



2023 Australasian College for Infection Prevention and Control (ACIPC) International Conference

Standards - AusHFG & the role and constraints in design – the view of the architect.

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Cheesman Architects

- Cheesman Architects was established in 1986 by Robert Cheesman.
- South Australian practice
- We take a consultative and comprehensive approach to our work and we listen to our clients.
- Cheesman Architects is a specialist in the delivery of projects of a scale or complexity usually associated with large national firms, whilst maintaining the hands-on approach and attention to detail of a single office practice.
- Our projects encompass work in the education, health, science and research, defence, industrial, commercial, retail, residential (including age care and retirement) sectors and range from small scale alterations to projects exceeding \$350M.
- Cheesman Architects' collaborative style and consistent focus on service delivery has resulted in many loyal long-term relationships with industry partners and clients.
- Personally, I have worked at Cheesman Architects for over 20 years, on a diverse portfolio of projects, including over \$750M in the health sector.



Our Services

Cheesman Architects is a multi-disciplinary practice providing services in the following specialist areas:

- Architecture
- Interior Design
- Master Planning
- Urban Design
- Sustainability
- Complex Projects
- Facilities Planning



Our Philosophy

Cheesman Architects is recognised locally and nationally for its consistent ability to complete projects that achieve architectural excellence and deliver high value outcomes.

Our philosophy is central to our business and underpins our approach to every project.

- Listen
- Technical excellence
- Practical and innovative solutions
- Responsiveness and reliability
- Open and transparent communication
- Commitment to long term partnerships through service
- Belief in social and environmental responsibility
- Delivering best value for clients









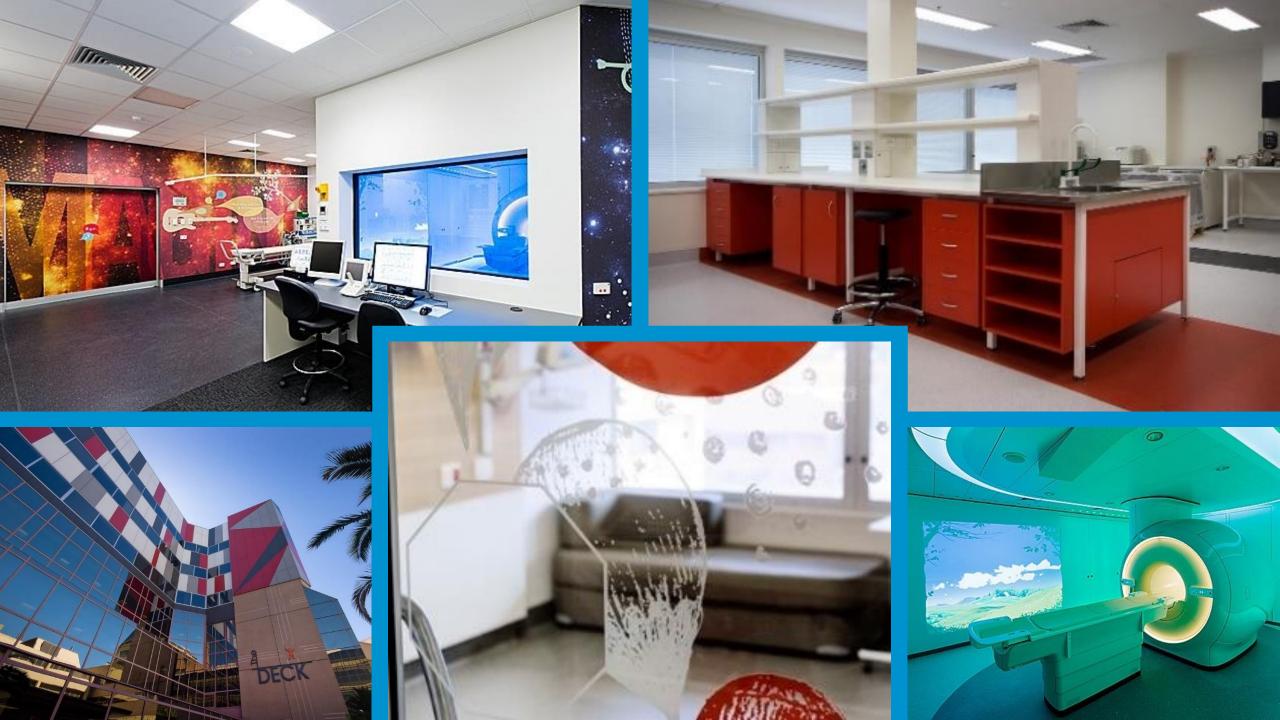














Standards & Guidelines

NCC – National Construction Code

AS / NZS – Australian Standards / New Zealand Standards

NSQHS Standards – Australian Commission on Safety and Quality in Health Care

AusHFG – Australasian Health Facility Guidelines



National Construction Code

"The NCC is Australia's primary set of technical design and construction provisions for buildings. As a performance-based code, it sets the minimum required level for the safety, health, amenity, accessibility and sustainability"

The NCC is a legal requirement through State and Territory legislation.

Comprised of three (3) volumes:

- NCC Volume 1 Building Code of Australia
- NCC Volume 2 Building Code of Australia
- NCC Volume 3 Plumbing Code of Australia

Volume 1 references an additional 166 Standards including AS, AS/NZS, ANSI, ISO, NASH, EU and other Standards





Standards

There are thousands of standards affecting the design of hospitals and everything that goes into the hospitals.

Many standards are compulsory as they are legislated, eg through the National Construction Code or a referenced by other accreditation bodies such as National Safety and Quality Health Service (NSQHS).

Other standards that are voluntary and / or best practice should be advised / provided to the designers by the client during the briefing stages of a project as they will have an impact on the design and late incorporation may not be feasible.





"The National Safety and Quality Health Service (NSQHS) Standards provide a nationally consistent statement of the level of care consumers can expect from health service organisations."

They have been developed in collaboration with the Australian Government, states and territories, private sector providers, clinical experts, patients and carers.

The aim of the NSQHS Standards are to protect the public from harm and to improve the quality of health service provision.

All public and private hospitals, day procedure services and public dental practices are required to be accredited to the national Safety and Quality Health Service (NSQHS) Standards.







There are eight NSQHS Standards provide a nationally consistent statement about the level of care consumers can expect from health services.

- Clinical Governance Standard
- Preventing and Controlling Infections Standard
- Comprehensive Care Standard
- Blood Management Standard
- Partnering with Consumers Standard
- Medication Safety Standard
- Communicating for Safety Standard
- Recognising and Responding to Acute Deterioration Standard



"The Guidelines provide a nationally accepted approach to infection prevention and control, focusing on core principles and priority areas for action. They provide a basis for healthcare workers and healthcare facilities to develop detailed protocols and processes for infection prevention and control specific to local settings."

"Effective infection prevention and control is central to providing high quality healthcare for patients and a safe working environment for those that work in healthcare settings."

The guidelines are based on best available evidence and knowledge of the practicalities of clinical procedures:

- Understanding modes of transmission of infectious agents, risk management
- Work Practice to mimimise the risk of transmission of infectious agents
- Governance structures to support the implementation, monitoring and reporting of prevention and control practices
- Compliance legislation, regulations and standards









Modes of transmission of infectious agents:

Contact – most common, involves transmission by touch or via contact with blood or body substances. Contact may be direct or indirect.

Droplet – occurs when an infected person coughs, sneezes or talks, and during certain procedures. Droplet distribution is limited by the force of expulsion and gravity and is usually no more than 1 metre.

Airborne – occurs via particles containing infectious agents that remain infective over time and distance. Airborne infectious agents can be dispersed over long distances by air currents (e.g. ventilation or air conditioning systems) and infect individuals who have not had any contact with the infectious person.









Work Practices:

Implementing standard precautions as a first-line approach to infection prevention and control in the healthcare environment minimises the risk of transmission of infectious agents from person to person, even in high-risk situations.

- Personal hygiene hand hygiene.
- Personal protective equipment to prevent exposure of the healthcare worker and patients to infectious agents.
- Handling and disposal of sharps
- Environmental control cleaning and spills
- Waste and linen handling









Transmission Precautions:

Transmission-based precautions are recommended as additional work practices in situations where standard precautions alone may be insufficient to prevent transmission.

- Risk assessment potential need for transmission based precautions on patient arrival
- Isolation allocation of single rooms inclusive of bathroom facilities.
- Cohorting of patients with same infectious agent.
- Personal protective equipment additional specific PPE.
- Environmental control use of specific air handling techniques.
- Restriction of movement of both patients and workers.











The Australasian Health Facility Guidelines (AusHFG) provide information to assist health services and design teams to plan and design health facilities.

They are an initiative of the Australasian Health Infrastructure Alliance (AHIA).

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

- Australasian best-practice approach to health facility planning;
- access to standard spatial components; and
- a flexible tool responsive to changes in the delivery of health care.





The ongoing development of the AusHFG are a result of the collaborative efforts of key stakeholders including:

- AHIA representatives from all Australian states and territories and New Zealand;
- Industry including health planners, architects and engineers;
- Clinical experts

and

Health consumers including patients and their carers.





The AusHFG seek to support the delivery of optimal patient care through provision of an appropriate physical environment.

The aims of the AusHFG are to:

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





The AusHFG is composed of six (6) parts:

Part A – Introduction and Instructions for Use

Part B – Health Facility Briefing and Planning

Part C – Design for Access, Mobility, OHS and Security

Part D – Infection Prevention control

Part E – Building Services and Environmental Design

Part F – Project Implementation





Part B – Health Facility Briefing and Planning

- Health Planning Units
- Schedules of Accommodation
- Standard Components
- Room Layouts
- Room Data





Part B – Health Facility Briefing and Planning

- Service planning
- Role delineation of Health facilities
- Capital development guidelines
- Cost planning guidelines
- Cost and area benchmarks
- Recurrent costs
- Environmentally sustainable design
- Natural disaster
- Occupation Health and Safety
- Accessibility
- Infection Control





Part B – Health Facility Briefing and Planning – Health Planning Units

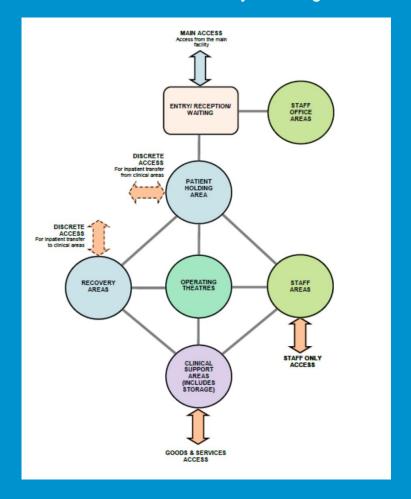
Health Planning Units are a key feature of the AusHFG and provide detailed information regarding common clinical departments or services in hospitals and other healthcare settings.

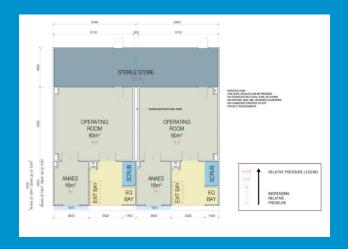
Each HPU contains information relating to a service description, related policies and guidelines, operational planning and design considerations. Each Health Planning Unit also includes a detailed schedule of accommodation and functional relationship diagram.





Part B – Health Facility Briefing and Planning – Health Planning Units











Part B – Health Facility Briefing and Planning – Schedules of Accommodation

OPERATING ROOM AREA

Note 3: Provide 1 anaesthetic room per operating room for Levels 5/6. The number of anaesthetic rooms for Levels 3 and 4 to be determined during planning with consideration to operational policy and throughput. A larger size of 18m2 may be required in some cases although the use of sliding doors at the entry to the room will maximise available space.

Note 4: The number of operating rooms will be determined for each project based on consideration of throughput and casemix

Note 5: Consideration may be given to a larger operating room for highly specialised surgery. Examples include a hybrid operating room which will typically be planned at 75m2 and require an attached control room and computer equipment room.

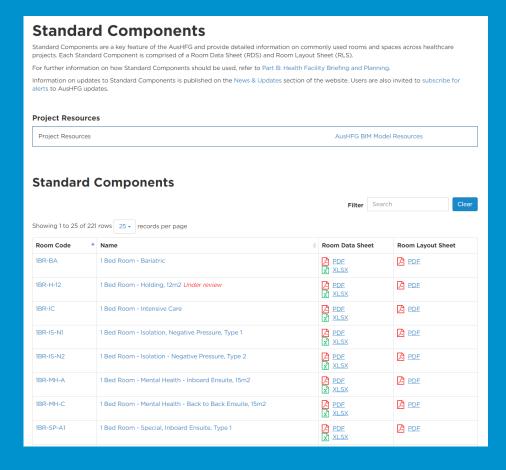
CODE	ROOM/SPACE	SC/SC-	NO.	SIZE m2	REMARKS
ANAE-16	Anaesthetic Preparation Room, 16m2	Yes	16	16.0	refer note 3
ORGN	Operating Room, General	Yes	16	60.0	refer notes 2, 3 and 4
SCRB-4	Scrub Up, 4m2	Yes	16	4.0	
	Exit Bay		16	12.0	1 per Operating Room; if shared between 2 rooms, increase to 16m2; area includes approx 1m2 space for AV integration server cupboard which must be temperature controlled
CLUP-10	Clean-Up Room - Shared, 10m2	Yes	8	10.0	1 per 2 ORs, or 15m2 if shared between 3 ORs; fluid management system dock will not be required to every Clean-Up Room
Intradepartmental (discounted) circulation				40%	







Part B – Health Facility Briefing and Planning – Standard Components

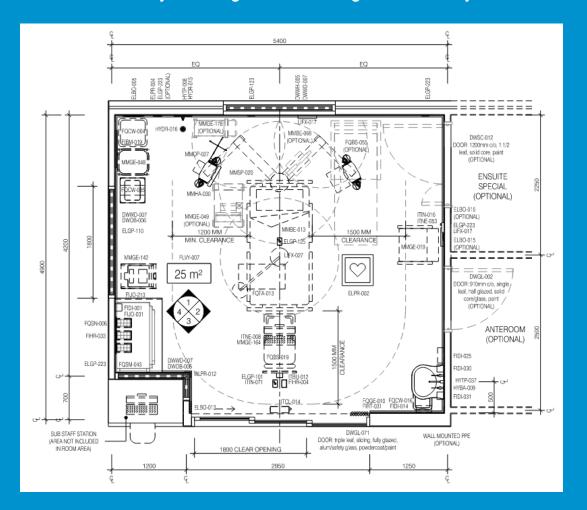








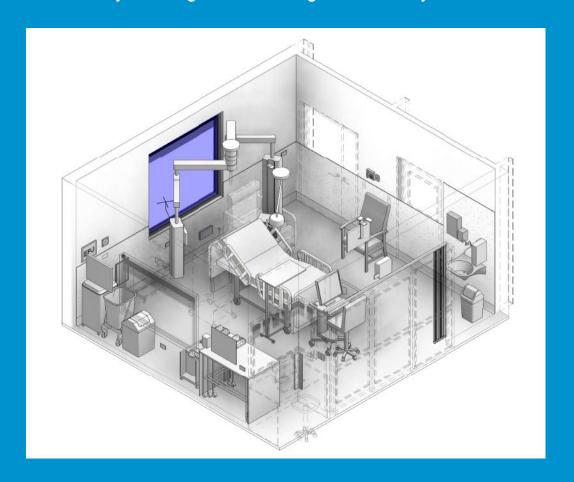
Part B – Health Facility Briefing and Planning – Room Layouts





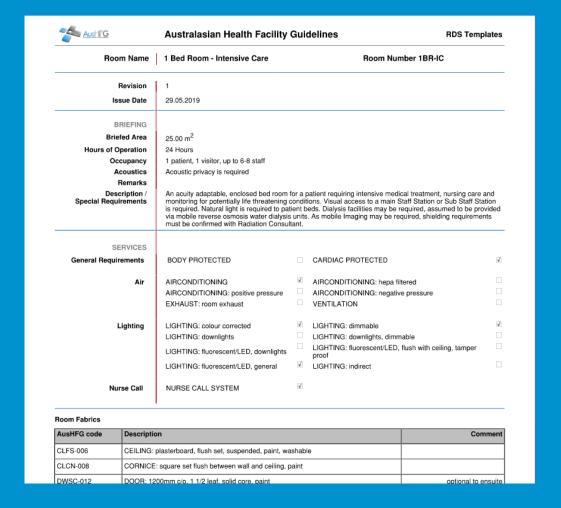


Part B – Health Facility Briefing and Planning – Room Layouts





Part B – Health Facility Briefing and Planning – Room Data









Part C – Design for Access, Mobility, OHS and Security

Comprises several sections including:

- Physical Planning Issues
- Amenity, Safety and Design Tolerances
- Human Engineering
- Wayfinding
- Security & Safety Considerations

Benchmark for the designers, information for the users, and as a checklist for assessment of design and functionality.

It does not replace the need to consult with staff and other experts during all stages of the planning, design and construction process to ensure consideration of project specific requirements.





Part C – Design for Access, Mobility, OHS and Security – Physical Planning Issues

Planning of healthcare facilities requires an understanding of the suitable relationships between the various clinical and support services as well as an understanding of site constraints and local risks.

Physical planning issues include:

- Flexible design
- Separation of Flows
- Shared Rooms / Facilities
- Handing of Rooms
- Modular Design
- Zoning
- Circulation Spaces (Interdepartmental and Intradepartmental)
- Engineering Spaces and allowances





Part C – Design for Access, Mobility, OHS and Security – Amenity, Safety and Design Tolerances

The objective of this Section is to ensure appropriate design coordination between minimum statutory requirements of the BCA and related Standards thereunder, with the operational and functional requirements of the healthcare facility.

- Corridors (types, widths, handrails)
- Ramps
- Ceilings (types, heights, acoustics)
- Doors & hardware (types, widths, automation, swing, locking, hardware)
- Interior glazing (types, location, privacy, safety, clinical observation)
- Windows / External views (types, operation, cleaning, furnishings)
- Finishes (floors, walls, ceiling, fixtures and fittments)





Part C – Design for Access, Mobility, OHS and Security – Human Engineering

Human engineering includes occupational ergonomics which aims to fit the work practices, FF&E and work environment to the physical and cognitive capabilities of all people.

Includes:

- Pedestrian access paths, seating areas and street furniture
- Vehicular access, setdown and parking
- Circulation (corridors, doors, vertical, 'hospital streets', floor finishes)
- Reception and waiting areas (reception and waiting areas should accommodate the needs of a wide range of users including the provision of suitable areas for people with disabilities, the aged and the very young)
- Office Accommodation / Consult Rooms





Part C – Design for Access, Mobility, OHS and Security – Wayfinding

Good wayfinding means knowing where you are, knowing where you are going to, then being able to follow the best route to your destination and recognising it on arrival.

"Wayfinding is more than just signs: it is an integrated group of systems and tools to help people navigate."





Part C – Design for Access, Mobility, OHS and Security – Security Considerations

Patients, visitors and staff should be able to work in, or attend a health care facility and feel safe and secure in the surroundings.

Through the creation of a calming and subdued atmosphere, a positive user experience can be created.

Requirements of a facility can only be defined by conducting a security risk assessment of a facility. The outcomes of the security risk assessment will provide details of the current threats, hazards, risks, trends and security landscape for a particular facility.





Part D – Infection Prevention and Control

This section has been designed to assist project teams in the planning, design and construction or refurbishing of healthcare facilities.

Infection prevention and control is influenced by environmental factors, building services and human activity.

Part D addresses environmental and building services factors relating to infection prevention and control. Through design we can also influence human activity to assist with maintenance of infection control procedures.





Part D – Infection Prevention and Control

Design of healthcare facilities can influence the transmission of healthcare associated infections (HAI). Design features that minimize transmission include:

- surface finishes that are easy to clean and maintain
- ventilation, air conditioning, cooling towers and water systems that meet prescribed standards
- ability to isolate patients who are infectious or immunocompromised
- workplace design (separation of clean and dirty work flows, access to hand hygiene facilities and personal protective equipment (PPE), cleaning / linen / waste management)





Part E – Building Services and Environmental Design





Part F – Project Implementation





THANKYOU