

## 36.0 Sterile Supply Unit (SSU)

### 36.1 Introduction

#### 36.1.1 General

A Hospital must provide adequate facilities for cleaning, sterilisation and storage of equipment and instruments to ensure the care and safety of patients, and the safety of staff, at all times. The sterilisation process may be carried out entirely or partially on-site, the latter relying on an external supply source to regularly restock the hospital sterile goods store/s. The scale of operation can be small or large, dependent upon the requirements of the serviced departments, for example, an Operating Unit requires the services of a Theatre Sterile Supply Unit (TSSU) or a full Central Sterile Supply Unit (CSSU), whereas an Acute Inpatient Unit requires only a basic sterile supply service.

### 36.2 Planning

#### 36.2.1 Operational Models

The size and role of the sterile goods supply service shall be clearly defined in the Operational Policy Statement. Operational policies will be drafted on project specific basis by users and staff of the Sterile Supply Unit, the Operating unit and all other relevant staff associated with this service.

#### 36.2.2 Functional Areas

The Central Sterile Supply Unit will include the following functional areas or zones:

- Receiving Area where soiled articles for recycling are received on trolleys from Units throughout the facility
- Decontamination Area where all articles are sorted, rinsed, ultrasonically cleaned or mechanically washed then mechanically dried; this area may also include cleaning of the delivery trolleys
- Packing Area (Clean Workroom) where the clean instruments, equipment and other articles are sorted, counted and packaged for sterilising
- Sterilising and Cooling Area where sterilisers are loaded, set into operation and unloaded following completion of the sterilising cycle
- Despatch Area where sterile stock is held prior to despatch to Units in the facility; distribution trolleys may also be located in this area
- Administrative Areas including Offices or Workstations
- Staff Amenities which includes Staff Toilets, Change Rooms and Staff Rooms; these may also be shared with Operating Unit if convenient.

#### ADMINISTRATIVE AREAS

A separate room, or space within the Workroom, shall be provided for routine clerical/ administrative procedures. The provision of a separate office will depend upon the size of the unit/department. An area for write-up and storage of stationery and files shall be provided.

#### CLEAN WORKROOM / PACKING AREA

The Clean Workroom will provide packing tables and equipment for assembly of cleaned and dry instruments into sets, wrapped and sealed ready for sterilisation. The Clean Workroom shall be in a separate area to instrument preparation. Linen folding, where required, shall be carried out in a separate room, preferably the laundry. The air handling system shall be filtered or discharged direct to the outside to prevent lint build-up and related industrial and fire safety problems. High level supply and low level exhaust is the recommended airflow pattern, with localised high level extraction for heat removal only. Special attention shall be given to the height and depth of workbenches to allow staff to work sitting or standing. Views to the outside are considered highly desirable. A handwashing basin shall be provided at the perimeter of the room to avoid water contamination of wrapped instrument sets.



## DISTRIBUTION

A distribution point, if required, shall be provided in the form of a staffed counter or stable door, or a pass through cupboard from the sterile store into an adjacent service corridor. No general access is allowed to the SSU.

## RECEIVING AND DECONTAMINATION AREAS

The Receiving area will be used for return of used trolleys and instruments to the Unit for processing. The Decontamination area is where instruments are rinsed, ultrasonically cleaned if appropriate, washed/ decontaminated through instrument processing equipment and dried. Special instruments may be hand washed in this area.

## STAFF AMENITIES

Showers, toilets and secure lockers for staff employed in this area shall be provided. These facilities shall be conveniently located and may be shared with the Operating Unit staff in cases where the Sterile Supply Department is attached to the Operating Unit. A lunch room can be a shared central facility outside the Sterile Supply Department. Access to a training room in close proximity to SSU for formal training activities is recommended. Facilities shall also be provided in the Change Room to store caps, overalls and footwear protection. 'Barrier' principles are observed when entering the unit.

## STORAGE

A room shall be provided for the storage of processed sterile packs etc. Ventilation, humidity and temperature control is required. Supply air pressure shall be positive with respect to surrounding areas and the level of filtration shall equal or exceed that of the Operating Room. Storage cupboards shall be fitted with doors. A separate room shall be provided to store stock that is 'clean' but not sterile. Access to this room shall be provided from outside the unit for stocking, and from within the unit for drawing stock to process. Space shall also be provided for storing trolleys as required.

### 36.2.3 *Functional Relationships*

The Sterile Supply Unit (SSU) should be located with direct or close access to the Operating Unit. It should have ready access to Supply Unit and Linen Handling Unit for delivery of supplies. Access to the CSSU should be restricted to authorised personnel only. Refer also the Functional Relationships Diagrams in this section.

## 36.3 Design

### 36.3.1 *General*

The planning of the facility must provide for separate clean and dirty working areas with a defined unidirectional workflow that prevents cross contamination of items being processed.

### 36.3.2 *Communications*

A telephone or intercom system should be installed within the Clean Workroom and/or Office to allow communication with outside personnel and departments, without breaching the "clean barrier" regime.

### 36.3.3 *Finishes*

Floor finishes shall be easy to clean. Wet areas shall have a suitable non slip finish. Welded sheet vinyl, covered up the wall, is recommended. Wall finishes shall also be easy to clean, with special consideration for damage by trolleys. Windows, if provided, must be unable to be opened. The ceiling shall be of a flush type and sealed against the walls.



### 36.3.4 *Building Service Requirements*

#### AIR FILTRATION

Where the Sterile Supply Unit is attached to an Operating Unit, ventilation shall be provided by a treated air supply, with compliant air-conditioning systems and HEPA filters.

#### LIGHTING

Light fittings shall be fully recessed and selected to prevent dust and insects from entering. Light levels shall be not less than 400 lux.

#### SIGNAGE

Door signs are required to provide instruction as to the closed nature of the department and the limited access points for services.

## 36.4 Components of the Unit

### 36.4.1 *Introduction*

The Central Sterile Supply Unit will consist of a combination of Standard Components and Non-Standard Components. Provide Standard Components to comply with details in Standard Components described in these Guidelines. Refer also to Standard Components Room Data Sheets.

### 36.4.2 *Non-Standard Components*

Provide the Non-Standard Components as identified in this section and in the Schedule of Accommodation, according to the Operational Policy and Functional Brief.

#### DECONTAMINATION

##### Description and function

The Decontamination area shall contain work space and equipment for sorting, decontamination and cleaning medical and surgical equipment, and for disposal of used/soiled material. It shall include hand-washing facilities. The Decontamination functions may also be provided in a Clean-Up Room. There will be a need to provide special types of cleaning equipment, dependent on the level of service, for example, ultrasonic cleaners, anaesthetic tubing washers and dryers.

##### Location and Relationships

The Decontamination area should be located between the Receiving area and the Clean Workroom/ Packing area.

##### Considerations

The Decontamination area will require the following finishes:

- Walls and ceiling that are smooth, impervious, and easily cleanable
- Floors that are impervious and non slip.

Fittings and fixtures located in this area will include the following:

- Stainless steel deep bowl sinks with tubing manifolds (air and water) and additional water outlets for water pistols
- Stainless steel benches
- Instrument and tubing washers/ decontaminators, according to service requirements
- Ultrasonic cleaner, according to service requirements
- Instrument and tubing dryers, according to service requirements
- Staff handwashing basin
- Exhaust air extraction over sinks and equipment doors.

#### CLEAN WORKROOM/ PACKING

##### Description and function



The Clean Workroom/ Packing area is where cleaned and dried instruments are removed from the decontaminating/ drying equipment, sorted, assembled into sets and packaged, ready for sterilising.

#### Location and Relationships

The Clean Workroom/ Packing area will be located between the Decontamination area and the Sterilising area, with a unidirectional workflow from contaminated to clean areas.

#### Considerations

Refer to Functional Areas above for inclusions in this room. Consideration should be given to ergonomics aspects of packing tables, adjustable height tables and equipment is recommended.

### STERILISING AND COOLING

#### Description and function

The Sterilising and Cooling Area provides accommodation for sterilisers and parking space for steriliser and cooling trolleys. Following unloading of the steriliser, packs should not be handled until cool. Specialised sterilisers such as ethylene oxide, require separate installation and accommodation. Low temperature specialised sterilisers require separate installation according to manufacturer's recommendations. The size of the area will be dependent on the number and type of sterilisers installed.

#### Location and relationships

The Sterilising and Cooling area should be located between the Sorting and Packing area and the Despatch area. Special consideration shall be given to the location of the sterilisers. External access to a steriliser duct is highly desirable so that repairs or routine maintenance do not interfere with the activities within the Workroom. A duct enclosure can also minimise heat build-up within the Workroom. An exhaust over the front of the steriliser(s) shall also be considered, to extract both heat (cabinet) and steam (opening door).

#### Considerations

An exhaust over the front of the steriliser(s) shall be considered, to extract both heat (cabinet) and steam (opening door).



## 36.5 Schedule of Accommodation

### 36.5.1 Supply Unit Generic Schedule of Accommodation

Schedule of Accommodation for a Sterile Supply Unit for 2 & 4 Sterilisers

ROOM/SPACE	Standard Component				Qty x m2	Qty x m2	Remarks
					2 sterilisers	4 sterilisers	
RECEPTION	yes				1 x 9	1 x 12	
STORE – PHOTOCOPY/STATIONERY	yes				1 x 8	1 x 8	
OFFICE – MANAGER	yes				1 x 9	1 x 12	
LOAN EQUIPMENT STORE	yes				1 x 9 optional	1 x 12 optional	For loaned instrument sets from suppliers
RECEIVING AREA	yes				1 x 20	1 x 35	Return of used items
TROLLEY WASH	yes				1 x 8	1 x 15	Similar to Clean-up; may use automated trolley wash unit
DISPOSAL ROOM	yes				1 x 8	1 x 8	Access to external corridor
DECONTAMINATION					1 x 50	1 x 80	
CLEAN WORKROOM/ PACKING					1 x 50	1 x 80	
STERILISING – LOADING & COOLING					1 x 50	1 x 120	Includes Plant space
STERILISER – ETO					1 x 10 optional	1 x 10 optional	Low temperature – Ethylene oxide; free standing
STERILISER – LOW TEMPERATURE					1 x 6 optional	1 x 15 optional	Free standing; includes peracetic acid/ plasma types
STORE – STERILE STOCK	yes				1 x 20	1 x 40	For supplying hospital units
STORE – STERILE STOCK (O.R)	yes				1 x 40 optional	1 x 80 optional	Adjust to 10m2 per O.R; may be located in the Operating Unit
STORE – GENERAL	yes				1 x 12	1 x 20	Bulk goods receipt, de-cartoning; Linen
CLEANER'S ROOM	yes				1 x 5	1 x 5	Within unit
DISCOUNTED CIRCULATION					10%	10%	

### STAFF AREAS

ROOM/SPACE	Standard Component				Qty x m2	Qty x m2	Remarks
					2 sterilisers	4 sterilisers	
STAFF TOILET	yes				2 x 3	4 x 3	
STAFF SHOWER	yes				2 x 2	4 x 2	
STAFF CHANGE – MALE/FEMALE	yes				2 x 14	2 x 20	includes lockers
STAFF ROOM	yes				1 x 28	1 x 40	
MEETING ROOM	yes				1 x 20 optional	1 x 30	
DISCOUNTED CIRCULATION					20%	20%	

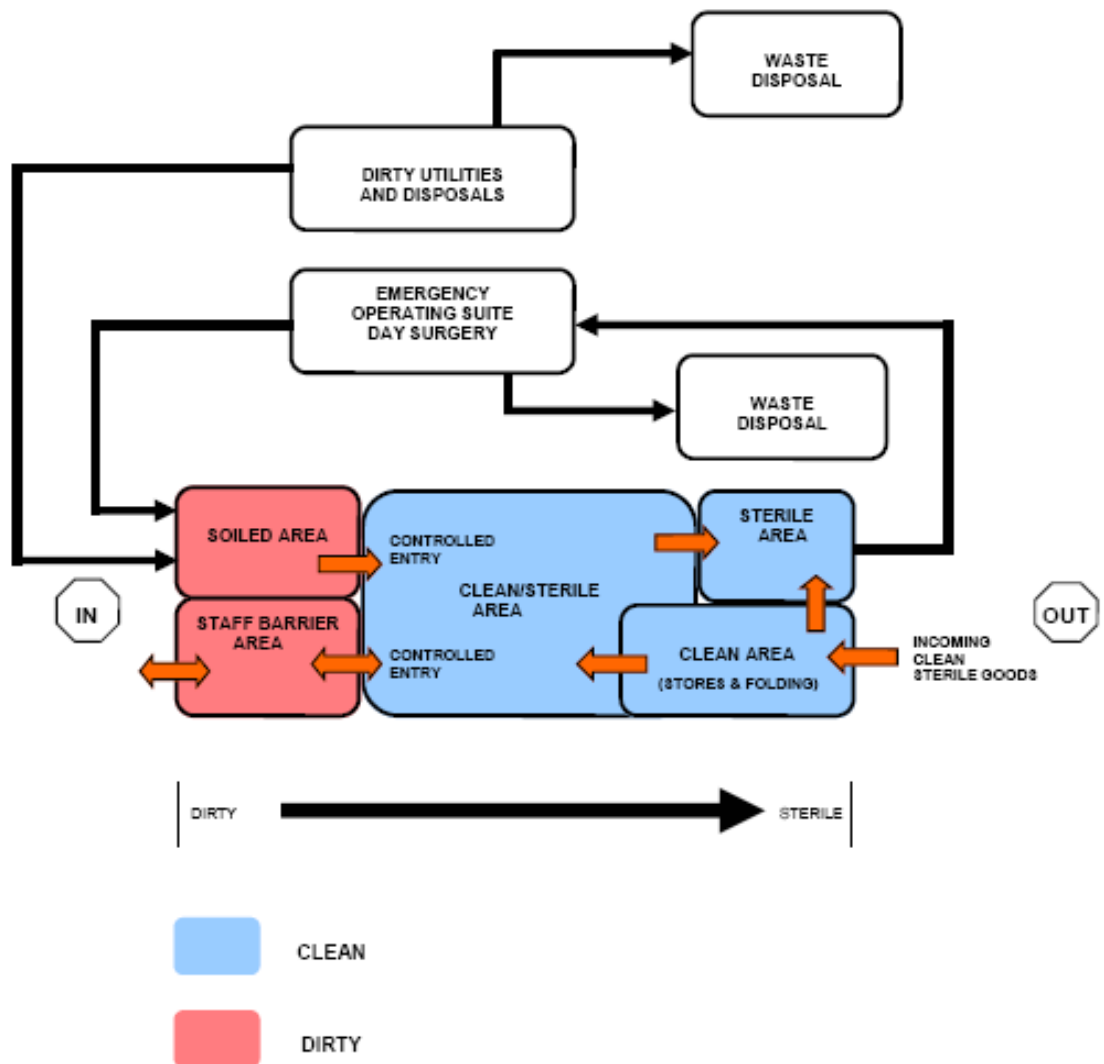


Please note the following:

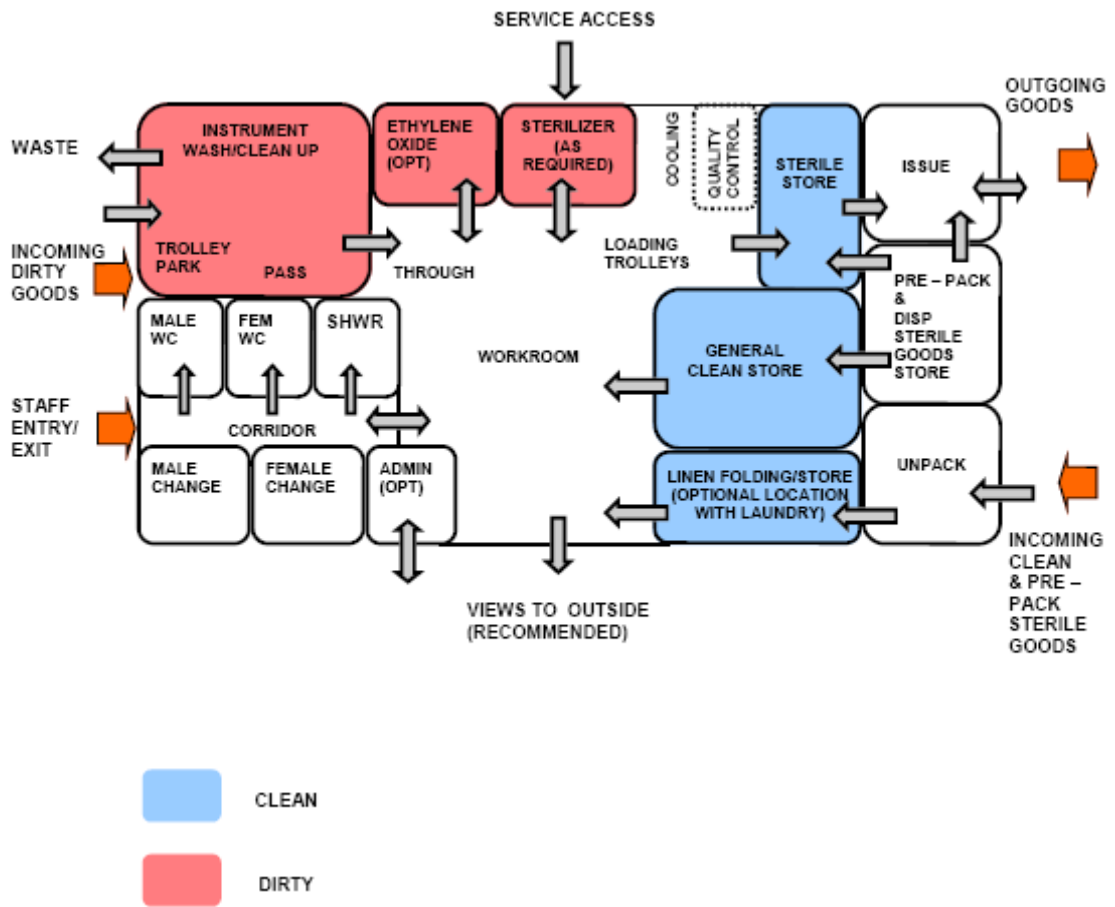
- Areas noted in Schedules of Accommodation take precedence over all other areas noted in the FPU.
- Rooms indicated in the schedule reflect the typical arrangement according to the Role Delineation.
- Exact requirements for room quantities and sizes will reflect Key Planning Units identified in the service plan and the policies of the Unit.
- Room sizes indicated should be viewed as a minimum requirement; variations are acceptable to reflect the needs of individual Unit.
- Office areas are to be provided according to the Unit role delineation and staffing establishment.
- Staff and support rooms may be shared between Functional Planning Units dependant on location and accessibility to each unit and may provide scope to reduce duplication of facilities.

## 36.6 Functional Relationship Diagram

### 36.6.1 Sterile Supply Unit Functional Relationship Diagram (Flow Diagram)



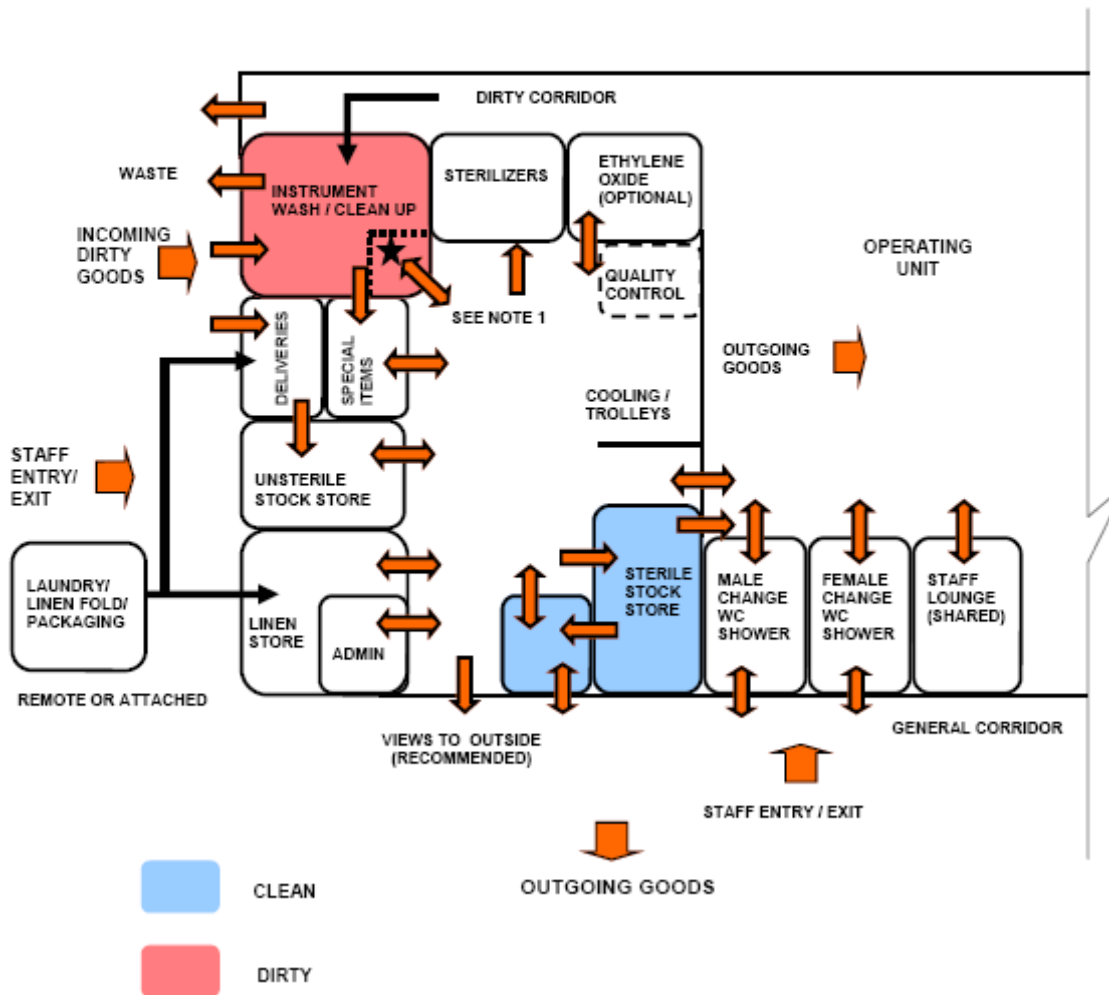
36.6.2 Sterile Supply Unit Functional Relationship Diagram (Base Model)



### 36.6.3 Sterile Supply Unit Functional Relationship Diagram (Integrated With Or)

NOTE 1 DIRECT ACCESS (OTHER THAN PASS THROUGH) BETWEEN INSTRUMENT WASH AND THE WORKROOM SHOULD BE RESTRICTED OTHER THAN IN SMALL FACILITIES WHERE DUPLICATION OF STAFF FOR BOTH "CLEAN" AND "DIRTY" AREAS IS NOT POSSIBLE

★ BARRIER ENTRY (SRUC - UP, GOWN, ETC PRIOR TO RE - ENTRY)

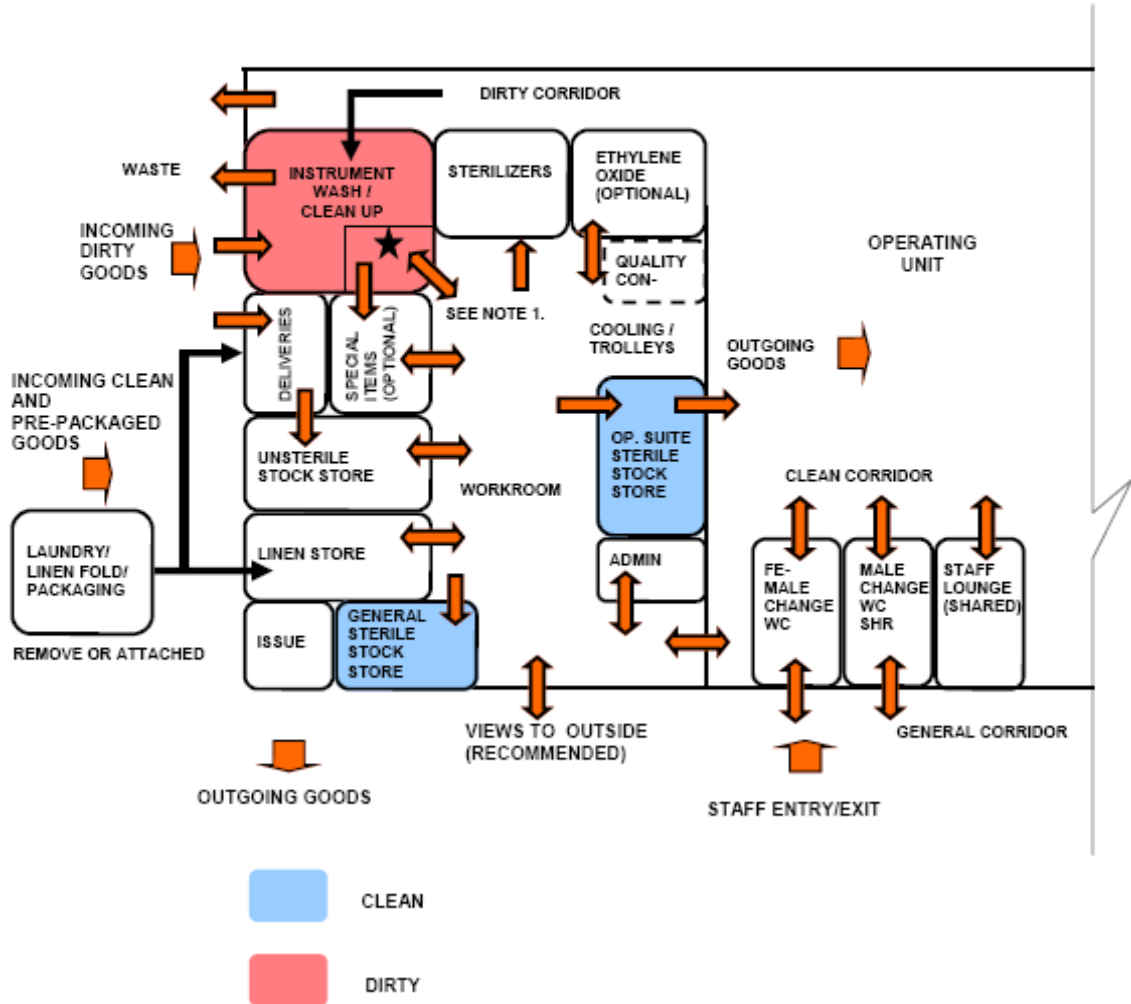




### 36.6.4 Sterile Supply Unit Functional Relationship Diagram (Alternate Model)

NOTE 1 DIRECT ACCESS (OTHER THAN PASS THROUGH) BETWEEN INSTRUMENT WASH AND THE WORKROOM SHOULD BE RESTRICTED OTHER THAN IN SMALL FACILITIES WHERE DUPLICATION OF STAFF FOR BOTH "CLEAN" AND "DIRTY" AREAS IS NOT POSSIBLE

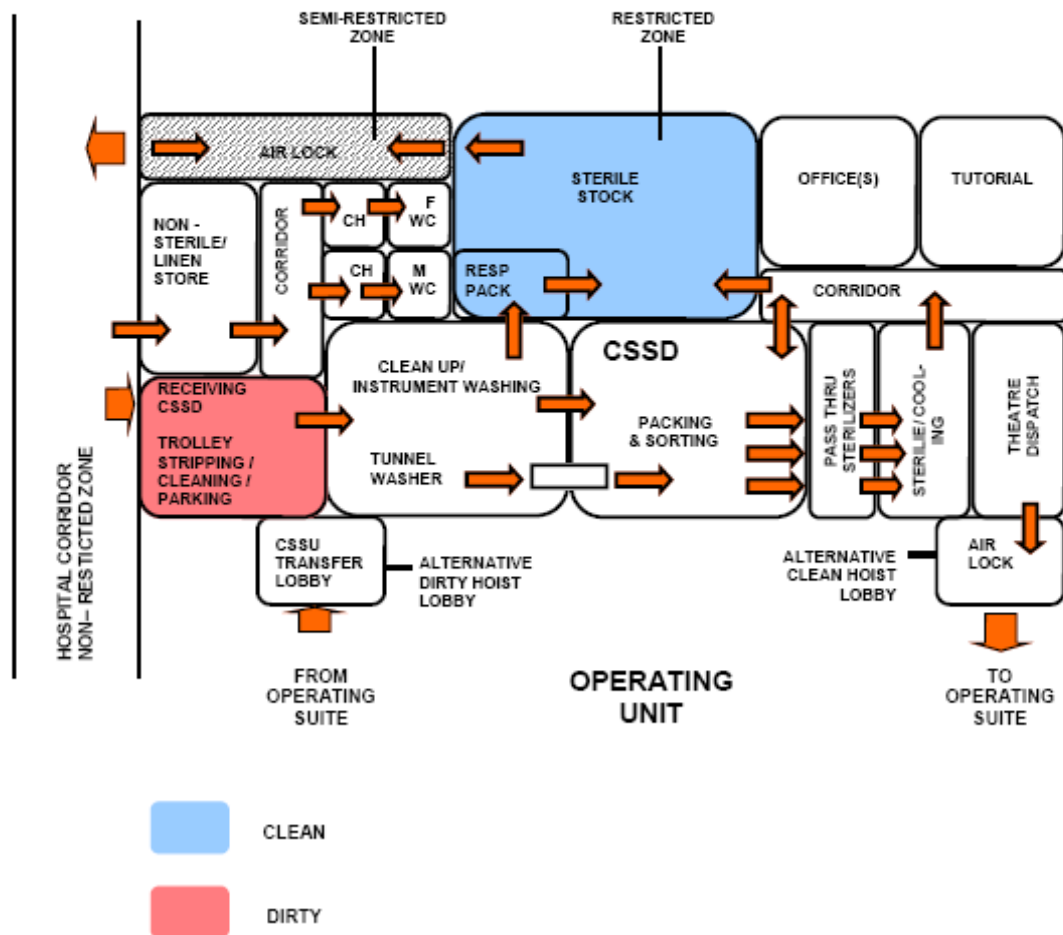
★ BARRIER ENTRY (SRUC - UP, GOWN, ETC PRIOR TO RE - ENTRY)



### 36.6.5 Sterile Supply Unit Functional Relationship Diagram (Simple Model)

NOTE 1 ONLY THE MOST IMPORTANT FUNCTIONS ARE SHOWN FOR CLARITY

NOTE 2 CSSU MAY BE CONNECTED TO OPERATING SUITE VIA CLEAN/DIRTY HOISTS  
 CSSU TRANSFER LOBBY MAY BE REPLACED WITH DIRTY HOIST LOBBY  
 THEATRE DISPATCH AIR-LOCK MAY BE REPLACED WITH CLEAN HOIST LOBBY



### 36.7 References and Further Reading

- Australian Standard 4187 - Cleaning, disinfecting and sterilising reusable medical and surgical instruments and equipment and maintenance of associated environments in Health Care Facilities
- National Standard for the Operation of Sterile Supply Service in Health Care Facilities produced by the National Consultative Council for Therapeutic Goods, (NCCTG).
- Australasian Health Facility Guidelines. (AusHFG Version 3.0), 2009; refer to website [www.healthfacilitydesign.com.au](http://www.healthfacilitydesign.com.au)
- Guidelines for Design and Construction of Health Care Facilities; The Facility Guidelines Institute, 2010 Edition.
- Design Guidelines for Hospitals and Day Procedure Centres, Department of Human Services Victoria, 2005



The Indian Health Facility Guidelines recommends the use of **HFBS** “**Health Facility Briefing System**” to edit all room data sheet information for your project.

HFBS provides edit access to all HFG India standard rooms, departments, and more than 40 report templates.

## HFBS Health Facility Briefing System



### Briefing Module

The Health Facility Briefing System (HFBS) has numerous modules available via annual subscription. It suits healthcare Architects, Medical Planners, Equipment Planners Project Managers and Health Authorities.

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