

2018 UIA-PHG International Student Competition

A PREFABRICATED MODULAR COMMUNITY HEALTH CENTRE

SPACE PROGRAMME

Definitions

In this space programme, various terms and acronyms, which the reader may not be familiar with, are used. The following definitions are provided to clarify this terminology.

- NSM² refers to the Net Square Metres, which is the actual total area within each room or space listed in the space requirements; it is measured to the inside face of wall surfaces.
- Component or Functional Component is a cohesive grouping of activities or spaces related by services or physical arrangement. A planning component may or may not be a department, since the term “department” refers to an administrative organisation rather than a functional organisation of space and activities.
- CGM² refers to Component Gross Square Metres. This area includes partitions, the internal corridors that serve the respective room groupings, small mechanical shafts and the building structure. It is computed by multiplying the NSM² by a net to gross factor that varies from component to component.
- The total building gross area (BGM²) refers to the Building Gross Square Metres. It includes all component gross areas, exterior walls, primary mechanical and electrical spaces, major services shafts, and all general corridors, elevators and stairways serving more than one component.

Note:

This programme has been developed specifically for this competition although it is loosely based on guidelines for this type of facility developed by the Indian Ministry of Health. It is recognized that its transposition to other socio-economic and demographic contexts and physical environments may call for some adjustments but the listed components should be retained along with all essential rooms. Significant deviations from the programme should be justified by the participants in their presentation.

Acknowledgements:

Parts of this document were loosely based on the Dutch Centre for Health Assets (Utrecht, The Netherlands) rules and regulations developed for a design competition held in 2008-2009 titled *The Transformation of Healthcare*, and on documents available on the Web regarding modular prefabrication.

UIA/PGH Design Competition		
Functional Programme	Space List	SUMMARY
1. INPATIENT UNITS	Beds	CGM²
1.1 Medical/Surgical Units	30	397
Subtotal	30	397
2. AMBULATORY CARE		CGM²
2.1 General Clinics		168
2.2 Specialty Clinics		296
2.3 Emergency		156
2.4 Specimen Collection		125
2.5 Vaccination		41
Subtotal		744
3. DIAGNOSTIC AND TREATMENT SERVICES		CGM²
3.1 Surgical Suite		233
3.2 Diagnostic Imaging		113
3.3 Clinical Labs		57
3.4 Pharmacy		13
3.6 Maternity Unit		275
Subtotal		415
4. ADMINISTRATIVE SERVICES		CGM²
4.1 Administration		74
4.2 Amitting/Registration		83
4.4 Health Records		64
4.5 Information Systems		31
Subtotal		251
5. SUPPORT SERVICES		CGM²
5.1 Central Stores and Distribution		61
5.2 Central Sterilization Service		69
5.3 Dietary Service		89
5.4 Laundry and Linen Service		57
5.5 Housekeeping		14
5.6 Engineering and Maintenance		46
5.7 Mortuary		13
Subtotal		335
6. STAFF and PUBLIC SERVICES		CGM²
6.1 Medical Staff Accommodation		255
6.2 General Staff Accommodation		251
6.3 Public and Patients Services		81
Subtotal		587
Total Components Gross Area		2730
Main Circulations, Exit Stairs, Verandah, etc.	3%	82
Electrical and Mechanical Systems	4%	98
Total Building Gross Area		2910
Square Metres per Bed		97

Note for the Summary:

- The allowance for main circulations, stairs, verandah and other general spaces outside of components is given here as a general indication and will vary from scheme to scheme.
- The allowance for mechanical and electrical systems is also given here as a general indication; it is not necessary for the participants to detail these areas, it will suffice to indicate within the design where these areas will be located on the plan. It will vary greatly depending on site context.

UIA/PHG Design Competition							
Functional Programme		Space List		1. INPATIENT UNITS			
S U M M A R Y							
				CGM ²	CGM ² /Bed	sq. ft.	sq. ft./bed
1. INPATIENT UNITS							
# Beds							
1.1 General Medical/Surgical Units		30	397	13	4273	142,4	
		30					
Room Function		#	Room	Total	Subtotal	Factor	Total
		Rooms	Area	Net Area	CNM²	Net/Gross	CGM²
1.1 Medical/Surgical Units							397
Total Unit					305,4	1,30	397
Patient Rooms Area (4 units)					210,8		
6-bed ward				52,7			
• Bed Area		6	7,2	43,2			
•Toilets		1	2,5	2,5			
•Toilet Handicap		1	4	4			
•Shower Stalls		2	1,5	3			
Isolation Rooms					33,6		
•Isolation Room		2	9,3	18,6			
•Vestibule w/ sink		2	3,5	7			
•Toilet		2	4	8			
Private Rooms					53,2		
•Private Room		4	9,3	37,2			
•Toilet		4	4	16			
Staff and Patient Support Area					61		
Nursing Station				15			
Toilet Staff				2,5			
Clean Utility				10			
Soiled Utility				8			
Medication Alcove				2			
Doctors' Room				10			
Bathroom, Doctors' Room				3,5			
Storage Stretchers and Wheelchairs				2			
Equipment Storage				6			
Housekeeping Closet				2			

Note:

- Inpatient Units should be on the same level; it is not anticipated that there would be elevators in the building.

UIA/PHG Design Competition						
Functional Programme		Space List 2. Ambulatory Care				
SUMMARY						Total Components Gross Area 744
	<i>Exam.</i>	<i>Treatment</i>	<i>Procedure</i>	<i>Consult</i>	<i>Beds</i>	<i>CGM²</i>
	<i>Chamber</i>	<i>Rooms</i>	<i>Room</i>	<i>Offices</i>	<i>Stretch.</i>	
2.1 General Clinics	6					168
2.2 Specialty Clinics	8	1				296
2.3 Emergency					4	156
2.4 Specimen Collection						125
2.5 Vaccination						41
Total	14	1	0	0	4	
Room Function						
	#	Room	Total	Subtotal	Factor	Total
	Rooms	Area	Net Area	CNM ²	Net/Gross	CGM ²
2.1 General Clinics				124,2	1,35	168
Administrative & Public Areas				40,2		
Waiting Area	18	1,4	25,2			
Public Toilets	2	2,5	5			
Reception/Clerical - 2 positions	2	5	10			
Clinical Modules				84		
Module			84			
• Exam/Consult	6	11	66			
• Clean Supply	1	6	6			
• Soiled Utility	1	4	4			
• Toilets	2	4	8			
Room Function						
	#	Room	Total	Subtotal	Factor	Total
	Rooms	Area	Net Area	CNM ²	Net/Gross	CGM ²
2.2 Specialty Clinics				219,2	1,35	296
Administrative & Public Areas				40,2		
Waiting Area	18	1,4	25,2			
Public Toilets	1	2,5	2,5			
Reception/Clerical	2	5	10			
Staff Toilet	1	2,5	2,5			
Examination Area				165		
Exam Rooms	8	11	88			
Toilets En-suite Medical Staff	8	2,5	20			
Refraction Room	1	12	12			
AYUSH Room	1	15	15			
Treatment Room	1	18	18			
Ultrasound	1	12	12			
Shared Spaces				14		
Clean Utility	1	8	8			
Soiled Utility	1	6	6			

Room Function	#	Room	Total	Subtotal	Factor	Total
	Rooms	Area	Net Area	CNM ²	Net/Gross	CGM ²
2.3 Emergency				119,8	1,30	156
Patient Intake				39,8		
Stretchers/Wheelchairs	1	1	1			
Waiting Room	12	1,4	16,8			
Reception/Registration	1	5	5			
Family Room - 6 to 8 people	1	12	12			
Public Toilets	2	2,5	5			
Exam & Treatment				38		
Casualty Room	1	24	24			
Clean Utility	1	6	6			
Soiled Utility	1	4	4			
Toilets Handicap	1	4	4			
Toilets	1	2,5	2,5			
Observation & Holding - Adult				42		
Stretcher Cubicles	4	9	36			
Nursing Station	1	6	6			
Room Function	#	Room	Total	Subtotal	Factor	Total
	Rooms	Area	Net Area	CNM ²	Net/Gross	CGM ²
2.4 Specimen Collection				86	1,45	125
Specimen Collection				20		
Waiting Room (Outside the module)	0	0	0			
Collection Room (2 collection chairs)	1	20	20			
Room Function	#	Room	Total	Subtotal	Factor	Total
	Rooms	Area	Net Area	CNM ²	Net/Gross	CGM ²
2.5 Vaccination				33	1,25	41
Vaccination				33		
Waiting Room (Outside the module)	0	0	0			
Injection Room	1	10	10			
Cold Chain Room	1	10	10			
Logistics Room	1	10,5	10,5			
Toilet	1	2,5	2,5			

Note:

- The Vaccination Area should be accessible directly from the lobby as well as the Specimen Collection.
- Emergency should be directly accessible from outside and have an inside connection with the rest of the CHC.
- Waiting rooms for Clinics could be accommodated in an outdoor veranda and could be combined with the lobby if climatically appropriate.

UIA/PHG Design Competition						
Functional Programme		Space List	3. D & T Services			
Total D & T Components Gross Area						415
3.1 Surgical Suite						233
3.2 Diagnostic Imaging						113
3.3 Clinical Labs						57
3.4 Pharmacy						13
3.5 Maternity Unit						275
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Room Function	#	Room	Total	Subtotal	Factor	Total
	Rooms	Area	Net Area	CNM ²	Net/Gross	CGM ²
3.1 Surgical Suite				155,0	1,50	233
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Reception/Holding				33,0		
Reception and Control				4		
Holding and Preparation Room for Stretcher Patients		2	6	12		
Toilet, Patients		1	4	4		
Locker Room - Males		1	3	3		
Toilet w/ Shower		1	3	3		
Locker Room - Females		1	4	4		
Toilet w/ Shower		1	3	3		
Anaesthesia				10,0		
Equipment Cleaning and Maintenance		1	10	10		
Operating Rooms				86,0		
Operating Rooms		2	36	72		
Scrub Area		1	2	2		
Sterile Storage		1	12	12		
Post-Anaesthesia Recovery				16,0		
Recovery Area		2	8	16		
Support Rooms				10,0		
Housekeeping Closet		1	2	2		
Clean Supply Room		1	4	4		
Soiled Holding Room		1	4	4		

Room Function	#	Room	Total	Subtotal	Factor	Total
	Rooms	Area	Net Area	CNM ²	Net/Gross	CGM ²
3.2 Diagnostic Imaging				75,0	1,50	113
Reception and Waiting				28,0		
Reception	1	4	4			
Waiting Room Ambulatory Patients	10	1,4	14			
Patient Holding	1	6	6			
Toilet Wheelchair	1	4	4			
General Radiography				47,0		
Changing Cubicles	1	1,5	1,5			
Changing Cubicles Handicap	1	2,5	2,5			
General Radiography Room	1	32	32			
Toilet	1	4	4			
Darkroom	1	3	3			
Viewing and Reading	1	4	4			
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Room Function	#	Room	Total	Subtotal	Factor	Total
	Rooms	Area	Net Area	CNM ²	Net/Gross	CGM ²
3.3 Clinical Laboratory				44,0	1,30	57
Combined Functions						
Laboratories	1	44	44			
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Room Function	#	Room	Total	Subtotal	Factor	Total
	Rooms	Area	Net Area	CNM ²	Net/Gross	CGM ²
3.4 Pharmacy				25,8	1,35	35
Reception				25,8		
Cashiers	1	2,7	2,7			
Prescription Receiving Counter (2 positions)	2	2,7	5,4			
Prescription Dispensing and Consultation	1	2,7	2,7			
Storage and Dispensing Area	1	15	15			
Waiting (part of Lobby)	0	0	0			

Room Function	#	Room	Total	Subtotal	Factor	Total
	Rooms	Area	Net Area	CNM ²	Net/Gross	CGM ²
3.4 Maternity Unit						275
Subtotal				211,9	1,30	275
Reception and Triage				24		
Reception/Triage	1	5	5			
Waiting	4	2	8			
Consultation Room	1	11	11			
Labour				32		
Labour Room Cubicles	3	8,5	25,5			
Storage/Staff work area	1	2	2			
Toilet w/ shower	1	4,5	4,5			
Staff and Patient Support Area				29		
Nursing Station	1	8	8			
Toilet Staff	1	2,5	2,5			
Clean Utility	1	6	6			
Formula Preparation Room	1	4	4			
Well Baby Nursery (4 bassinets)	2	2	4			
Soiled Utility	1	4	4			
Medication Alcove	1	0,5	0,5			
Common Areas				10		
Office Chief Nurse	1	10	10			
Delivery Suite				76,9		
Delivery	1	36	36			
Scrub Area	1	0,5	0,5			
Sub-sterile Utility	1	10	10			
Resuscitation/Procedures (2 positions)	2	8	16			
Recovery Area (2 stretchers)	2	7,2	14,4			
NICU				40		
Incubators - Intensive Care	2	8	16			
Incubators - Intensive Care Isolation	1	10	10			
Anteroom	1	2	2			
Incubators - Intermediate Care	2	6	12			

Note:

- The Maternity Unit should have a direct internal access to the Operating Theatres.
- The Pharmacy should be directly accessible within the lobby.
- Diagnostic Imaging should be accessible both for outpatients and emergency patients and for inpatients through separate routes.
- The Laboratories should be easily accessible from the Specimen Collection room.

UIA/PHG Design Competition						
Functional Programme	Space List	4. Administrative Services				
SUMMARY						Total Components Gross Area 251
4.1 Administration						74
4.2 Admitting/Registration/Cashiering						83
4.3 Health Records						64
4.4 Information Systems						31
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Room Function	#	Room	Total	Subtotal	Factor	Total
	Rooms	Area	Net Area	CNM ²	Net/Gross	CGM ²
4.1 Administration				52,5	1,4	74
Offices				52,5		
Medical Superintendant	1	18	18			
Public Health Supervisor	1	15	15			
Public Health Nurse	1	12	12			
Office, Secretary	1	7,5	7,5			
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Room Function	#	Room	Total	Subtotal	Factor	Total
	Rooms	Area	Net Area	CNM ²	Net/Gross	CGM ²
4.2 Admitting/Registration/Cashiering				59,0	1,40	83
Inpatient Admitting and Outpatient Registration				59,0		
Reception	1	7,5	7,5			
Admitting Cubicles	2	4,5	9			
Registration Cubicles	2	4,5	9			
Cashiers	1	4,5	4,5			
Waiting Room	15	1,4	21			
Toilets	2	4	8			
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Room Function	#	Room	Total	Subtotal	Factor	Total
	Rooms	Area	Net Area	CNM ²	Net/Gross	CGM ²
4.3 Health Records				51,5	1,25	64
Work Area				21,5		
Record Assembly	1	4,5	4,5			
Record Control/Incomplete Charts	1	6	6			
Microfilming/Digitizing Room	1	11	11			
Support Area				18,0		
Active Record Storage	1	12	12			
Photocopy Room	1	6	6			
Administrative Area				12,0		
Office, Director	1	12	12			
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Room Function	#	Room	Total	Subtotal	Factor	Total
	Rooms	Area	Net Area	CNM ²	Net/Gross	CGM ²
4.4 Information Services				22,0	1,40	31
Support Area				22,0		
Server Room	1	10	10			
Control Room	1	6	6			
Workroom/Storage	1	6	6			

Note:

- The Admitting, Registration and Cashiering components should be located in the lobby.
- Other components should be grouped together and could be located on a second floor accessible by stairs.

UIA/PHG Design Competition						
Functional Programme	Space List	5. SUPPORT SERVICES				
SUMMARY						Total Components Gross Area 348
5.1 Central Stores and Distribution						61
5.2 Central Sterilization Service						69
5.3 Dietary Services						89
5.4 Laundry and Linen Service						57
5.5 Housekeeping						14
5.6 Engineering and Maintenance						46
5.7 Mortuary						13
Room Function	#	Room	Total	Subtotal	Factor	Total
	Rooms	Area	Net Area	CNM ²	Net/Gross	CGM ²
5.1 Central Stores and Distribution				55,0	1,1	61
Receiving and Storage				55,0		
Receiving Docks	1	11	11			
Flammable Stores	1	2	2			
Biomedical Waste Holding Room	1	3	3			
Kitchen Garbage Holding	1	2	2			
Gas Cylinder Storage	1	3	3			
Gas Cylinder Manifold	1	3	3			
Bulk Stores, Medical Supplies	1	10	10			
Bulk Stores, Non-medical Supplies	1	15	15			
Equipment Storage	1	6	6			
Room Function	#	Room	Total	Subtotal	Factor	Total
	Rooms	Area	Net Area	CNM ²	Net/Gross	CGM ²
5.2 Central Sterilization Service				59,8	1,15	69
Decontamination Area				16,0		
Decontamination Area	1	10	10			
Washers/Sanitizers	1	6	6			
Packing and Sterilization Area				22,8		
Instruments Sorting and Preparation Area	1	8	8			
Linen and Instruments Packaging	1	6	6			
Steam Sterilizers	1	4	4			
Staff Lockers, Male (incl. toilet w/ shower)	2	0,8	1,6			
Staff Lockers, Female (incl. toilet w/ shower)	4	0,8	3,2			
Storage and Distribution				10,0		
Storage, Sterile Supplies	1	10	10			
Administrative Area				11,0		
Office, Director	1	11	11			

Room Function	#	Room	Total	Subtotal	Factor	Total
	Rooms	Area	Net Area	CNM ²	Net/Gross	CGM ²
5.3 Dietary Service				74,0	1,20	89
Receiving and Storage				10,0		
Dry Storage	1	6	6			
Freezers and Refrigerated Rooms	1	4	4			
Production and Assembly Area				32,8		
Meal Preparation	1	12	12			
Tray Assembly	1	12	12			
Housekeeping Closet	1	4	4			
Staff Lockers, Male (incl. toilet w/ shower)	2	0,8	1,6			
Staff Lockers, Female (incl. toilet w/ shower)	4	0,8	3,2			
Cafeteria and Servery				11,2		
Cafeteria, General Staff	8	1,4	11,2			
Sanitizing				10,0		
Dishwashing Room	1	8	8			
Cart Washing	1	1	1			
Garbage Holding	1	1	1			
Administrative Area				10,0		
Office, Director	1	10	10			
Room Function	#	Room	Total	Subtotal	Factor	Total
	Rooms	Area	Net Area	CNM ²	Net/Gross	CGM ²
5.4 Laundry and Linen Service				47,2	1,20	57
Processing and Storage Area				37,2		
Soiled Linen Receiving	1	4	4			
Soiled Linen Sorting and Washing	1	3	3			
Soiled Linen Washing	1	3	3			
Drying Area	1	3	3			
Clean Linen Sorting Area and Storage	1	5	5			
Assembly and Distribution	1	4	4			
Cart Holding	1	2	2			
New Linen Storage	1	2	2			
Staff Lockers, Male (incl. toilet w/ shower)	2	1,2	2,4			
Staff Lockers, Female (incl. toilet w/ shower)	4	1,2	4,8			
Housekeeping Closet	1	4	4			
Administrative Area				10,0		
Office, Supervisor	1	10	10			
Room Function	#	Room	Total	Subtotal	Factor	Total
	Rooms	Area	Net Area	CNM ²	Net/Gross	CGM ²
5.5 Housekeeping				13,0	1,10	14
Storage				13,0		
Equipment Storage	1	10	10			
Supplies Storage	1	3	3			

Room Function	#	Room	Total	Subtotal	Factor	Total
	Rooms	Area	Net Area	CNM ²	Net/Gross	CGM ²
5.6 Engineering and Maintenance				38,0	1,20	46
Shop Area				18,0		
General Shop	1	18	18			
Storage				6,0		
Storage, General	1	6	6			
Biomedical Engineering & Electronics				14,0	1,35	19
Equipment Receiving and Storage	1	4	4			
Repair Shop	1	10	10			
Room Function	#	Room	Total	Subtotal	Factor	Total
	Rooms	Area	Net Area	CNM ²	Net/Gross	CGM ²
5.7 Mortuary				12,0	1,10	13
Mortuary				12,0		
Refrigerated Room	1	12	12			

Note:

- Except for Central Sterilization, these functions should be grouped together and could be located in a separate building attached to the rest of the CHC.
- To respond to different site conditions and to minimize site work, no basement should be incorporated into design unless warranted by climatic conditions.
- Central Sterilization should be as close as possible to the Operating Theatres and the Delivery Room in the Maternity Unit, but should remain accessible from outside these two components.
- Access to the loading dock for delivery vehicles should be as separate as possible from the main artery serving the CHC.

UIA/PHG Design Competition							
Functional Programme Space List 6. Staff and Public Services							
SUMMARY						Total Components Gross Area	587
6.1 Medical Staff Accommodation							255
6.2 General Staff Accommodation							251
6.4 Public and Patients Services							81
Room Function	#	Room	Total	Subtotal	Factor	Total	
	Rooms	Area	Net Area	CNM ²	Net/Gross	CGM ²	
6.1 Medical Staff Accommodation				232	1,10	255	
Housing Units				232			
1-bedroom Living/Sleeping Units	8	29	232				
Room Function	#	Room	Total	Subtotal	Factor	Total	
	Rooms	Area	Net Area	CNM ²	Net/Gross	CGM ²	
6.2 General Staff Accommodation				228	1,10	251	
Housing Units				228			
6-bedroom Living/Sleeping Units	2	114	228				
Room Function	#	Room	Total	Subtotal	Factor	Total	
	Rooms	Area	Net Area	CNM ²	Net/Gross	CGM ²	
6.3 Public and Patient Services				74	1,10	81	
Lobbies and Lounges				74			
Public Lobbies	1	56	56				
Information Desk	1	6	6				
Toilets	2	6	12				

Note:

- Medical and General Staff Accommodations can be either attached to the hospital or located separately.
- It is not compulsory to detail these accommodations' internal layouts but the location and the overall envelope should be indicated on the site plan.
- The lobby could be accommodated in an outdoor veranda if climatically appropriate.