differing models of care.

This information will assist the architects in producing a design that facilitates the model of care specifically for the facility.

Architects require this information to design unit layouts and for the development of the accommodation brief and SOA. Architects are also able to respond early to any changes in model or operation, for example, changes to grouping of amenities.

12.8 Schedule of accommodation

Content

List the key core functional spaces for the unit. Provide the AusHFG room/space name and numbers of them, number of people using the room, non-standard activities, hours of use and a comment if required.

Provide a table with the following headings:

- room tag
- room code
- room name
- standard room
- briefed area m2
- number of rooms
- subtotal of briefed area m2
- occupancy (patient, staff, visitor)
- functional description.

Comments

This schedule is an initial list and will be the basis of further work by planners and architects, as all schedules will need to be checked against statutory requirements.

The use of space planning tools is encouraged as they structure the SOA in a relational database and ideally can be linked to the design information, throughout the course of project delivery.

Rationale

The facility or HHS provides a list of the core rooms/spaces required to delivery services according to the model or care for the facility.

Architects require this information to design unit layouts and for the development of the accommodation brief and SOA. Architects are also able to respond early to any changes in model or operation, for example, changes to grouping of amenities.

This is key information for input to the costing model for the facility.

This information will be included in the strategic assessment and subsequent business cases.

12.9 Summary of changes to model of care

Content

List changes to the current model of care that will have an impact on the project, in particular but not limited to spaces, equipment and technology.

Rationale

A description by the facility or HHS of their anticipated changes to the model of care provides clarity and transparency to planners and architects on expectations and special design requirements.

Changes to models of care can impact upon multiple clinical, clinical support and non-clinical services.

Architects require this information to design unit layouts and for the development of the accommodation brief and SOA. Architects are also able to respond early to any changes in model or operation, for example, changes to grouping of amenities.

13 Clinical support services department/unit

13.1 Scope of service

Content

Describe the parameters of the service:

- what does it provide by types and numbers, for example the modalities
- what CSCF level
- who receives the services, internal and external—at summary level?

Make note of any exclusions to the scope of service.

Rationale

Architects require this information to generate initial unit layouts and for the development of the SOA. This information is central to the costing model for the budget development which goes into the business case.

13.2 Model of service delivery

Content

Describe the model of service delivery which has been previously developed by the facility or HHS.

What services are provided, who receives them, where and how are they delivered.

Rationale

Architects require this information to design unit layouts for all the departments affected and for the development of the accommodation brief and SOA.

Depending on the model, net m² for each department may be quite different. It is essential to know at this stage how much area a department needs as it will be fitted into an overall floor layout.

Linking space planning tools with the building information models provides a useful method of tracking the briefed m².

Changes to models of service delivery and their impact on space requirements can be very costly to a project if they occur after initial facility layout has been determined. It is not always possible to expand a department area due to limitations on the size of a floor plate. Understanding the model of service delivery at the functional design brief stage will avoid rework later in the project.

13.3 Workforce for the department/unit

Content

Provide a table of current and projected staffing requirements with the following detail:

- type of staff member by classification
- current FTE and number of people
- projected FTE and number of people.

Rationale

Unit level workforce detail is the source information which is collated into the whole of facility summary table. The summary workforce table should equal the sum of all the units detailed in the full functional design brief.

Planners and project team members will use this information to develop an operating budget for the department which feeds into business cases.

Architects require this information to finalise the SOA with detail of numbers of toilets and other staff amenities, size meeting and collaboration spaces and match staffing numbers generally to spaces provided.

13.4 Policies impacting on built environment

Content

This section should include detail any relevant policies of clinical and state-wide services as well as legislation and standards. For example:

- Relevant legislation includes the *Radiation Safety Act 1999* and *Radiation Safety Regulations 2010*.
- Queensland Government, water risk management plan provisions under the *Public Health Act 2005* (<https://www.health.qld.gov.au/public-health/industry-environment/environment-land-water/water/risk-management>).

Rationale

The project team including consultants must be aware of any policies, regulations and standards the facility or HHS must adhere to. Policies, regulations and standards can have a significant cost impact on a project which needs to be built into the costing model.

By listing them in the functional design brief, there is transparency of this information throughout the project and their impact can be readily understood.

13.5 Operational description

Content

This section describes how the department functions in delivering its services. It includes hours of operation for various services, patient and staff flows, such as how patients, staff and visitors arrive, move around and leave the department.

Points to consider where there are specific considerations or requirements that are different to the whole of facility:

- access
- admission and discharge
- amenities for staff
- amenities for patients and visitors
- consumables storage
- education and training
- equipment storage
- infection prevention and control
- medical gases
- medication management
- hotel services
- security
- waste
- water supply, quality, treatment and safety.

Rationale

Architects require this information to design internal department layouts and for the refinement of the SOA. Architects are able to design the department based on what the stated requirements are rather than making assumptions. By providing this level of information, design rework may be avoided and better design outcomes achieved for the department service.

13.6 Functional relationships

Content

Describe relationships based on those that happen most of the time i.e. 80 per cent of the time.

Describe the functional groups or relationships between the unit and outside departments. Group functions based on:

- where patients come from, for example emergency department
- where patients go to and from while staying in the unit, for example medical imaging
- where patients go when they are discharged, for example home.

Describe the internal functional groupings or relationships within the department. Group functions based on:

- core clinical spaces, for example bedrooms
- spaces that support core clinical activities, for example clean utility
- non-clinical spaces that are within the clinical service delivery unit, for example workstations
- green spaces, for example open outdoor spaces.

Rationale

This is where the staff of the service describes what spaces they use and the relationship of spaces to one another. The articulation of functional relationships is best done by those people who understand the model of care and are responsible for delivering care.

Architects use this information to design unit layouts and for the development of the accommodation brief and SOA. Architects are also able to respond early to any changes in model or operation, for example changes to grouping of amenities.

13.7 Staging of built capacity

Content

If there is a proposal to build the service in stages over a period of time, this should be documented here. List any special considerations relevant to staging this service capacity.

Consider compatibility with existing/remaining facilities, impacts of capital infrastructure works when done in stages and timelines for staging. Make note in this section if a department/unit is not suitable for staging of built capacity, including the reasons.

Consider requesting BIM being used to graphically show staging, as defined in the *PIR* document.

Rationale

Architects require this information to design department layouts to facilitate future expansion or changes to area functions. Planning for this in the early stages of a project may avoid future rework.

Maintenance and replacement of large complex equipment needs to be factored into design of the department. This includes requirements to place some equipment on exterior walls to avoid undue damage to assets in future and disruption to delivery of services.

13.8 Future service developments and innovations

Content

Some service areas are experiencing rapid change in models of service delivery and use of new technologies. List any developments that are imminent or on the horizon that may have an influence on design, in particular, equipment and technology.

Innovation may be defined as introducing something new and previously untried. Innovation may involve a product, piece of equipment, new process or approach, new ICT or work method. Describe any innovations planned for the department/unit.

Rationale

The project team is required to future proof the facility and provide for expansion. This information is essential to understanding what design features are required to meet future changes to service delivery.

The impact of planned innovation needs to be assessed by facility planners, architects and other consultants. Impact assessment may include changes to spatial and design requirements, operating costs, building services, furniture fittings and equipment.

The cost impact of future service developments must also be factored into the project budget, both capital and operational.

13.9 Specific design requirements

Content

This section can be approached on the premise that design requirements in the AusHFG, relevant legislation and standards will be met by default.

List any design requirements that may be additional to the AusHFG or which are not covered by the AusHFG for this facility.

List requirements due to changes in the model of care that are not covered by the AusHFG or that are considered a high priority or of major concern.

Include any items that require special focus, for example, nuclear medicine has specific requirements for dealing with radioactive isotopes.

Rationale

There are a variety of options for the design of clinical units to meet differing models of care.

This information will assist the architects in producing a design that facilitates the model of care specifically for the facility.

Architects require this information to design unit layouts and for the development of the accommodation brief and SOA. Architects are also able to respond early to any changes in model or operation, for example, changes to grouping of amenities.

13.10 Schedule of accommodation

Content

List the key core functional spaces for the unit. Provide the AusHFG room/space name and numbers of them, number of people using the room, non-standard activities, hours of use and a comment if required.

Provide a table with the following headings:

- room tag
- room code
- room name
- standard room
- briefed area m2
- number of rooms
- subtotal of briefed area m2
- occupancy (patient, staff, visitor)
- functional description
- comments.

This schedule is an initial list and will be the basis of further work by planners and architects, as all schedules will need to be checked against statutory requirements.

Rationale

The facility or HHS provides a list of the core rooms/spaces required to delivery services according to the model or care for the facility.

Architects require this information to design unit layouts and for the development of the accommodation brief and SOA. Architects are also able to respond early to any changes in model or operation, for example, changes to grouping of amenities.

This is key information for input to the costing model for the facility.

This information will be included in the strategic assessment and subsequent business cases.

13.11 Summary of changes to model of service delivery

Content

List changes to the current model of care that will have an impact on the project, in particular but not limited to spaces, equipment and technology.

Rationale

Architects require this information to design unit layouts and for the development of the accommodation brief and SOA. Architects are also able to respond early to any changes in model or operation, for example changes to grouping of amenities.

Changes to models of care can impact upon multiple clinical, clinical support and non-clinical services.

14 Non-clinical services department/unit

14.1 Scope of service

Content

Describe the parameters of the service:

- what services does it provide by types and numbers
- who receives the services, internal and external—summary.

Make note of any exclusion to the scope of the service, particularly those that might be provided in other projects for example chillers.

Rationale

Architects require this information to generate initial unit layouts and for the development of the SOA. This information is central to the costing model for the budget workup which goes into the business case.

14.2 Model of service delivery

Content

Describe the model of service delivery which has been previously developed by the facility or HHS.

What services are provided, who receives them, where and how they are delivered.

Rationale

Architects require this information to design unit layouts for all the departments affected and for the development of the accommodation brief and SOA. Depending on the model, square metre areas for each department may be quite different. It is essential to know at this stage how much area a department needs as it will be fitted into an overall floor layout. Changes to models of service delivery and their impact on space requirements can be very costly to a project if they occur after initial facility layout has been determined. It is not always as possible to expand a department area due to limitations on the size of a floor plate. Understanding the model of service delivery at the functional design brief stage will save unnecessary rework later in the project.

Checkpoint

This is where models of service delivery are described at a local level. Describing these ensures that the relationships and layouts within each department are organised to support the desired service delivery model. It is important to ensure that the models described allow for efficiency of service delivery and future flexibility of services provision. This is the third level in the model of care hierarchy. See Figure 2. *Levels of models and care and service delivery*.

Models of service delivery must reflect contemporary thinking and be supported by evidence. The models of care should not just be driven by the views of an individual departmental manager (particularly if it is not a contemporary approach) as health care design needs to respond to a range of workers and models over time.

14.3 Workforce for the department/unit

Content

Provide a table of current and projected staffing requirements with the following detail:

- type of staff member by classification
- current full-time equivalent (FTE) and number of people
- projected FTE and number of people.

Rationale

Unit level workforce detail is the source information which is collated into the whole of facility summary table. The summary workforce table should equal the sum of all the units detailed in the full functional design brief.

Planners and project team members will use this information to develop an operating budget for the department which feeds into business cases.

Architects require this information to finalise the SOA with detail of numbers of toilets and other staff amenities, size meeting and collaboration spaces and match staffing numbers generally to spaces provided.

14.4 Policies impacting on built environment

Content

This section should include detail any relevant policies of clinical and state-wide services as well as legislation and standards. For example:

- Queensland Government, water risk management plan provisions under the *Public Health Act 2005* (<https://www.health.qld.gov.au/public-health/industry-environment/environment-land-water/water/risk-management>).

Rationale

The project team including consultants must be aware of any policies, regulations and standards that the facility or HHS must adhere to. Policies, regulations and standards can have a significant cost impact on a project which needs to be built into the costing model.

By listing them in the functional design brief, there is transparency of this information throughout the project and their impact can be readily understood.

14.5 Operational description

Content

This section describes how the department functions in delivering its services. It includes:

- hours of operation for various services
- staff and goods flows
- how goods and services arrive and leave the department
- how goods and services are delivered throughout the facility
- how staff arrive, move around and leave the department
- how visitors to the department arrive, move around and leave.

Rationale

Architects require this information to design internal department layouts and for the refinement of the SOA. Architects are able to design the department based on what the stated requirements are rather than making assumptions. By providing this level of information, design rework may be avoided and better design outcomes achieved for the department service.

14.6 Functional relationships

Content

Describe relationships based on those that happen most of the time i.e. 80 per cent of the time.

Describe the functional groups or relationships between the unit and outside departments. Group functions based on:

- where staff and goods enter from
- where staff and goods travel to and from
- where staff travel to as they leave work.

Describe the internal functional groupings or relationships within the department. Group functions based on:

- core functional spaces, for example, the cleaners' rooms
- spaces that support core activities, for example waste sub stores
- non-clinical spaces that are within the clinical service delivery unit
- green spaces, for example open outdoor spaces.

Rationale

This is where the staff of the service describes what spaces they use and the relationship of spaces to one another. The articulation of functional relationships is best done by those people who understand the model of care and are responsible for delivering care.

Architects use this information to design unit layouts and for the development of the accommodation brief and SOA. Architects are also able to respond early to any changes in model or operation, for example, changes to grouping of amenities.

14.7 Staging of built capacity

Content

If there is a proposal to build the service in stages over a period of time, this should be documented here. List any special considerations relevant to staging this service capacity.

Consider compatibility with existing/remaining facilities, impacts of capital infrastructure works when done in stages and timelines for staging.

Make note in this section if a department/unit is not suitable for staging of built capacity, including the reasons. Consider requesting BIM being used to graphically show staging, as defined in the *PIR* document.

Rationale

Architects require this information to design department layouts to facilitate future expansion or changes to area functions. Planning for this in the early stages of a project may avoid future rework.

Maintenance and replacement of large complex equipment needs to be factored into design of the department. This includes requirements to place some equipment on exterior walls to avoid undue damage to assets in the future and minimise disruption to delivery of services.

14.8 Future service developments and innovations

Content

Some service areas are experiencing rapid change in models of service delivery and use of new technologies. List any developments that are imminent or on the horizon that may have an influence on design, in particular, equipment and technology.

Innovation may be defined as introducing something new and previously untried. Innovation may involve a product, piece of equipment, new process or approach, new ICT or work method. Describe any innovations planned for the department/unit.

Rationale

The project team is required to future proof the facility and provide for expansion. This information is essential to understanding what design features are required to meet future changes to service delivery.

The impact of planned innovation needs to be assessed by facility planners, architects and other consultants. Impact assessment may include changes to spatial and design requirements, operating costs, building services, furniture fittings and equipment.

The cost impact of future service developments must also be factored into the project budget, both capital and operational.

14.9 Specific design requirements

Content

This section can be approached on the premise that design requirements in the AusHFG, relevant legislation and standards will be met by default.

List any design requirements that may be additional to the AusHFG or which are not covered by the AusHFG for this facility.

List requirements due to changes in the model of care that are not covered by the AusHFG or that are considered a high priority or major concern.

Include any items that require special focus.

Points to consider:

- is specialist advice required to brief this service department for example kitchen, supply chain, retail study
- check if Queensland Health state wide policies or procedures apply for example procurement
- requirements for separation of clean and dirty flows
- standard and specialised storage requirements
- what is the impact of any proposed model of service delivery on the whole facility and other facilities on the site? For example, will new trolleys fit through both existing and new corridors in a refurbishment?
- what is the impact of new equipment and processes on other departments for example on engineering services capacities, loading dock?

Rationale

There are a variety of options for the design of clinical units to meet differing models of care.

This information will assist the architects in producing a design that facilitates the model of care specifically for the facility.

Architects require this information to design unit layouts and for the development of the accommodation brief and SOA. Architects are also able to respond early to any changes in model or operation, for example, changes to grouping of amenities.

14.10 Schedule of accommodation

Content

List the key core functional spaces for the unit. Provide the AusHFG room/space name and numbers of them, number of people using the room, non-standard activities, hours of use and a comment if required.

Provide a table with the following headings:

- room tag
- room code
- room name
- standard room
- briefed area m2
- number of rooms
- subtotal of briefed area m2
- occupancy (patient, staff, visitor)
- functional description
- comments.

In some cases, such as food services, specialist consultant advice must be sought to provide the SOA.

This schedule is an initial list and will be the basis of further work by planners and architects, as all schedules will need to be checked against statutory requirements.

Rationale

The facility or HHS provides a list of the core rooms/spaces required to delivery services according to the model or care for the facility.

Architects require this information to design unit layouts and for the development of the accommodation brief and SOA. Architects are also able to respond early to any changes in model or operation, for example, changes to grouping of amenities.

This is key information for input to the costing model for the facility.

This information will be included in the strategic assessment and subsequent business cases.

14.11 Summary of changes to model of service delivery

Content

List changes to the current model of service delivery that will have an impact on the project, in particular but not limited to, spaces, equipment and technology.

Rationale

Architects require this information to design unit layouts and for the development of the accommodation brief and SOA. Architects are also able to respond early to any changes in model or operation, for example changes to grouping of amenities.

14.12 Changes to models of care can impact upon multiple clinical, clinical support and non-clinical services.

Appendix A - List of functional planning areas

The following is a list of typical functional planning units. It is not intended to be a complete list as the scope of projects varies widely.

Clinical service department/units	Clinical support department/units	Non-clinical department/units
<p>A clinical service unit is defined as a service in the facility where clinical services are provided directly to inpatients and outpatients.</p> <ul style="list-style-type: none"> Acute Medical Inpatient Unit and all sub specialist units Acute Surgical Inpatient Unit and all sub specialist units Ambulatory Care Birth Suite Cardio Vascular Interventional Suite Day Units Day of Surgery Unit Coronary Care Unit Emergency Department Endoscopy Suite High Dependency Unit Intensive Care Unit Interventional Medical Imaging Mental Health Services and all sub units Neonatal Intensive Care Unit Oncology Unit Operating Theatre Suite Outpatients Paediatric Intensive Care Post Anaesthetic Care Unit Procedure Suite Radiation Oncology Renal Dialysis Short Stay Observation Unit Sleep Laboratories 	<p>A clinical support service unit is defined as a service with specific design requirements that supports direct clinical care to the patient.</p> <ul style="list-style-type: none"> Aboriginal and Torres Strait Islander Health Allied Health Biomedical Engineering Chaplaincy and Pastoral Care Equipment Pool Health Promotion Helipad Medical Imaging Morgue Multi Faith Centre Nuclear medicine Pathology Pharmacy Sterile Supply Volunteers 	<p>A non-clinical unit is defined as a service that has specific design requirements, is essential to the functioning of a health facility but has no clinical or clinical support role.</p> <ul style="list-style-type: none"> Administration Ambulance Bays Archive Café, public and staff Cafeteria, staff Carpark Cashier Central Energy Facility Child Care Centre Commercial and Retail Corporate Services Courier Service Disaster Recovery Store Facility Management Food Services Engineering Services Environmental Services Facility Foundation Flammable store ICT Laundry Loading Dock Mailroom Medical Gas Store Patient Information (medical/health records) Pharmacy IV Store Revenue Security Supply Store Waste Management