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Building Healthcare for Today and Tomorrow — *It's Our Time* Project

Working together to improve patient care

Within the planning of the new health-care complex, user groups have been instrumental to the creation of the functional program, as well as in reviewing block diagrams to visualize how the building might function.

In order to bring you up to speed on how NHS staff have been directly involved in the planning of the new facility, this issue is dedicated to explaining the functional programming and user group process.

What's Inside

Pictured Above: *MRI Technician Dean Belcamino looks over imaging screens to assess a patient's condition. Diagnostic Imaging is just one of the many areas that were consulted in the planning of the new health-care complex.*

Niagara Health System
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What is functional programming?

Let's start with the basics. In respect to a building, functional literally means designing something that is intended to be practical rather than attractive. Let's not take this reference too literally though! While we are aiming at designing a practical building, we are also working towards producing an aesthetically pleasing atmosphere.

"To be more specific, functional programming refers to a highly consultative process adopted to help plan a new building," explains Marilyn Bellows, Clinical Project Manager of the Project Management Team dedicated to the new building. "The purpose of a functional program is to develop information on future functions, operations, activity, staffing and space requirements for each service provided by a hospital."

The functional program written to describe requirements for the new health-care complex was developed by 37 planning teams. This included NHS front-line staff, physicians, program managers and senior administration and has been ongoing since October 2004, with the last revision occurring on April 20, 2007.

Over this time, the groups have reviewed, updated and signed off on the components needed and were challenged to plan for significant operational and space efficiencies. Other points they were asked to consider included future approaches to service delivery, patient and family-centred care and the requirements for patient and staff safety.

The NHS staff involved in shaping the functional program were key in moving the project to the next step. Since information gained in this process is instrumental to the subsequent planning stages of a building, it provides pertinent information that architects and engineers can then translate into the design of a building.

In addition to the keen interest and dedication of the user groups, the functional program has also achieved improved success by the following of best practices. This has been most greatly noted in the planning and proposed design of single patient rooms, increased soft space and the departmental planning of cardiac catheterization labs, emergency services and the regional cancer centre. A future issue of the newsletter will be dedicated to defining the utilization of best practice planning in healthcare and how these guidelines have shaped the planning of the above-mentioned areas.

This second step of the planning process is nearing completion. Following receipt of the functional program, a group of architects and building professionals took the words and guidelines written by NHS employees and transformed these visions into block schematics, which are a set of drawings that illustrate the footprint of the building and where hospital programs and services will be placed in relation to one another. This was undertaken by a team of professionals at Cannon Design.

"The functional program is a vital element in ensuring we understand how users will optimally use the building," says Malcolm Lawrie, Project Manager at Cannon Design, who is instrumental in providing expertise in the fields of architecture, signage and wayfinding and sustainable design.

"We are able to translate concepts from the functional program, which are words on paper, into visualizations by analyzing functional components," he continues.

Malcolm Lawrie has been providing critical expertise to the Project Management Team to support the planning of the new health-care complex

A functional program is made up of numerous functional components which serve as the building blocks for physically organizing a space. Essentially, a functional component is a group of activities or assigned spaces that are physically related by their common mission to satisfy a certain operation.

An important point to remember, as it can become confusing, is that although a functional component may be synonymous with department, this doesn't necessarily mean that the space will take up a department area or unit. This is since the word department refers to an administrative structure and not a physical space.

For example, an entire user group dedicated to Diagnostic Imaging (DI) has been a part of the functional programming process. Although considerations for DI have been grouped together, the DI components may not necessarily occupy one physical space or department area. While the majority of DI services will be housed in one location (i.e. MRI, CT scanning, ultrasound, x-ray), additional DI areas will serve the hospital, such as a treatment planning CT in the new cancer centre, and angiography services in the cardiac services area of the hospital.

Components of a functional program include:

Functional description

This element provides information on the future general services of the component and its basic features or characteristics.

Operational description

Provides information regarding the proposed operation of the component internally, as well as in relation to other components.

Workload

This summarizes the existing and projected future workload in appropriate work units, including assumptions used in developing the projections. This information is used to estimate both the staffing and space requirements of the component.

Staffing

In order to project staffing needs, existing staffing is summarized in terms of full-time equivalents (FTEs), as well, estimates of future FTEs and 'head counts' are provided (where applicable), including assumptions used in developing the projections. These estimates are used to project space requirements and operating costs. The figures are also useful to the architect in estimating maximum occupancy load conditions for fire exiting requirements.

Design criteria

This includes external (or inter-component) relationship criteria and internal relationships to be incorporated into the design of the component. This can include the requests of groups being linked horizontally or vertically and is rated in terms of general need, convenience or direct access.

Design criteria is also associated with net space requirements for each component based on the workload and staffing projections. The space list indicates the number of rooms or spaces (units), the net square feet (NSF) per room or space (NSF/unit), the total NSF for each space type and the supplementary remarks, which help explain the use of the space.

In addition, spaces are grouped to indicate to the architect those that create operationally related clusters. "We are then able to take total net areas, and in some cases, subtotals of clusters, and convert these areas into blocks of space by applying a planning factor, or PF," explains Malcolm. "This increased area, which can also be referred to as a component gross area then becomes one of the major blocking tools we use in the early design phase."

From words on paper to visualizations

Having now evolved from words to picture representations, the same user groups (in most cases) who helped write the functional program have now been reviewing blocked schematics for the past few months.

Looking at the blocked diagrams independently can be quite overwhelming and it is recommended to keep the functional program at hand while reviewing these. The words help to explain why certain areas are located close to one another and could answer certain questions, for example, as to why a certain room which may be thought to be located within a unit is actually located in another location within the hospital. This information would not be apparent from the blocking drawings.

It should be noted that the drawings that are being reviewed are not formal architectural plans and do not include considerations such as doorways, electrical areas or windows. They simply show a proposed blocking of how the functions within the hospitals could work within the confines of the proposed square footage of 800,000 square feet, spread out over four floors.

This process is moving swiftly to completion, upon which time the planning process then takes a loop and switches back to writing everything down on paper again. Once users have begun to get a taste of what the building may look like, they are asked to write down all of the important guidelines they would like adhered to when the building is officially designed. This process, which helps build the project specific output specifications, will be detailed in the next issue.

On behalf of NHS, thank you!

On behalf of the entire Niagara Health System, I would like to thank all staff, physicians, volunteers and other key external partners and stakeholders who have participated in the planning of the new health-care complex. While this has been an exciting process that I know you have enjoyed being a part of, it has also been very time consuming. You have all excelled at balancing your regular workload in addition to these further responsibilities. Thank you for being a part of this process and helping shape the future of health-care delivery in Niagara for community, family and friends for years to come. You should be extremely proud of this accomplishment.

Debbie Sevenpifer
President and CEO
Niagara Health System

The following user groups, including over 400 staff, physicians, volunteers and external partners have been involved in the design process.

Clinical Support:
- Respiratory Therapy
- Clinical Nutrition
- Imaging
- Laboratory Services
- Pharmacy

Diagnostics and Treatment:
- Cardiac Catheterization and Electro-diagnostics
- Endoscopic Procedures
- Central Sterile Reprocessing
- Operating Rooms

Nursing Services:
- Medical/Surgical
- Mental Health
- Maternal & Child/Paediatrics
- Intensive Care

Outpatient/Cancer:
- Ambulatory Care
- Renal Dialysis
- Diabetic Care
- Emergency Services
- Niagara Regional Cancer Centre
  - Outpatient Clinic Sub Group
  - Radiation Therapy and Treatment Planning Sub Group
  - Cancer Pharmacy Sub Group
  - Administration and Public Areas Sub Group
  - Systemic Oncology Sub Group

Administration:
- Academic Services/Education/Physician Services
- Patient Services/Medical Records
- Administration/Public Services/Volunteers

Non-clinical Support:
- Environmental Services
- Dietary/Kitchen
- Information Technology
- Materials Management
- Physical Plant/Site

Technology vendor showcase

In order to engage staff in the planning of the new health-care complex, NHS's Information & Communications Technology department, in cooperation with strategic partner Siemens Global Solutions, is pleased to host a two-day technology vendor showcase.

Where: Hilton Garden Inn, Niagara-on-the-Lake
When: Monday, May 7: 12:00 – 8:30 p.m.
Tuesday, May 8: 11:45 – 7:00 p.m.

This will be an exciting and informative opportunity for all staff to have a first-hand look at the equipment and new technologies that are rapidly becoming critical tools in the delivery of health-care services today and into the future. These technologies are not only influencing the design and planning of the new hospital, but will in fact offer the NHS greater visibility and control of equipment, patients and personnel, thus improving the availability and quality of care provided by the Niagara Health System.

For directions, go to **www.hiltongardenniagara.com/directions.html**

For an event agenda, or for more detailed information, contact:

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Next week…

Stay tuned for the next issue of Building Healthcare for Today and Tomorrow to learn more about forming project specific output specifications.

We are interested in your feedback!

What would you like to know about the project? If you have any ideas for an issue of this publication, or have a question regarding the project, please contact Liisa Morley at: Liisa.Morley@niagarahealth.on.ca.