PET/ CT Project located at TWH 3rd floor in the Medical Imaging Department

Project UHN 0100-09

Project Manager:
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Summary

- What is a PET/ CT?
- UHN Program Scope and Benefits
- Project Scope
- A Process Road Map!
- Lessons Learned

What is a PET CT?

- Positron Emission Tomography/Computed Tomography scanner (Biograph mCT) with 64 slices, TOF (time of flight) manufactured by Siemens; the first of this kind installed in Canada!
- Images acquired from both devices (PET and CT) can be taken sequentially, in the same session from the patient and combined into a single superposed image!
- Functional imaging obtained by PET, which depicts the spatial distribution of metabolic or biochemical activity in the body can be more precisely aligned or correlated with anatomic imaging obtained by CT scanning.
- Two- and three-dimensional image reconstruction may be rendered as a function of a common software and control system.

UHN Program Scope and Benefits

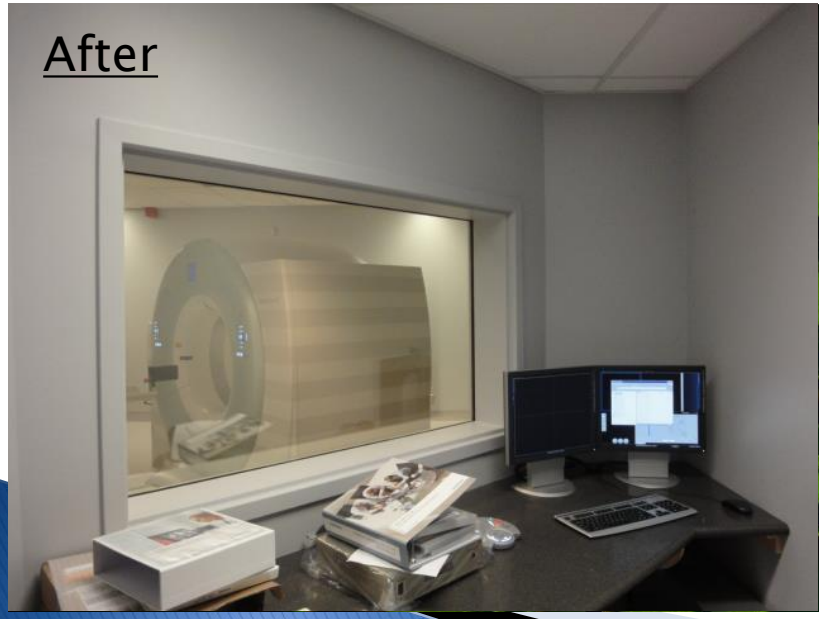
- To establish the neuroimaging research core at “Toronto Western Hospital”
  - To integrate the new units (PET/ CT, MRI and MEG) with the existing imaging modalities (e.g., gamma knife surgery), and to create a multimodal imaging capacity that will enable research subjects to be scanned in MRI, then MEG, and PET/CT before and after the research based intervention.
  - The primary use of the PET/CT is to understand the circuits in the brain and the fundamental mechanisms of action of deep brain stimulation (DBS). Deep Brain Stimulation has been one of the most successful product categories that the neurotechnology has seen.
    - Functional brain activation and temporal information within neural networks into how DBS corrects the deficiencies caused by Parkinson's disease, Alzheimer that can be identified by using the 7T MRI and MEG.
- To create a collaboration team between UHN, neurophysiologists at UWO and the computational group at Rotman Research Institute, and to develop a larger scale neural simulation that can be used to understand brain dynamics.

Total space renovated: 817 sq. ft.

Before

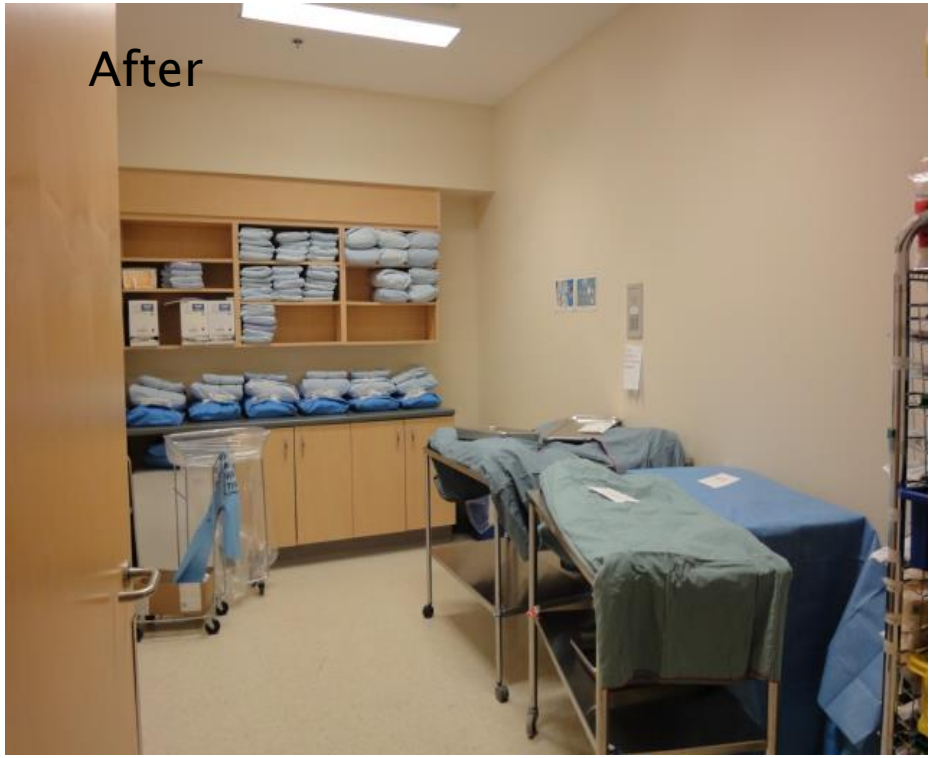
After

After



After

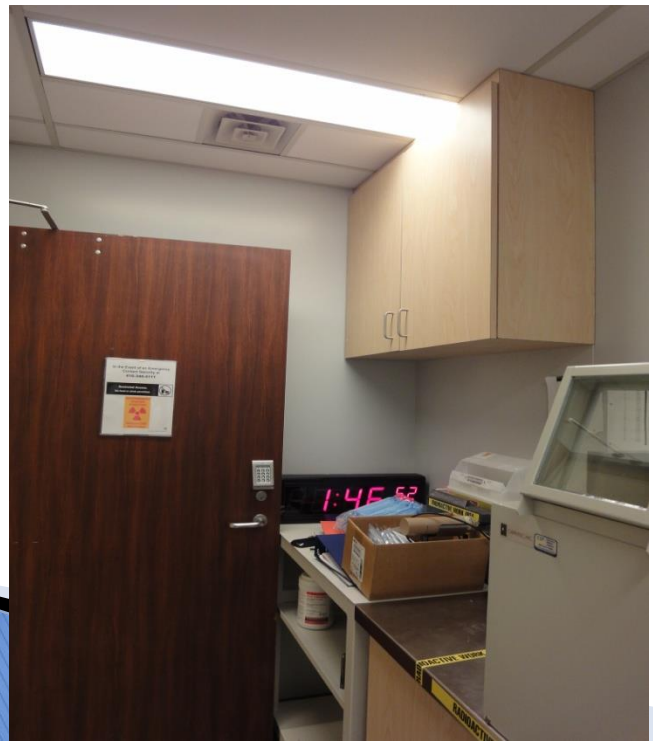
Relocation of the Clean Utility Room

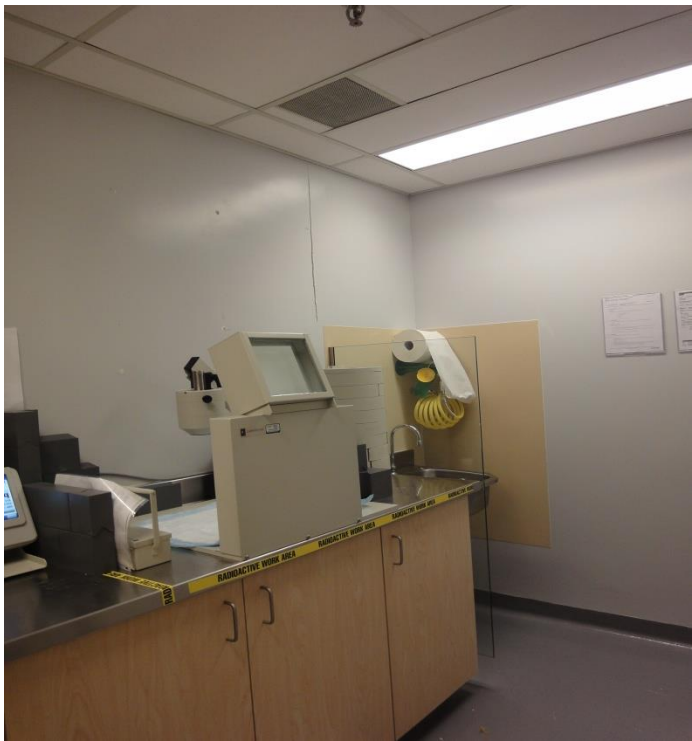


Radiopharmacy Room

- Space : 50 sq. ft.

Final

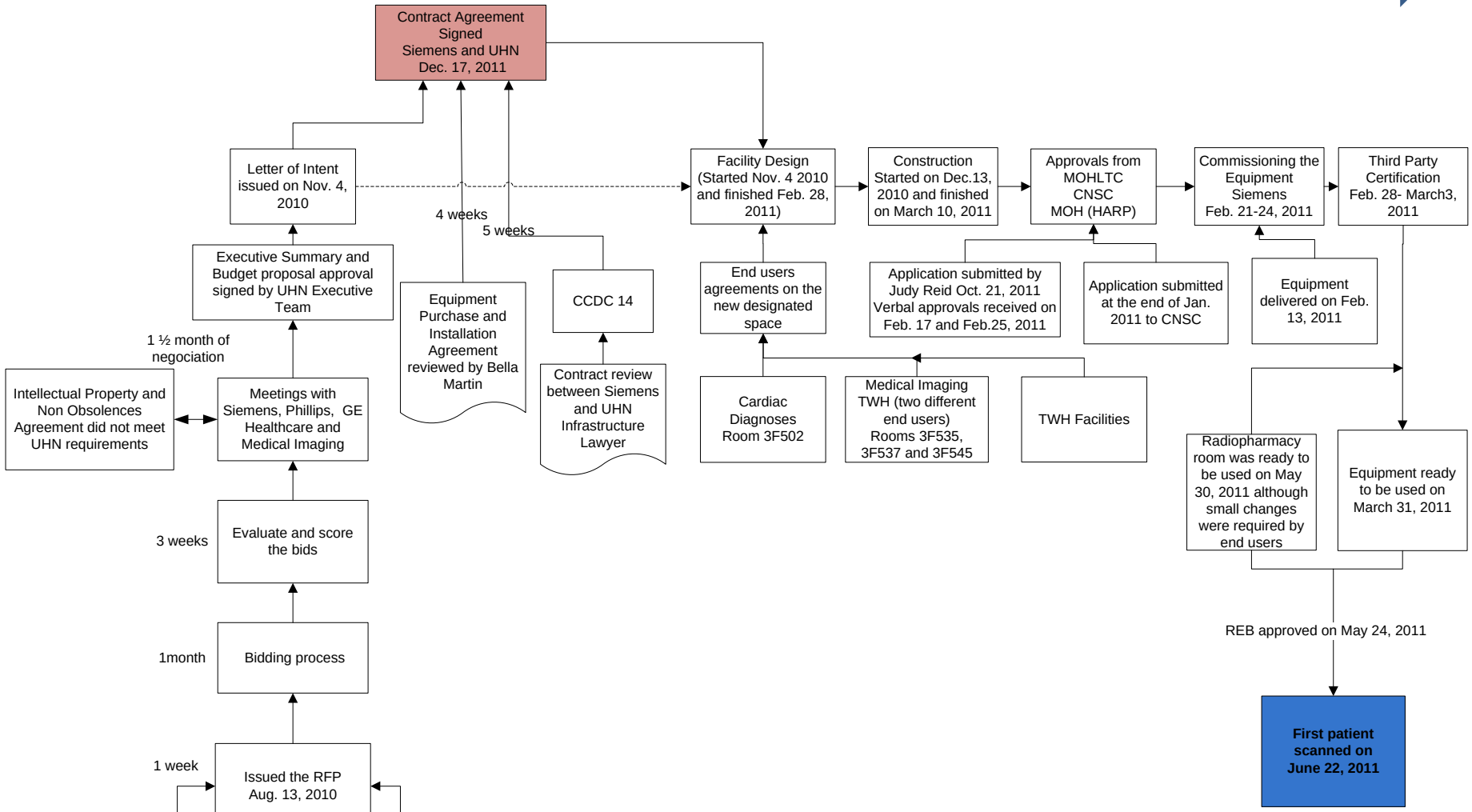




Project Scope

- Turnkey included construction, delivery, installation, commissioning of the PET/ CT equipment on the third floor at TWH.
- Design the facility suite to meet the requirements as per CNSC and HARP.
- Receive the approvals from CNSC (Canadian Nuclear Safety Commission), HARP Healing Arts Radiation Protection Act) and MOHLTC (Ministry of Health Long Term Care) to be able to use this facility for human's clinical research.

A Process Road Map!



OIT Final disbursement funds March 2, 2011

TGRI Final disbursement funds expected June 30, 2011

Lessons Learned

- Finance and Contract Agreements:
  - The Contract Agreement between UHN and vendor(s) should include all the potential or known change order requests as a percentage of the total budget. Otherwise another sign off process is required although the budget was approved!

Lessons Learned (cont'.)

- Some highlights!
  - Work with small groups whenever time is critical
  - Work on specific tasks rather than on a "wishful list"!
  - Never look back to what was supposed to happen but rather how to make it work with what you have available!
  - Start with what is important and critical and leave the details towards the end of the project unless they are critical and you had a chance to identify them as critical at the beginning of the project! Example: Design the sinks by considering the Infection Control guidelines but weight the risks when CNSC will need to approve the design. The standards are contradictory since each group develops the standards independently.
  - You will need to do the "leg work" for obtaining signatures if you want to be within the time allocated!
  - Do not forget that making the number signs at the doors will require as much time as manufacturing the PET/CT equipment in Texas, USA! This is important as patients might not be able to locate the room where they will need to go for a …scan!
  - Understand that each room has a different owner and his/her view are different than yours.