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Abbotsford Hospital & Cancer Centre

Output Specifications

Section 1 – Key Site and Building Design Criteria

November 29, 2004

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1.1 INTRODUCTION

1. SUMMARY

1.1 Components of Output Specifications

Section 1 Key Site and Building Design Criteria

Output Specification Section 1: Subsection 1.2 Performance Statements contains non-technical design, planning, quality and performance requirements that are to be met by Project Co. In Subsection 1.2, the following conventions have been followed:

- Bullets, sentences or paragraphs beginning with the word “**provide**” contain items that are required by Health Co for the delivery of health care in the new Facility, and are therefore required to be included in the design and layout of the site and Facility. All of these are to be construed and interpreted as if the word “provide” was replaced with the words to the effect that “Project Co shall provide”.
- Bullets, sentences or paragraphs beginning with the word “**consider**” contain items that are desirable to Health Co and would be beneficial to the delivery of health care in the new Facility. Although these items are not mandatory, they are to be addressed and taken into account wherever appropriate and cost-effective to do so by a prudent public owner of a major hospital and cancer treatment centre who is designing and constructing a hospital for itself through a traditional design-bid-build procurement model.

Output Specification Section 1: Subsection 1.3 Key Functional Groupings contains diagrammatic information regarding the physical organization of the Functional Groups. Although these diagrams are intended as general guidelines only, and do not imply suggested building layouts, Project Co shall ensure that the physical organization of the Functional Groups in the final building design provides at least the same efficiencies for Clinical Services and Non-Clinical Services as those obtained from the physical organization of Functional Groups shown in Subsection 1.3.

Section 2 Clinical Services:

Section 2 describes the operating requirements for Clinical Services including Outpatient, Inpatient and Support Services. Each output specification provides a service description, operational description, activity indicators, people requirements, and design guidance.

Section 3 Non-Clinical Services:

Section 3 describes the operating requirements for the following areas: Information Management, Learning Centre, Main Public Facilities, Site Administration, Staff Facilities and Volunteer/Auxiliary Services. Each output specification provides a service description, operational description, activity indicators, people requirements, and design guidance.

Section 4 FM Services:

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Section 4 specifies the requirements for each of the following services to be provided by Project Co: General Services, Biomedical Engineering, Food Services, Housekeeping Services, Laundry/Linen Services, Materiel Services, Plant Services, Protection Services, Transcription Services, Utilities Management and Parking Services. Integral to this section is that these services shall be provided by Project Co, either through Project Co's own staff, or by a Contractor or Contractors retained by Project Co.

Section 5 Design and Technical

Output Specification Section 5: Subsection 5.2 Technical Requirements for Building Systems and Assemblies contains technical performance requirements relating to Facility systems and assemblies that shall be met by Project Co.

Output Specification Section 5: Subsection 5.3 Performance Specifications contains technical performance requirements relating to the components and materials that shall be met by Project Co. This subsection is organized into 17 major sub-subsections, each of which corresponds to one of the 17 divisions of the Construction Specification Institute specifications format.

Section 6 IT/TEL Services:

Section 6 describes the information technology equipment and telecommunication equipment that shall be provided by Project Co.

Section 7 Equipment:

Section 7 contains equipment information for Project Co reference. Refer to Section 7 for the specific descriptions and intended usage of the Equipment List(s) contained in this section.

1.2 Numbering System

Except where the context requires otherwise, references in the Output Specifications to specific Sections, Subsections, Bullets, Schedules, and other divisions of the Output Specifications shall be construed such that each such reference on a page of the Output Specifications will be read to be preceded by and to include the prefix Section number or other references at the top of the applicable page, such that, for example:

- (a) In Output Specifications Section 1, "1.2 Performance Statements 5.1 Healing Environment" shall be interpreted as Output Specifications Section 1 – Key Site and Building Design Criteria, Subsection 1.2.5.1, and
- (b) In Section 2 – Clinical Services, Subsection A1(b).2.2.1 shall be interpreted as Output Specifications Section 2 Clinical Services: Subsection A1(b).2.2.1, and,
- (c) All cross-references to any Section in the Output Specifications shall be interpreted to include the applicable prefix Section number or other reference. References to a Section, Subsection, or other divisions by a

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number shall be deemed to include all divisions which contain that same number as a prefix.

1.3

The Output Specifications are written in the imperative form and, except where something is expressly stated in the Output Specifications to be provided, delivered, performed or done by Health Co or the Health Authorities, everything described in or required by the Output Specifications shall be an obligation of Project Co and shall be provided, delivered, performed or done, and shall be compiled with by, Project Co. Wherever the words “provide”, “deliver”, “design”, “consider”, “perform” or other terms are used in the Output Specifications, they shall be interpreted and construed as if the words “Project Co shall” immediately preceded them.

Where “cost-effective”, “appropriate” and terms of similar concept are used in the Output Specifications, they shall be construed and interpreted in terms of whether they are consistent with Good Industry Practice.

1.4 Scope

Project Co shall provide design, development, construction, commissioning, building operation, building maintenance, and FM services for a complete acute care hospital and cancer centre having a capacity of 300 beds, including medical and other equipment, as required by and to satisfy the Output Specifications and the Agreement. In general, Project Co shall provide the following, all in such a manner as will enable the Health Authorities to achieve and satisfy all clinical and other functionality of the provisions of Section – Clinical Services and Section 3 – Non-Clinical Services of the Output Specifications:

- Design, develop, construct and commission the Facility in such a manner and with sufficient flexibility that the Facility will accommodate future clinical workloads and future changes in clinical practice, technology and service delivery, and be fit for its purposes.
- Procure, provide and be responsible for medical and other equipment for the Facility as described or inferred in the Output Specifications and other provisions of the Project Agreement. All equipment must be suitable and fit for its intended use and must be integrated with the overall design and objectives of the Project.
- Provide a fibre optic backbone and wireless media, including all cabling and power points, for the information management and technology systems which will be initially installed.
- Provide all information services equipment, information technology equipment and telecommunications equipment described in the Output Specifications or elsewhere in the Project Agreement, except for those specific information services equipment, information technology equipment and telecommunications equipment that are expressly specified in the Output Specifications or elsewhere in the Project Agreement to be provided by Health Co or the Health Authorities.

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- Provide the design, development and construction of all necessary parking for the Facility, all of which shall meet the requirements of the Output Specifications.
- Project Co shall be responsible for all utilities and site-related infrastructure (both on-site and offsite) affected by or required to support the Facility. Off site, Hydro, Telus, Shaw, Terasen Gas shall be provided according to the terms described in the Project Agreement-Section 22.
- Provide the FM services described in Section 4 of the Output Specifications.

1.5 Analysis

Life cycle cost analysis and other analysis called for in the Output Specifications shall be performed to investigate the feasibility of options and sufficient to demonstrate to Health Co's reasonable satisfaction that the selected design provides the optimal design life for components and other specified performance criteria.

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2. GLOSSARY AND ACRONYM LIST – OUTPUT SPECIFICATIONS

2.1 GLOSSARY

1. Glossary and Acronym List Notes:

- 1.1 1.1.2.1 Glossary and 1.1.2.2 Acronym List defines the meaning of capitalized words, phrases and acronyms used in the Output Specifications.
- 1.2 Where “Refer to Project Agreement” appears beside a word or phrase listed in 1.1.2.1 or 1.1.2.2, it means that the word or phrase is defined in Schedule 1 Definitions and Interpretations in the Project Agreement.
- 1.3 Capitalized terms in the Output Specifications that are not defined in the Glossary but that have a generally accepted meaning in the health industry in Canada, or that are used to refer to a department or the provision of a health service or medical procedure using terminology that is generally accepted and used in major hospitals in the Province of British Columbia, have those generally accepted meanings unless the context otherwise requires.

Abbotsford, (City of Abbotsford)	The City of Abbotsford, the local Municipal government, its authorized representatives.
Abbotsford Hospital and Cancer Center (AHCC)	This is the AHCC, as defined in the Project Agreement.
Access Times	Refer to Output Specifications Section 4: Facilities Management Services, Subsection E5.1 Definitions.
Adult Psychiatric Day Hospital and Outpatient Services	Refer to Output Specifications Section 2: Clinical Services, Subsection B6 Mental Health/Psychiatry Program.
Agreement	The executed agreement between Health Co and Project Co, and which agreement includes these Output Specifications as Schedule 18 – Output Specifications.
Ambulatory Care Centre (Ambulatory Care)	Refer to Output Specifications Section 2: Clinical Services, Subsection A1 Ambulatory Care Centre.
Applicable Standard	Standards, guidelines, tests, codes, or documents that are typically cited and used by design professionals in the Province of BC experienced in the design of major hospital and cancer treatment centres as references and minimum standards to ensure a minimum level of quality of materials, fabrication and installation consistent with that in a major public health care facility in the Province of British Columbia, and all applicable laws.
Approved Certified Supplier	Refer to Output Specifications Section 4: Facilities Management Services, Subsection E4.1 Definitions.

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Architectural Institute of British Columbia (AIBC)	Professional association for architects in British Columbia. http://www.aibc.bc.ca/
Architect of Record	The Architect registered in the Province of B.C. who signs and seals the contract documents and Letters of Assurance for the Building Permit Application.
Association of Professional Engineers and Geoscientists of British Columbia (APEG)	Professional association for engineers and geoscientists in British Columbia http://www.apeg.bc.ca/
Authority Having Jurisdiction (AHJ)	See Project Agreement.
BCbedline	A program that facilitates the transfer of critically ill patients to hospitals with the most appropriate level of acute care or those that provide specialized regional or provincial services such as neuro-surgery or cardiac care.
BC Building Code	British Columbia Building Code
BC Plumbing Code	British Columbia Plumbing Code
BC Cancer Foundation	Is an independent charitable organization that raises and stewards resources to support breakthrough research and compassionate care throughout the BC Cancer Agency.
BC Elevating Devices Safety Act and Regulations	Refers to a program responsible for the regulation of safety in the area that pertains to elevating devices safety including passenger elevators, freight elevators, escalators, moving walks, handicapped lifts, hoists and amusement rides; http://www.mcaaws.gov.bc.ca/SES/EDP/
BC Gas	BC Gas Utility Ltd., now known as Terasen Gas Inc., a natural gas distribution public utility. BC Gas Utility Inc. changed its name to Terasen Gas Inc. on April 28, 2003, but is still commonly called BC Gas.
BC Hydro or Hydro	British Columbia Hydro and Power Authority, an electrical power utility company; References to Hydro in certain contexts can also refer to the overhead or underground electrical power system upstream of and including the electric meter at the consumer's site owned by BC Hydro. See separate definition of Hydro.
BC Pharmanet	Refers to a secure computer network which will link community pharmacies throughout British Columbia. Using this network, pharmacists have access to a patient's complete medication record, and on-line claims adjudication for all government paid claims for prescription drugs. The network links provincial pharmacies, emergency departments and the College of Pharmacists and will eventually be expanded to include physicians' offices.

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Best Practices or Best Design Practices	The best practices and design practices utilized by the health industry-recognized leading designers and constructors of major hospital and cancer treatment centres in North America, to produce state of the art designs and facilities that provide enhanced performance over existing hospital and cancer treatment centres in British Columbia and that employ the results of the most current and advanced research and technology.
Building Envelope	The part of the building that serves as an interface between the interior and exterior environments (the building shell) and includes the foundation (vertical wall and horizontal slab), the above-grade wall assemblies, and the roof assemblies. It plays a critical role in solar gain management, thermal load control, air infiltration and exfiltration, ventilation, moisture management, fenestration support, impact and disaster resistance, noise control, air-quality management, design value, and aesthetic definition.
Building Envelope Professional (BEP)	<ul style="list-style-type: none">Building Envelope Professional means a member of the Architectural Institute of British Columbia or the Association of Professional Engineers and Geoscientists of British Columbia who has recognized qualifications and experience in Building Envelope design. The role of the BEP shall be to provide review of the building envelope design and construction to the Architect of Record with respect to environmental separation and the performance of materials, components and assemblies of the building envelope as well as specific requirements listed in the Output Specifications.
Building Gross Area or Building Gross Square Metres (BGSM)	The sum of all building floor areas measured to the outside face of exterior walls for all stories or areas having floor surfaces. Building gross area includes component gross areas, general circulation, mechanical and electrical space and exterior walls.
Building Maintenance	Refer to Output Specifications Section 4: Facilities Management Services, Subsection E8.1 Definitions.
Building Management System (BMS) Reporting Requirements	Refer to Output Specifications Section 4: Facilities Management Services, Subsection E8.1 Definitions.
Building Permit	A permit that is required for construction, and is issued by the City of Abbotsford Development Services Department, Inspection Services Division.
Canadian Association of Psychosocial Oncology	Is an association fostering and encouraging interdisciplinary excellence in psychological research, education, and clinical practice in oncology.
Canadian Registered Safety Professional (CRSP)	A designation awarded by the Board of Canadian Registered Safety Professionals to professionals who have met academic, experience and professional examination requirements. The designation is increasingly required for occupational health and safety positions. The designation recognizes, under charter from the federal government, those persons who have achieved a professional level of competence in accident prevention.

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Canadian Triage & Acuity Scale (CTAS)	<p>Is a tool that enables Emergency Departments (ED to: prioritize patient care requirements and examine patient care processes, workload, and resource requirements relative to case mix and community needs. The CTAS has the following levels:</p> <ul style="list-style-type: none">• Triage Level I: Resuscitation• Triage Level II: Emergent• Triage Level III: Urgent• Triage Level IV: Less Urgent• Triage Level V: Non-Urgent
Cancer Centre	Refer to Output Specifications Section 2: Clinical Services, Subsection A1 Ambulatory Care Centre.
Cancer Centre Clinical Trials	Refer to Output Specifications Section 2: Clinical Services, Subsection A1(d) Cancer Centre Clinical Trials.
Cancer Centre General Clinic	Refer to Output Specifications Section 2: Clinical Services, Subsection A1(e) Cancer Centre General Clinic.
Cancer Centre Patient Rehabilitation	Refer to Output Specifications Section 2: Clinical Services, Subsection A1(g) Cancer Centre Patient Rehabilitation.
Cancer Centre Professional Staff Offices	Refer to Output Specifications Section 2: Clinical Services, Subsection A1(f) Cancer Centre Professional Staff Offices.
Cancer Centre Staff Facilities	Refer to Output Specifications Section 2: Clinical Services, Subsection A1(i) Cancer Centre Staff Facilities.
Car Parking Areas	Refer to Output Specifications Section 4: Facilities Management Services, Subsection E12.1 Definitions.
Car Parking Users	Refer to Output Specifications Section 4: Facilities Management Services, Subsection E12.1 Definitions.
CCI/CRI Indoor Air Quality (IAQ) Program	An industry-wide program made available by the Canadian Carpet Institute and the Carpet and Rug Institute of the U.S.A designed to help consumers improve indoor air quality by ensuring that carpet has met specified testing requirements for indoor air quality.
Chemotherapy Treatment Unit	Refer to Output Specifications Section 2: Clinical Services, Subsection A11 Cancer Centre Chemotherapy Treatment Unit.
Child and Adolescent Unit	Refer to Output Specifications Section 2: Clinical Services, Subsection B6 Mental Health/Psychiatry Program.
Class I	For the purpose of Mechanical, HVAC, plumbing and medical gas design, Class I refers to treatment areas such as operating rooms, recovery rooms, isolation units, burn units, nurseries, ICU, CCU, trauma units and vaults.

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Class II	For the purpose of Mechanical, HVAC, plumbing and medical gas design, Class II refers to patient areas such as patient rooms, radiology, emergency departments, etc
Class III	For the purpose of Mechanical, HVAC, plumbing and medical gas design, Class III refers to areas other than treatment and patient areas, such as laboratories, pharmacy, physiotherapy and other support services.
Class C roof covering	Roof covering classification; refer to BC Building Code.
Cleaning Services	Refer to Output Specifications Section 4: Facilities Management Services, Subsection E5.1 Definitions.
Cleaning Staff	Refer to Output Specifications Section 4: Facilities Management Services, Subsection E5.1 Definitions.
Clinical Services	Refer to Output Specifications Section 2: Clinical Services.
Clinical Trials Phases	The phases of clinical research include the following: <ul style="list-style-type: none">• Phase II Trials: Results are taken from the Phase I Trial to determine the best tumour type showing benefits, therefore focusing on a single tumour type. The primary objective is to determine the efficacy and the safety of the drug.• Phase III Trials: Tests a new drug, a new combination of drugs or a new surgical procedure in comparison to the current standard treatment. Randomized clinical tests (RCT) randomly assign study participants to either a standard group or new treatment group. Typically drugs or placebo are utilized with large number of study participants enrolled.
Code Blue	Cardiac Arrest; Refer to Output Specifications Section 2 Clinical and Section 5 Design & Technical, Sub-section 17
Computer Server Room	Refer to Output Specifications Section 3: Non-Clinical Services, Subsection D1 Information Management.
Comprehensive Cardiology Care Unit	Refer to Output Specifications Section 2: Clinical Services, Subsection B1 Comprehensive Cardiology Care Unit.
Contamination	Refer to Output Specifications Section 4: Facilities Management Services, Subsection E7.1 Definitions.
Contingency Planning	Refer to Output Specifications Section 4: Facilities Management Services, Subsection E1.1 Definitions.
Convenient by General Circulation – Desirable	Refer to Section 2: Clinical Services, Subsection 2.1 Introduction.
Critical Care	Refer to Output Specifications Section 2: Clinical Services, Subsection B Inpatient Services.

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Cultural	Refer to Output Specifications Section 4: Facilities Management Services, Subsection E4.1 Definitions.
Data Room	The electronic depository or physical space at the AHCC project office established pursuant to the Request for Proposals for the Project.
Demand Maintenance	Refer to Output Specifications Section 4: Facilities Management Services, Subsection E8.1 Definitions.
Design Control Covenant	Means covenant No. BV225960 registered in the applicable land title office against the Site imposing restrictions regarding the design and use of the Site and that must be compiled with by Project Co.
Development Agreement	Means covenant No. BV225961 registered in the applicable land title office against the Site imposing restrictions and obligations regarding the development of the Site and that must be compiled with by Project Co
Diagnostic Services	Refer to Output Specifications Section 2: Clinical Services, Subsection C1 Diagnostic Services.
Dictaphone	A system that records and reproduces dictation.
Dietician	Refer to Output Specifications Section 4: Facilities Management Services, Subsection E4.1 Definitions.
Direct Access by General Circulation – Important	Refer to Output Specifications Section 2: Clinical Services, Subsection 2.1 Introduction.
Direct Access by Internal Circulation – Essential	Refer to Output Specifications Section 2: Clinical Services, Subsection 2.1 Introduction.
Direct by Virtual or Dedicated Mechanical Circulation	Refer to Output Specifications Section 2: Clinical Services, Subsection 2.1 Introduction.
Domestic Water	Domestic water is water obtained from City watermains and safe for use in drinking, cooking, washing, etc. as distinguished from “fire flow” or “fire suppression” water. On site, the fire and domestic water are usually in separate mains.
Donor Wall	A wall surface or device on which the names of charitable donors are displayed in recognition for their support to the construction, operation or equipment of the Facility.
E-business	The term used to describe the conduct of business transactions through computers in electronic, magnetic or digital means. It provides management and support for their core business, which is one of the three core deliverables in the Fraser Health Authority information management directional plan.

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E-documentation	The term used to describe management and delivery of information through computers in electronic, magnetic or digital means, and which is one of the three core deliverables in the Fraser Health Authority information management directional plan.
E-highway	The term used to describe provision and management of the technology, which is one of the three core deliverables in the Fraser Health Authority information management directional plan.
Eco-Logo	The Eco-Logo symbol affixed to a product or service indicates certification in Canada's "Environmental Choice" program. A product or service may be certified because it is made or offered in a way that improves energy efficiency, reduces hazardous by-products, uses recycled materials or because the product itself can be reused; http://www.ns.ec.gc.ca/g7/eco-can.html
Elements	Refer to Output Specifications Section 4: Facilities Management Services, Subsection E5.1 Definitions.
Emergency	Refer to Output Specifications Section 2: Clinical Services, Subsection B Inpatient Services.
Emergency Power System	A backup power system that furnishes an immediate, automatic source of electrical power to a number of selected circuits whenever the normal electrical power to those circuits fails.
End-Use Device	End-Use Devices consist of computers, printers, wireless computers, wireless tablets, wireless personnel digital assistants (PDA's) or the latest equivalents.
Engineer of Record	The Professional Engineer registered in the Province of B.C. who signs and seals the contract documents and Letters of Assurance for the Building Permit Application.
Environmental Separation	Part 5 of the BC Building Code (1998). Applies to: <ul style="list-style-type: none">• building materials, components and assemblies exposed to exterior spaces or the ground,• building materials, components and assemblies separating environmentally dissimilar interior spaces, and• site materials, components and assemblies that may affect environmental loads on building materials, components and assemblies exposed to exterior space or the ground.
Equipment	Refer to Output Specifications Section 4: Facilities Management Services, Subsection E8.1 Definitions.

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Equipotential Grounding	Equipotential Plane: A grid, sheet, mass, or masses of conducting material which, when bonded together, offers a negligible impedance to current flow. An equipotential grounding structure for healthcare facilities bonds together the electrical distribution and all the metal in the area of the patient. The system should be relatively immune to the usual disturbing effects of either transients or electrical noise, whether in the normal (transverse) mode or common mode (to ground).
Ergonomics	Ergonomics is the application of scientific information concerning humans to the design of objects, systems and environment for human use.
Essential Power	Power supplied by BC Hydro that is backed up by the Emergency Power System.
Ethernet	Ethernet is a widely used local-area network (LAN) standard. It uses a bus or star topology and supports data transfer rates of 10 Mbps. The Ethernet specification served as the basis for the IEEE 802.3 standard, which specifies the physical and lower software layers. Ethernet uses the CSMA/CD access method to handle simultaneous demands.
Ethnic Diet	Refer to Output Specifications Section 4: Facilities Management Services, Subsection E4.1 Definitions.
Facility	Refer to Project Agreement
Facilities Management (FM)	Refer to Project Agreement
Failure Event	Refer to Project Agreement.
Failure Event Categories	Refer to Project Agreement.
Fire Department	The fire department of the City of Abbotsford serving the community by protecting life, property and the environment through fire prevention, education and suppression services, as well as medical assistance and rescue services.
Food Services	Refer to Output Specifications Section 2: Clinical Services, Section 3: Non-Clinical Services, Section 4: Facilities Management Services.
Food Supplement	Refer to Output Specifications Section 4: Facilities Management Services, Subsection E4.1 Definitions.
Foundation	Refer to Output Specifications Section 3: Non-Clinical Services, Subsection D3 Main Public Facilities.
Full Time Equivalent	A term used to express the conversion of a number of annual paid hours into the number of individuals who, if they were working a complete shift on a regularly scheduled basis, would be required to accommodate that number of hours.
General and Ad Hoc Services	Refer to Output Specifications Section 4: Facilities Management Services, Subsection E7.1 Definitions.

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General Day Care Unit	Refer to Output Specifications Section 2: Clinical Services, Subsection A3 General Day Care Unit.
General Medical/Surgical Inpatient Care Unit	Refer to Output Specifications Section 2: Clinical Services, Subsection B2 General Medical/Surgical Inpatient Care Unit.
Good Industry Practice	Refer to Project Agreement.
Grounds & Gardens	Refer to Output Specifications Section 4: Facilities Management Services, Subsection E8.1 Definitions.
Grounds & Gardens Maintenance Service	Refer to Output Specifications Section 4: Facilities Management Services, Subsection E8.1 Definitions.
Guiding Principles	Means the Vision and Guiding Principles described in Section 1.2.1 of the Output Specifications.
Health Authority	Refer to Project Agreement.
Health Co	Refer to Project Agreement
Health Co / Health Co's Representative	Refer to Project Agreement
Health Information Services	Refer to Output Specifications Section 3: Non-Clinical Services, Subsection D1 Information Management.
Health Records	Refer to Output Specifications Section 3: Non-Clinical Services, Subsection D1 Information Management.
Helpdesk Service	Refer to Output Specifications Section 4: Facilities Management Services, Subsection E1.1 Definitions.
Health Services Accreditation	Refer to Output Specifications Section 4: Facilities Management Services, Subsection E1.1 Definitions.
Helpdesk Users	Refer to Output Specifications Section 4: Facilities Management Services, Subsection E1.1 Definitions.
Hospital Grade	High quality hospital-specific.
Hydro	The overhead or underground electrical power system upstream of and including the electric meter at the consumer's site.
Industrial Health and Safety Regulation	Part of the Workers Compensation Act; Industrial Health and Safety Regulation (BC Regulation 585/77); http://www.worksafebc.com/
Information Systems Technological Services	Refer to Output Specifications Section 3: Non-Clinical Services, Subsection D1 Information Management.

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Inpatient Unit, (IPU), Inpatient Care Unit	Refer to Output Specifications Section 2: Clinical Services, Subsection B Inpatient Services.
Intensive Observation and Treatment Unit	Refer to Output Specifications Section 2: Clinical Services, Subsection B6 Mental Health/Psychiatry Program.
Intensive/Stepdown Care Units, Intensive Care Unit	Refer to Output Specifications Section 2: Clinical Services, Subsection B4 Intensive/Stepdown Care Units.
IP Telephone	Internet Protocol telephone technology is a process where a 32-bit number that identifies each sender or receiver of information is sent in packets across the network server for voice communication.
Laboratory Medicine	Refer to Output Specifications Section 2: Clinical Services, Subsection C2 Laboratory Medicine.
Labour Relations Board of BC	Labour Relations Board of British Columbia http://www.lrb.bc.ca/
Life Cycle Cost Analyses	Refer to Project Agreement
Lux	Unit of illumination in the International System of measurement (SI). One lux (Latin for “light”) is the amount of illumination provided when one lumen is evenly distributed over an area of 1 square m.
Maintenance	Refer to Output Specifications Section 4: Facilities Management Services, Subsection E8.1 Definitions.
Maintenance Users	Refer to Output Specifications Section 4: Facilities Management Services, Subsection E8.1 Definitions.
Master Municipal Construction Document	Printed by the Master Municipal Construction Document Association – 2000 (Gold) Edition – Master Municipal Specifications and Standard Detail Drawings
Maternal Child Program : Maternal/Newborn Care Unit	Refer to Output Specifications Section 2: Clinical Services, Subsection B5 Maternal Child Program.
Maternal Child Program : Special Care Nursery	Refer to Output Specifications Section 2: Clinical Services, Subsection B5 Maternal Child Program.
Maternal Child Program : Paediatric Inpatient Unit	Refer to Output Specifications Section 2: Clinical Services, Subsection B5 Maternal Child Program.

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Maternal Child Program : Paediatric Inpatient Unit special care area	Refer to Output Specifications Section 2: Clinical Services, Subsection B5 Maternal Child Program.
Meal Times	Refer to Output Specifications Section 4: Facilities Management Services, Subsection E4.1 Definitions.
Mechanical and Electrical Services	Refer to Output Specifications Section 4: Facilities Management Services, Subsection E8.1 Definitions.
Medical Imaging	Refer to Output Specifications Section 2: Clinical Services, Subsection C3 Medical Imaging.
Meditech	Medical Information Technology, Inc. (MEDITECH) is a software and service company serving the medical community.
Mental Health/Psychiatry Program	Refer to Output Specifications Section 2: Clinical Services, Subsection B6 Mental Health/Psychiatry Program.
Microsoft	http://www.microsoft.com/
Monitoring Method	Refer to Project Agreement.
Morgue and Autopsy	Refer to Output Specifications Section 2: Clinical Services, Subsection C4 Morgue and Autopsy.
MSA Hospital	Matsqui-Sumas-Abbotsford General Hospital; the existing hospital situated in Abbotsford, BC.
Municipal	Relating to the local government of the city or municipality or regional district.
Municipal Off-Site Services	Municipal off-site services refers to the construction of works in road dedications or Right-of-Ways (ROW's) to provide the public infrastructure required to support the proposed land use on the private property. Upon satisfactory completion, the constructed works will be turned over to the authority having jurisdiction (AHJ). The AHJ may be Abbotsford or the utility companies.
Municipal On-Site Services	On-site services refers to the construction of works within the boundaries of the private property and outside of the building footprint. The on-site services are the private infrastructure required to support the proposed land use. The private infrastructure extends from the terminus of the public infrastructure at the property line to the building(s) and in between buildings, if applicable. The works include in ground components (e.g., sewers) and above ground components (e.g., roadways).
Noise Criterion	The criterion that is specified for ambient noise levels in enclosed spaces. The values used to determine whether noise criteria (NC) are met are determined from the measurements of the octave-band sound levels in an occupied room when the air-conditioning system is on. The measured values are then compared to standard NC curves

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Noise Impact Assessment Report	A report dealing with noise from external sources that must be addressed and controlled in the design and planning of the Facility.
Non-Clinical Services	Refer to Output Specifications Section 3: Non-Clinical Services.
Normal Power	Power supplied by BC Hydro for which an emergency power backup system is not required by the Output Specifications.
Oncology Inpatient Unit	Refer to Output Specifications Section 2: Clinical Services, Subsection B2 General Medical/Surgical Inpatient Care Units.
Outbreak Cleaning	Refer to Output Specifications Section 4: Facilities Management Services, Subsection E5.1 Definitions.
Output Specifications	Refer to Project Agreement
Patient Meal Services	Refer to Output Specifications Section 4: Facilities Management Services, Subsection E4.1 Definitions.
Performance Monitoring	Refer to Output Specifications Section 4: Facilities Management Services, Subsection 4.1.2.1 Introduction.
Performance Monitoring Program	Refer to Output Specifications Section 4: Facilities Management Services, Subsection E1.1 General.
Periodic Planned Cleaning	Refer to Output Specifications Section 4: Facilities Management Services, Subsection E5.1 Definitions.
Pharmacy Services	Refer to Output Specifications Section 2: Clinical Services, Subsection C5 Pharmacy Services.
Plant	Refer to Output Specifications Section 4: Facilities Management Services, Subsection E8.1 Definitions.
Plant Services	Refer to Output Specifications Section 4: Facilities Management Services, Subsection E8.1 Definitions.
Plant Services Information Management	Refer to Output Specifications Section 4: Facilities Management Services, Subsection E8.1 Definitions.
Patient Portering Service	Refer to Output Specifications Section 4: Facilities Management Services, Subsection E10 Definitions.
Post-disaster Operation	Refers to the operation of the Facility following natural and man-made disasters including earthquakes, major fires, hurricanes and floods.

1.1 INTRODUCTION

Power Factor	Power factor is the ratio between the KW and the KVA drawn by an electrical load where the KW is the actual load power and the KVA is the apparent load power. It is a measure of how effectively the current is being converted into useful work output and more particularly is a good indicator of the effect of the load current on the efficiency of the supply system.
Project Co	Refer to Project Agreement.
Project Agreement	Refer to definition of Agreement
Protection Service Users	Refer to Output Specifications Section 4: Facilities Management Services, Subsection E9.1 Definitions.
Protection Services	Refer to Output Specifications Section 4: Facilities Management Services, Subsection E9.1 Definitions.
Province	Province of British Columbia
Provincial	Relating to the government of the Province of British Columbia.
Psychiatric Inpatient Unit	Refer to Output Specifications Section 2: Clinical Services, Subsection B6 Mental Health/Psychiatry Program.
Public Address	A system of microphones, amplifiers and loudspeakers to amplify and distribute speech and other sound in an area.
Public Facilities	Refer to Output Specifications Section 2: Clinical Services, Subsection A Outpatient Services
Quality Failure	Refer to Project Agreement.
Quality Failure Priorities	Refer to Project Agreement.
Quality Monitoring	Refer to Output Specifications Section 4: Facilities Management Services, Subsection 4.1.2.1 Introduction.
Radiation Therapy	Refer to Output Specifications Section 2: Clinical Services, Subsection A1(h) Cancer Centre Radiation Therapy.
Reactive Maintenance	Refer to Output Specifications Section 4: Facilities Management Services, Subsection E2.1 Definitions.
Recording Frequency	Refer to Project Agreement.
Rectification	Refer to Project Agreement.
Rectification Time	Refer to Project Agreement.
Registration/Admitting	Refer to Output Specifications Section 3: Non-Clinical Services, Subsection D1 Information Management.

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Rehabilitation Services	Refer to Output Specifications Section 2: Clinical Services, Subsection C6 Rehabilitation Services.
Religious Diet	Refer to Output Specifications Section 4: Facilities Management Services, Subsection E4.1 Definitions.
Renal Services RO Water	Refer to Output Specifications Section 2: Clinical Services, Subsection A4 Renal Services.
Renal Services (Renal Unit)	Refer to Output Specifications Section 2: Clinical Services, Subsection A4 Renal Services.
Residential Grade	The standard of quality that is generally accepted and used in the industry for comparable residential-specific applications.
Room Criterion	The criterion specified in the Output Specifications for noise level in a room, and which criterion is mostly used for acoustical design of HVAC systems. The Room Criterion take into account the noise components at the lowest and the highest frequencies.
Routine Cleaning	Refer to Output Specifications Section 4: Facilities Management Services, Subsection E5.1 Definitions.
Royal Columbian Hospital (RCH)	A 400-bed acute tertiary care teaching facility, located in New Westminster, British Columbia. Royal Columbian Hospital is in the jurisdiction of the Fraser Health Authority (FHA).
Safety Engineering Services (SES)	A department of the provincial government dealing with public safety programs that ensure safety in the design, manufacture, construction, installation, operation and repair of boiler and pressure vessels, electrical devices, elevating devices, gas equipment and aerial tramways, and for the regulatory environment that ensures public and employee safety for railways. http://www.mcaaws.gov.bc.ca/SES/
Same Day Admit Unit	Refer to Output Specifications Section 2: Clinical Services, Subsection C7 Surgical Services.
Scheduled Maintenance	For purposes only of Section 4E2 of the Output Specifications, refer to Output Specifications Section 4: Facilities Management Services, Subsection E2.1 Definitions. For all other purposes, refer to the definition in the Project Agreement.
Schedule of Accommodation	The Schedule of Accommodation is as defined under the design criteria contained within each clinical and non-clinical output specification section.
Screening Mammography Program of British Columbia (SMPBC)	A provincial wide breast screening program. Screening mammography is an X-ray of the breasts used to detect breast cancer early in healthy women who have a normal breast physical examination.
Section	The major organizational component of the Output Specifications. Refer to Output Specifications, Section 1, Subsection 1.1.1 Summary.

1.1 INTRODUCTION

Security Staff	Refer to Output Specifications Section 4: Facilities Management Services, Subsection E9.1 Definitions.
Service Request	Refer to Project Agreement.
Service Response	Refer to Project Agreement.
Service Response Time	Refer to Project Agreement.
Services Quality Plan	Services Quality Plan is as defined under Section E4 Facility Management Services.
Service Standards	Refer to Output Specifications Section 4: Facilities Management Services, Subsection 4.1.2.1 General.
Servicing Agreement	The agreement(s) between the developer (i.e. Project Co in this instance) and Abbotsford, which sets out the rights and obligations of both parties in respect to the subject development of the site for the Project.
Shaw	Shaw Cablesystems G.P., a cable network (television and high-speed internet service) operator/public utility.
Site Fire Management/ Fire Management Plan	Refer to Output Specifications Section 4: Facilities Management Services, Subsection E8.1 Definitions.
Special Diet	Refer to Output Specifications Section 4: Facilities Management Services, Subsection E4.1 Definitions.
Specific Service Specification	Refer to Output Specifications Section 4: Facilities Management Services, Subsection 4.1.2.1 General.
Specification Grade	An electrical industry term used to designate a level of quality of wiring devices.
Spiritual Care	Refer to Output Specifications Section 3: Non-Clinical Services, Subsection D3 Main Public Facilities.
Static Coefficient of Friction	The coefficient of friction used to describe the force of friction between two objects not moving relative to each other.
Statutory Right of Way (ROW)	The portion of a fee simple property, as defined by a drawing and document, which grants a public body (Example: a city, a public utility) the use of that portion of the property shown on the drawing for the use specified in the document. Example: the corridor for a city owned sewer across a private property.
Stepdown Care Unit	Refer to Output Specifications Section 2: Clinical Services, Subsection B4 Intensive/Stepdown Care Units.
Suitably Qualified Person	Refer to Output Specifications Section 4: Facilities Management Services, Subsection E8.1 Definitions.

1.1 INTRODUCTION

Sterile Processing Services (SPD)	Refer to Output Specifications Section 2: Clinical Services, Subsection C8 Sterile Processing Services.
Subsection	The organizational component of the Output Specifications that is the next level down from Section. Refer to Output Specifications, Section 1, Subsection 1.1.1 Summary.
Surgical Daycare/ Same Day Admit	Refer to Output Specifications Section 2: Clinical Services, Subsection C7 Surgical Services.
Surgical Services Operating Suite (Surgical Suite)	Refer to Output Specifications Section 2: Clinical Services, Subsection C7 Surgical Services.
Surrey Memorial Hospital (SMH)	A 610-bed acute care hospital located in Surrey, British Columbia. Surrey Memorial Hospital is in the jurisdiction of the Fraser Health Authority.
Technical Reference Standards	The technical reference standards attached as Appendix 5A to Section 5: Design and Technical of the Output Specifications.
Telus	Telus Communications Inc., a telecommunications public utility company.
Terasen Gas	Terasen Gas Inc., formerly known as BC Gas.
Tertiary Palliative Care Unit	Refer to Output Specifications Section 2: Clinical Services, Subsection B3 Tertiary Palliative Care Unit.
Therapeutic Diet	Refer to Output Specifications Section 4: Facilities Management Services, Subsection E4.1 Definitions.
Traffic and Parking Analysis	An analysis of traffic and parking requirements specific to the site and Facility that must be addressed in the design and planning.
Transport Canada	A department of the Federal Government of Canada, dealing with transportation systems. http://www.tc.gc.ca
Universal Design	Universal design addresses the scope of accessibility with the objective of making all elements and spaces accessible to and usable by all people to the greatest extent possible.
Utilities	Refer to Output Specifications Section 4: Facilities Management Services, Subsection E11.1 Definitions.
Utilities Management Service	Refer to Output Specifications Section 4: Facilities Management Services, Subsection E11.1 Definitions.
Utility Company	Refer to Output Specifications Section 4: Facilities Management Services, Subsection E11.1 Definitions.
Utility User(s)	Refer to Output Specifications Section 4: Facilities Management Services, Subsection E11.1 Definitions.

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Vegan Diet	Refer to Output Specifications Section 4: Facilities Management Services, Subsection E4.1 Definitions.
Vegetarian Diet	Refer to Output Specifications Section 4: Facilities Management Services, Subsection E4.1 Definitions.
Volunteer	Refer to Output Specifications Section 2: Clinical Services, Section 3: Non-Clinical Services, Subsection D6 Volunteer/Auxiliary Services.
Warnock Hersey (WHI) Mark	The Warnock Hersey Mark is a mark of compliance for building codes, association criteria, and product safety and performance standards. In 1992, Warnock Hersey became part of ETL SEMKO. http://www.canada.etlsemko.com/
Waste, Clinical	Refer to Output Specifications Section 4: Facilities Management Services, Subsection E5.1 Definitions.
Waste, Non-Clinical	Refer to Output Specifications Section 4: Facilities Management Services, Subsection E5.1 Definitions.
Waste Removal	Refer to Output Specifications Section 4: Facilities Management Services, Subsection E5.1 Definitions.
Waste, Solid	Refer to Output Specifications Section 4: Facilities Management Services, Subsection E5.1 Definitions.
Women's and Children's	Refer to Output Specifications Section 2: Clinical Services, Subsections A Outpatient Services and B Inpatient Services.

2.2 ACRONYM LIST

24/7	Shortened form of the phrase "24 hours per day, 7 days per week"
5HIAA	5-hydroxyindoleacetic acid
A	Annually
A/G	Albumin/Globulin
ABR	Auditory Brainstem Response
ACB	Air Circuit Breaker
ACC	Ambulatory Care Centre
ACI	American Concrete Institute http://www.aci-int.org
ACS	Acute Coronary Syndrome

1.1 INTRODUCTION

ADH	Antidiuretic Hormone
ADL	Activities of Daily Living
ADR	Additional Development Request
ADS	Automated Dispensing System
ADT	Admission, Discharge, Transfer
AHC	Architectural Hardware Consultant. An AHC specializes in architectural hardware, including electrified hardware, and all its applications. The AHC is a consultant certified by the Door and Hardware Institute (DHI); http://www.dhi.org/consult.asp
AHCC	Refer to project Agreement.
AHJ	Authority Having Jurisdiction
AIBC	Architectural Institute of British Columbia http://www.aibc.bc.ca
ALOS	Average Length of Stay
ALT	Alanine Transaminase
AMCA	Air Movement and Controls Association http://www.amca.org/
ANSI	American National Standards Institute http://www.ansi.org/
APEG	Association of Professional Engineers and Geoscientists of British Columbia http://www.apeg.bc.ca
aPTT	Activated Partial Thromboplastin Time
ARI	American Refrigeration Institute http://www.ari.org/
ASHRAE	American Society of Heating, Refrigerating and Air Conditioning Engineers http://www.ashrae.org/
ASME	American Society of Mechanical Engineers http://www.asme.org/
ASPE	American Society of Plumbing Engineers; http://www.aspe.org/
AST	Asparate Transaminase
ASTM	American Society of Testing Materials http://www.astm.org/

1.1 INTRODUCTION

AV	Audio Visual
AWCC	Association of Wall and Ceiling Contractors
AWMAC	Architectural Woodwork Manufacturers Association of Canada http://www.awmac.com/
AWWA	American Water Works Association http://www.awwa.org/
B	Bi-Annually
BC	British Columbia
BCBC	British Columbia Building Corporation; http://www.bcbc.bc.ca/
BCCA	Refer to Project Agreement.
BCCRC	British Columbia Cancer Research Centre; http://www.bccrc.ca/
BCERMS	British Columbia Emergency Response System http://www.pep.bc.ca/bcerms/bcerms.html
BCG	Bacillus Calmette-Guérin
BCICA	British Columbia Insulation Contractors Association
BCIT	British Columbia Institute of Technology; http://www.bcit.ca/
BCLA	British Columbia Landscape Standard; Available through the British Columbia Association of Landscape Architects; http://www.bcsla.org/
BCNTA	British Columbia Nursery Trades Association
BEP	Building Envelope Professional
BGSM	Building Gross Square Metres
BICSI	Building Industry Consulting Service International. BICSI's aids the telecommunications industry by providing education, promoting skill sharing, and assessing knowledge with professional registration programs.
BL1125-2002	Abbotsford By-Law 1125-2002, Subdivision and Development By-Law, 2002
BM	Bone Marrow
BMS	Building Management System
B-OH	Butyrate–OH Butyrate

1.1 INTRODUCTION

BRAT	Biological Response Advisory Team
BSC	Biological Safety Cabinets
BTS	Blood Transfusion Services
CA	Cancer Agency
CAD	Computer Aided Design
CADD	Computer Aided Drawing and Design
CAIS	Cancer Agency Information System
CAN	National Standard of Canada
CAN/GCA	Canadian Gas Association http://www.cga.ca/
CAPD	Continuous Ambulatory Peritoneal Dialysis
CAR	Canadian Aviation Regulations
CBRN	Chemical, Biological, Radio-Nuclear
CBU	Cementitious Backer Unit A backer board designed for use with ceramic tile in wet areas. Refer to the latest edition of the Handbook for Ceramic Tile Installation for complete definition; http://www.tileusa.com
CC	Cancer Centre
CCCU	Comprehensive Cardiology Care Unit
CCME	Canadian Council of Ministries of the Environment; http://www.ccme.ca/
CCTV	Closed Circuit Television
CCU	Coronary Care Unit
CD	Compact Disk
CDA	Certified Dental Assistant
CD-ROM	Compact Disk – Read Only Memory
CDU	Clinical Decision Unit
CEA	Carcinoembryonic Antigen
CEC	Canadian Electrical Code
CFC	Chloro Fluo Carbons

1.1 INTRODUCTION

CFIA	Canadian Food Inspection Agency; http://www.inspection.gc.ca/english/toce.shtml
CGH	Chilliwack General Hospital
CGSB	Canadian Government Specifications Board
CIBSE	Chartered Institution of Building Services Engineers; http://www.cibse.org/
CISC	Canadian Institute for Steel Construction http://www.cisc-icca.ca/
CISCA	Ceilings & Interior Systems Construction Association; http://cisca.org/home
CIVA	Centralized Intravenous Additive
CJD	Creutz-Feld-Jakob disease
CK	Creatine Kinase
CL	Chloride
CMCA	Canadian Masonry Contractor's Association http://canadamasonrycentre.com/cmca/
CNS	Central Nervous System
CNSC	Canadian Nuclear Safety Commission (formerly the Atomic Energy Control Board) http://www.nuclearsafety.gc.ca/eng/index.cfm
CNTA	Canadian Nursery Trades Association
CPR	Cardiopulmonary Resuscitation
CPTED	Crime Prevention Through Environmental Design http://www.cpted.net/home.html
CPU	Central Processing Unit.
CQI	Continuous Quality Improvement
CR	Computed Radiography
CRP	C-reactive Protein
CRSP	Canadian Registered Safety Professional
CRTC	Canadian Radio-television and Telecommunications Commission; http://www.crtc.gc.ca

1.1 INTRODUCTION

CSA	Canadian Standards Association http://www.csa.ca The Canadian Standards Association (CSA) is a membership association serving industry, government, consumers and other interested parties in Canada and the global marketplace. CSA is a leading developer of standards and codes that enhances public safety, improves quality of life, preserves the environment and facilitates trade.
CSDFMA	Canadian Steel Door and Frame Manufacturer's Association
CSF	Cerebral Spinal Fluid
CSSBI	Canadian Sheet Steel Building Institute http://www.cssbi.ca/
CT	Computed Tomography
CTAS	Canadian Triage and Acuity Scale
CTI	Cooling Towers Technology Institute http://www.cti.org/
D	Daily
DB	Decibels. Measure of sound pressure.
DDS	Drug Distribution System
DHI	Door and Hardware Institute; http://www.dhi.org
DMSO	Dimethyl Sulfoxide
DOA	Dead on Admission
DVD	Digital Versatile Disc
DVT	Deep Vein Thrombosis
EA	Energy and Atmosphere category of LEED rating system
ECG	Electrocardiogram
ECT	Electroconvulsive Therapy
ECU	Extended Care Unit
ED	Emergency Department
EEG	Electroencephalography
EENT	Eye Ear Nose Throat

1.1 INTRODUCTION

EHR	Electronic Health Record
ELCB	Earth Leakage Protection Devices
EMG	Electromyography
ENG	Electronystagmography
ENS	Environmental Notation System; http://www.paintinfo.com/green/MPI_Notation_System.PDF
ENT	Ear Nose Throat
EOC	Emergency Operations Centre
EP	Evoked Potential
EPA	Emergency Programs Act
EQ	abbreviated designation of Indoor Environmental Quality category of LEED rating system
ER	Emergency Room
ERCP	Endoscopic Retrograde Cholangiopancreatography
ESR	Erythrocyte Sedimentation Rate
ETO	Ethylene Oxide
EU	European Union
FCH	Fraser Canyon Hospital
FDA	Food and Drug Administration, United States Department of Health and Human Services http://www.fda.gov/
FE	Failure Event
FEMA	Federal Emergency Management Agency United States Department of Homeland Security http://www.fema.org/
FHA	Fraser Health Authority; refer to Project Agreement.
FHERMS	Fraser Health Emergency Response System
FM	Facilities Management
FOIPPA	Freedom of Information and Protection of Privacy Act
FTE	Full Time Equivalent

1.1 INTRODUCTION

FVCC	Fraser Valley Cancer Centre
Gamma GT	Gamma Glutamyl Transaminase
GANA	Glass Association of North America http://www.glasswebsite.com/
GBM	Glucose Blood Monitoring
GC	Gas Chromatography
GCA	Glazing Contractors Association of BC
GCMS	Gas Chromatography Mass Spectrometry
GI	Gastrointestinal
GMS	General Management Services
GP	General Management Service Specification Parameter
GTT	Glucose Tolerance Test
H. pylori	Helicobacter Pylori
HAA	Health Authorities Act
HACCP	Hazard Analysis Critical Control Points
HAF	Health Assessment Form
HACCP	Refer to Output Specifications Section 4: Facilities Management Services, Subsection E4.1 Definitions.
HCAPS	Health Capital Assessment and Planning
HCFC	Hydro Chloro Fluo Carbons
HCG	Human Chorionic Gonadotropin
HCG-S	Human Chorionic Gonadotropin – Serum
HCO ₃	Bicarbonate
HCP	Hereditary Cancer Program
HDL	High Density Lipoprotein
HEPA	High Efficiency Particulate Air
HgbA1c	Glycolated Hemaglobin A1c
HIPPA	Health Insurance Portability and Accountability Act

1.1 INTRODUCTION

HIS	Health Information Services
HIV	Human Immunodeficiency Virus
HIV/AIDS	Human Immunodeficiency Virus/Acquired Immunodeficiency Syndrome
HR	Health Records
HRA	Health Records Assistant
HV	Heating Ventilation
HVAC	Heating Ventilation Air Conditioning
IAQ	Indoor Air Quality
ICD-10-CA/CCI	The International Classification of Diseases (Canadian Adaptation) and Canadian Classification of Health Interventions
ICH-GCP	International Conference on Harmonisation – Good Clinical Practice
ICU	Intensive Care Unit
ICU/SDCU	Intensive Care Unit/Stepdown Care Unit
ID	Infection Disease
ID	Identification (as used in Section 5)
IEEE	Institute of Electrical and Electronics Engineers. IEEE is an authority in technical areas ranging from computer engineering, biomedical technology and telecommunications, to electric power, aerospace and consumer electronics, among others.
IEP	Immuno-electrophoresis
IEQ	Indoor Environmental Quality category of LEED rating system
IES	Dean Kaardal to confirm definition (Section 5 p 147)
IESNA	Illuminating Engineering Society of North America http://www.iesna.org/
IGMAC	Insulating Glass Manufacturers Association of Canada (IGMAC); now merged with the Sealed Insulating Glass Manufacturers Association (SIGMA) to become IGMA-The Insulating Glass Manufacturers Alliance; http://www.igmaonline.org
IM	Information Management

1.1 INTRODUCTION

IMRT	Intensity Modulated Radiation Therapy
INR	International Normalized Ratio
IP	Internet Protocol.
IPD	Intermittent Peritoneal Dialysis
IPU	Inpatient Unit
IS	Information Systems
IT	Information Technology
IV	Intravenous
IVR	Interactive Voice Response
KVA	Kilovolt Amp. Total of apparent load power and actual load power.
KW	Kilowatts. Actual load power.
KWH	Kilowatt Hour
L/S	Lecithin/Spingomyelin
LAN	Local Area Network
LBRP	Labour-Birth, Recovery and Postpartum
LC	Liquid chromatography
LCD	Liquid Crystal Display
LD	Lactate Dehydrogenase
LDL	Low Density Lipoprotein
LEED™	Leadership in Energy and Environmental Design http://www.usgbc.org/LEED/LEED_main.asp
LEEP	Loop Electro-Excision Procedure
LIS	Laboratory Information System
LPN	Licensed Practical Nurse
LV	Low Voltage
M	Monthly
MAC	Moves, Adds, and Changes
MARS	Medication Administration Records System

1.1 INTRODUCTION

MATV	Master Antenna Television
MCB	Multi Cast Buffer
MCP	Maternal Child Program
MDG	Medical Devices Group
MIBI	99mTc-sestamibi (radioactive agent)
MLC	Multileaf Collimator
MMCD	The Master Municipal Construction Document
MMH	Mission Memorial Hospital
MOH	Ministry of Health Services; http://www.gov.bc.ca/healthservices/
MPDA	Master Painters and Decorators Association http://www.paintinfo.com/assoc/mpda/
MPI	Master Painters Institute http://www.paintinfo.com/mpi/index.html
MRI	Magnetic Resonance Imaging
MRSA	Methicillin-Resistant Staphylococcus Aureus
MS	Material Services
MSD	Musculoskeletal disorder
MSDS	Material Safety Data Sheets; Refer to Project Agreement.
N/A	Not Applicable
NC	Noise Criterion
NCCLS	National Committee for Clinical Laboratory Standards
NCRP	National Council on Radiation Protection and Management; http://www.ncrp.com
NEBB	National Environment Balancing Bureau http://www.nebb.org/
NEMA	National Electrical Manufacturers Association; http://www.nema.org/
NEMA LD-3	A standard for the Performance, Application, Fabrication, and Installation of High-Pressure Decorative Laminates; Refer to http://www.nema.org/help/titles.html#N

1.1 INTRODUCTION

NFCA	National Floor Covering Association; http://www.nfca.ca/
NFPA	National Fire Protection Association http://www.nfpa.org/ The NFPA is an international non-profit organization that helps to reduce the problem of fire and other hazards on the quality of life by providing and advocating scientifically-based consensus codes and standards, research, training and education.
NM	Nuclear Medicine
NSM	Net Square Meters
NST	Non-Stress Tests
NTSC	National Television System Committee; The NTSC is responsible for setting television and video standards in the United States.
O ₂	Oxygen
OAE	Otoacoustic Emissions
OCB	Output Circuit Breaker
OCIPEP	Office of Critical Infrastructure Protection and Emergency; http://www.ocipep.gc.ca/
OIPC	Office of the Information and Privacy Commissioner
OP	Outpatient
OR	Operating Room
OSHA	Occupational Health and Safety, United States Department of Labor http://www.osha.gov/
OT	Occupational Therapy
PACS	Picture Archiving Communication System; refer to Output specifications, Section 2: Clinical Services, Subsection C3 Medical Imaging
PACU	Post Anesthetic Care Unit; refer to Output Specifications, Section 2: Clinical Services, Subsection C7 Surgical Services.
PABX (PBX)	Private Area Branch Exchange; a telephone system within an enterprise that switches calls between enterprise users on local lines while allowing all users to share a certain number of external phone lines. The main purpose of a PABX is to save the cost of requiring a line for each user to the telephone company's central office.

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PC	Personal Computer (as referenced in Sections 5 and 6).
PAC	Preadmission Clinic (as referenced in Sections 2, 3, and 4)
PCI	Pre-stressed Concrete Institute http://www.pci.org/
pCO ₂	Pressure of Carbon dioxide
PCOT	Point of Care Testing
PDA	Personal Digital Assistant
PET	Positron Emission Tomography
PF	Pulmonary Function
PFC	Patient Family Counseling
pH	Potential of Hydrogen; measurement expressing acidity and alkalinity in fluids
PHSA	Provincial Health Services Agency Refer to Project Agreement.
PICC	Peripherally Inserted Central Catheter
PIPEDA	Personal Information Protection and Electronic Documents Act
PLT	Platelet
PM	Post Mortem
PMP	Performance Monitoring Program
pO ₂	Pressure of Oxygen
POE	Physician Order Entry
PR	Per Request
PRA	Provincial Renal Agency; http://www.phsa.ca/ProgramsServices/AgenciesandOrganization/BCRenalAgency.h tm
PROMIS	Professional Medical Information Systems
PSA	Prostate Specific Antigen
PRV	Pressure Reducing Valve
PT	Physical Therapy
PTH	Parathyroid Hormone

1.1 INTRODUCTION

PVC	Polyvinyl Chloride
PYXIS	Medication and supply dispensing system; http://www.pyxis.com/
Q	Quarterly
QA	Quality Assurance
QF	Quality Failure
QI	Quality Improvement
R	Randomly
R&M	Routine and Microscopic
RC	Room Criterion
RCABC	Roofing Contractors Association of British Columbia http://www.rcabc.org/index2.htm
RCDD	Registered Certified Data Designer
RCE	Radio Control Equipment
RCMP	Royal Canadian Mounted Police
RFTV	Radio Film Television
RGC	Roofing Contractors Association of British Columbia Guarantee Corp
RN	Registered Nurse
RO	Reverse Osmosis
ROI	Release of Information
ROW	Right of Way
RPN	Registered Practical Nurse
RR	Respiratory Rehabilitation
RRP	Respiratory Rehabilitation Program
RSI	Thermal resistance value in Système International units. The measurement of the ability of a material to resist heat transfer.
RT	Radiation Therapy
SANE	Sexual Assault Nurse Examiner
SARS	Severe Acute Respiratory Syndrome

1.1 INTRODUCTION

SAT	Saturation
SBT	Serum bactericidal titres
SCN	Special Care Nursery
SDC/SDA	Surgical Day Care/Same Day Admit
SFP	Service Failure Points
SLP	Speech Language Pathology
SMACNA	Sheet Metal and Air Conditioning Contractors National Association http://www.smacna.org/
SP	Specific Service Specification Parameter
SPD	Sterile Processing Services Department; refer to Output Specifications, Section 2: Clinical Services, Subsection C8 Sterile Processing Services
SQL	Structured Query Language (database query language)
SROW	Statutory Right of Way
STAT	Statim (Latin for “immediately”)
STC	Sound Transmission Class
TB	Tuberculosis
TBD	To Be Determined
TCP / IP	Transmission Control Protocol / Internet Protocol
TDM	Time Division Multiplexer/Multiplexing
TIA / EIA	Telecommunications Industry Association / Electronic Industries Alliance
TIBC	Total Iron Binding Capacity
TLC	Thin Layer Chromatography
TPD	Therapeutic Product Department
TPN	Total Parenteral Nutrition
TTMAC	Terrazo Tile and Marble Association of Canada; http://www.ttmac.com/
TV	Television
TVOC	Total Volatile Organic Compound

1.1 INTRODUCTION

Type L	Copper Pipe Designation
U/S	Urine/Serum
UBC	University of British Columbia
ULC (CAN/ULC)	Underwriters Laboratories Canada http://www.ulc.ca/ Underwriters' Laboratories of Canada (ULC) is a non-profit organization that develops, certifies and registers standards for the purpose of protection of life and property.
UPS	Uninterruptible Power Supplies
US	Ultrasonography
USDA	United States Department of Agriculture http://www.usda.gov/
USGBC	United States Green Building Council http://www.usgbc.org/
UV	Ultra-violet
VCC	Vancouver Cancer Centre
VCR	Video Cassette Recorder
VDT	VDT (video display terminal, or sometimes visual display terminal) is a term used for the computer display. The display is usually considered to include the screen or projection surface and the device that produces the information on the screen. In some computers, the display is packaged in a separate unit called a monitor.
VLAN	Short for virtual LAN (Local Area Network) a network of computers that behave as if they are connected to the same wire even though they may actually be physically located on different segments of a LAN. VLANs are configured through software rather than hardware, which makes them extremely flexible.
VOC	Volatile Organic Compounds
VRE	Vancomycin-Resistant Enterococci
W	Weekly
WAN	Wide Area Network
WCB	Workers Compensation Board http://www.worksafefbc.com/
WE	Water Efficiency category of LEED rating system
WHI	Warnock Hersey Institute

1.1 INTRODUCTION

WHMIS Workplace Hazardous Materials Information System; Refer to Project Agreement.
<http://www.hc-sc.gc.ca/hecs-sesc/whmis/>

1.1 INTRODUCTION

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1.2 PERFORMANCE STATEMENTS

1. PROJECT

1.1 PROJECT VISION AND GUIDING PRINCIPLES

The Abbotsford Hospital and Cancer Centre has established a vision and series of guiding principles to help determine the direction for the new Facility. These will serve as the common foundation for all planning, design and operational decisions as the development of the project proceeds. These Guiding Principles (Collectively the “Guiding Principles”) shall be used and adhered to by Project Co in the design, construction and operational life of the Facility.

1. Develop and maintain a healing and aesthetically pleasing environment that is sensitive to diversity.
2. Design care processes that optimize patient, client and family satisfactions.
3. Foster a safe, comfortable and productive work environment that promotes provider recruitment, retention, and satisfaction.
4. Create a flexible and adaptable design to accommodate future structures, processes, care delivery systems and technological needs.
5. Build and promote partnerships that improve effectiveness and efficiency.
6. Maximize cost effectiveness and the use of available resources.
7. Develop and apply integrated resources to enable:
 - ✓ Seamless and sustainable care and support for patients and families;
 - ✓ Effective exchange of information;
 - ✓ Sharing of technology and services and
 - ✓ The ongoing learning and the development of new knowledge.
8. Use technologies as a tool to improve cost effectiveness, integration of services and health outcomes.
9. Maintain the individual identities of the FHA and PHSA/BCCA while sharing resources and providing seamless services.
10. Minimize impact on the natural and physical environment.

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1.2 GUIDANCE

ProjectCo must operate the new Facility in a safe and efficient manner. In regard to the new Facility, Project Co shall examine a duty of care. This means among other things that:

- Staff can carry out their duties in a safe environment.
- The proper response can be given in an emergency situation.
- Visitors and patients will be safe in those areas of the new Facility to which they have access.
- Patients and visitors do not have access to areas that would be hazardous for them.
- The engineering services be designed and installed to ensure that down time is minimal.
- The engineering services systems and equipment have a long life so that disruption caused by replacement is minimized.
- The design shall comply with all statutory regulations, mandatory requirements and Municipal guidelines/agreements unless otherwise agreed by the Health Co in writing.

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2. SITE

2.1 SITE CONDITIONS

A number of site conditions that will impact the design of the Facility are to be carefully considered to facilitate vehicle and pedestrian access and wayfinding and optimize operational efficiencies, building aesthetics and indoor environmental quality. The design of the Facility shall:

- Be in accordance with the City of Abbotsford's site-specific P8 zoning requirements (specified in the Abbotsford Zoning Bylaw, 1996, Amendment Bylaw No. 293), the Design Control Covenant and the Development Agreement. The Design Control Covenant lists a number of items, such as site plans and landscape plans, which must be provided by the developer to the satisfaction of Abbotsford's designated representative before the intended land use is permitted on the property.
- Be integrated with and sited to preserve existing significant natural features, trees and natural vegetation.
- Mitigate the nearby highway's noise and minimize its visual impact from the building.
- Provide for smooth transitions between the site and adjacent properties and between the site and public sidewalks using regrading where possible. Where retaining walls are necessary, they shall be consistent in materials and quality to that of the building.
- Provide a Transport Canada certifiable H-3 heliport to accommodate a Bell 212/412 helicopter and its specific operational requirements. The heliport shall be designed in accordance with *Heliport Standards, Canada Aviation Regulations (CARs) 325*. Provide a convenient same level or 'hot'-elevator connection from the heliport to Emergency.
- Existing site fence will remain.
- Provide a minimum of two vehicular accesses to the site for vehicles approaching from both the east and the west along Marshall Road.
- Provide appropriate accesses to the site to meet the needs of: ambulances and automobile traffic to Emergency; staff and visitor traffic, and service and delivery vehicles. Emergency access shall be available from both east and west direction along Marshall Road.

In developing the design Project Co shall:

- Consider the impact of site development and placement of the Facility on adjacent neighbors and land uses. Preserve visual privacy and sunlight for adjacent properties, and include features that "soften" the building's appearance.
 - Consider the micro-climatic effects of parking, walkway and building location and entrance orientation on patient, staff and visitor comfort and safety
 - Consider the impact on site circulation and building location and configuration of the 8M slope that divides the site into upper and lower 'benches' and the potential benefits of having entrances from grade at two and possibly three building levels
 - Consider the potential of the treed knoll and of all other significant trees on site to reduce the impact of the building on its neighborhood context and to contribute to the healing environment for patients, visitors and staff.
 - Consider the views to important building entrances from Marshall Road.
 - Consider the opportunities for views of Mt Baker to the southeast.

1.2 PERFORMANCE STATEMENTS

2.2 BUILDING ACCESSIBILITY

The Facility will likely require multiple entries serving various functional needs. The design of the Facility shall:

- Provide the following primary entrances:
 - **Main hospital** entrance to primarily serve patients arriving for admission to an Inpatient Unit or the Same Day Admit Unit and who require immediate access to patient registration and elevators. This entry also serves as the main visitor entry and would benefit by the co-location of a range of public-oriented services, such as Volunteers, Foundation offices, retail facilities, Spiritual Care, etc.
 - **Ambulatory Care Centre** entrance, complete with vestibule for environmental control, for direct access to the wide range of outpatient services within the Facility. This entrance will also serve Cancer Center patients and their need for short routes from ground level parking and provide a volunteer and family driver drop-off for diagnostic and treatment facilities. Provide access to public amenities for the high daily volume of patients and visitors to these areas.
 - **Ambulance and emergency walk-in** entrances to Emergency that are distinct from other building entrances and are easily accessed and recognized apart from other entrances.
- Provide the following secondary entrances:
 - Building entrance and transfer area in proximity to the morgue that is distinct and screened from public and patient entrances (may be combined with service entrance).
 - Service vehicle loading/unloading area(s) and building entrances that are distinct and screened from other entrances.
 - Covered ambulance (non-emergency) drop-off point to serve the inter-Facility transport service for both cancer patients and long term care clients (e.g., those coming for diagnostic testing). This entry will be open 0700 to 2100, Monday to Friday, and therefore needs to be controlled by Security. Ideally, this entrance will be adjacent to the Ambulatory Care Centre entrance.
 - Mental Health/Psychiatry Program entry consistent with the functional requirements indicated in Output Specifications Section 1 – Key Site and Building Design Criteria: Subsection 1.3.6 Mental Health Group.
- Provide buildings and site designed for easy identification of and access to public entrances.
- Provide service vehicle loading/unloading area(s) and building entrances that are distinct and screened from other entrances.
- Provide access in accordance with BC Building Code, as a minimum, to all areas of the Facility for persons with disabilities. Locate parking stalls for persons with disabilities convenient to all public entrances and where parkers do not have to cross vehicle paths.
- Provide curb cuts accessible to persons with disabilities in accordance with the BC Building Code, City of Abbotsford, and Health Co requirements.
- Provide access to the building for fire fighting personnel and equipment as required by BC Building Code and Authorities Having Jurisdiction.
- Provide protection for pedestrians from inclement weather with shelters, canopies, arcades and windbreaks at all public entrances and transit stops. All entrances to be readily available to

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pedestrians, wheelchairs and those attending in vehicles. Provide adequately sized vestibules to suit the function at all primary and secondary entrances.

- Consider the provision of a separate direct access to Radiation Therapy for the convenience of patients arriving for treatment on multiple occasions over the course of several weeks. This entry may be combined with the outpatient services entry if relatively close to destinations within Radiation Therapy

Vehicular Access and Parking

The design of the Facility shall:

- Minimize general and service vehicle traffic interference with ambulance and other emergency vehicle access to the site. Plan for the functional separation of traffic for emergency vehicles, visitors and staff, and delivery vehicles.
- Minimize interference from all on-site traffic to pedestrians and parkers accessing important building entrances
- Provide convenient on site vehicular and pedestrian access between the upper and lower site benches. Slopes shall be in accordance with BC Building Code requirements.
- Provide a passenger-side drop-off zone protected from inclement weather for 3 vehicles at main hospital entrance. Provide a passenger-side drop-off zone protected from inclement weather for 3 vehicles at the Ambulatory Care Centre/Cancer Center entrance. Provide rain shelter to within 300mm of curb minimum.
- Provide a taxi cueing area for 3 taxis within view of the main entrance that does not interfere with the main entrance passenger drop-off zone. Provide a taxi cueing area for 2 taxis within view of the ambulatory/cancer center entrance that does not interfere with the ambulatory/cancer center passenger drop-off zone. Alternatively, provide a cueing area for 4 taxis within view of both the main and ambulatory/cancer center entrance that does not interfere with either entrance drop-off zone.
- Provide a loading dock and service entrances protected from inclement weather.
- Provide parking according to Health Co requirements, the BC Building Code, the City of Abbotsford requirements and the recommendations of the Project Co traffic and parking analysis. As a minimum, the following parking shall be provided to meet the needs of Section 2 Clinical Services and Section 3 Non-Clinical Services:

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- Provide off-street parking facilities sized to accommodate projected demands, which shall be confirmed subject to detailed site layout and allowance for any innovative transportation / parking features of the proposed Facility. Planning estimates of parking supply requirements total 900 stalls, broken down as follows:
 - 520 stalls for staff (including volunteers, medical and non-medical staff);
 - 315 stalls for patients & visitors, which shall include an appropriate number of stalls sized to accommodate larger vehicles such as vans or mini-buses for senior's transportation.
 - 20 stalls (minimum) for emergency patient vehicles; and
 - 45 stalls reserved for physicians.
- Provide a minimum of 20 (of the 900) parking stalls for persons with disabilities, distributed throughout the parking areas and located for convenient access to all patient and visitor entrances. The final ratio of parking stalls for persons with disabilities provided by Project Co shall be in accordance with Best Practices and may result in more than 20 spaces.
- Provide ambulance parking spaces appropriate for the needs of the Clinical Services.
- Provide appropriate numbers of bicycle and motorcycle parking spaces.

The design shall address the following parking issues

- Parking lot layouts shall be orderly and logical to minimize confusion and excessive internal circulation. Parking facilities shall be well-lit and located as close as possible to major patient and staff destinations. Walkways and shelters shall be planned in conjunction with the parking areas to minimize pedestrian/vehicular conflicts.
- Critical parking areas, such as those adjacent to Emergency, shall be designed so that distraught drivers can park and leave their car without blocking circulation.
- Parking shall be planned and located in relation to the function of the required entrances identified in this section, for example consideration for cancer patients arriving for Radiation Therapy.
- Patient and visitor parking shall be located in closer proximity to major public entrances than staff parking.
- Close-in staff parking shall be available for evening and night shift workers to provide an increased sense of security for these employees. The amount of such close-in parking shall be in the order of 25% of the total staff parking.
- Access to staff parking areas can be less direct than those for other types of traffic, since the staff will be familiar with the Facility. However, these routes should be able to handle greater volumes of concentrated traffic than other routes, particularly during shift changes.

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2.3 SECURITY AND PERSONAL SAFETY

EXTERIOR: The location, layout and lighting of site entrances, walkway, parking areas and building entrances and the provision of 'eyes on the street' from within the building will affect the personal safety of patients, visitors and staff. The design of the Facility shall:

- Conform to Crime Prevention Through Environmental Design (CPTED) principles in site layout, building design, landscaping, and lighting:
 - natural surveillance.
 - hierarchy of space.
 - territoriality.
 - target hardening.
 - access control.
- Provide appropriate lighting levels and light sources along walkways, in parking areas and at building entrances that reduce glare and shadow contrast and optimize safety. Exterior lighting shall avoid light pollution, be directed so as to not shine into adjacent properties, and use current Best Practices in site illumination design. Refer to 5.3.16.11 Lighting for illuminance (Lux) levels.
- Optimize views to staff and public parking areas and walkways from the following locations:
 - entry and public areas.
 - global circulation routes.
 - staff work areas.
 - 24/7 inhabited portions of the building.
- Provide landscaping that maintains knee to head height visibility throughout developed areas on and around the site.
- Provide 5 emergency call-stations within the visitor and staff parking areas near the perimeter, all in close proximity to lamp standards location.
- All significant changes in grade shall be dealt with in a safe and secure manner, including by isolation of site facilities and slipperiness of roadways and walkways.

INTERIOR: the layout and design of the building interior will affect the personal safety of patients, visitors and staff and the security of their effects. The design of the Facility shall:

- Optimize views and visibility from the most highly used segments of the public and primary circulation areas to as much of the system as possible.
- Provide 'eyes on corridors' by glazing corridor walls and doors where function allows.
- Avoid isolating 24/7 occupied functions within areas that are closed weekends, evenings and nights.
- Locate public washrooms and public change rooms so that they are accessible directly from high-use public areas and circulation paths.

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3. BUILDING

3.1 HEALTHCARE CAMPUS

The need to accommodate several large and closely related diagnostic and treatment departments on the same level can lead to very large and monolithic hospital floor plates. The configuration of large floor plates often severely restricts access to daylight and natural ventilation, creates environments that are not conducive to healing and creates stress due to the large numbers of people and high volume of traffic in corridors. Departments within large floorplates may be located far from building entrances, imposing long travel paths and wayfinding difficulties on elderly and infirm patients and visitors. Smaller departments may be completely 'land-locked' with no connection to the outdoors and with limited opportunity to expand. Large hospitals also tend to impose uniform construction systems on the entire building that may constrain servicing and exceed or fail to achieve ideal clear spans or ceiling heights for specific functions.

The design of the Facility shall uphold the Guiding Principle *"Maintain the individual identities of the FHA and PHS/BCCA while sharing resources and providing seamless services"*.

In developing the design consider:

- Siting and building configuration strategies that accommodate large adjacent and same-level departments and provide access to natural light for most patient care and staff work areas, without constraining circulation within and between departments.
- Provision of a campus of linked or otherwise related buildings that can accommodate multiple expansion options to adapt to changing Facility needs, provide shorter travel paths to departments from parking areas and other advantages of buildings with smaller floor plates.

The Facility as a whole will be operational for 24 hours per day 365(6) days per year. Some departments will operate on a restricted hours basis and some departments will not operate on weekend or on public holidays. All departments shall be capable of being shut down on a short or long-term basis.

The Facility shall be designed so that:

- All departments and areas can be served separately.
- Access to departments and areas is not restricted by the securing of any other department or area.
- Departments remain fully functional when any other departments have been closed down.
- Fire and smoke compartmentalisation are compatible with other departments and areas.
- While an electrical switchboard may service more than one department and area, no department and area should be served by more than one switchboard.
- The configuration of the air conditioning system enables air conditioning to be closed down and operated with reset temperature as required according to usage and occupant load.

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3.2 CONSIDERATION OF BUILDING TYPE

Hospital buildings contain a wide range of functions with a wide range of Facility requirements. Functions can be categorized into five basic groupings:

- Public.
- Diagnostic and treatment (D & T)
- Inpatient.
- Office.
- Operational support.

Basic Facility requirements include:

- Column spacing or **structural span**.
- Mechanical, electrical and telecommunication **system servicing** requirements.
- The need for system **servicing flexibility**.
- The need for **spatial** configuration **flexibility**.
- The importance of **outdoor connections** for patients, visitors and staff (access to natural light, views and potentially, natural ventilation and outdoor access).

The general Facility requirements of each group are:

	Structural Span	System Servicing	Servicing Flexibility	Spatial Flexibility	Outdoor Connections
Public	clear ideal	low	low	low	high
D & T	medium	high	high	high	medium-high
Inpatient	clear ideal	moderate	moderate	low	high
Office	medium	low	high	high	high
Operational support	long	low to high	low	moderate	low-medium

The following principles shall be considered in the selection of building systems for each functional grouping:

- Consider buildings with construction systems adapted to function specific servicing, height, post-disaster and other technical requirements.
- Inpatient units contain a number of standard room types. Standardization assists caregivers in quickly accessing critical equipment. Standard room modules often don't align with the structural grid, such that interior and perimeter columns interfere with door, bed, furniture, equipment placing and washroom layout, impinging on function. Minimize or eliminate interior columns within inpatient units and limit the intrusion of perimeter columns. Match standard room modules to the structural grid wherever possible. A structural grid of not less than 9.1 metres should be considered.

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3.3 ADAPTABILITY, FLEXIBILITY AND EXPANDABILITY

Healthcare practices and technologies are changing at an increasing rate, and many healthcare delivery changes require changes to the Facility. The periods of change are fractions of a building's life or even fractions of the design and construct schedule. Healthcare buildings will spend most of their useful life undergoing continuous change. Integrated building systems that support a changing care delivery system, minimize the impact of change on operations and provide an environment that contributes to healing are therefore invaluable.

Factors affecting flexibility include column spacing, ceiling heights, partitions, floor loading capacity, location of vertical movement systems, the need for adjacency between staff work areas, the placement of fixed features such as auditoriums, and the system for power and data distribution.

Adaptable layouts accommodate changes in function with minimal Facility change. Flexible buildings utilize building systems and components that facilitate configurational change and changes in servicing. Expandable buildings allow the expansion or contraction of departments and allow horizontal and vertical building expansions with minimal disruption or impact on existing building layout. The design of the Facility shall:

- Provide adaptability in the utilization of outpatient care facilities by the centralization of most outpatient components; the consolidation of modular general space, and; the segregation of special purpose or highly serviced space.
- Provide adaptability and flexibility in highly technical (diagnostic and treatment) areas, which contain many small rooms with stringent functional and ergonomic requirements affecting the placement of furniture and equipment. Consider the following for adaptability and flexibility:
 - Open blocks of space with a structural grid not less than 9.1 metres.
 - Minimize the number of internal columns.
 - Simple building perimeter and non-restrictive fenestration pattern.
 - Floor to floor heights and servicing systems that can be modified with minimal disruption to operations.
- Locate permanent building elements such as stair, elevator and duct shafts to minimize constraints on configurational change. In particular, avoid internal shear walls.
- Locate building services plant and distribution systems to maximize service system flexibility and ease of maintenance.
- Provide excess capacity in vertical (and horizontal) distribution shafts and plenums to accommodate service system improvements, new equipment, digitization, Picture Archiving and Communication System (PACS), and emerging technologies.
- Accommodate the vertical and horizontal distribution of electrical and mechanical services to allow maintenance and changes to occur with the least disruption to clinical service delivery, particularly where the need for service flexibility is highest.
- Provide building service systems designed to minimize service disruptions to areas adjacent to building maintenance and renovation sites.

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- Provide a system where appropriate to accommodate access for raceways for cable and fibre optic connections under each control and computer room in Medical Imaging.
- Locate primary circulation corridors to allow expansion without increasing the complexity of the circulation system as a whole. Specifically allow for the expansion with minimal disruption of the following departments: Renal Services, Radiation Therapy vaults, and Chemotherapy Treatment Unit. Identify all significant potential expansion sites.
- Address long-term growth and expansion needs of the Facility due to changing roles, service and technology. Diagnostic and treatment areas (especially Surgical Services and Medical Imaging) should have the ability to expand to meet the needs of increased number of beds. All of the Ambulatory Care Centre should be expandable.
- Standardize the design and layout of recurrent room types, including washrooms, treatment bays, examination and treatment rooms, clean and soiled utility rooms, equipment rooms and inpatient rooms and patient washrooms

Where appropriate and cost effective:

- Consider adaptability in the utilization of inpatient care facilities by maintaining consistent inpatient unit sizes and configurations wherever possible.
- Consider interstitial space over diagnostic and treatment areas for the most highly serviced and/or operationally critical components to minimize disruption to clinical service while changes are being made.
- Consider locating administrative and other non-clinical 'soft' functions adjacent to clinical areas that are likely to need to expand
- Consider the ongoing adaptation and reuse of the Facility as it relates to sustainable building design.

3.4 IMAGE

The external image of the Facility should make a symbolic statement about the values that Health Co embodies yet also provide for separate identities for both the FHA and the BCCA. The hospital shall have a subtle balance of human scale and community scale. Appropriate architectural character will convey the message that the institution is concerned about the individual as a community member, not just a 'case' and will respond to the status of the hospital as a public place of importance. All planning and design strategies should be considered within the context of advancing patient care and the enhancement of the Facility as a humanistic and unthreatening refuge for healing and access to health and wellness. The design of the Facility shall:

- Provide enduring exterior materials that reflect its significance as a public building.
- Provide an attractive appearance towards public streets. Where a building face, other than the front of a building, is visible from a street, a visually attractive appearance shall be provided by a combination of finishing and fenestration to a similar standard as the front of the building.
- Provide permanent screening for unenclosed storage areas, loading areas, recycling and garbage areas, and all functions that tend to be unsightly. These areas are not to be located between any buildings and abutting streets and, where possible, the buildings shall provide the required screening.

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- Provide an environment that patients, visitors and staff perceive as open and accessible rather than regimented and intimidating.
- Provide visual and acoustic screening or isolation of highly technical areas from public areas.
- Provide design elements that reflect concern for patient and staff comfort and well-being, and the role of the hospital within the community it serves.
- Provide important entrances as a combination of outdoor and indoor space and include functions that will create a lively destination for visitors and patients such as retail and food kiosks, information and other “community” or public functions.
- Consider human scale in the details of the design.
- Provide architectural elements and finishes that differentiate major components of the campus, without necessarily separating those major components into separate buildings, in order to assist with wayfinding and reinforce the human scale of the buildings.
- Use building massing and finishes to be used in conjunction with external signage in order to ease the public’s introduction to the site and main entry points.
- Provide appropriate relationships of functional spaces and clearly define access points both internally and externally, as required by the Clinical Output Specifications.

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4 FUNCTION

4.1 SPACE STANDARDS

Space standards included in Section 2 Clinical Services and & Section 3 Non-clinical Services of the Output Specifications have been determined to suit best clinical practices, to facilitate overall operational efficiency and to optimize healthcare delivery. Net functional areas identified in Sections 2 & 3 are therefore the minimum to be provided in the Facility.

- Project Co shall identify those functional areas that do not comply with the space standards and indicate any clinical benefits, increased flexibility, and/or operational efficiencies that justify the deviation.

4.2 CIRCULATION (INTERNAL)

The overall configuration of horizontal and vertical movement systems within the Facility will significantly impact the time spent in movement by staff, response time of code teams, ease of patient transfer, travel distances and wayfinding for patients and visitors and the efficiency and responsiveness of materials management and maintenance staff. The spatial and architectural characteristics of the circulation system will affect staff satisfaction with their overall work environment as well as patients' impressions of the quality of care provided at the Facility.

Movement is the largest consumer of caregiver time in a hospital, and communication with other staff is the second. Daily caregiver movement typically consists of many repetitive and relatively short trips that constitute a workpath, and a few much longer trips between hospital services and staff amenities.

The layout and design of each of the following components of the internal circulation system of the Facility shall:

For the system as a whole:

- Eliminate spatial configurations and/or design elements that require increases to the clinical staffing model.
- Minimize the distances staff need to move, and maximize the potential for staff/staff interaction during necessary movements.
- Provide light and views along important travel routes.
- For corridors where it may be necessary to move a patient in a bed, the minimum width shall be 2.4 metres unless there is a requirement for greater width in the current BC Building Code. Projections into the corridor width shall comply with the requirements of the BC Building Code.
- Consider the following where appropriate and cost effective:
 - Discreet pathways for transporting patients with dignity and privacy.
 - Discreet pathways for the movement of materials.
 - A 'front door' on a primary or secondary route and a 'back door' from a staff/service route for departments that serve primarily outpatients or both inpatients and outpatients.

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- The design of the new hospital shall be such that direct access is provided to all nursing units so that patients, visitors and staff do not have to pass through other nursing units to gain access to a unit.

Elevators

- Provide high capacity, hospital appropriate elevators with performance characteristics to increase overall operational efficiency. Refer to 5.3.14 for specific elevator requirements. Consider the following factors contributing to high elevator usage in hospitals when designing the elevators:
 - Higher floor to floor heights.
 - An abundance of wheeled traffic.
 - High occupancy levels
 - The mobility challenges faced by patients and visitors.
- Locate passenger elevators serving patients, visitors and staff where they are visible and directly accessible from both the main entry and from the most important circulation path on each floor.
- Group public elevators in each public elevator location to maximize system performance.
- Locate a patient transfer or 'hot' elevator(s) to provide discreet but direct vertical links with minimal stretcher turns between vital clinical services: Emergency/Surgical Suite/Intensive Care and Stepdown Care Units and convenient links between all Inpatient Units/Rehabilitation Services/Medical Imaging.
- Locate service elevators to minimize interference with patient, visitor and staff movement and to maximize the efficiency of cart movement to and from Materiel Management, SPD and Food Services.
- Provide appropriately sized dedicated embarkation areas in front of all patient transfer and service elevators that are out of site from major public circulation routes.
- Provide appropriately sized dedicated embarkation area in front of all passenger elevators.
- Provide dedicated case cart elevators/dumbwaiters between SPD and the Surgical Suite & Maternal/Newborn Care Unit.

Exit stairs

- Locate exit stairs strategically for the convenience of staff moving between related clinical departments
- Locate exit stairs conveniently accessible from circulation routes
- Avoid stair locations that negatively impact planning flexibility or constrain desirable views from patient care and staff work areas
- Provide daylighting and views from stairwells for orientation and amenity, and into stairwells for staff security at night

Convenience stairs

- Consider the provision of convenience stairs where appropriate, located strategically to reduce elevator use by staff, visitors and patients.

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Primary public paths

- Allow primary public paths to be extended to fully integrate with major building expansions.
- Consider, where appropriate and cost effective, an internal circulation system configuration that avoids the use of primary public paths for patient stretcher and material movement.

Secondary paths

- Locate secondary public circulation paths perpendicular to primary paths, so that the entire public circulation system can be seen and understood from the primary path system.
- Provide the remainder of clinical department entrances and patient services along secondary paths.
- Minimize use of secondary public paths for patient stretchers and material movement.

Internal departmental paths

- Provide a strong relation of internal departmental paths to primary and secondary public paths.
- Avoid code-allowable dead-ended local routes within departments that overly isolate patients and staff.
- Consider, where appropriate and cost effective, interconnected local routes between adjoining departments for convenient 'back of house' staff and wheeled patient movements and material distribution.

4.3 WAYFINDING AND SIGNAGE

Wayfinding

A visit to the hospital is often made in anxious or worrisome circumstances and within an unfamiliar environment. Patients and visitors entering the Facility may be disoriented or anxious and many will be older patients who may have diminished cognitive and physical abilities. It is important to reduce the anxiety level of patients and their families by making it as easy as possible for them to navigate their journeys to and from the hospital and their specific destination(s) within it. Ease of wayfinding increases the efficiency of healthcare delivery by reducing the staff time required to give directions to patients and visitors.

Wayfinding is the technique of guiding people through the hospital with the least effort, and shall address the needs of clients/patients, visitors and staff. Spaces shall be designed to create privacy where required and direct visitors through defined areas. Wayfinding shall provide opportunities for all Facility users to reach their destinations without getting lost or traversing through areas that are private.

The wayfinding design of the Facility shall:

- Provide a simple configuration of the building(s) circulation systems and functions so that wayfinding is inherently easy and the importance of additional signage reduced.
- Relate the building(s) massing, public entrance(s) and primary circulation systems to its community context.
- Reveal as much of the basic form and major circulation elements of the building from the main entrance as possible, as well as the relation of the main entrance back to the site and its context.
- Locate primary public circulation paths to reinforce the wayfinder's understanding of the basic form of the building on all floors.

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- Locate destinations such as major departmental entrances and patient services along the most important primary public circulation paths. Make departmental entrances and waiting areas as open as possible from circulation paths so wayfinder's retain confidence that they're still "on track".
- Provide two Donor Walls in an appropriate public location.
- Use views to the outside and other wayfinding elements that clearly tell the visitor when they are leaving one building element and entering another.
- Provide significant recognizable, easily named and identified elements in important and easily found locations that can become 'meeting points' for patients and visitors.
- Locate personal guidance and building graphics/signage in highly visible locations near at major entrances to introduce the interior circulation system to the user. Provide information about the location of and directions to additional services within the community and the most convenient amenities to the hospital for non-local patients and families.
- Design elevator lobbies, major departmental entrances and other major destinations to be visually distinctive from adjacent corridor areas.
- Design major public and secondary public paths to look distinctly different from service routes and other non-public routes.
- Design staff areas to look significantly different from public areas.
- Provide signage to clearly identify public telephones in areas accessible to visitors.

Signage

Provide highly visible and simple signage - including having building plan directories oriented to the building. Direct visitors to departments, not buildings, and avoid multi-layered naming hierarchies.

Internal directional signs shall:

- Include a main directory installed at the new entrance and smaller subdirectories at other entrances. The main directory and subdirectories shall indicate the location of every area and department that is intended be accessible from that entrance.
- Be installed to provide a continuous trail from entrances to each of the reception/information points listed on the directories.
- Be installed at each point at which a directional decision is required.
- Be clearly visible as it is approached.
- Use consistent terminology.

Door signage shall:

- Be coordinated with directional signage and wayfinding.
- Indicate restrictions on entry and warn of hazards.
- Indicate fire / smoke capability.

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Door numbering shall:

- Not be obscured by the emergency systems and Code Blue system call.
- Identify every room.
- Be located in a consistent location for every room.

External directional signage shall:

- Clearly indicate where public is to access the building for various services.
- Be well illuminated or backlit – readily visible at night.
- Be located at each point of access to the site and at key internal site intersections and points.
- Provide continuous trail from points where signage is accessed to final destination.

Illuminated external Facility signage shall:

- Clearly indicate to pedestrian and drivers the location of Facility and location of vehicular access.
- Be internally illuminated.
- Be located adjacent to the roadway as per City of Abbotsford requirements.
- Indicate the location of vehicular entrances for various types of vehicles.
- Clearly indicate the emergency entrance.

Other signage requirements as per Best Practices shall include:

- Highway signage
- Safety signage
- Fire evacuation signage

4.4 OPERATIONAL ENVIRONMENT

The operational efficiency and effectiveness of caregivers in a hospital are greatly influenced by the physical design of facilities. The physical plan and organization of functions within a hospital can contribute significantly to reduced operating costs and improved quality of service. The design of the Facility must not result in additional operating costs and must not compromise clinical efficacy or add stress or distraction to the performance of caregivers' critical tasks. Project Co shall:

- Develop departmental layouts around logical workflows to maximize the efficiency of caregivers and support staff and to support the models of care described in Section 2: Clinical Services documents.
- Configure patient care areas to optimize views of patients in care from workstations and from departmental circulation routes, - so that caregivers can maintain contact with patients while performing other tasks and see and be seen by patients when moving between care areas, workstations and support spaces
- Avoid deep-plan pods and wide bands of support spaces fronting patient care areas that hinder or block view of patients from departmental circulation routes or add to the length of caregiver workpaths
- Design individual and group workstations to both avoid distraction during concentrated work and encourage communication between caregivers
- Locate frequently used support spaces to minimize primary workpaths. Consider duplicating frequently used support spaces when sharing overly extends primary workpaths.

1.2 PERFORMANCE STATEMENTS

- Provide a working environment that individualizes control of natural and artificial lighting, allows the ergonomic configuration of workstations and support equipment and minimizes noise and other stressors.

4.5 INFECTION CONTROL

Universal practices and principles shall be utilized, maintained and practiced by the Project Co to ensure a safe environment for all patients, staff and visitors in the Facility. Infection control policies and practices in the Facility are formulated by Health Co.

General Criteria

- Provide design, planning, material selection and Facility construction in accordance with Health Co infection control policies.
- The Project Co shall attend the Health Co meetings relating to infection control policies during planning, design and construction.

Handwashing sinks

- Provide sinks with integral counters and back-splashes constructed out of solid-surface seamless materials in all isolation rooms, ante rooms, and in locations noted in Table 1.2.4.5 Selected Isolation and Infection Control Design Requirements.
- Provide handwashing sinks convenient to nurse stations and patient bed areas. There shall be at least one handwashing sink for every three beds in open plan areas, and one in each patient room. The handwashing sink shall be located near the entrance to the patient cubicle or room, shall be sized to minimize splashing water onto the floor, and shall be equipped with blade handle controls.
- For each patient room a sink shall be located in the toilet room. In addition to the sink in the toilet room, a handwashing sink shall be provided in the patient room outside of the patient's cubicle curtain so that it is accessible to staff. In rooms that include an anteroom, the handwashing sink shall be located in the anteroom. In isolation rooms that do not include an anteroom, the handwashing sink shall be located within the isolation room.
- Provide handwashing sinks within each procedure, examination, treatment and clinical room.
- Provide handwashing sinks in all non-clinical spaces such as Laboratory Medicine and Pharmacy Services in accordance with Best Practices and as reviewed with Facility users during design.
- Provide handwashing sinks conveniently accessible to the nurse stations, medication stations, and nourishment centres. One handwashing station may serve several areas if convenient to each.
- Provide a handwashing sink in each soiled workroom or soiled holding room.
- Provide employee handwashing sinks in each room where clean or soiled linen is processed and handled.

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- All sinks in the facility are to be provided with blade handles 4” or 6” depending on sink depth with the following exceptions:
 - ICU/Step down and CCCU – visitor sinks to be hands free with electronic sensor.
 - Emergency – Trauma area – sinks to be hands free with electronic sensor. The scrub sinks to have knee operated controls
 - Operating Suite – Scrub sinks to be hands free, half with electronic sensor and half with knee operated controls.

Isolation Rooms

- Provide negative pressure ventilation in all isolation rooms for patients with infectious disease. Refer to Table 1.2.4.5 below for number and location.
- Provide enclosed anteroom to the isolation rooms in locations listed in Table 1.2.4.5 below.

Table 1.2.4.5 Selected Isolation and Infection Control Design Requirements

Location	Negative pressure ventilation required	Enclosed anteroom for each isolation room	Hand-washing facilities inside the isolation room
Emergency	2 adult isolation rooms 2 pediatric rooms	Yes	Yes
General Day Care Unit	2 bronchoscopy procedure rooms as per Canadian guidelines	No	Yes
Renal Services	2 isolation rooms in patient care area	Yes	Yes
Comprehensive Cardiology Care Unit	2 isolation rooms	Yes	Yes
General Medical/Surgical Inpatient Care Units	23 isolation rooms	Yes	Yes
Oncology Inpatient Unit	1 isolation rooms	Yes	Yes
Tertiary Palliative Care Unit	1 isolation rooms	Yes	Yes
Intensive Care Unit	4 isolation rooms	No	Yes
Step-down Care Unit	1 isolation rooms	Yes	Yes

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Location	Negative pressure ventilation required	Enclosed anteroom for each isolation room	Hand-washing facilities inside the isolation room
Maternal Child Program; Special Care Nursery	2 isolation rooms	No	Yes
Maternal Child Program; Pediatric Inpatient Unit	2 isolation rooms	Yes	Yes
Maternal Child Program; LBRP	1 isolation room	Yes	Yes
Maternal Child Program; Pediatric Inpatient Unit, special care area	2 isolation rooms	Yes	Yes
Mental Health/Psychiatry Program	1 in Intensive Observation Unit	Yes	Yes
Surgical Services PACU Surgical Services Operating Suite	1 in Adult Inpatient Unit	Yes	Yes
	1 isolation room	Yes	Yes
	1 General Surgery operating room to have capability to switch to negative pressure	No	No
Emergency Waiting/Isolation Room	1 isolation room	No	No
Pharmacy (Hospital) Chemo Room	1 chemo Room	Yes	Yes
Cancer Centre Chemo Room	1 chemo Room	Yes	Yes

Other Criteria

- Provide a separate exhaust system in the decontamination room and vestibule.
- Refer to Output Specifications Section 5 – Design and Technical: Subsection 5.3.15.14, Table 5.3.15.14 Design Criteria for information regarding pressurization requirements for the IV Admixture Preparation Room and adjacent Chemo Room in Pharmacy Services (hospital) and for the Cancer Centre Pharmacy IV Admixture Preparation (Chemo) Room..

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- Provide seamless finish materials and/or minimize seams between materials.
- Provide full height wall vinyl, fully welded in all patient ensuite washrooms and shower rooms.
- For Isolation Rooms, Interventional Rooms, Operating Theatres and rooms requiring a high degree of sterility, provide seamless and 'fissure free' finishes that allow easy cleaning.
- Internal windows in sterile areas shall be double glazed with integral between glazing blinds.
- Consider that current recommendations are that initial contact staff should maintain a distance of not less than 1 metre away from a client who may be presenting with infectious symptoms.

References

- The design shall comply with Health Co, WCB and Best Practices design for infection control in Canadian healthcare facilities.

4.6 ERGONOMICS

The following quotation from the document "*OSHA Ergonomics: The Study of Work, 2000*" is consistent with the Health Co ergonomics philosophy:

"Ergonomics is an important consideration. Ergonomics is the science of designing the job to fit the worker, rather than physically forcing the worker's body to fit the job. Adapting tasks, workstations, tools and equipment to fit the worker can help reduce physical stress on a worker's body and eliminating many potentially serious, disabling work-related musculoskeletal disorders (MSDs)."

The design of the Facility shall:

- Provide detailed design features, which expressly facilitate the physical activities of the staff and patients to increase their safety, efficiency and general well being, and assist in eliminating ergonomic risk factors.
- Provide for all patient care and treatment spaces (including washrooms) to accommodate lifting and transfer devices.
- Provide ergonomics design consistent with current Best Practices of all work spaces including millwork, lighting, and finishes to eliminate strain and injury to healthcare workers.
- Be consistent with "Universal Design" philosophies (Section 1 Key Site and Building Design Criteria: Subsection 4.7 Design Standards for Accessibility) in the design and planning of ergonomics-related areas.

References

- The design shall comply with WCB requirements and Best Design Practices.

4.7 DESIGN STANDARDS FOR ACCESSIBILITY

The design of the Facility shall:

- Provide accessibility and usability in accordance with the BC Building Code, as a minimum.

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- In Emergency, provide easy access to wheelchairs/stretchers close to the entrance. Ensure that all patient-occupied spaces are designed for disabled access and assistance by nursing staff.
- Wherever appropriate and economically feasible, reflect provisions beyond the minimum requirements of the BC Building Code in response to the nature of the Facility and the aging community in accordance with current Best Practices for healthcare design.

Consider the following “Universal Design” philosophies in the design and planning of the Facility to ensure environments that are usable by all people to the greatest extent possible, without the need for adaptation or specialized design:

1. Equitable use – the design is useful to people with diverse abilities.
2. Flexibility in use – the design accommodates a wide range of individual preferences and abilities.
3. Simple and intuitive - use of the design is easy to understand, regardless of the user’s experience, knowledge, language skills, or current concentration level.
4. Perceptible information – the design communicates necessary information effectively to the user, regardless of ambient conditions or the user’s sensory abilities.
5. Tolerance for error – the design minimizes hazards and the adverse consequences of accidental or unintended actions.
6. Low physical effort – The design can be used efficiently and comfortably and with a minimum of fatigue.
7. Size and space for approach and use – appropriate size and space is provided for approach, reach, manipulation, and use regardless of user’s body size, posture or mobility.

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5. INDOOR ENVIRONMENTAL QUALITY

5.1 HEALING ENVIRONMENT

Patients and their families are under both physical and psychological stress.

The goal of the healing environment in a healthcare setting is to reduce stress, which in turn helps to restore vitality. A healing environment is designed out of a thoughtful concern for human needs, and makes visible the same healing qualities that are experienced in nature. Healing architecture uses natural light, sound and music, color, pattern, air quality, nature and views of nature, art, and aesthetic form as tools for creating a spirit-reinforcing environment that will encourage and cheer patients of all ages and their families.

Three factors have been found to reduce stress in patients, visitors and staff: (1) a sense of control, (2) access to social support, and (3) access to positive distractions. The design of the Facility shall:

- Provide maximum independence for patients by allowing patients to control noise, light and the degree of privacy provided in their immediate environment.
- Provide a quiet, comfortable environment conducive to patient relaxation.
- Provide non-intrusive night lighting in 24/7 patient care spaces where possible.
- Provide for the display of patient's personal effects.
- Provide patient care areas that are configured to promote comfort and intimacy for patients, family centered care, and conviviality between patients, caregivers and families.
- Provide patient care areas that are designed to maintain dignity and allow for patient privacy while facilitating the observation of patients by staff.
- Provide a gradual continuum from community to privacy.
- Provide support facilities and convenient and comfortable overnight accommodations for family.
- Provide a view from the bed of nature and/or community, where possible.
- Provide sheltered and safe grade and roof level accessible gardens, courtyards and terraces with wheelchair accessible surfaces.
- Provide wide views to accessible gardens, courtyards and terraces from adjacent program areas, where possible.
- Provide shading over seating areas within accessible garden and terrace areas, using trellises, canopies and/or trees.
- Provide native indigenous plant species where possible in the site landscaping.
- Provide discreet garden maintenance equipment storage adjacent to landlocked or rooftop garden areas.
- Consider the use of natural materials such as wood throughout public and patient care areas.
- Consider and acknowledge ethnic diversity.
- Consider the introduction of positive distractions that engage all five senses, offer variety and delight.

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5.2 INDOOR AIR QUALITY (IAQ)

Indoor air quality is important to the well being of patients, visitors and staff. Indoor air quality depends on the provision of adequate fresh, clean air, effective natural or mechanical ventilation and the absence of VOCs and other indoor contaminants from off-gassing materials, the handling of wastes and toxics produced by work processes, the selection of cleaning agents and the management of building operations and maintenance. The design of the Facility shall:

- Provide benign indoor materials and maintenance processes.
- Provide and maintain proper pressure relationships, air exchange rates, and filtration efficiencies for ventilation systems in surgical suites and throughout the hospital.
- Provide physical isolation and separate ventilation under negative pressure for enclosed copy rooms and all other work areas associated with chemical use.

Where appropriate and cost effective:

- Consider the provision of natural available ventilation to patient and staff areas where practically and clinically possible.
- Consider the use of displacement ventilation systems that could provide improved air quality, patient and staff comfort and reduced operational costs.

5.3 DAYLIGHT

Natural light is an important element in the workplace and in the creation of a therapeutic environment. Natural light is required in all patient areas, except where it conflicts with clinical requirements. The above are deemed to be minimum requirements but do not take precedence over statutory requirements. Refer to 5.3.16 Electrical (Division 16) for appropriate Lux levels in selected locations.

The design of the Facility shall:

- Provide daylighting to as much of the indoor environment as possible, including public areas and amenities, primary and secondary public circulation paths, patient waiting, patient care and staff work areas.

5.4 ACOUSTICS

The design of the Facility shall:

- Provide room shapes, workstation configurations, and sound absorptive finishes appropriate to the interior acoustic and reverberation requirements for the intended use of the room.
- Provide the required degree of sound isolation between the exterior and the interior, as well as between interior spaces within the Facility through space planning and building materials.
- Provide control of building services and footfall vibration so that the function of vibration-sensitive uses and spaces is not disturbed or affected.
- Provide control of building services noise through space planning to address the adjacency/proximity of Mechanical and Electrical spaces to minimize their effect on noise sensitive areas. Refer also to 5.3.15.6 and 5.3.16 for specific measures to control mechanical, electrical, and plumbing noise.

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- Provide wall, roof and floor assemblies with acoustic performance in accordance with the requirements listed in Table 1.2.5.4 (a) Sound Transmission Limitations.
- Provide control of background noise on accordance with Table 1.2.5.4 (b) Recommended Background Noise Criterion (NC) Levels for recommended design guidelines for background noise, in terms of Noise Criterion (NC) or Room Criterion (RC).
- Provide control of indoor sound exposure to exterior noise sources in accordance with Table 1.2.5.4 (c) Exterior Environmental Noise Source Guidelines. These guidelines shall be used in conjunction with the Project Co's noise impact assessment report.

Provide an acoustic consultant as part of the design team to ensure effective application of the above-noted requirements.

Where appropriate and cost effective:

- Consider off-site noise from Highway #1 when designing operable windows and vents and in the location of exterior amenity spaces.
- Consider proximity to external vibration sources to minimize their impact on vibration-sensitive uses and spaces when designing space planning and siting.

Table 1.2.5.4 (a) Sound Transmission Limitations.

Note: Treatment rooms shall be treated the same as patient rooms.

Space Adjacencies	STC Class ¹ -Walls	STC Class ¹ -Floors
Patient room to patient room	45	50
Public space to patient room ²	45	50
Service areas to patient rooms ³	50	50
Patient room to access corridor ⁴	40	50
Exam/consultation room to exam/consultation room- Ambulatory Care and Cancer Centre	45	-
Exam/consultation room to Exam/consultation room - typical	50	-
Exam/consultation to public space	40	-
Exam/consultation room to wait room	50	-
Toilet room to public space	45	-
Conference rooms to public space	45	-
Conference rooms to patient rooms	50	-

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Staff lounges to patient rooms	45	-
Staff lounges to public space	40	-

Explanatory Notes for Table 1.2.5.4 (a)

1. *Sound Transmission Class (STC) tests shall be done on the wall and ceiling construction conditions on site, using a methodology in general accordance with ASTM E336 Standard Test Method for Measurement of Airborne Sound Insulation in Buildings*
2. *Public space includes corridors (except inpatient room access corridors), lobbies, dining rooms, recreation rooms, and similar space.*
3. *Service areas include kitchens, elevators, elevator machine rooms, laundries, garages, maintenance rooms, boiler and mechanical equipment rooms, and similar spaces of high noise. Mechanical equipment located on the same floor or above patient rooms, offices, nurses stations, and similar occupied spaces shall be effectively isolated from the floor.*
4. *Patient room access corridors contain composite walls with doors/windows and have direct access to patient rooms.*

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Table 1.2.5.4 (b) Recommended Background Noise Criterion (NC) Levels.

Space Type	Recommended NC or RC
Inpatient Unit (patient rooms, nursery)	30
Inpatient Unit (occupational therapy)	35
Inpatient Unit (other)	35
Intensive Care Unit, Comprehensive Cardiology Care Unit	30
Outpatient Services	35
Operating Rooms	30
Emergency	35
Medical Imaging	35
Obstetrics	35
Pathology/Morgue & Autopsy	35
Pharmacy Services	35
Laboratory Medicine	35
Sterile Processing Services	35
Education- Offices	35
Education - Classrooms	30
Administration (Board Rooms)	30
Administration (offices, computer rooms, reception)	35
General Support Areas	35

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Table 1.2.5.4 (c) Exterior Environmental Noise Source Guidelines.

Space Type	Sound Pressure Limit (dBA)
Operating rooms, patient rooms	45
Private offices, waiting rooms	45
General offices, reception, television rooms, lobby and corridors	50

5.5 COLOUR/DESIGN PHILOSOPHY

The goal of effective colour application in the healthcare setting is to enhance the environment with the appropriate use of full-spectrum coloration.

Color can be used to calm, encourage and cheer the patient. Adequate daylight with natural finishes and a correct proportion and balance of colors can create relaxing or stimulating environments as care and treatment protocols require. Patients and staff needing to remain in a limited area for a protracted period require exposure to a wide palette of colors from across the color spectrum to retain visual acuity, remain alert and reduce their sense of confinement. The design of the Facility shall:

- Provide departmental color palettes appropriate for the emotional and psychological needs of their patients.
- Provide natural color palettes that contribute to the creation of a healing environment.
- Provide distribution of ambient full-spectral color within typical staff and patient environments.
- Provide balanced color temperature in all areas, using ambient color temperatures tending to cool to keep the environment fresh.
- Provide an appropriate number of colours by avoiding departmental ‘color schemes’ that have too few colors and avoiding designation of departments and patient care areas by their ambient color so that a single color doesn’t dominate over too wide an area.

Where appropriate and cost effective:

- Consider the selection of permanent materials that are color balanced and polychromatic so that color and material selection is not limited in the future.
- Consider the psychological effects of colors – for example that cooler colors have been found to hasten the passage of time, and anthroposophist theories of the healing effects of color temperature on various illness types.
- Consider the palette, distribution, and intensity of ambient color, accent color, and wayfinding color.
- Consider interior colour schemes that avoid glare-creating finishes.

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5.6 USE OF ART

Art can improve the quality of the environment by reinforcing the impression of a caring environment and by creating a sense of place through strong ties to the local community. Art can be a positive distraction for patients and promote social interaction and social support as well as patients' and staff's sense of ownership. Art can facilitate wayfinding.

The use of art in the Facility shall be in accordance with Health Co policy. Project Co shall work closely with Health Co to coordinate and manage artwork that is owned and provided by Health Co. Artwork shall form an integral element of the development design proposals. Project Co shall identify the most effective and appropriate locations for major and minor works of art throughout the Facility. Art provided and installed by Health Co shall fit within the design parameters of building systems and not require modifications or change to the same.

The design of the Facility shall:

- Weight and size of art shall be accommodated by the current structural design of the Facility.
- Provide seismic restraint of art objects where required.
- Provide lighting to enhance the display of all works of art and the necessary structural support and/or protective measures required for particular works.

Where appropriate and cost effective:

- Consider the development of major public pathways as galleries with hanging and display systems that can accommodate complete size and spacing flexibility in mounting.
- Consider the provision of an art program to invite community artists to display their work on a permanent and temporary basis within the buildings and on the site.

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6. BUILDING SYSTEMS

6.1 ENERGY AND SUSTAINABILITY

The construction and use of buildings consumes high percentages of the world's raw materials and generates significant waste, 50% of CFCs, about 30% of US CO₂ production, and substantial toxic emissions. Given this, the opportunities are significant to improve environmental quality through 'green' or 'sustainable planning' design, construction and operations and maintenance practices.

A major component of sustainable design is indoor environmental quality (IEQ) and many IEQ design principles are also principles of healing design within a healthcare environment.

The Facility shall be designed and constructed to achieve, as a minimum level, "LEED™ Silver" Certification as per Project Agreement Section 22.3 LEED. The standard evaluates environmental performance from a whole building perspective over a building's life cycle, providing a definitive standard for what constitutes a "green and sustainable" building. Unless otherwise defined in the Glossary or Acronym List, capitalized words and acronyms listed in Section 1 Key Site and Building Design Criteria: Subsection 6.1 Energy and Sustainability refer to specific LEED terminology; refer to LEED documentation for definitions.

Where a material is required within the Output Specifications to meet the requirements of the Canadian Eco-Logo program or equivalent, Project Co shall provide an Eco-Logo certified product wherever possible. However, if an Eco-Logo certified product is sole sourced (or otherwise not competitively priced) and/or not available, then Project Co may substitute another product that is not Eco-Logo certified, provided that it meets the same VOC requirements and the product is consistent with the intent of the Eco-Logo program as defined in the Output Specifications, Section 1.1.2.1 Glossary.

To the extent practicable and cost-effective, design the overall Facility as a high performance energy efficient building at a minimum level of energy performance 35 percent better than the Model National Energy Code Building (MNECB), as demonstrated by the National Resource Canada's Commercial Buildings Incentive Program (CBIP) modeling approach.

In addition to the above, the following are some other environmental considerations that Project Co may choose to address:

- Consider the use of construction materials that reduce the environmental cost of construction, including:
 - a) Reuse of fill from the site.
 - b) Use of pozzolanic cement in concrete.
 - c) Use of recycled materials in the primary structure including recycled steel in reinforcing bars and structural steel and sheet steel products including decking.
 - d) Use of recycled materials in the cladding and architectural finishes including recycled steel, recycled aluminum and other materials that include both pre and post consumer materials.
- Consider the use of locally, then regionally manufactured, extracted or harvested building materials and the use of rapidly renewable materials.

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- Consider the energy effects of building orientation to minimize heat gains during summer period and maximize controlled passive solar gains during the winter.
- Consider site placement to maximize energy efficiency through passive solar gain.
- Consider the use of geo-thermal energy for heating.
- Consider the thermal efficiency of the building envelope and the energy efficiency of the engineering services installations.
- Consider the use of thermally efficient glazing and the use of external and/or internal shading devices to control direct sunlight penetration and minimize summer solar heat gains without excessive restriction of building occupants' view to the outside.
- Consider the use of night-time flushing and thermal mass strategies to reduce cooling requirements.
- Consider bi-level automatic controls for exterior lighting to reduce energy consumption.
- Consider interior colour schemes that avoid extensive use of dark interior finishes that require increased lighting levels.

6.2 PROVISIONS FOR DISASTER

Planning and design shall consider the need to protect the life safety of all Facility occupants and the potential need for continuing services following an earthquake or other disaster.

The design of the Facility shall:

- Provide for disaster preparedness and post-disaster operation in accordance with current standards, with flexibility to allow for future changes in disaster management.
- Provide for disaster preparedness and post-disaster operation in accordance with the BCERMS and the FHERMS.
- Provide a Facility emergency plan.
- Provide an Emergency Operations Centre (EOC) in accordance with the BCERMS and the FHERMS requirements. Communications devices in the EOC shall include, but not be limited to, satellite TV and satellite telephone; Refer to 5.3.17.13 Patient Entertainment System and 6.3 Telephone Equipment.
- Provide adequate seismic restraint for equipment and non-structural items in accordance with CSA S832-01 Guidelines for Seismic Risk Reduction of Operational and Functional Components.

Where appropriate and cost effective:

- Consider the concept of "mitigation" (design concepts that enhance occupant safety during seismic events) as it applies to security and emergency preparedness in the planning and design of the Facility.

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Post-Disaster and Seismic Structural Design

The post-disaster and seismic structural design of the Facility shall be in accordance with the following:

- The building structure shall be designed in accordance with the current BC Building Code for post disaster buildings.
- Seismic design shall address the parts and portions of the building including architectural appendages and the restraint of mechanical and electrical items attached to the building. The importance factor used in the calculation of seismic forces on these parts shall be 1.5 in accordance with the BC Building Code requirements for a post disaster structure.

Post-Disaster Mechanical and Electrical Design

The design of the Facility shall:

- Provide two domestic water inlet connections on the exterior of the building for supply of water through tanker truck connections; one inlet for domestic and fire protection and a second inlet for the Renal Services RO Water system.
- Provide a sanitary sewer pump out connection on the main sewer line leaving the building for removal of sanitary sewer material by pump-out trucks.
- Provide seismic protection for medical oxygen and nitrous oxide bulk storage tanks and piping or provide a gas truck inlet connection for each gas at the building wall.
- Provide fuel oil inlet connections on the exterior of the power plant for fuel oil tanker truck connection.

In addition, the post disaster mechanical and electrical design of the Facility shall be in accordance with the following:

- The main mechanical infrastructure services shall be located in the post-disaster departments. Any departments designed as non post-disaster construction shall be serviced c/w isolation valves from the main infrastructure services.
- The main electrical infrastructure services shall be located in the post-disaster departments.
- All piping systems shall be seismically restrained in accordance with 'SMACNA' guidelines for the seismic restraints of mechanical, plumbing and medical gas systems. All cast iron plumbing drainage piping joints need not comply with "SMACNA" guidelines.

6.3 DESIGN LIFE

The design of the Facility shall:

- Provide a building and building components designed to be fully functional for the time period defined in the Agreement and consistent with:
 - Table 1.2.6.3 below, and

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- Schedule 27, Section 2 – Conditions of the Facility on Expiry Date.
- Provide design solutions, construction materials and methods that promote cost effectiveness both in capital costs and recurring costs.
- Refer to Table 1.2.6.3 Minimum Design Life Guidelines for Selected Facility Components for suggested design life of Facility elements:

Table 1.2.6.3 Minimum Design Life Guidelines for Selected Facility Elements

Element	Design Life
A1 Substructure	
A11.1 Standard foundations	50 years
A2 Structure	
A21.1 Lowest floor construction	50 years
A22.1 Upper floor construction	50 years
A22.2 Stair construction	50 years
A23.1 Roof construction	50 years
A3 Exterior Enclosure	
A31.1 Structural walls below grade	50 years
A32.1 Walls above grade	50 years
A32.2 Structural walls above grade	50 years
A32.3 Curtain walls	30 years
A33.1 Windows and louvers	30 years
A33.2 Glazed screens	30 years
A33.3 Doors	30 years
A34.1 Roof covering	20 years
A34.2 Skylights	20 years
B1 Partitions & Doors	
B11.1 Fixed partitions	50 years
B11.2 Moveable partitions	20 years
B11.3 Structural partitions	50 years
B12.1 Doors	25 years
B2 Finishes	
B21.1 Floor finishes	10 years
B22.1 Ceiling finishes	20 years
B23.1 Wall finishes	10 years

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B3 Fittings & Equipment B31.1 Metals B31.2 Millwork B31.3 Specialties B32.1 Non-medical equipment B33.1 Elevators B33.2 Escalators & moving walkways B33.3 Material handling systems	50 years 15 years 20 years 25 years 30 years 30 years 30 years
C1 Mechanical C11.1 Plumbing systems & fixtures C12.1 Fire Protection C13.1 Heating equipment C13.2 Cooling Equipment C13.3 Air handlers C13.4 HVAC distribution C14.1 Controls	20 years 40 years 30 years 20 years 20 years 50 years 15 years
C2 Electrical C21.1 Service & distribution C22.1 Lighting & Devices C23.1 Fire alarm & public address C23.2 Nurse call system C23.3 Communications & data	30 years 15 years 15 years 15 years 15 years
D1 Site Work D11.1 Roadways D11.2 Walkways D11.3 Site furnishings D11.4 Landscaping D12.1 Mechanical utilities D13.1 Electrical utilities D13.2 Site lighting	20 years 30 years 30 years 50 years 30 years 50 years 30 years

Where appropriate and cost effective:

- Consider cost-effective alternative options when designing engineering systems. Life cycle cost analyses shall be used to investigate the feasibility of options.

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1.3 KEY FUNCTIONAL GROUPINGS

1. INTRODUCTION

In general, the successful physical organization of each major functional group involves locating functions to both minimize unnecessary movement of people and materials, and to concentrate more capital intensive, expensive space and equipment together. In other words, strategies of “one stop shopping” and locating “like functions with like functions”, can have substantial operating and capital economies and should be considered as general strategies for the development of the Facility.

Also, certain components within each group require close relationships with others for one or more reasons (e.g., sharing of support facilities and staff, accessibility, future flexibility for shifting boundaries, expansion etc.). The following diagrams illustrate key groupings that should be achieved in design.

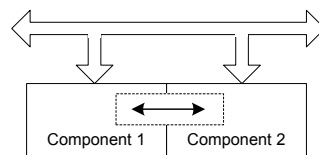
Definition of Relationships/Types of Access

The following terminologies have been used to indicate the desired hierarchy of relationships/types of access that have also been used in Section 2 Clinical Services and Section 3 Non-Clinical Services in the Output Specifications.

There are 4 definitions of terms used in the external relationship description as follows:

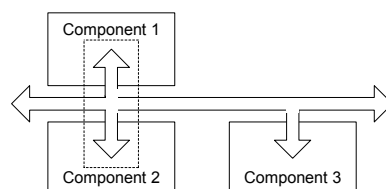
1.1 Direct Access by Internal Circulation - Essential

“Direct access by internal circulation” refers to components that are essentially horizontally contiguous or very close and linked internally. This form of access avoids movement through the general circulation system of the Facility and is considered essential to achieving best practice, the vision and guiding principles, reduced patient risk, and the effective functioning of the program/department. An acceptable alternative to horizontal access would be vertical access by means of a dedicated (“hot”) elevator.



1.2 Direct Access by General Circulation (Important)

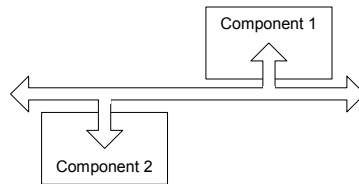
“Direct access by general circulation” refers to components linked by an important but minimal or moderate amount of horizontal and/or vertical general circulation. This form of access will improve the efficient and effective functioning of the program/department and is considered important, but not essential to achieving best practice, the vision and guiding principles or reduced patient risk. If the relationship cannot be achieved, other strategies can be employed as alternatives.



1.3 KEY FUNCTIONAL GROUPINGS

1.3 Convenient by General Circulation - Desirable

“Convenient access by general circulation” refers to components which are desirably linked by extended horizontal and/or vertical general circulation. This form of access will be desirable if it can be achieved but the program/department can function effectively and efficiently, achieve the vision and guiding principles, all without increased patient risk, in the absence of the relationship.

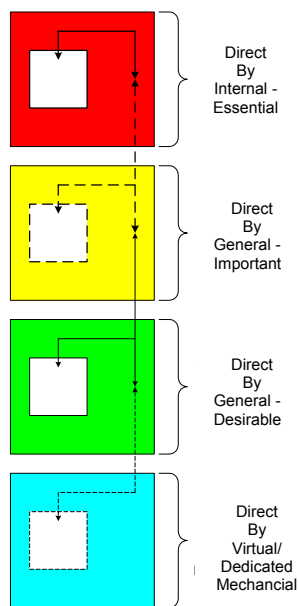


1.4 Direct by Virtual or Dedicated Mechanical Circulation

“Direct access by virtual or dedicated mechanical circulation” refers to components linked by direct supply/service systems incl. IT systems and/or mechanical systems (e.g., elevator; dumb waiter; pneumatic tube).

In addition to the above definitions and graphic methodology, colours and notations have been used to enhance the information and to focus on nuances of access or adjacency.

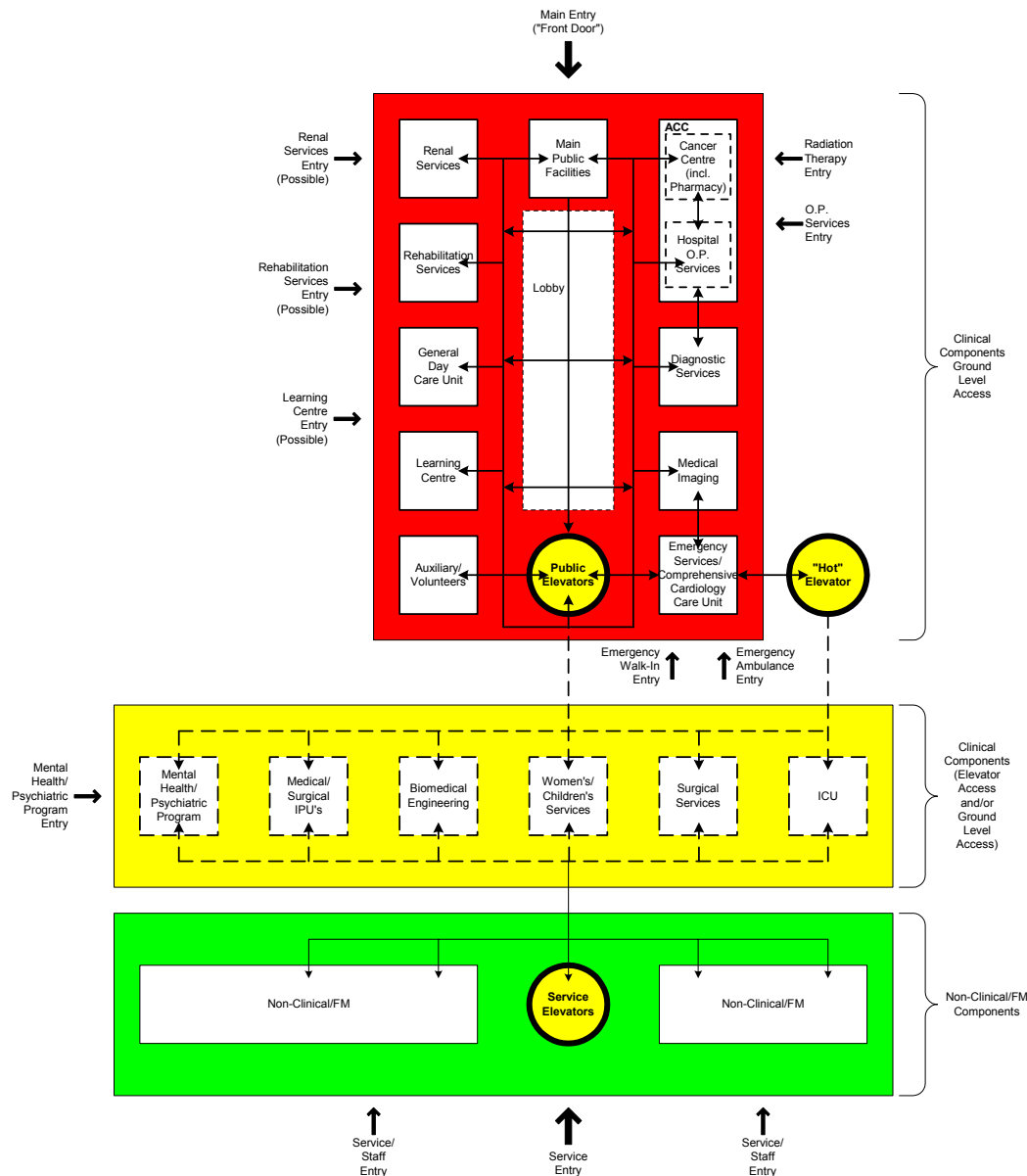
The generic format used for all groupings is typically as illustrated below with the colours (red, yellow, green through to blue) intended to reinforce the concept of “hot” to “cold” requirements for physical adjacency and the varying line weight of connecting arrows also reflecting the degree of physical adjacency with the bold solid line being the highest and the light dotted line being the most remote.



1.3 KEY FUNCTIONAL GROUPINGS

2. HEALTH CENTRE AS A WHOLE

The following diagram illustrates the key features of physical adjacency, access and circulation to and between the main clinical components and selected non-clinical and facilities management components. The colours (red, yellow and green) are used here to reinforce the concept of “hot” to “cold” requirements for physical adjacency, which are illustrated in more detail below in the individual major functional group diagrams. This diagram is not intended to indicate any architectural layout nor does it indicate any architectural scale.

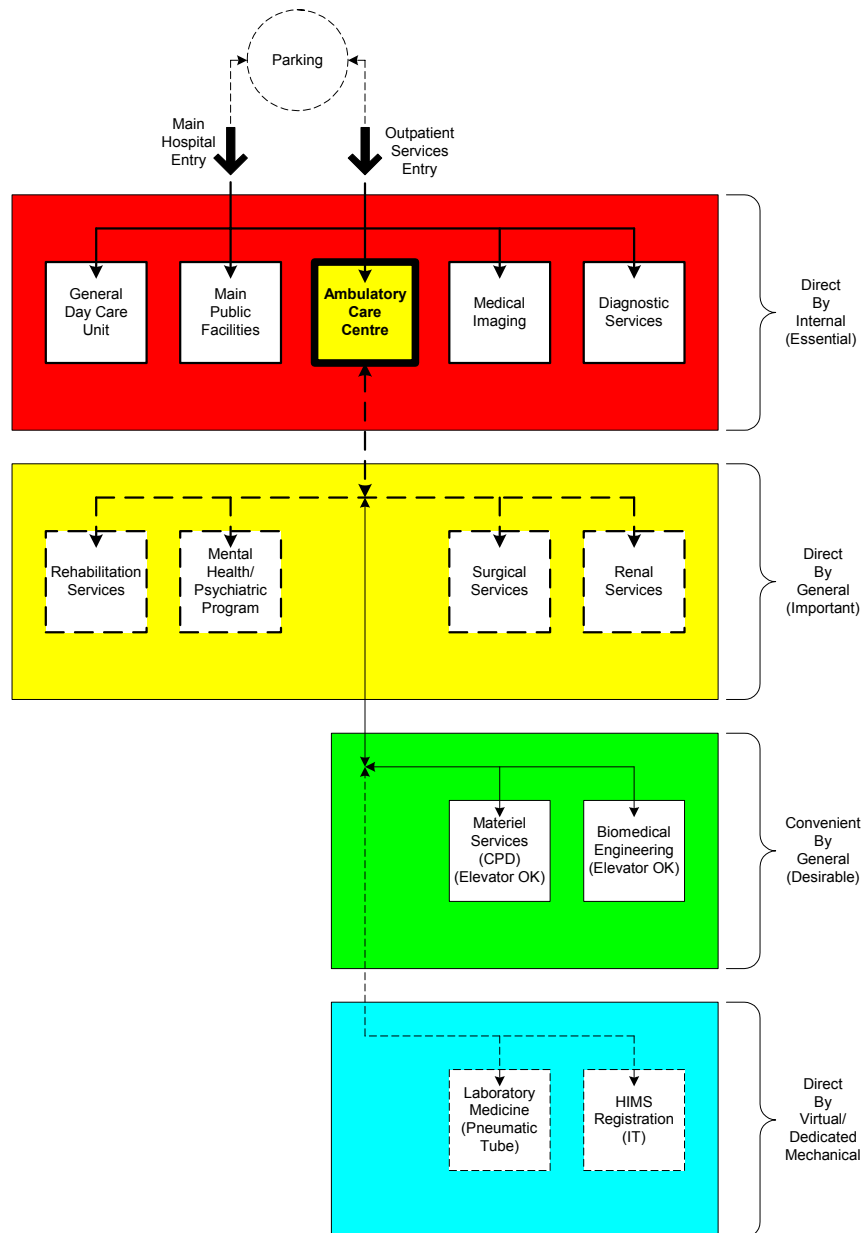


1.3 KEY FUNCTIONAL GROUPINGS

3. AMBULATORY CARE GROUP

Ambulatory Care services, including outpatient clinics and day care programs, should be centralized, as much as possible, to consolidate ambulatory patient traffic and should be close to a public entry, and preferably located at grade level.

The following diagram illustrates how the Ambulatory Care group should be developed in the context of the relationship and adjacency levels described above.



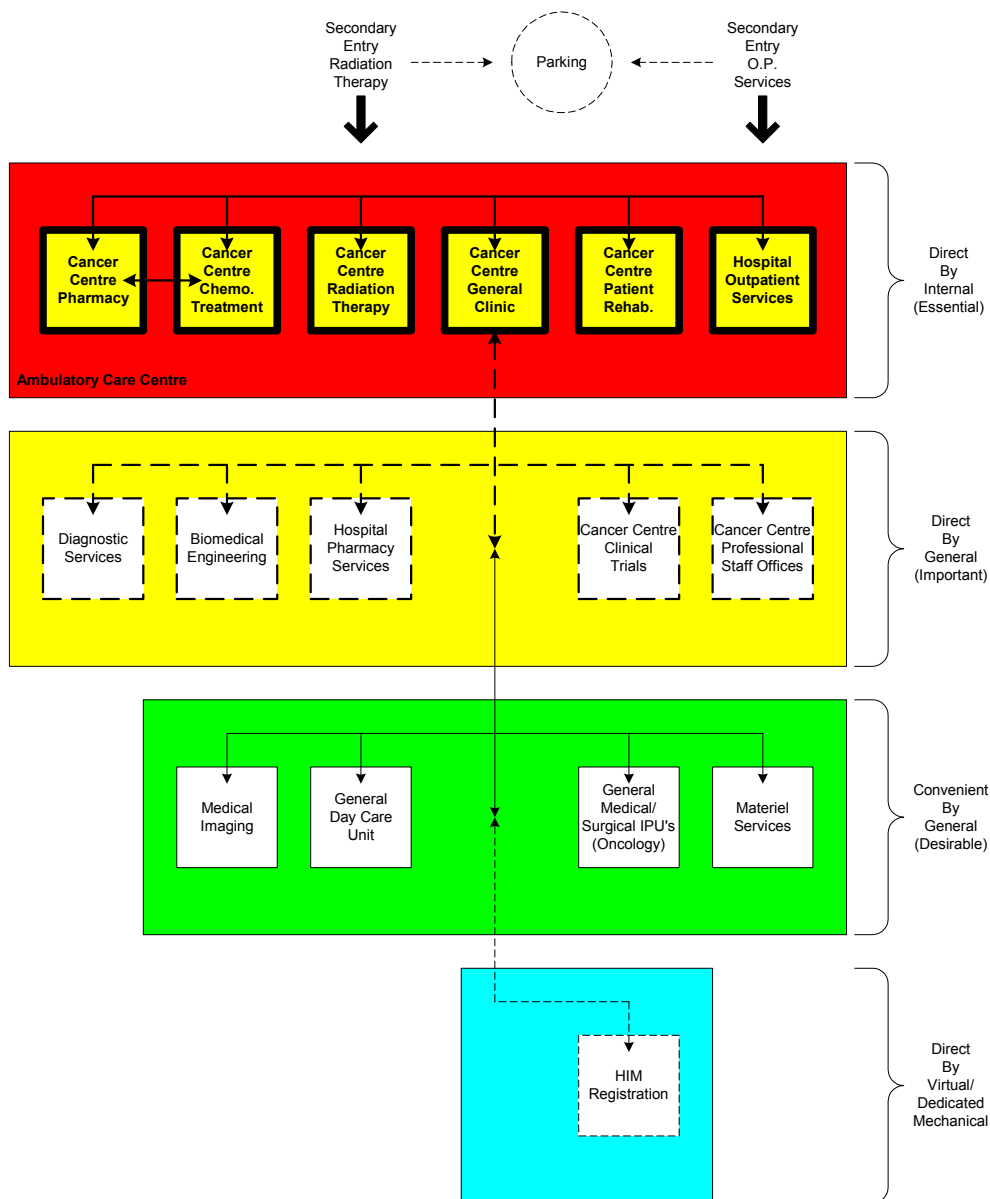
1.3 KEY FUNCTIONAL GROUPINGS

4. CANCER CARE GROUP

Cancer services should be centralized as much as possible to provide appropriate progressive patient care, ensure implementation of a family-centred care approach, promote efficient use of resources and provide flexibility for future growth.

Adjacency to selected areas in the Facility is also essential.

A Cancer Care group should be developed and comprised of the following components:

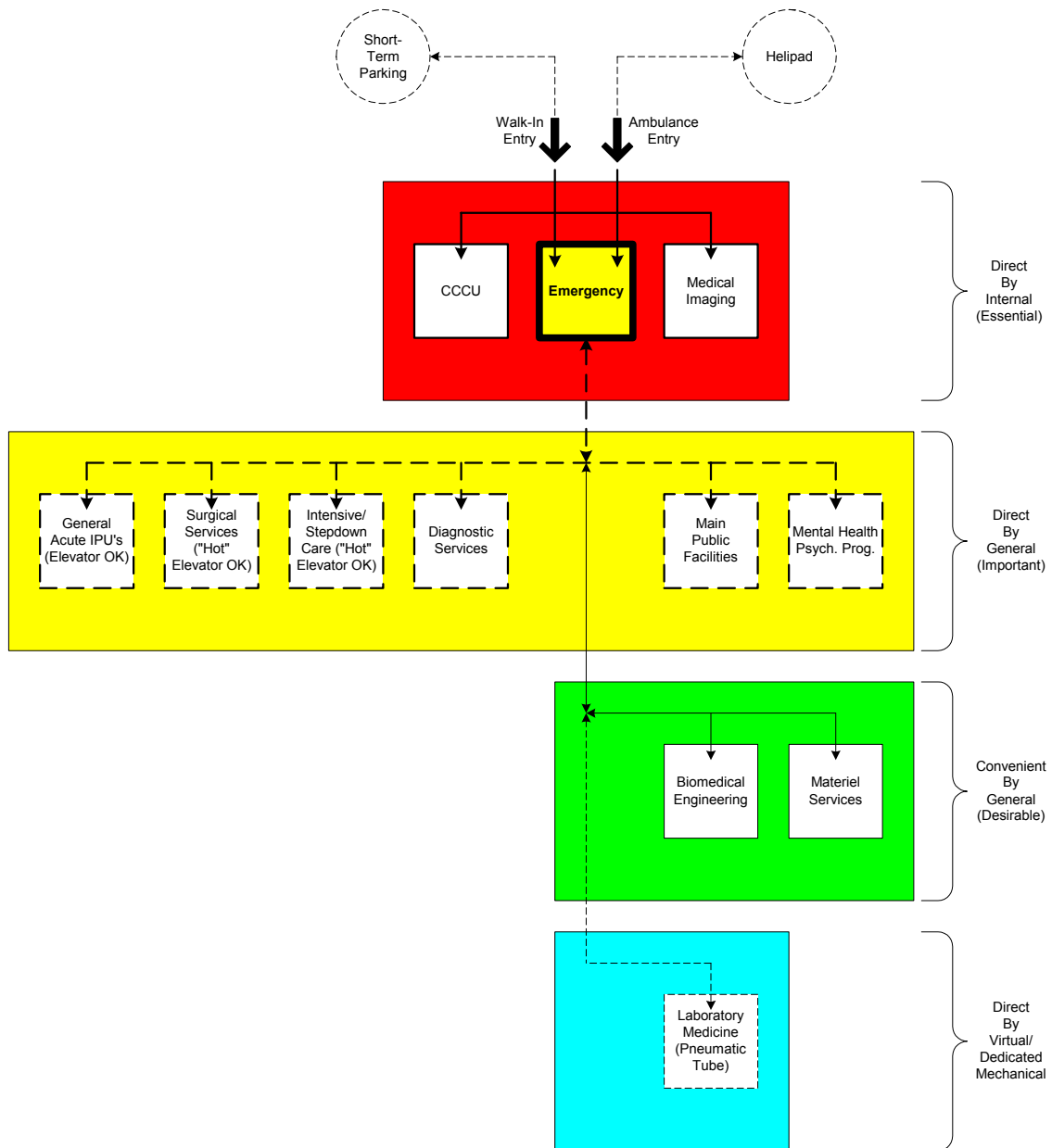


1.3 KEY FUNCTIONAL GROUPINGS

5. EMERGENCY GROUP

Emergency services together with supporting diagnostic and treatment areas should be centralized as much as possible to shorten travel distances for staff and patients and to minimize the time it takes to deliver care to critically ill patients.

An Emergency group should be developed and comprised of the following components:

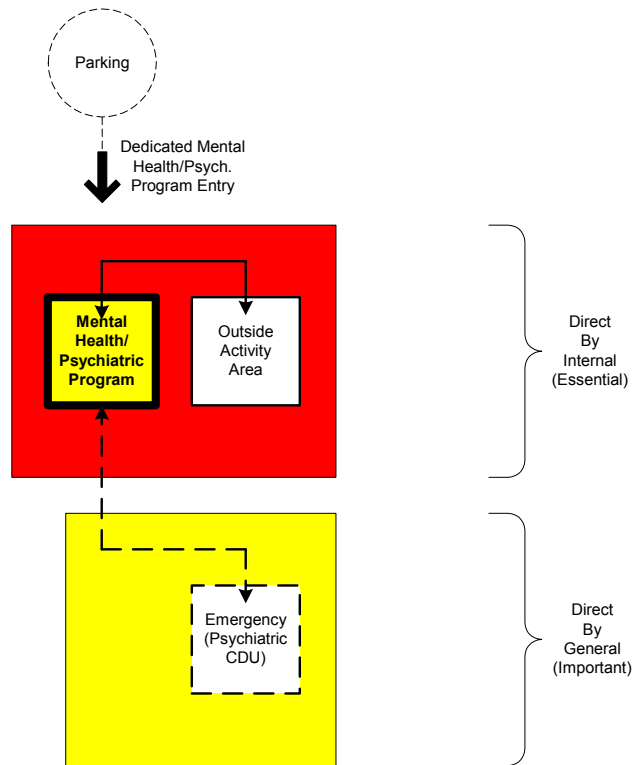


1.3 KEY FUNCTIONAL GROUPINGS

6. MENTAL HEALTH GROUP

The Mental Health/Psychiatry Program group should be located on-grade in order to allow for opportunities of shared support space, shared exterior activity space, and shared direct entry.

A Mental Health/ Psychiatry Program group should be developed and comprised of the following:

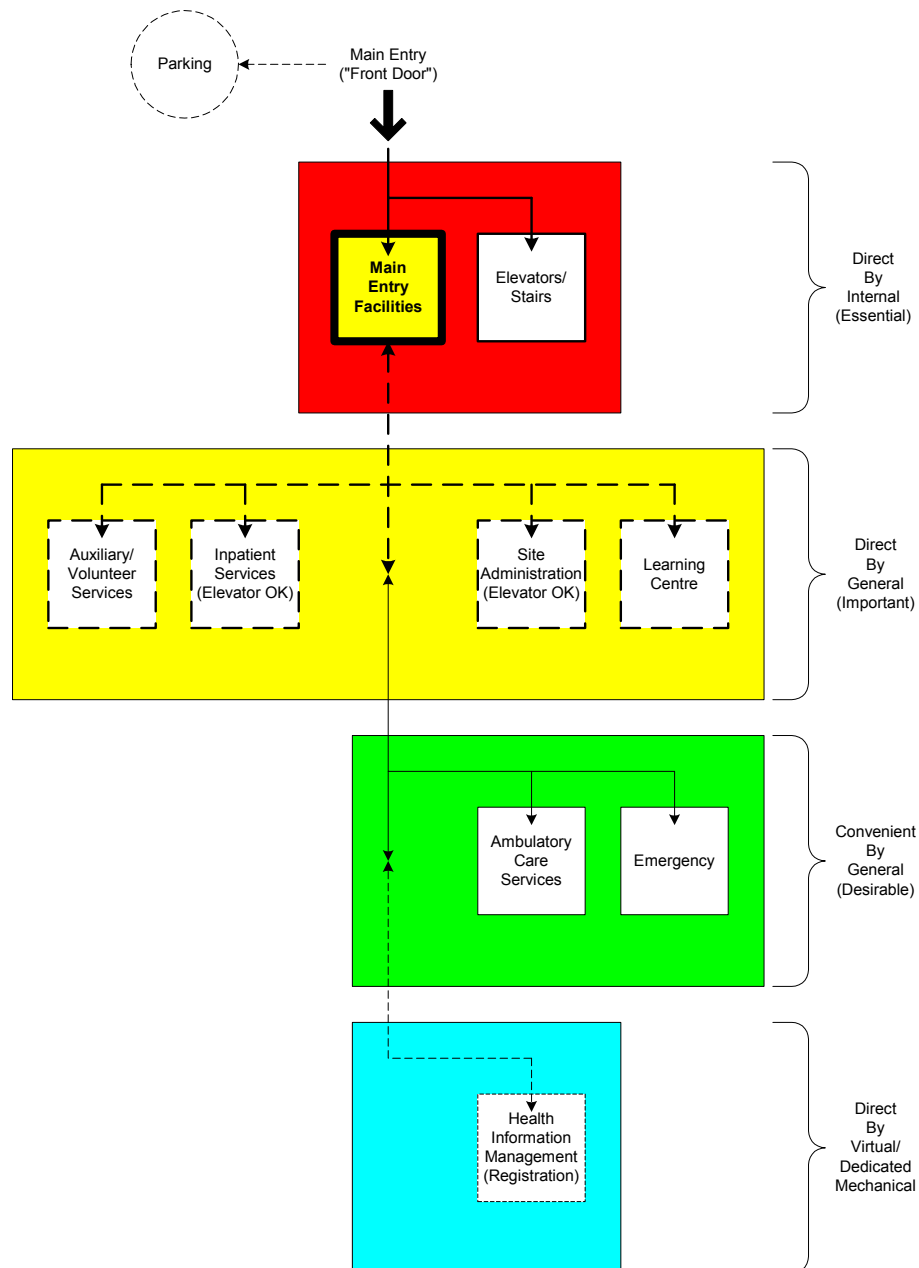


1.3 KEY FUNCTIONAL GROUPINGS

7. PUBLIC FACILITIES GROUP

Public Facilities should be centralized as much as possible to ensure orientation of patients, especially first-time visitors, and to promote a clear focus of public activity and an image of public accessibility.

A Public Facilities group should be developed and comprised of the following components:

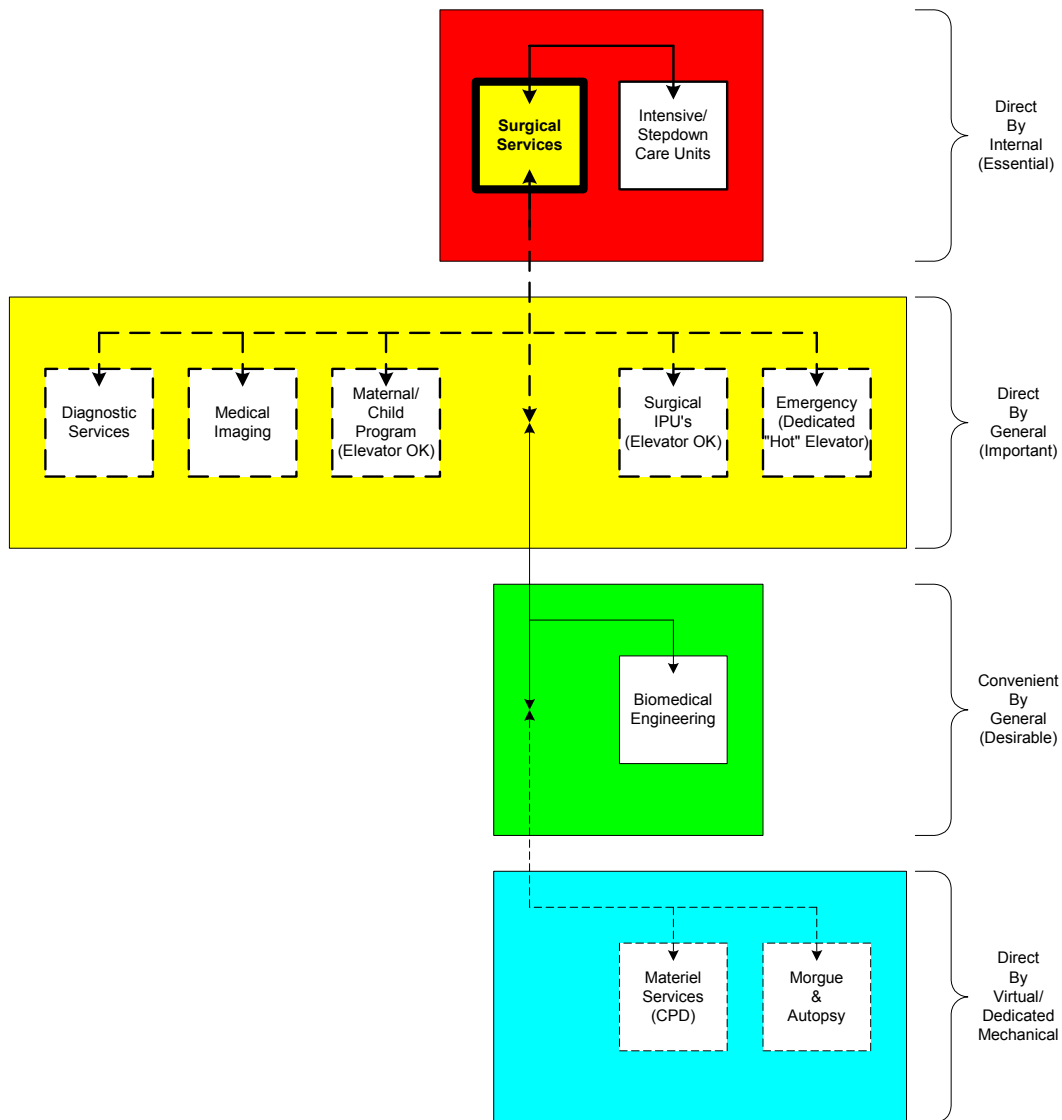


1.3 KEY FUNCTIONAL GROUPINGS

8. SURGICAL GROUP

Surgical and critical care services, together with key supporting services, should be centralized as much as possible to minimize travel distances for critically ill patients undergoing surgery and for continuity of care, on-the-spot technical back-up and efficient use of staff.

A Surgical/Critical Care Group should be developed and comprised of the following components:



1.3 KEY FUNCTIONAL GROUPINGS

9. WOMEN’S AND CHILDREN’S SERVICES GROUP

Women’s & Children’s services should be centralized as much as possible to provide appropriate progressive patient care, ensure implementation of a family-centred care approach, promote efficient use of resources and provide flexibility for future growth.

A Women’s & Children’s services group should be developed and comprised of the following components:

