

Site Feasibility Study

Our Lady's Children's Hospital Crumlin

Addendum:

This "Site Feasibility Study" was commissioned by the Board of Management of Our Lady's Children's Hospital Crumlin. The author of the report is Tony Donoghue, Health Facility Planning Ltd. The study was based on the Framework Brief for the New National Children's Hospital prepared by RKW healthcare consultants.

Mr Donoghue while working with HOK International as a Clinical Facility Planner, was previously involved in association with Payne Cullen Architects in the preparation of the report, "A World Class Tertiary Children's Hospital for Ireland" September 2006. The latter report can be accessed at web site www.olchc.ie, under "New Children's Hospital".

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1 Introduction

1.1 Purpose & Scope

The Study examines the feasibility of a development at Our Lady's Children's Hospital Crumlin (OLCHC) with the objective of significantly improving core accommodation for patient care in the shortest time possible and with strictly limited capital resources. Its focus is a project which could accommodate around 300 patient beds of all types and needs a minimum of preliminary enabling work. The development would be functionally sustainable for an indefinite period yet capable of being continued to create a coherent renewed hospital in the future.

1.2 Background

Nearly three years have elapsed since the McKinsey Report on the future of paediatric hospital services was delivered to the HSE. The Report outlined a compelling vision of rationalised national tertiary and regional secondary paediatric services centred on a new National Paediatric Hospital (NPH). In the present economic climate concern is growing that the capital cost of the NPH – rumoured to be between €700 million and €1 billion – may be unaffordable. The implicit operating costs of the proposed dispersed paediatric care network in the Dublin Region are also a matter for concern.

Abandonment or even a significant deferral of the NPH raises the prospect that patient facilities deemed unacceptable over five years ago, and which provided the initial impetus for renewal, will remain in use indefinitely. In such circumstances some stakeholders have begun to ask if there are more affordable developments which could alleviate the worst features of the current situation, make the best of investments already made and could be achieved quickly.

While much OLCHC accommodation is deficient, especially inpatient facilities, the hospital have created an inventory of permanent and temporary space using both public and private funds which are fit for purpose and have useful residual life. Some of the larger projects are shown in Table 1. Additional projects are under way at the moment to extend the Emergency Department and upgrade the Main Entrance. The Children's Medical and Research Foundation (CMRF) have funded research, education and clinical improvements including:

- A major conversion of space in the CMRF for basic research
- Clinical research accommodation in the hospital proper
- A new library and seminar facility to compliment the single centre for Children's Nurse Education
- Isolation rooms for patients with Cystic Fibrosis
- A 4-8 bed Adolescent Cancer Care Unit
- A molecular microbiology laboratory

If this existing inventory could be augmented by new space addressing the worst deficiencies then the hospital could provide an appropriate environment for care for a realistic capital

outlay. Maintaining OLCHC, and the other children’s hospitals, may not be a perfect solution but in the medium term it would be affordable and ensure continuing regional coverage with children’s emergency departments available in central/north and south-west Dublin.

Any project must be manageable in scope, affordable and achievable in as short a time as possible. It must focus on the highest priority – ward accommodation of all types; minimise lengthy and potentially expensive enabling work such as temporary buildings; and, ensure services can be maintained during implementation.

This study sets out to examine the feasibility of such a project at OLCHC.

Table 1: Selected OLCHC Facility Investments 2003-2008

	Area
Theatre Development	2,565
<i>7-theatre operating suite/13-bed day care unit</i>	1,850
<i>Sterile services department</i>	715
Medical Tower – Ambulatory Care	5,000
<i>Neurology, Gastroenterology, Respiriology, Dermatology, Infectious Diseases Services Haematology/Oncology, Cardiology</i>	
MRI	607
Day Care	704
<i>13-bed Haematology/Oncology Unit</i>	
Diabetes and Endocrinology	267
<i>Extension to ambulatory facilities</i>	
Laboratories	436
<i>National Centre for Genetics Phase I and II</i>	354
<i>Category 3 Laboratory</i>	82
Amenities and Parent Accommodation	
<i>Adolescent Den</i>	110
<i>Ronald McDonald House</i>	1,394
<i>2nd Floor Nurses Residence</i>	
<i>3-bed /4-bed houses</i>	2,230
<i>Crèche</i>	260
<i>Coffee Dock</i>	70

2 Framework

2.1 Assumptions

Nature of the Study

Feasible means “possible” and “practical”. The Study seeks to demonstrate that the defined project is feasible technically and financially at a broad, strategic level. It is not a substitute for a properly constituted Development Control Plan executed by a multi-disciplinary team. Specific details of content and arrangement, along with other aspects, will need further in-depth study and refinement. However, the Study is a realistic assessment of what is possible and offers a starting point for further consideration.

Priorities

The highest priority for renewal is assumed to be patient care accommodation – specifically inpatient and day beds. The study therefore examines in greatest detail the feasibility of creating a new inpatient and day bed block.

Lesser priorities are respectively: outpatient and diagnostic facilities, the latter including imaging and laboratories; and, clinical and general support facilities. These priorities are not addressed in detail beyond demonstrating how they could be implemented later.

Content

The Study assumes a complement of 300 beds of all types compared to 248 beds at present (with a number of requests to the HSE pending). The projected complement is broadly consistent with an independent review of bed needs conducted in early 2005. It has also been informed by recent activity and trends. The distribution of beds assumed for the Feasibility Study is as follows:

	Current	Pending/Proposed Change	Study Assumption
<i>Total</i>	248	15	300
Acute Inpatient Beds	189	21	216
-- Standard Beds	184	19	209
-- Transitional Care	5	2	7
Critical Care (PICU & HDU)	21	7	30
Day Beds	38	--	54
-- Haematology/Oncology	13		18
-- Surgical	13		18
-- Medical	12		18
Operating Theatres	7	1	8

Some of the *additional* beds shown under “Pending/Proposed Change” are the subject of current negotiation and include six for cardiology plus two for Transitional Care. The cardiology beds are assumed to be capable of being accommodated within the standard of accommodation proposed without special spatial provision. Transitional Care, which includes one respite bed, has been assumed to be non-standard accommodation. The

increase in day care is proportionally higher than for inpatients reflecting recent growing utilisation of these beds.

Other implicit allocations include beds for Cystic Fibrosis, Psychosomatic Unit and Adolescent Cancer Unit. They are assumed to be compatible within standard units with minor adaptation not relevant at the overall scale of the Study.

Paediatric Intensive Care and High Dependency Unit (PICU/HDU) beds are included in the 300-bed total, notwithstanding negotiations to create interim accommodation for these elements. Provision has not been made for a Neonatal Intensive Care Unit or an Airborne Infectious Diseases Unit. However, the block arrangement will be flexible enough to incorporate these units if need be.

Inpatient Unit & Floor Size

Unit size is assumed to be in the range of 18-24 beds, the lower figure being similar to the initial briefing assumption of the 2004 DCP. Further, it has been assumed that a floor would contain a minimum of 24 beds (ie a single unit at the larger size) but preferably more – at least 2 x 18-bed units.

Engineering Services

The Study has not included an engineering analysis but has drawn on a recent evaluation of capacity¹. The location of key site infrastructure including electrical feeder, water supply, foul drainage and IT network have been noted from earlier studies for the purposes of identifying possible major diversions. After consultation with the hospital the following assumptions have been made:

- Capacity of incoming utilities (electrical, natural gas, water) -- deemed sufficient and therefore no implication
- Boiler capacity, steam and hot water – insufficient to provide 100% stand-by capacity in the event of maintenance and/or boiler failure; additional capacity required
- Chilled water supply – no central plant, local capacity included with each development
- Medical oxygen – existing central supply (VIE) adequate; note that significant load will be removed as existing inpatient units are vacated
- Medical vacuum – local vacuum pumps and back-up cylinder bank installed to serve new development
- Medical compressed air -- provide local compressors and back-up cylinder bank to serve new development
- Electrical power, on-site – fourth medium voltage(MV) transformer station required for new development; closure of existing MV distribution to create ring main highly desirable
- Emergency power – already insufficient to avoid load management; new development will require additional capacity
- Cold water storage -- incremental storage capacity required for new development
- Telecommunications – telephone capacity available; data network at capacity and obsolescent
- Foul drainage – adequate capacity

¹ Varming Consulting Engineers, “Final Report on the Capacity Survey of the Existing Utility Systems”, July 2008

- Surface water drainage – addition connections for new development and may need attenuation tank

Decanting

The hospital has no vacant space to which existing activities needing to be displaced can be transferred. Decanting space will need to be created and will be a cost to the project.

Vehicular and Building Access

Discussions with Dublin City during the course of the 2004 ODCP confirmed the current entrance from Cooley Road as the most suitable main entrance to the site for public and emergency access. This conclusion is the basis for the present Study.

For the purposes of the initial development phase every effort will be made to leave existing building entrances undisturbed. This includes the main entrance to the hospital, the emergency department entrance and main receiving service entry.

Parking

Parking is an ongoing practical problem for both families and staff. A full traffic and parking study is beyond the scope of the present exercise. However, opportunities to replace parking lost and to expand existing capacity will be identified. In all probability, any significant development will need to be supported by a comprehensive traffic and travel proposal compliant with City of Dublin policies applicable in the locality.

Fire & Life Safety

A Fire & Life Safety analysis has not been undertaken.

2.2 Study Methodology

- 1 Determine the departmental space of the high priority inpatient units through the preparation of exemplar Schedules of Accommodation
- 2 Explore the geometry and dimensions of physical “footprints” for the inpatient accommodation consistent with the area of the Schedules of Accommodation and other implications such as minimum perimeter wall
- 3 Identify potential zones for development to minimise decanting and disruption
- 4 Test the inpatient footprints on the potential sites
- 5 Modify the generic footprints to suit the specific conditions of the sites, creating options which have the potential to be developed into full architectural proposals
- 6 Select the most suitable option for preparing an outline capital cost estimate taking into account
 - Ability to accommodate a viable number of beds at each level
 - Degree of enabling work and decanting required
 - Complicating factors such as service diversions and loss of parking
 - Relationship to existing hospital departments for public, patient and logistical access especially the operating theatres and diagnostic facilities
 - Potential for further coherent development
- 7 Prepare a project capital cost estimate for the selected option (excluding movable medical and nursing equipment, furniture and IT installations)

3 Proposals

3.1 Space

Exemplar Schedules of Accommodation have been prepared for:

- 18-bed and 24-bed children’s standard inpatient units
- 7-bed Transitional Care Unit, including one respite bed
- 30-bed Paediatric Intensive and High Dependency Care Unit, based on an earlier proposal
- A generic 18-bed Medical Day Care Unit; and, an 18-bed Surgical Day Care Unit

The standard inpatient schedules, shown in Section 5/Appendix A, incorporate the following core elements:

- 100 per cent single room, en-suite accommodation
- One in six patient rooms configured for containment and/or protective isolation (3 rooms in 18, 4 rooms in 24)²
- Play and dining space, and family accommodation
- Appropriate nursing and staff support
- A modular approach to permit the creation of two sub-specialty sections allowing, say, the grouping of adolescents and younger children separately

The PICU/HDU provides a mix of single and four-bed spaces. One in five beds will be accommodated in single, isolation-capable rooms which exceeds the recommendations of Guidelines for the Control of MRSA in Ireland³

For the purpose of devising footprint plans the departmental space shown on the schedules has been increased by 15 per cent to allow for floor gross elements such as stairs, lifts and vertical ducts. Plant rooms for major electrical switch and mechanical installations are in addition to this allowance. Projected areas for the *unit* footprints are as follows:

	Net Area	Departmental Area	Footprint Area
18-bed Standard Inpatient Unit	783	1,057	1,216
24-bed Standard Inpatient Unit	966	1,304	1,500
7-bed Transitional Care Unit	538	726	835
30-bed PICU & HDU	2,030	2,801	3,221
18-bed Day Care Unit (Medical)	539	728	836
18-bed Day Care Unit (Surgical)	630	851	979

² Health Protection Surveillance Centre; The Control and Prevention of MRSA in Hospitals and in the Community, SARI Infection Control Subcommittee; September 2005

³ Ibid

3.2 Form and Layout

Plan Arrangement

All single room nursing accommodation presents a special design problem because of the length of perimeter needed for bedrooms and other facilities. Four generic types have been considered to determine likely, compliant dimensions:

- A simple linear single corridor unit
- A linear “race-track” with double corridors and an internal core of service rooms
- A triangular arrangement with dense core
- Variations of the basic types using modified geometries such as cruciform, L-and T-shapes; and, combinations of single and double corridor

Testing of the footprints on potential development sites has shown that only two inpatient units of 18-beds can be accommodated comfortably on a single level without an unacceptable amount of preliminary decanting and demolition. It has also confirmed that adapted variants of the generic types will offer the most practical plan form.

Vertical Stack

A generic nine storey vertical stack has been developed and is shown in Figure 1. It is based on the mandatory location of the 30-bed PICU/HDU at Level 1 to ensure a satisfactory horizontal relationship to the operating theatres and selected diagnostic facilities. This is the so-called “Hot Floor”. Further horizontal links to the rest of the Hospital at Ground Level are envisaged for visitors, the public and service traffic. It is unlikely that links will be possible above First Floor due to the disparity between the floor to floor dimensions of new development (around 4.0m) and existing buildings (less than 3.5m). The distribution of units above First Floor can be varied as necessary. Overall height including a roof-top plant room will probably exceed 40 m.

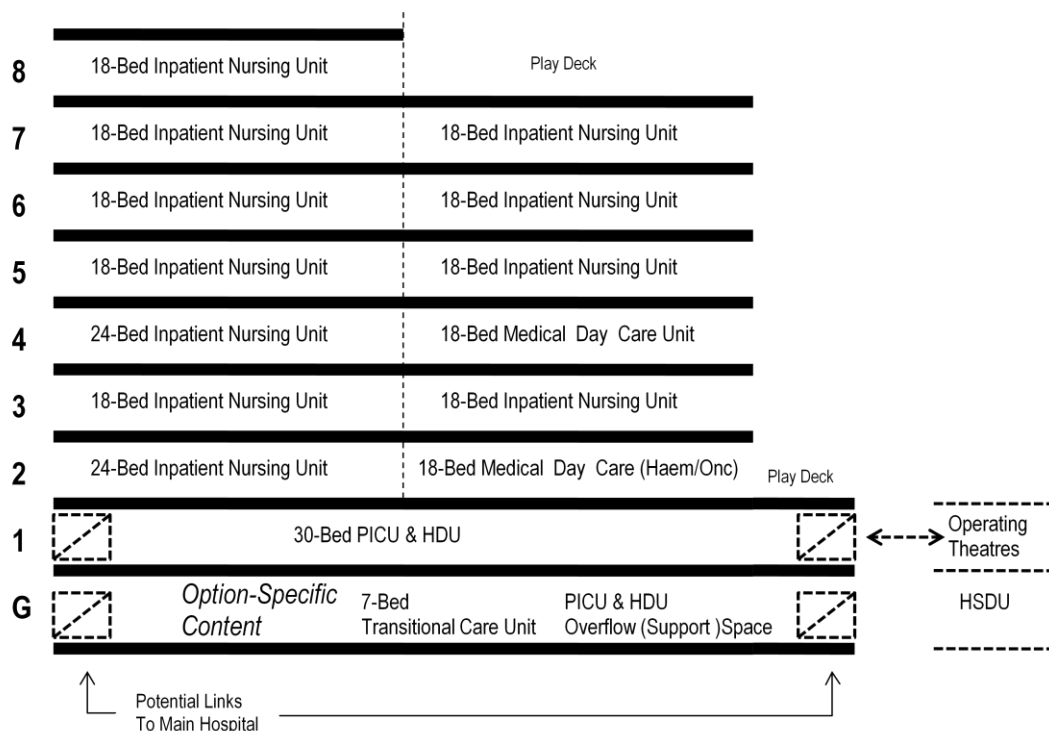


Figure 1: Generic Vertical Stack

3.3 Site Constraints and Opportunities

The most promising development zones are shown in Figure 2, labelled A and B. Zone A, the larger area, covers the north-east quadrant of the site; the smaller zone B is a strip to the south of the existing hospital buildings facing Crumlin Road and extends from the existing diagnostic and outpatient buildings westwards towards Ronald McDonald House.

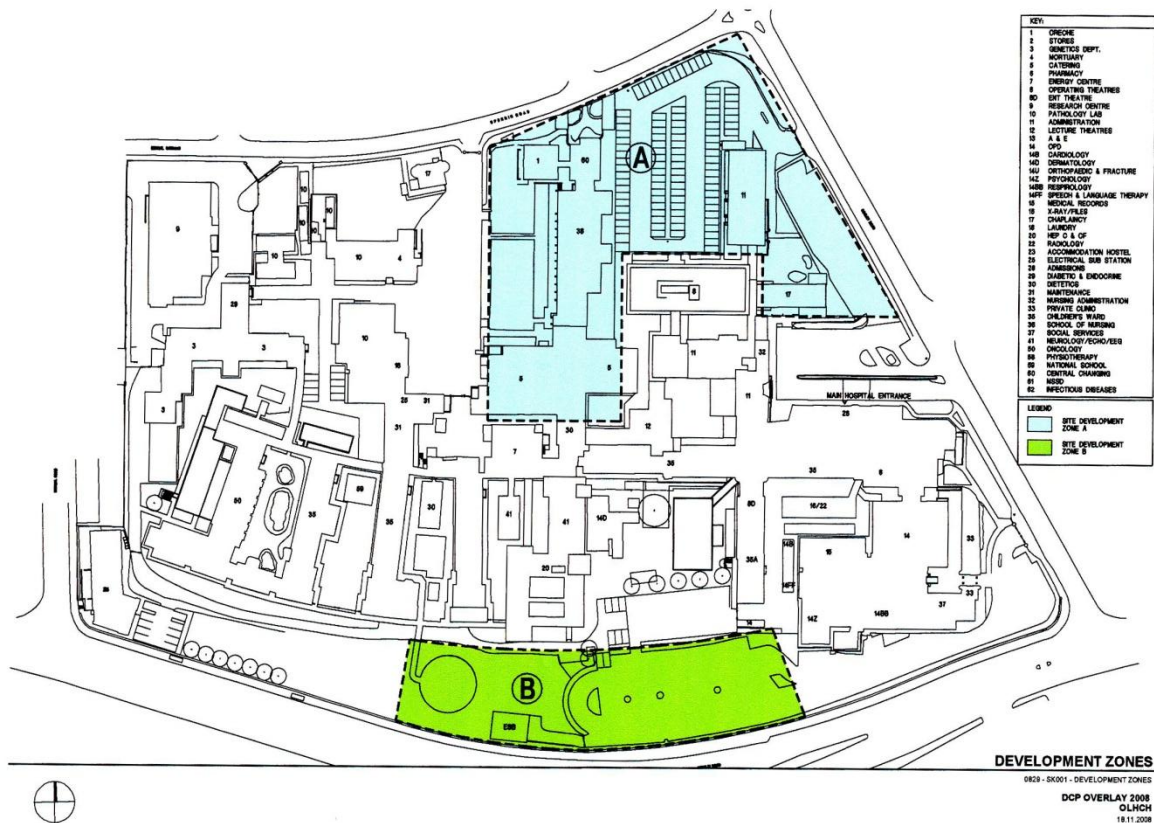


Figure 2 Development Zones

The western half of the site, occupied by the existing inpatient wards and various laboratory buildings has been discounted as a starting point because of the disruption and expense of clearing an area for development.

Zone A includes the School of Nursing, Catering Block, Crèche, Administrative/Executive Wing and potentially the chapel. Release of Zone A in its entirety would necessitate decanting and re-housing up to 6,500 sq m of space. Other potential impediments include the IT central server room (in the School of Nursing), a 100 mm water main, a 10,000 gallon fire water storage tank and around 200 parking spaces. It will be more practical to utilise only as much area of this zone as is absolutely necessary bearing in mind the need for speed, simplicity and affordability. The western part of Zone A is relatively well located in relation to other patient care resources such as the operating theatres, diagnostic services and to a lesser degree the emergency department. The northern part of the zone is less accessible to diagnostic services and the emergency department.

Zone B is free of existing buildings. However, the helicopter landing pad, a main incoming electrical feeder and ESB sub-station will need to be moved. It also impinges on the main public car park containing over 160 spaces.

3.4 Options

Three options have been devised for consideration.

Option 1 -- Zone A School of Nursing Site (See Figure 3)

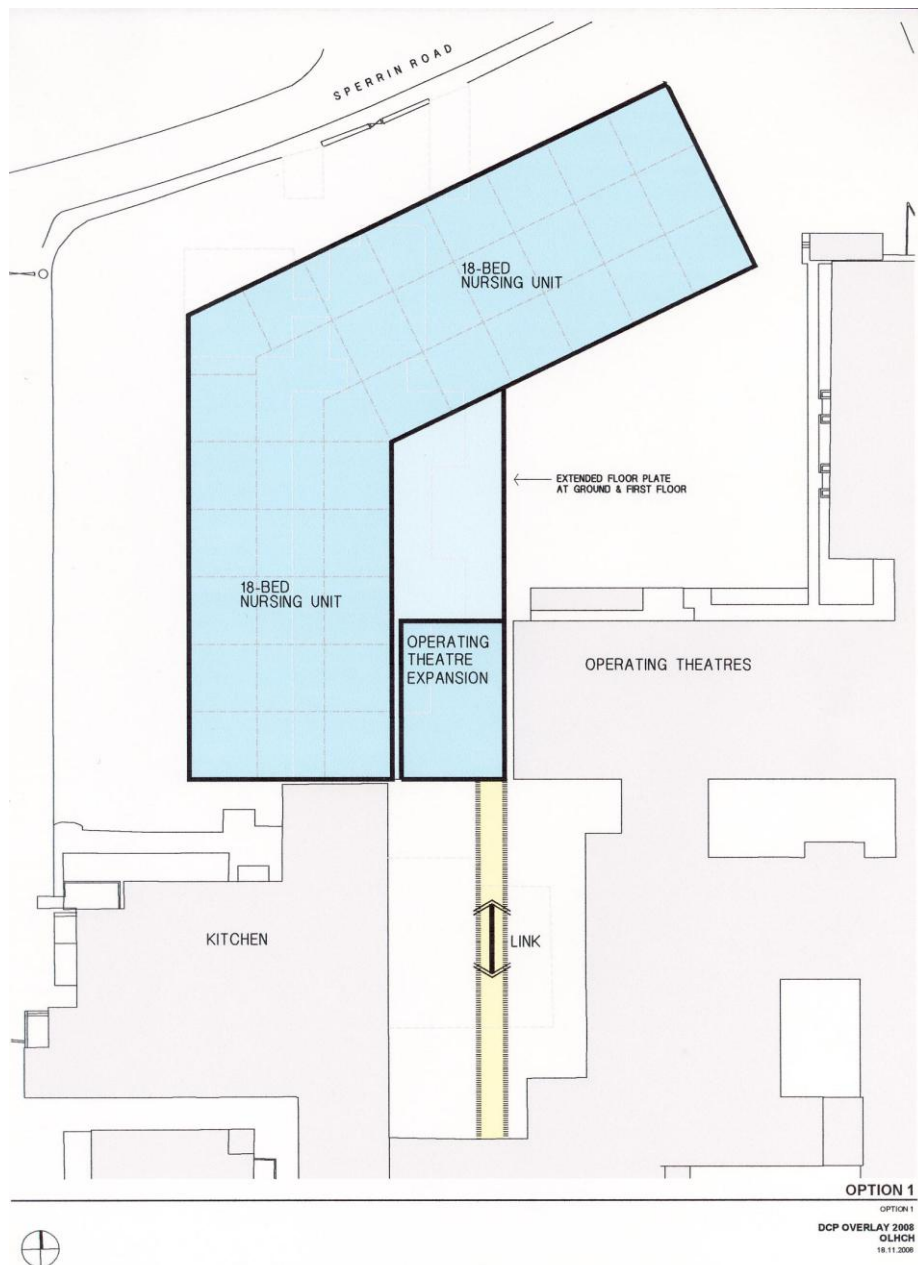


Figure 3

- Requires preliminary removal of the School of Nursing Building, Crèche and cafeteria; and, re-housing of all occupants; this represents approximately 4,300 sq m

of occupied space which must be replaced in interim/temporary buildings for eventual permanent re-housing

- Includes re-location of the central IT server facility with reconfiguration of network distribution
- Permanently displaces at least 120 staff parking spaces
- Provides 210 standard inpatient beds, 7 TCU beds, 30 PICU/HDU beds and 36 day beds over nine floors, as shown in Figure 1
- Includes expansion of the operating department for one additional theatre and 5 additional day beds
- Further development would take place on the site of the vacated existing single-storey inpatient units; and, refurbished vacated inpatient accommodation in the main building for office and other non-clinical displaced accommodation

Option 2 -- Zone A Administrative/Executive Wing & Chapel Site (See Figure 4)

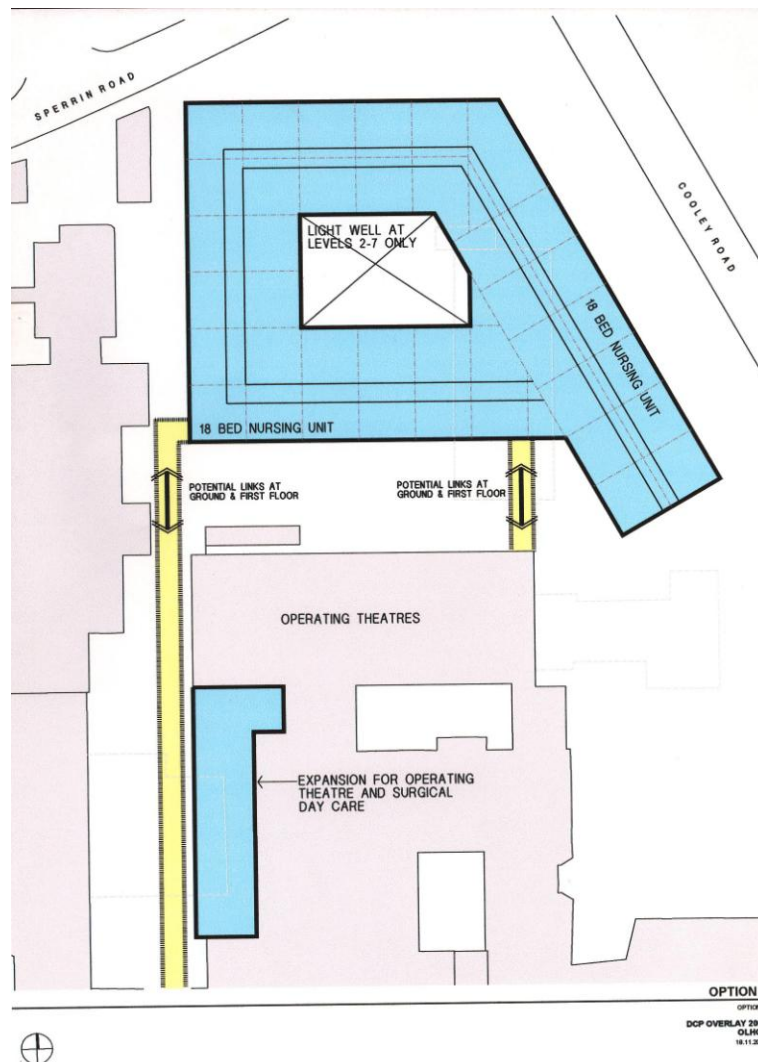


Figure 4

- Requires removal of the Administrative/Executive Wing, the Chapel and cafeteria; this represents approximately 1,300 sq m of space to be replaced in interim/temporary buildings and eventual permanent re-housing
- Requires the diversion of site drainage and the fire fighting water storage tank
- Permanently displaces around 150 staff parking spaces
- Provides 210 standard inpatient beds, 7 TCU beds, 30 PICU/HDU beds and 36 day beds over nine floors, as shown in Figure 1
- Includes expansion of the operating department for one additional theatre and 5 additional day beds in a separate package of work
- Balance of Ground Floor available for hospital cafeteria, kitchen (either as an explicit inclusion or a shell for future fitting out) and a new server room
- Further development would take place first on the site of the School of Nursing following refurbishment of the vacant main building space; and/or on the site of the vacated single-storey inpatient units and/or laboratories

Option 3 – Zone B Southern Frontage Site (See Figure 5)

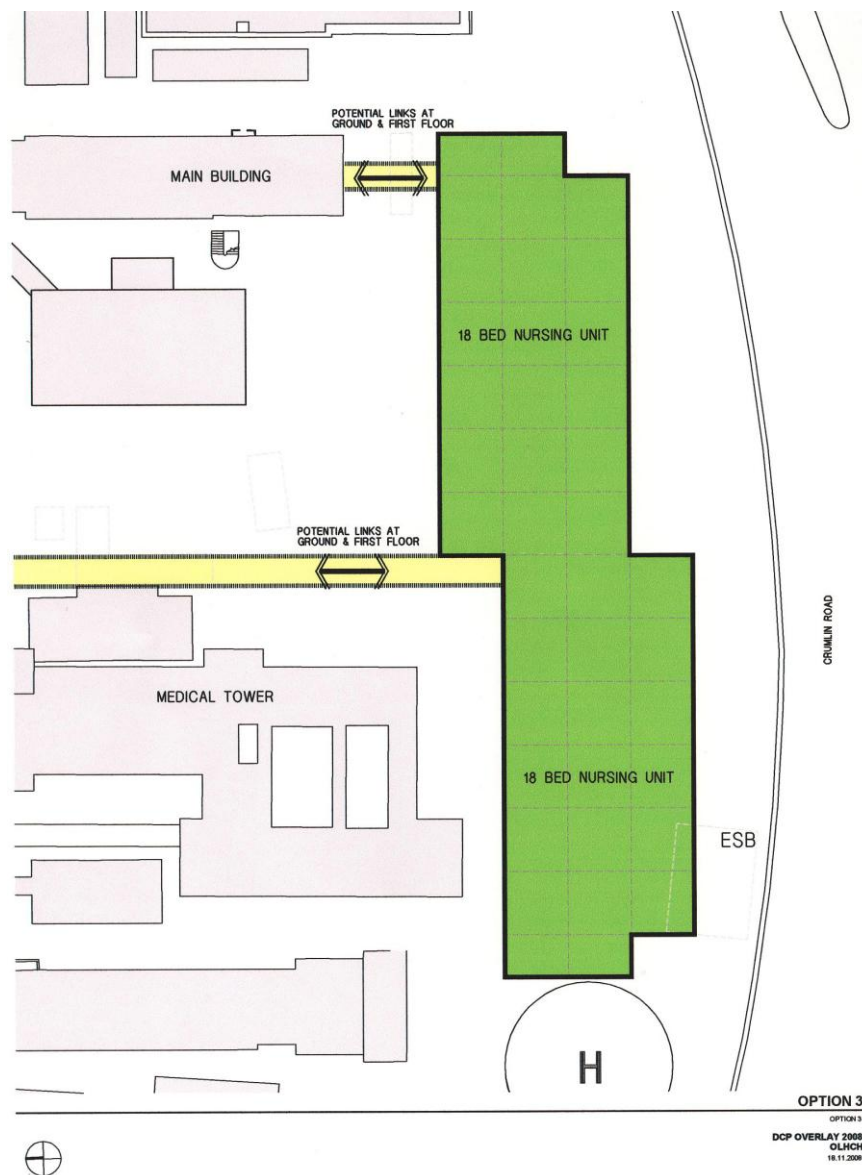


Figure 5

- Requires re-location of the helicopter landing pad and the incoming electrical feeder and sub-station
- Permanently displaces around 150 public parking spaces
- Provides 210 standard inpatient beds, 7 TCU beds, 30 PICU/HDU beds and 36 day beds in a modified vertical stack over *eight* floors, as shown in Figure 6
- Includes expansion by one theatre of the operating department in a separate package of work
- Further development would take place either on the site of the vacated single-storey inpatient units; or, on Zone A sites in the north and north-east quadrant of the site

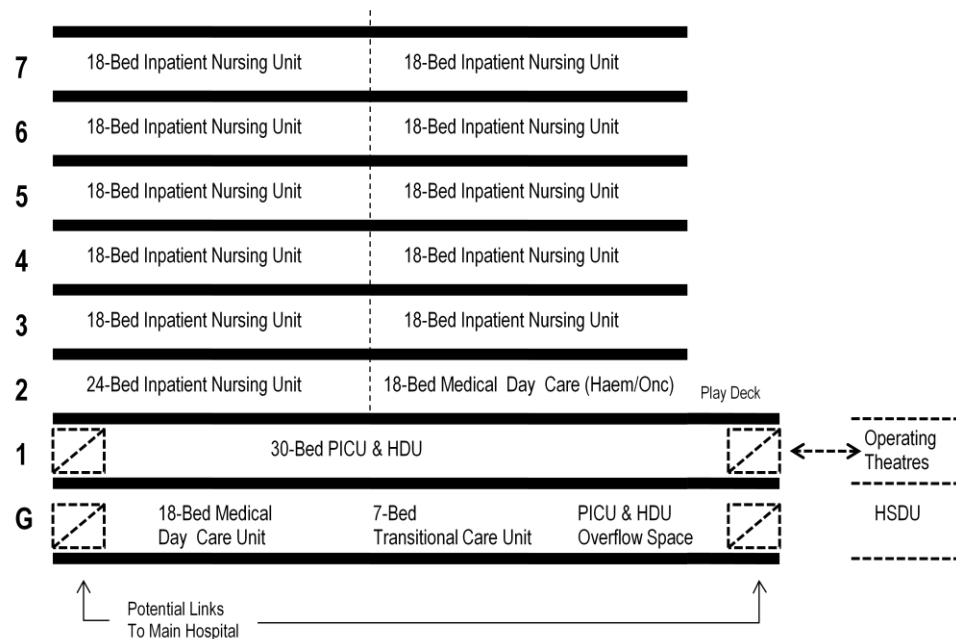


Figure 6: Modified Stack Option 3

3.6 Commentary and Recommendation

All three options:

- Are technically possible
- Accommodate the required total number of beds, or very close
- Can accommodate 2 x 18-bed nursing units at each level
- Allow continuing development, although with differing end state configurations
- Adversely affect parking provision by between 100 and 200 places

Option 1 offers attractive flexibility both in sizing and configuring an architectural solution. However, its viability depends on displacing between 4,000 and 5,000 square metres of occupied space at a minimum. The task of creating a brief, finding sites and the cost to construct the necessary temporary accommodation make this preliminary enabling work a major project in its own right and one which will have significant effect on implementation time. A further serious complication is the need as part of this decanting to re-locate the hospital main computer server room with attendant re-routing of the distribution network. This critical facility will need to be moved again later unless permanent space can be found immediately. The building can be connected at Ground and First Floor to the core of the existing hospital but only at a single point. Travel distances to diagnostic and treatment resources are acceptable but not ideal.

Option 2 displaces much less existing space than Option 1, not exceeding 1,500 sq m of mainly office accommodation. However, the site area is constrained by retained existing buildings limiting the form and plan size of an architectural solution. The building can be connected to the core of the existing hospital at two separate points and on Ground and First Floor. Travel distances to existing diagnostic facilities and the emergency department are not ideal but acceptable. Further development could take place by using vacated inpatient space in the core hospital to house the occupants of the School of Nursing, subsequently using that site for a combined outpatient and diagnostic block. This would then leave the western half of the site to complete the immediate development and as a long term strategic reserve.

Option 3 is slightly smaller in total built area than the alternatives and superficially more straightforward since it does not require any occupied buildings to be displaced. It will impinge on the helicopter landing pad. Relocation of the pad will be as difficult as finding the multiple sites for the temporary buildings in Option 1. The site is constrained by the limited depth of site from the site boundary to the existing hospital buildings. Travel distances to existing diagnostic facilities and the emergency department are good. Access to the operating theatres is less easy. Subsequent development could take place either on the northern part of the site (Zone A) or on the site of the vacated single storey inpatient units.

Recommendation for Costing

Option 1 is not recommended by virtue of the large volume of preliminary decanting required. Option 3 is rejected because of the limitations of the site and the impact on public parking which can only be addressed by an on-site solution. Option 2 is recommended as the best compromise because of the manageable amount preliminary decanting and because of the long term options which are possible with this option.

The long term development potential of Option 2 is illustrated in Figure 7 overleaf. It proposes the reuse of the vacated inpatient space in the main hospital block to accommodate non-clinical functions now housed in the Nurses Residence, assisting the clearance of that block. The Nurses Residence would then be demolished to make way for a new outpatient and diagnostic services block. The resulting diagnostic units would be in close proximity to inpatient services and, with the Medical Tower, form a coherent north-south outpatient zone. Subsequent development would take place on the cleared land to the west with a substantial reserve maintained for strategic initiatives in the future.

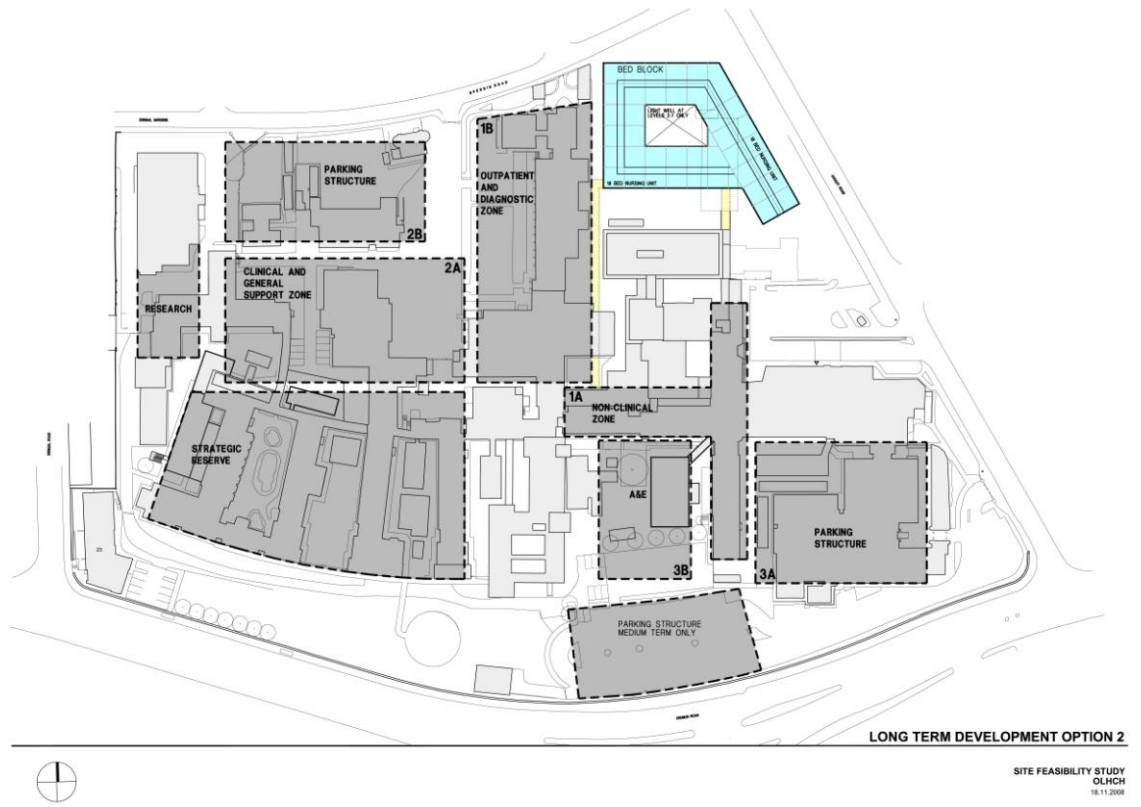


Figure 7: Option 2 Long Term Potential

4 Capital Cost

4.1 Basis for Costing

Option 2 is the basis for preparing a capital cost estimate. The anticipated elements of the first phase are defined and quantified in the following table.

PRELIMINARY WORK		Area sq m
Temporary Accommodation	Administrative & executive activities)	1,500
	Chapel)	
Parking (see note after table)	Add deck to public parking for extra 150 places	5,250
Demolition	Administrative/Executive Block + Chapel	1,000 (3,000 cu m)
	Cafeteria	250 (750 cu m)
Service diversions/relocations	Relocation 10,000 gal fire tank	
	Diversion of foul and surface water drains	
NEW CONSTRUCTION CORE BLOCK		
Ground Floor	7-bed Transitional Care Unit	726
	PICU/HDU Support Space	326
	Hospital kitchen, conventional food service	890
	Hospital cafeteria	400
	Allowance for new IT server centre	100
	Floor grossing elements (stairs, lifts, corridor)	408
	First Floor	PICU/HDU, core space, 30 beds
Floor grossing elements (stairs, lifts, corridor)		375
Second Floor	1 x 24-bed standard inpatient unit	1,304
	1 x 18-bed Medical Day Care unit	836
	Floor grossing elements (stairs, lifts, corridor)	290
Third Floor	2 x 18-bed standard inpatient units	2,114
	Floor grossing elements (stairs, lifts, corridor)	316
Fourth Floor	1 x 24-bed standard inpatient unit	1,304
	1 x 18-bed Medical Day Care unit	836
	Floor grossing elements (stairs, lifts, corridor)	290
Fifth to Seventh Floor	6 x 18-bed standard inpatient units	6,342
	Floor grossing elements (stairs, lifts, corridor)	948
Eighth Floor	1 x 18-bed standard inpatient unit	1,057
	Floor grossing elements (stairs, lifts, corridor)	316
Main Plant Space	Mechanical & Electrical	2,000
		<i>Total Gross Core Block</i>
		23,653
OTHER ELEMENTS		
Links to main hospital	Ground & First Level, enclosed, new construction	540
Operating Theatre expansion	New construction	200
Surgical Day	Internal refurbishment, allowance	500

Parking Note

The proposal includes an allowance to add a single, above ground deck to the existing public parking lot, to the south of the outpatients department. The existing lot

accommodates 125 places and the deck is projected to add a further 150 places. The space indicated in the previous table is the gross space for the incremental capacity only.

Engineering Allowances

The following inclusions have been assumed in respect of engineering installations for the new development.

- Additional boiler capacity for space heating and domestic hot water supply integral to the development
- Integral chiller capacity to serve the new building
- Medical oxygen, new branch connection to existing central supply (VIE) with new local back-up cylinder bank
- Medical vacuum, new integral vacuum pumps and back-up cylinder bank installed to serve new development
- Medical compressed air, new integral local compressors and back-up cylinder bank to serve new development
- MV electrical power, new fourth medium voltage transformer station to be included for new development plus closure of existing MV distribution to create ring main with cable installed through existing buildings
- Low voltage, new switch room and distribution panel feeding floor by floor sub-boards in the new building
- Emergency power, additional capacity provided for and in new development
- Cold water storage, incremental storage capacity installed in new development
- Telecommunications, connection to existing central telephone system
- Space allowance for additional IT server room (but not for the IT installation); internal data network for new building and connection to existing network
- Fire detection/ alarm, new panel inter-connected to existing building system
- Foul drainage, new connection to Sperrin Road
- Surface water drainage, new connection to Sperrin Road with new attenuation tank
- Mechanical ventilation/air conditioning, as required by building configuration (deep planned areas) and clinical need (eg PICU and HDU, kitchen/cafeteria)

4.2 Estimated Capital Cost Summary

ELEMENT	Estimate €
Temporary Accommodation	1,500,000
Demolition of Administrative Block & Chapel	300,000
Car-parking, suspended deck for 150 cars (possible revenue item)	2,000,000
Diversions of foul / surface water drains, relocation of fire tank	250,000
Upgrading of electrical power installation	250,000
New 300 bed hospital block	68,000,000
Other elements, links, etc.	3,250,000
Sundry items / contingencies	3,000,000
<i>Sub-total</i>	€78,550,000
Design Team Fees	10,250,000
<i>Sub-total</i>	€88 800 000
Value Added Tax	13,000,000
<i>Total</i>	€101,800,000
Say	€102,000,000

NOTES and EXCLUSIONS

- a) Costs based on current prices and market conditions; excludes any inflation post November 2008.
- b) IT, Printers and PC's not included
- c) Equipment costs not included
- d) Costs exclude loose furniture / furnishings.
- e) Contributions to Local Authorities and Utilities not included.

5 Appendices

Appendix A: Exemplar Schedules of Accommodation

- A-1 18-Bed Inpatient Nursing Unit
- A-2 24-Bed Inpatient Nursing Unit
- A-3 30-Bed Paediatric Intensive & High Dependency Care Unit
- A-4 7-Bed Transitional Care Unit
- A-5 18-Bed Day Care Unit (Surgical)
- A-6 18-Bed Day Care Unit (Medical)

A-1 18-Bed Paediatric Nursing Unit

	Places	Net Area	No Req	Total Net	Comments
1	Visitor waiting + play 20 places	42.0	0.5	21.0	Share with adjacent Unit
2	One-bed room	23.5	15	352.5	
	(bed area	19.0)		
	(toilet/shower/whb	4.5)		
3	One-bedroom, isolation	28.0	3	84.0	
	(bed area	19.0)		
	(lobby	4.5)		
	(toilet/shower/whb	4.5)		
4	Play room/adolescent room	27.0	2	54.0	
5	Dining room	11.0	2	22.0	
6	Assisted bathroom	14.0	1	14.0	Bath, toilet, hand-wash
7	Assisted wc/hand-wash	4.5	1	4.5	
8	Consultation/examination/treatment	16.5	1	16.5	
9	Quiet room/interview	8.0	1	8.0	
10	Ward pantry	12.0	1	12.0	
11	Reception/clerical 2 places	13.0	1	13.0	
11	Staff base/office 2 places	9.0	2	18.0	IT & printers; could be combined
12	Clean utility/supply	13.0	1	13.0	
13	Linen bay	2.5	2	5.0	
14	Dirty utility	12.0	1	12.0	
15	Disposal hold	9.0	1	9.0	
16	Equipment store	15.0	2	30.0	
17	Mobile equipment bay	5.0	1	5.0	
18	Resuscitation trolley	1.0	1	1.0	
20	Food service kitchen	24.0	0.5	12.0	
21	Family lounge	16.0	1	16.0	
22	Family pantry	8.0	1	8.0	
23	Toilet, visitor	4.5	1	4.5	Assist/baby changing
24	Office, nurse	9.0	1	9.0	
25	Multi-use room	12.0	1	12.0	Office, small meeting area
26	Staff rest room	18.0	0.5	9.0	Shared with adjacent unit
27	Seminar room	18.0	0.5	9.0	
28	Toilet, staff	2.0	1	2.0	
29	Cleaner	7.0	1	7.0	
Total Net Area sq m				783.0	Corridors, walls, small ducts
Net to Gross Factor				35%	
Departmental Area sq m				1,057	

A-2 24-Bed Paediatric Nursing Unit

	Places	Net Area	No Req	Total Net	Comments
1	Visitor waiting/play	51.0	0.5	25.5	Share with adjacent Unit
2	One-bed room	23.5	20	470.0	
	<i>(bed area</i>	19.0)		
	<i>(toilet/shower/whb</i>	4.5)		
3	One-bedroom, isolation	28.0	4	112.0	
	<i>(bed area</i>	19.0)		
	<i>(lobby</i>	4.5)		
	<i>(toilet/shower/whb</i>	4.5)		
4	Play/adolescent room	30.0	2	60.0	
5	Dining room	13.0	2	26.0	
6	Assisted bathroom	14.0	1	14.0	Bath, toilet, hand-wash
7	Assisted wc/hand-wash	4.5	1	4.5	
8	Consultation/examination/treatment	16.5	1	16.5	
9	Quiet room/interview	8.0	1	8.0	
10	Ward pantry	12.0	1	12.0	
11	Reception/clerical 2 places	13.0	1	13.0	
12	Staff base/office 2 places	11.0	2	22.0	IT & printers; could be combined
13	Clean utility/supply	14.0	1	14.0	
14	Linen bay	2.5	2	5.0	
15	Dirty utility	12.0	1	12.0	
16	Disposal hold	10.0	1	10.0	
17	Equipment store & general store	17.0	2	34.0	
18	Mobile equipment bay	5.0	1	5.0	
19	Resuscitation trolley	1.0	1	1.0	
20	Food service kitchen	30.0	0.5	15.0	
21	Family lounge	18.0	1	18.0	
22	Family pantry	8.0	1	8.0	
23	Toilet, visitor	4.5	1	4.5	Assist/baby changing
24	Office, nurse	9.0	1	9.0	
25	Multi-use room	16.0	1	16.0	Office, small meeting area
26	Staff rest room	22.0	0.5	11.0	Shared with adjacent unit
27	Seminar room	22.0	0.5	11.0	
28	Toilet, staff	2.0	1	2.0	
29	Cleaner	7.0	1	7.0	
Total Net Area sq m				966.0	Corridors, walls, small ducts
Net to Gross Factor				35%	
Departmental Area sq m				1,304	

A-3 30-Bed Paediatric Intensive and High Dependency Care Unit

	Places	Net Area	No Req	Total Net	Comments
1	Reception	9.0	1	9.0	
2	Visitor lounge	62.0	1	62.0	
	(sitting area 30 places	51.0)		
	(children's play	11.0)		
3	Interview room	9.0	2	18.0	
4	Toilet, visitor	4.5	3	13.5	
5	Family overnight room	16.0	15	240.0	Includes 3-pc bathroom
6	Entry hand-wash alcove	4.0	1	4.0	
7	One-bed room, isolation	32.0	10	32.0	Multi-use PICU/HDU
	(bed area	26.0)		
	(lobby	6.0)		
8	Four-bed bay	140.0	5	700.0	Multi-use PICU/HDU
9	Assisted bath/toilet	14.0	1	14.0	
10	Pantry	8.0	1	8.0	
11	Resuscitation trolley	1.0	3	3.0	
12	Staff base	11.0	3	33.0	
13	Ward clerks 3 places	15.0	1	15.0	
14	Image viewing	8.0	2	16.0	
15	Medication prep	8.0	3	24.0	
16	Clean utility	17.0	3	51.0	
17	Linen bay	3.0	3	9.0	
18	Dirty utility	12.0	3	36.0	
19	Mobile equipment	8.0	1	8.0	
20	Procedure room	35.0	1	35.0	
21	Consumables storage	30.0	1	30.0	Bulk supply
22	Equipment storage	30.0	2	60.0	
23	Disposal hold	10.0	1	10.0	
24	Cleaner	7.0	1	7.0	
25	ECMO training laboratory	20.0	1	20.0	
26	Transport equipment	20.0	1	20.0	
27	Gas cylinder store	6.0	1	6.0	
28	Laboratory	9.0	1	9.0	
29	Biomedical satellite workshop	15.0	1	15.0	
30	Office, director	11.0	1	11.0	
31	Office manager	11.0	1	11.0	
32	Office, clerical 2 places	12.0	1	12.0	

A-3 30-Bed Paediatric Intensive and High Dependency Care Unit -- Continued

	Places	Net Area	No Req	Total Net	Comments	
33	Office, multi-user	4 places	20.0	1	20.0	
34	Seminar/in-service	20 places	32.0	1	32.0	
35	Rest-room/beverage bay		30.0	1	30.0	
36	Cube lockers		4.0	1	4.0	
37	Toilet staff		2.0	4	8.0	
38	Office/on-call sleep room		13.0	3	39.0	Includes toilet/shower
39	Female staff change		48.0	1	48.0	
40	Male staff change		24.0	1	24.0	
		Total Net Area sq m			2,030.0	
		Net to Gross Factor			35%	Corridors, walls, small ducts
		Departmental Area sq m			2,801	

A-4 7-Bed Transitional Care Unit

	Places	Net Area	No Req	Total Net	Comments
1	Visitor waiting 10 places	15.0	1	15.0	
2	Family suite	50.0	6	300.0	
	(patient bed area	23.0)		
	(lobby	4.5)		Isolation technique
	(toilet/shower/whb	6.5)		Full assisted bathroom
	(family bedroom	12.0)		Double occupancy
	(family bathroom	4.0)		
3	Family suite	34.0	1	34.0	
	(patient bed area	23.0)		
	(lobby	4.5)		Isolation technique
	(toilet/shower/whb	6.5)		Full assisted bathroom
4	Play room	30.0	1	30.0	
5	Neuro-developmental room	30.0	1	30.0	
6	Quiet room/interview	8.0	1	8.0	
7	Staff base/office	11.0	1	11.0	IT & printers; could be combined
8	Clean utility/supply	11.0	1	11.0	
9	Linen bay	2.5	1	2.5	
10	Dirty utility	9.0	1	9.0	
11	Disposal hold	--		--	Use floor facility
12	Equipment & general store	20.0	1	20.0	
13	Resuscitation trolley	1.0	1	1.0	
14	Food service kitchen	11.0	1	11.0	
15	Family room	30.0	1	30.0	Lounge/dining facility
16	Play room	12.0	1	12.0	Siblings
17	Visitor toilet	4.0	1	4.0	
18	Staff toilet	2.0	1	2.0	
19	Cleaner	7.0	1	7.0	
Total Net Area sq m				538.0	Corridors, walls, small ducts
Net to Gross Factor				35%	
Departmental Area sq m				726	

A-5 18-Bed Day Care Unit (Medical)

	Places	Net Area	No Req	Total Net	Comments
1 Reception	2 places	11.0	1	11.0	
2 General Office	2 places	11.0	1	11.0	
3 Main waiting		49.0	1	49.0	
	<i>(sitting area 20 places</i>	28.0)		
	<i>(wheelchair places 4 places</i>	10.0)		
	<i>(play area</i>	11.0)		
4 Toilet, patient/visitor		4.5	2	9.0	
5 Nursing consultation/examination		13.5	1	13.5	
6 Trolley/wheelchair parking		6.0	1	6.0	
7 Multi-bed/recliner room	4 places	49.2	3	147.6	
8 Toilet, patient		4.5	3	13.5	Wheelchair accessible
9 One-bed room		23.5	6	141.0	
	<i>(bed area</i>	19.0)		
	<i>(2-pc bathroom</i>	4.5)		
10 Procedure room		23.0	1	23.0	
11 Quiet room/interview		9.0	1	9.0	
12 Staff base/office	3 places	16.5	1	16.5	
13 Clean utility		14.0	1	14.0	
14 Utility/preparation		14.0	1	14.0	Special handling, cytotoxics etc
15 Consumables store		14.0	1	14.0	Bulk stock
16 Equipment store		14.0	1	14.0	
17 Dirty utility		12.0	1	12.0	
18 Linen bay		3.0	1	3.0	
19 Pantry		8.0	1	8.0	
20 Toilet, staff		2.0	1	2.0	
21 Office, manager		9.0	1	9.0	
22 Office, multi-use		11.0	1	11.0	
23 Cleaner		7.0	1	7.0	
Total Net Area sq m				539.0	Corridors, walls, small ducts
Net to Gross Factor				35%	
Departmental Area sq m				728	

A-6 18-Bed Day Care Unit (Surgical)

	Places	Net Area	No Req	Total Net	Comments	
1	Reception	2 places	11.0	1	11.0	
2	General Office	2 places	11.0	1	11.0	
3	Main waiting		49.0	1	49.0	
	(sitting area	20 places	28.0)		
	(wheelchair places	4 places	10.0)		
	(play area		11.0)		
4	Toilet, patient/visitor		4.5	2	9.0	
5	Nursing consultation/examination		13.5	2	27.0	
6	Patient changing		5.0	2	10.0	
7	Changed waiting/play		19.0	1	19.0	
8	Clothing store		4.5	1	4.5	
9	Toilet, patient /visitor		4.5	1	4.5	
10	Trolley/wheelchair parking		6.0	1	6.0	
11	Multi-bed room	4 places	49.2	3	147.6	
12	Toilet, patient		4.5	3	13.5	Wheelchair accessible
13	One-bed room		23.5	6	141.0	
	(bed area		19.0)		
	(2-pc bathroom		4.5)		
14	Pre-discharge/play room		30.0	1	30.0	
15	Toilet, patient /visitor		4.5	1	4.5	
16	Procedure room		23.0	1	23.0	
17	Quiet room/interview		9.0	1	9.0	
18	Staff base/office	3 places	16.5	1	16.5	
19	Clean utility		14.0	1	14.0	
20	Consumables store		14.0	1	14.0	Bulk stock
21	Equipment store		14.0	1	14.0	
22	Dirty utility		12.0	1	12.0	
23	Linen bay		3.0	1	3.0	
24	Pantry		8.0	1	8.0	
25	Toilet, staff		2.0	1	2.0	
26	Office, manager		9.0	1	9.0	
27	Office, multi-use		11.0	1	11.0	
28	Cleaner		7.0	1	7.0	
		Total Net Area sq m			630.0	
		Net to Gross Factor			35%	Corridors, walls, small ducts
		Departmental Area sq m			851.0	

Notes applicable to all Schedules

- 1) Electrical distribution press (closet) required in addition to useable area, approximately 3.0 sq m
- 2) Voice/Data press (closet) required in addition to useable area, 3.0 sq m
- 3) Departmental area does not include stairs, lifts, air handling or other major plant installations