

Appendix 7 - Functional Program Framework

FUNCTIONAL PROGRAM FRAMEWORK FOR HEALTH CAPITAL PROJECTS

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1.0 INTRODUCTION

The framework that follows is comprehensive in nature, but intended as a general guide that anticipates it being used or adapted for a wide variety of health capital projects. It can be used to describe a complex project of short duration, a straight-forward project of short or long duration, or a project that is large, complex and of significant duration. Likewise, the project may have many, or few, inter and intra-relationships with adjacent functions, spaces or buildings. The intent is that the functional program being developed contains enough information to allow the project to deliver the facility solution that will address the “problem” to be solved in the most efficient, effective and economic manner possible. A simple problem may require a simple solution and the functional program should be reflective of that notion. For example, a straight-forward small project could be sufficiently described in two or three pages.

This document was purposely designed as a framework rather than a template in order to allow the requisite freedom for professional choice with respect to the information and detail contained in it. The process involved a collaborative approach between the three partners: Alberta Health Services (AHS), Alberta Health (HEALTH) and Alberta Infrastructure (INFRA), with INFRA being the lead in terms of accountability. The intent that the use of and requirement for use of this document would be flexible in its application and would not be prescriptive. The guiding philosophy in the development of this document was one of utilizing common sense.

2.0 SUMMARY DEFINITION

A functional program is a multi-purpose document that describes, in detail, the proposed services to be addressed in a capital project, specifying human, technical, and building resources necessary to function as intended. Overall, the functional program documents the scope of services, objectives and basic operational description of each component to be addressed in a capital project, workload and staffing of the components, together with an estimate and description of the facility resources (space) required to support them. It provides a comprehensive understanding of the activities and the functional needs of each component, and the relationships between the components which must be accommodated within the capital project, as well as the relation of the capital project components to the broader systems external to it.

3.0 DETAILED DESCRIPTION

Functional Program:

- is a tool for the Key Stakeholder/Client - it documents scope of service(s), objectives and basic operational methods of the specific component; and specifies the human, technical, and building resources necessary to function as intended;
- is a communication tool - it outlines what each component intends to do and why, and assists in securing the necessary resources and project approvals to proceed with the project; and
- is the prescription for the building design - it provides instruction to the architectural and engineering team for the preparation of Schematic Design and later Detailed Design and Construction Documents.

The functional program is a coherent, meaningful compilation of the information needed to develop facilities. It is required to effectively support the Health Care Facility's (HCFs) operations and organizational goals; directing (without limiting or dictating) design. It should permit design latitude and provide necessary criteria against which the design consultant can assess the validity and vitality of the design solution. It is:

- the critical link between strategic/operational development & building facility design;
- the use of experience and co-ordination for future planning, to facilitate good control over proposed project design and development; and
- a vital stage in health care facility planning, which results in information to inform design.

Functional Program must:

- be concise and written at the level of detail which allows for ready translation into facility and planning requirements so that design will support the approved functions;
- provide sound methodology for analysis and projection of activity (e.g., functions determine workload, which ultimately determine space). The depth of analysis required for each element of the functional program is based on the project's size, complexity and risk. Within the process of developing the functional program, documentation of issues and their resolution also occurs to ensure that the facility is planned, designed and developed in a manner that can be operationally implemented;
- incorporate detailed listing of the functions to be undertaken in the completed facility, and of the physical requirements for performance of these functions;

- be comprehensive to allow the development of operational management plans (e.g., staff and facility) and budgets for each component, and determination of overall operational cost impact; and
- incorporate fixed and loose equipment elements since equipment is generally a significant expense in a construction project and is a major consumer of space, support services, and utility requirements and it is most subject to technological change. The purpose of equipment planning at this stage is to list those items of furnishings/equipment that were considered during the programming of each component and that will be required to make each space operational.

Planning for a major capital project, whether it is a major renovation project or a new health care facility, offers the organizations an opportunity to “rethink” its delivery model, operational systems, processes, and use of technology. A major investment of dollars in a healthcare facility should result in enhanced quality services, improved and sustainable operations, increased flexibility, in addition to contemporary, better engineered, and code-compliant buildings. With all capital projects, there should be time and effort expended before beginning the functional program to ensure that the service delivery models and operational plans for the facility are clarified and that processes within the proposed facility are designed to encourage efficient, value-added approaches. This will allow alignment of the operational intent of a project with the planning and design of the facility.

4.0 ELEMENTS OF A FUNCTIONAL PROGRAM

Functional program documentation will be developed for each identified component within a project. The following may be brief or quite detailed depending on the complexity of the project – generally, the elements to be included in the functional program are:

Assumptions:

- premise(s) for the future, upon which the project is required (e.g., occupancy at 90%, population growth, and change in treatment protocols);
- descriptive overview of the change in the organization to address the project;
- the supporting rationale that identifies the factors driving the need and the planning work done to date;
- summary of needs assessment findings; and
- key cost, schedule and implementation assumptions.

Planning Parameters:

- project mandate and service priorities;
- strategic intent, project vision;
 - guiding principles for the project (e.g., *integrated and coordinated service*); and
 - strategy – how the change will be implemented.
- operational principles/business process;
 - how the facility will operate and how the individual services interface or integrate with existing services/facilities.
- functional programming principles and parameters;
 - guide the planning consistent with the operational principles; and
 - planning horizons (e.g., *10 years*).
- design parameters;
 - derived from operational and functional needs; and
 - Based on design standards and requirements (e.g.: LEED® objective).
- population parameters;
 - defined projection methodology required to accurately projects the workload, staffing and space.

Activities/Functions for Each Component within the Project:

This section provides a detailed description of component activities and functions - what is done (e.g., *inpatient care, ambulatory care, diagnostic imaging, patient transport, building cleaning, laundry, food services, human resources*), by whom, when and with what resources. It includes specific components within the major activities/functions (e.g., *Human Resources would be further broken down – labour relations, payroll, accounting, etc.*) and describes any transfer of activities/function from one component to another component.

This will generally include:

- operational/service planning model organization and management;
- service delivery principles and methods;
- hours of operation;
- client/patient flow;
- opportunities for integration with others;
- scope of service (current and future);
- client/patient profile;

- clinical roles and activities;
- education roles and activities; and
- research roles and activities.

Workload/Volumes:

- detailed description of component workload (e.g., *number of patients, service provided*);
- workload projection methodology and supporting rationale;
- projections for planning - historical, current and projected (5 & 10 year);
- number of visits/procedures – current and future;
- methodology and projection of diagnostic and treatment spaces required;
- staff workload patterns and projections at maximum occupancy - based on equivalent full-time positions including relief needs;
- projection methodology;
- current and projected FTE's (over the planning horizon of project); and
- head count (where relevant for space planning).

Functional Relationships:

External:

- to the component – e.g., diagram/descriptions describing critical relationships to other programs/services/components within the facility (e.g., *patient transport from emergency department to component, materiel management flow to and from the component, etc.*); and
- to the facility - relationships with other facilities to provide the program context within the greater health care system (e.g., *patient transport for specialized diagnostic procedure, sending/receiving lab specimens*).

Internal:

- relationships of sub-units within the component space (e.g., *location of nursing station to patient rooms, waiting area to reception*) to facilitate flow, functionality, etc. within the component; and
- visual matrices/conceptual diagrams, not floor plans.

Locations - specify whether component must be adjoining to another program (share common wall), adjacent (within the same physical area) or accessible (via corridor/elevator).

Prioritized relationships according to frequency and importance of interaction.

Design Criteria/Physical Requirements:

- special requirements of each component (e.g., access, security, privacy, noise control, natural light, infection prevention and control, safety, work environment, change and flexibility, sustainability, critical dimensions, overall layout, special needs population);
- space requirements and description of each space type, activities, what is contained within (furniture, fixtures and equipment), special features, number of people, etc.;
- description of essential physical spaces required to accommodate the component (e.g., patient rooms, operating rooms, Intensive Care Unit cubicles, support rooms and building systems spaces);
- sufficient detail regarding the use, occupancy and equipment to be located in the spaces to assist with the determination of the room size during the design stage; and
- brief description of the overall appearance, ambiance, configuration, traffic flow, and privacy issues (e.g., continuous walking circuit for personal care home residents, exterior windows in waiting area).

Schedule of Accommodation:

- room-by-room space list or schedule of accommodation of space types identifying the number or units required and the area in net square meters, with reference to the number of occupants and major equipment; and
- component gross-up factors.

Equipment:

- preliminary list of equipment to determine space sizes, assisting in preliminary costing, completed in detailed design (depending on the project it could be a detailed list); and
- overview of the fixed or large loose equipment (e.g., diagnostic imaging, sterile processing, medical gas/electrical service columns in patient cubicles).

Impact Analysis:

- impact of planned component (new or additional service) to the overall facility/system that supports it and the specific services including core services and clinical and support services; and
- the impacted service assess the additional workload added by the service and what resources staff, space equipment, etc. is required to support the component.

Development Options (Conceptual Development Plan):

- determine optimal component location for key functional requirements and relationships;
- gaming session/design charrette (refers to a planning technique that focuses on establishing and testing functional relationships; typically utilizing a two or three dimension model of the buildings and/or site to enable a variety of participants to become involved in the determination of optimal facility layouts;
- test-fit of options – especially important in renovations/reuse of existing buildings;
- evaluation criteria/comparative analysis of the options; and
- process should result in identification of an optimal concept design.

OTHER CONSIDERATIONS:

The following may also be included in a functional program, especially where the project is large, complex in nature, or addition to an existing facility.

- site development plan/master plan;
- project cost plan (this would normally be part of most projects);
- operational impacts; and
- parking and traffic studies.

Appendices can include the following:

- applicable guidelines and standards used to guide functional program development;
- summary table of program/service facility support requirements;
- issues documented from the project – tool that documents the issues and resolution includes all issues – operations, functional programming, design and construction. Form of communication maintained through the life of the project;
- definitions/terminology; and
- planning teams and committees (*e.g. planning team/roles and responsibilities, steering committee/roles and responsibilities, and user group/roles and responsibilities*).