

Pearls of Wisdom In Healthcare Facility Design

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Event details:

Pearls of Wisdom Conference: 30th Annual Conference Infection Control
Association of NSW Inc
Sydney, Australia

Publication Date:

2007

DOI:

<https://doi.org/10.26190/unsworks/1157>

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PEARLS OF WISDOM – IN HEALTHCARE FACILITY DESIGN
NSW INFECTION CONTROL ASSOCIATION CONFERENCE - 20 SEPT 2007

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PEARLS OF WISDOM: IN HEALTHCARE FACILITY DESIGN

**How facility design can make a difference to
planning and commissioning for Infection
Prevention and Control**

Sandy Berenger

How construction detail can make a difference in
commissioning and refurbishing

Jane Carthey

Development and use of Health Facility Guidelines
Overcoming design shortcomings and improving
infection prevention and control on future projects

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Sandy Berenger, Hunter New England Health

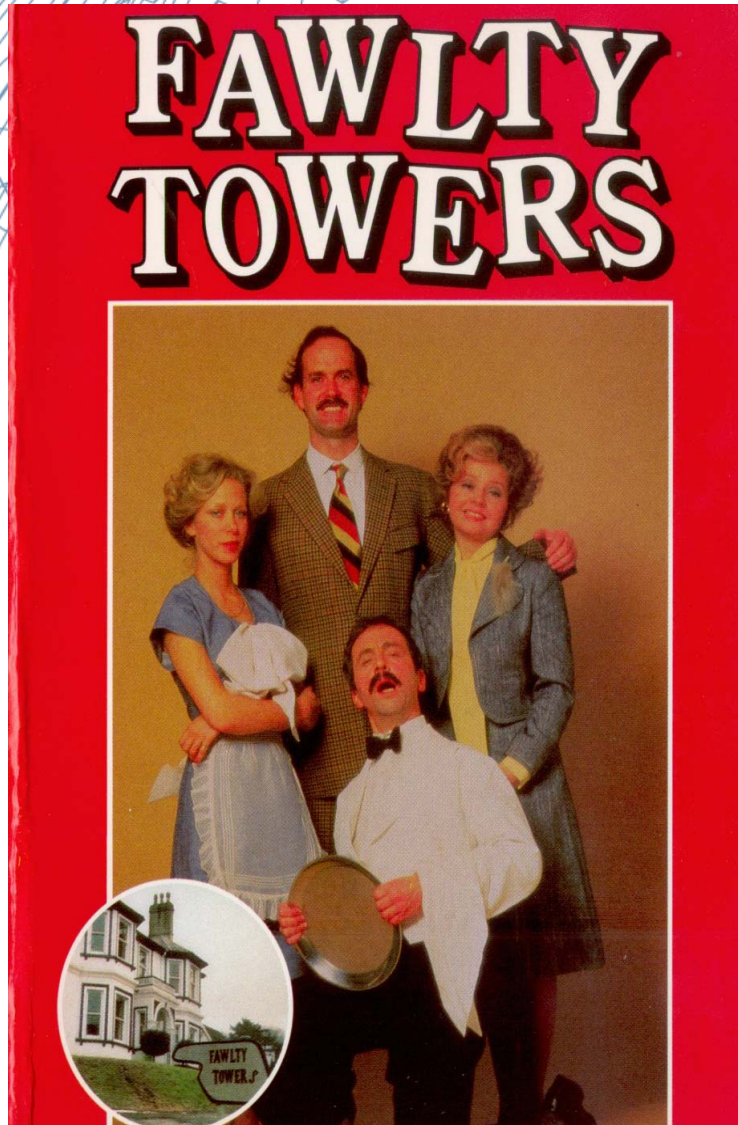
**How construction detail can make a difference in
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Is your facility a
“Faulty Towers”
Hospital?!!

What is the impact
on the patient and
health care
system?

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Background

HNE through the Newcastle Strategy has been involved in major capital works programs across the Area

Planning

Planning for new construction or renovation requires early and ongoing consultation:

- This includes the review of ventilation systems required
- Architects and Designers
- Capital Works Staff – including Project Officers
- Engineering
- Staff who will be working in the new facility

Problems identified

The design and renovation projects undertaken have identified areas that need to be considered to overcome the repetitive design faults.

These faults may and frequently **do** occur when inappropriate standardisation of design models in hospitals are undertaken across the Area or State.

Planning and Commissioning

Areas e.g.:

- Operating Theatre
- Intensive Care Units
- Emergency Departments
- Wards/Clinics
- Haematology
- Oncology
- Transplant
- Negative Pressure Rooms

These areas are very resource intensive components of the planning process especially for the Infection Prevention and Control Units.

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Facility/Unit Commissioning

Often “**gaps**” and/or design faults are identified pre, during and post the commissioning process.

The resources required to correct such oversights create many issues relating to ownership and ongoing funding requirements in an already overburdened Health System.

Some design flaws that have occurred

- Air-conditioning including Negative Pressure Rooms
- Intensive Care Unit
- Operating Theatre Design
- Ward Design
 - Hand sink placement
 - Cleaners rooms
 - Storage – including linen cupboards
 - Toilet and bathroom facilities



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Design Flaws continued

The use of inappropriate materials within the facilities such as

Timber Tiles and Carpet!!!

Are impossible to maintain due to the breaching of their impervious surfaces

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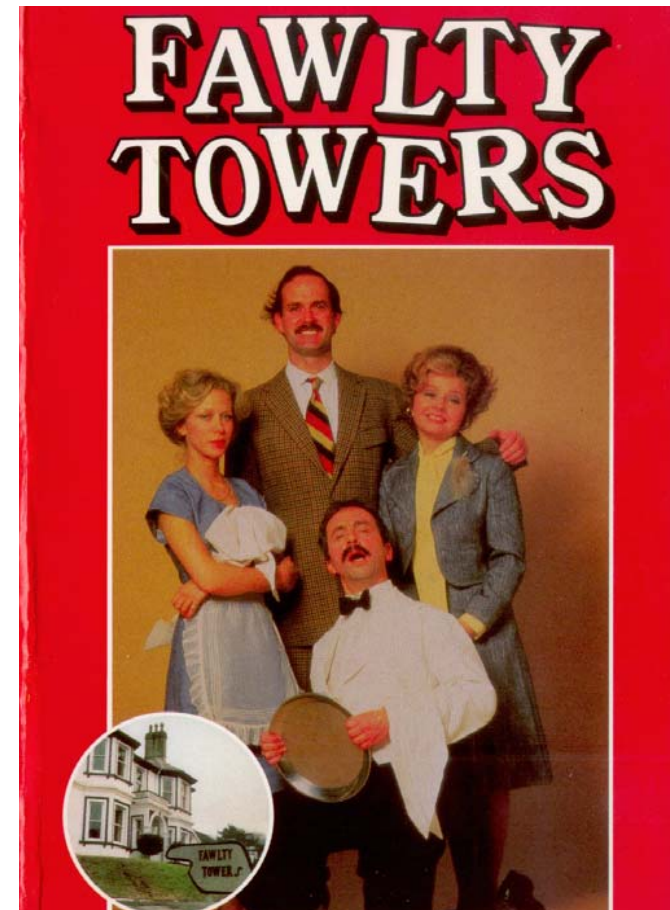


Photo Examples of “Faults”



What to do?

To prevent the “Fawlty Towers” situation, NSW Health has assisted with the funding to CHAA at the University of NSW to facilitate research which has lead to innovative approaches to health care facility design



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CHAA AND ITS RESEARCH

CHAA RESEARCH PROGRAMS

- 1. Health facility standards and guidelines**
2. Benchmarking and post occupancy evaluation
3. Capacity building/knowledge management

CHAA AND ITS RESEARCH

1.0 STANDARDS & GUIDELINES

1.1 NSW Health Facility Guidelines

- *continues* development of various NSW guidelines that continue to be translated into the Australasian project.
- *develops* HFG content for use by NSW Health Facility Briefing system

1.2 Australasian Health Facility Guidelines

- *Governance* – all States of Australia and NZ MOH
- *Issued November 2006* for 12 month period of review and commentary
- *Status depends* on jurisdictional requirements

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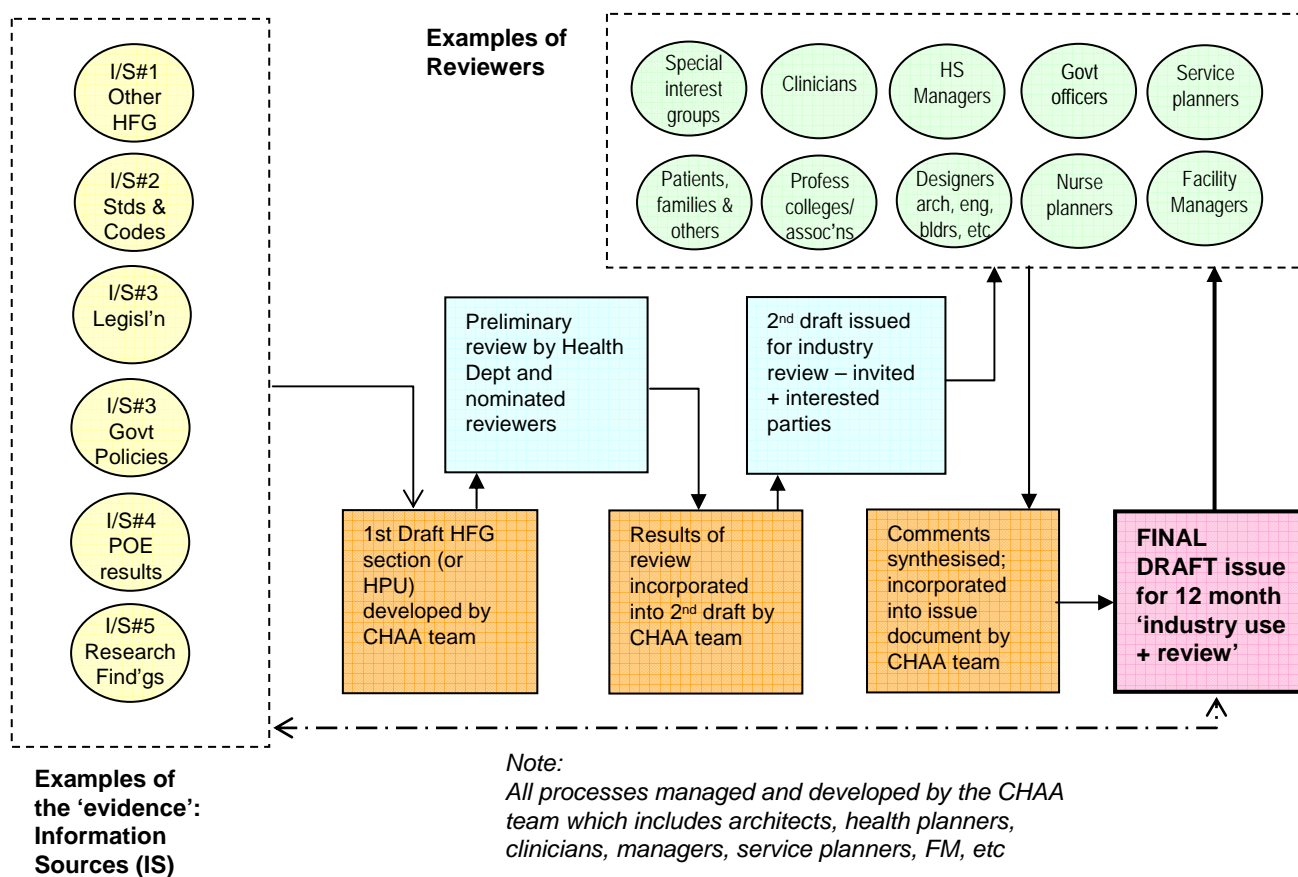
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AUSTRALASIAN HFG PROJECT STRUCTURE & GOVERNANCE

AUSTRALASIAN HFG – DEVELOPMENT PROCESS



Australasian HFG Development Process

Australasian HFG

Development Parameters include:

- Regulatory environment – mandated or advisory only
- Public and private funder requirements
- Quality/experience/availability of design consultants
- Feedback loops
- Political climate

AUSTRALASIAN HFG FEATURES

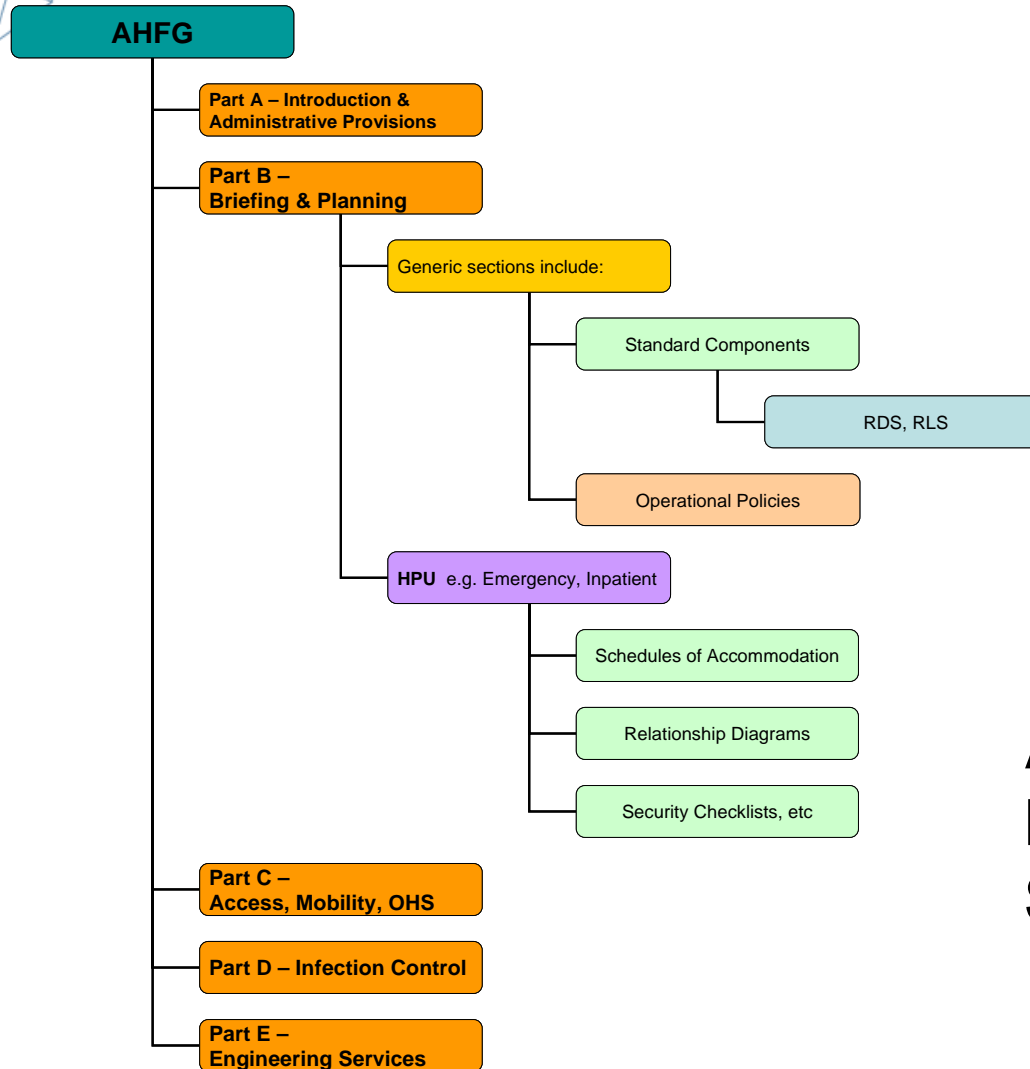
- Web access
- Minimal costs to use
- Links to NSW Health Facility Briefing System
- **Generic parts** that cover all health facilities – std comps, RDS, RLS (PDF format)
- **Specific parts** for specific hospital units
HPU (health planning units) or departments

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AUSTRALASIA N HFG STRUCTURE

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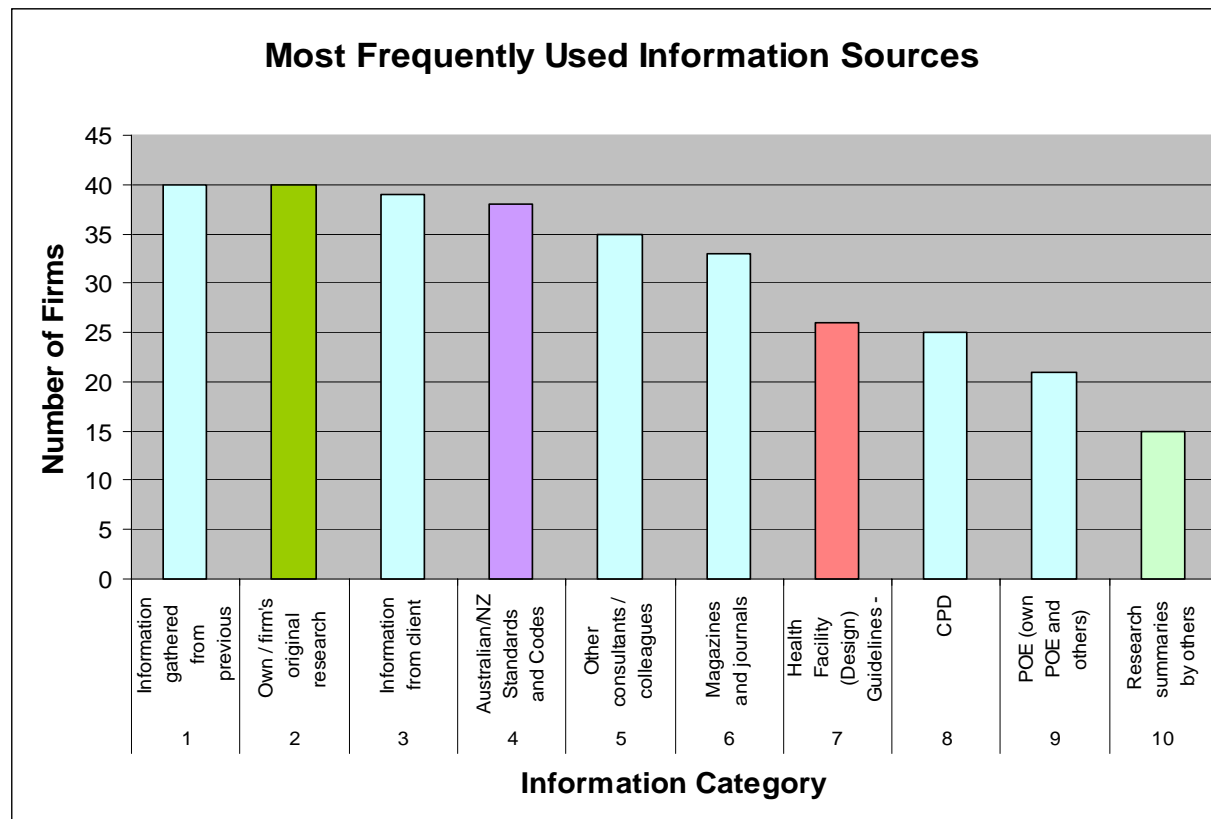
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HEALTHCARE DESIGNERS SURVEY RESULTS INFORMATION SOURCES USED



RAIA-UNSW Healthcare Designers Survey, 2006

A STANDARDISED APPROACH TO HEALTH FACILITY DESIGN

Why do it?

- Body of knowledge can be used on more than one project, available to every project team
- Communicate acceptable/recommended standards to support healthcare delivery
- Purpose of HFG is **briefing** not prescriptive design
- Some evidence that standard layouts reduce clinical errors in practice

STANDARDISED APPROACH TO HEALTH FACILITY DESIGN

Key Benefits include

- Reduced debate over repeatable elements
- Design process focuses on project specific elements
- Reduced number of design variations
- Consistent quality between projects
- Consultation/user groups more effective
- Assist in meeting minimum legal obligations – standards, codes, etc

AUSTRALASIAN HFG REVIEW

Review Process:

- Regular review of all sections – ‘**sunset dates**’
- Standardised commentary form – track comments received/processing/audit trail
- Input from Variation process – Aust/State
- Input from Benchmarking & POE projects
- Input from all CHAA research ie the ‘evidence base’ – healthcare designers’ survey, HAI project, culture and health, etc
- Process of **continuous improvement**

AUSTRALASIAN HFG REVIEW

Review Process: Coming up in 2007/8

- Review and update of Part D Infection Prevention and Control
- HPU including Emergency, Operating, Inpatient
- Room data and Room Layouts associated

You can be involved as a reviewer - how?

- Register interest with CHAA via website/email
- Register for CHAA.net email updates and newsletter for information regarding other reviews, seminars, and events of interest
- www.chaa.net.au

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AUSTRALASIAN HFG REVIEW

Review Process for Part D Infection Prevention and Control

To be reviewed at Australasian level through HFG
Governance Structure – plus reference group in each
jurisdiction/ nationally to be determined.

AUSTRALASIAN HFG REVIEW

Review Process for Part D Infection Prevention and Control

Current Table of Contents (developed for NSW):

- General Requirements – Intro, Handwashing, Handwash basins, Isolation rooms
- Physical Environment – HVAC, ESD, Patient accommodation/need for adequate no. of single rooms
- Surfaces & Finishes – Physical planning: floors, walls, doors, skirtings, ceilings, etc
- Construction & Renovation – Risk Management, Construction, Verification, Risk Assessment & Action Plan
- References and Further Reading

AUSTRALASIAN HFG DEVELOPMENT

Variations to Guidelines:

- HFG content – handled at Aus/NZ level (CHAA)
- Particular project/State/jurisdiction based variations – handled at State/jurisdiction level
- Suggested criteria for variations (NSW trialling)
 - **Safety** of patients, staff, community
 - **Quality of service delivery**
 - **Quality of facility design** (eg may improve flexibility of use/'future proof'/streamline construction of this facility)
 - **Direct financial benefit** (must be quantifiable)
 - Capital cost
 - Operational cost

STANDARDISED APPROACH TO HEALTH FACILITY DESIGN

Lessons Learnt

- 'Evidence base' required & continuously developed & improved
- Briefing '**starting point**' not a design substitute – let designers do their jobs!
- Must be translatable to 'real' space
- Must allow/support > one operational model
- Anticipate the future
- Never finished!

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Things to avoid!



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AUSTRALASIAN HFG

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