

Post Occupancy Evaluation

Methodology



May 2014

Post Occupancy Evaluation Methodology Outline

The Post Occupancy Methodology is the process for conducting *Post Occupancy Evaluations* (POE) on occupied facilities. The following methodology can be applied to all provincial government funded facilities undergoing a *Post Occupancy Evaluation*. This methodology is provided to give Alberta Infrastructure's intentions on a full scope POE project. Each project is unique, and the information provided in the Scope of Work for each individual project will be revised as required to address the actual project requirements. Consultants responding to any Request for Proposals are to refer to the specific Scope of Work for that project.

The normal timeline for conducting POEs on facilities is typically after the *Construction Warranty* expires but no later than 12-18 months after the *Occupancy Permit* has been issued. There are some exceptions where alternative procurement methods were used to provide the facility. One example is the Public, Private Partnership (P3) School Bundles that provide a significant number of schools under a P3 and where a warranty period is not included in the maintenance contracts.

The services of a consultant will be retained to perform the "Conducting" phase of the POE. The scope of work for the consultant is outlined in Scope of Work. The consultant is expected to follow the methodology, using the tools identified below to collect and analyze the data and then compile a report outlining the Lessons Learned relating to the design and functionality of the facility.

The Lessons Learned from conducting POEs will identify what has worked well and should be continued in future designs; what did not work out as planned with the facility; and, *short term corrections, medium term improvements and long term planning considerations*. These should be in priority order with a Recommendation and associated costs. The Lessons Learned report will include recommendations for potential improvements to Infrastructure's design standards and guidelines to improve facility planning, design and construction in future designs.

The methodology document is intended to be a "living document" as it will be continually reviewed and revised as more POEs are conducted on facilities and lessons learned regarding improvements to the methodology can be incorporated. The consultants will be required to comment on the methodology, what worked well and make suggestions on possible improvements.

The tools that the consultant can use for gathering the necessary information are:

- Document Review of the facility
 - Drawings, specifications, change orders
 - Supporting supplemental documents, such as a *Building Purpose Document* (summary of stakeholders, summary of documents, scope of work/intent)
- Physical Observation of the facility
 - On-site tour
 - IAQ testing as per the BOMA Best Energy and Environmental Guide [*Note – as required*]
 - Other tests as deemed acceptable for the facility [*Note – as required*]
- Functional Observation of the facility
 - On-site observation for length of time stated in Scope of Work

Note – all those terms and words that are italicized are terms as defined in Appendix 2

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- Stakeholder Consultation
 - Interviews (or Focus Groups)
 - Surveys
- Financial Review [*Note - as required*]
 - Operational
 - Capital

Document Review

A review of the facility as-built drawings, specifications, change orders and other documentation by the consultant is a necessary step in understanding the facility. Interviewing the *Designer* and sub-consultant team will give a better awareness of why the facility was designed the way it was. Interviewing the general *Contractor* will give insight into the constructability of the facility. The *Contractor* will also be able to explain key change orders requiring modifications to the design, site issues, etc. The *POE Manager* will make available all documents, including a summarization of the project to the consultant selected to undertake the POE contract. This document is referred to as the *Building Purpose Document*. This document may include:

- Audience (*Occupants, Stakeholders, Facility Management* profiles, etc.)
- Summarization of initial project intent and original scope
- Summary of major change orders (especially those that impact original project intent/scope)
- As-built drawings
- Specifications
- Initial Budget, Final Project Cost
- Infrastructure's input into project through the Technical Services Branch

Physical Observations [*Note – See Scope of Work for extent required for each project*]

A review of all documents for the project is required prior to tour. An on-site tour of the facility, done in conjunction with *Facility Management*, is a method for comparing initial scope to the existing facility using as-built drawings and other documentation, as deemed necessary. The physical tour should evaluate at a minimum the facility, site, mechanical and electrical systems, and structure. Finishing materials should also be assessed in terms of durability, maintainability and longevity. Indoor Air Quality (IAQ) testing may be required. See BOMA BEST Energy and Environmental Report (BBEER) for standards and information as well as Alberta Infrastructure's Indoor Air Quality Guidelines. The consultant can access these documents at <http://www.bomabest.com/> and <http://www.infrastructure.alberta.ca/992.htm>.

The physical tour can also be used to gather information required to complete ReCapp section(s), materials review and LEED evaluation components of the report.

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Functional Observation

The functional observation is an on-site observation of how well the facility is meeting the needs of the *occupants*. Observing how the *occupants* use their spaces; circulation, zoning and functional relationships; etc. is a method used for determining if the facility is appropriate for the *occupants* and public it was designed to serve. The minimum length of observation for each evaluation will be established as part of each project's Scope of Work.

Stakeholder Consultation:

1. Conducting Interviews (or Alternatively Focus Groups)

Interviews are an effective method for soliciting information about the facility from people that occupy it who are considered to be the “*occupants*” of the facility. Since there are a significant number of diverse facilities funded by Government, included in the Definitions (Appendix 2 attached) is terminology for the various type of people who utilize the facility and have a vested interest in it. All of those entities listed in Appendix 2 should be considered for either an interview or a survey.

At a minimum, the people recommended are:

- The owner's *accommodation planners* need to be interviewed to gain an understanding of the programming needs of the facility, the number of *occupants* the facility is intended to accommodate and the design decisions that were made to accomplish this task.
- *Facility management* must be interviewed to acquire an understanding of the workings of the mechanical, electrical systems, durability of materials and finishes and the overall operations of the facility.
- A sample number of the *occupants* (or daily users) of the facility are interviewed. The *occupants* give insight into what aspects of the facility meet their needs such as sufficient power and data outlets, comfort level in terms of heating, cooling, etc.
- The consultant team needs to be interviewed to gain an understanding of design challenges and outcomes. This team includes the *designer* or architect and, in some projects, may also include additional members of a design build team.

2. Surveys

To compliment feedback received from the interviews, surveys tailored to each specific audience are to be deployed. The survey information provides the overall satisfaction with the facility and identifies areas that need improvement. It allows the opportunity for all *occupants* to provide their input and capture opinions from those who may not have participated in the interviews.

Alberta Infrastructure has developed standard questions to be used for the surveys. These questions are intended to cover a majority of the questions to be asked that relate to all facilities with the same intended usage (for example, schools). It is expected the consultant will be required to supplement these questions with questions specific to unique features or functions of the facility. These additional survey questions require the approval of Alberta Infrastructure and the *Ministry*. All

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surveys will be deployed by the consultant. If a Commissioning feedback report was completed on the project, a comparison of the results may be required.

Financial Review (both Operational and Capital) [*Note - as Required*]

The Capital Financial Review will review the actual project financial data, taking into account if the facility was constructed within the approved budget and any deviations from the budget, such as change orders or any other contributing factors. A Life Cycle Cost Report will be prepared.

The Operational Financial Review will undertake building energy/water utilization models, gather the building data on the actual consumption and then assess the results. Comparison of LEED score sheet at design stage to what exists will be undertaken. Also included is the comparison to cost/m² baselines, or GHG or CO² baselines as applicable.

Measuring and Benchmarking

A POE is a way of determining if a facility had met its intended physical and functional design by measuring the result of the POE against the original intent of the design. The benchmark of acceptable design and physical performance standards are found in Infrastructure's Design Standards and Guidelines as well as its LEED checklist, the BOMA BEST Energy and Environmental Report (BBEER), and Industry Best Practices. Deviations from these benchmarks are to be noted in the POE report, with reasons for the deviation.

Lessons Learned

It is from the data collected through the combination of tours, interviews and surveys, which the lessons learned on the facility and/or site, will be compiled and the *short term corrections, medium term improvements and long term planning considerations* can be derived. All lessons learned, if captured and passed along, can influence and change design criteria for future buildings, as well as provide valuable information about buildings currently in use. It is an organization's compilation and awareness of the lessons learned that improves the facility planning design and delivery process with the increased knowledge for future project teams.

The methodology presented is intended to be a guideline for consultants conducting *Post Occupancy Evaluations* for the Government of Alberta to ensure consistency in the completion of the *Post Occupancy Evaluation Reports*. Alberta Infrastructure and the *Ministry* will work closely with the consultant to ensure that a project specific methodology and process meets the standards set out by Infrastructure.

For additional information, please contact:

Alberta Infrastructure

Capital Projects Division, Technical Services Branch at 780-638-5619

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Appendix 1

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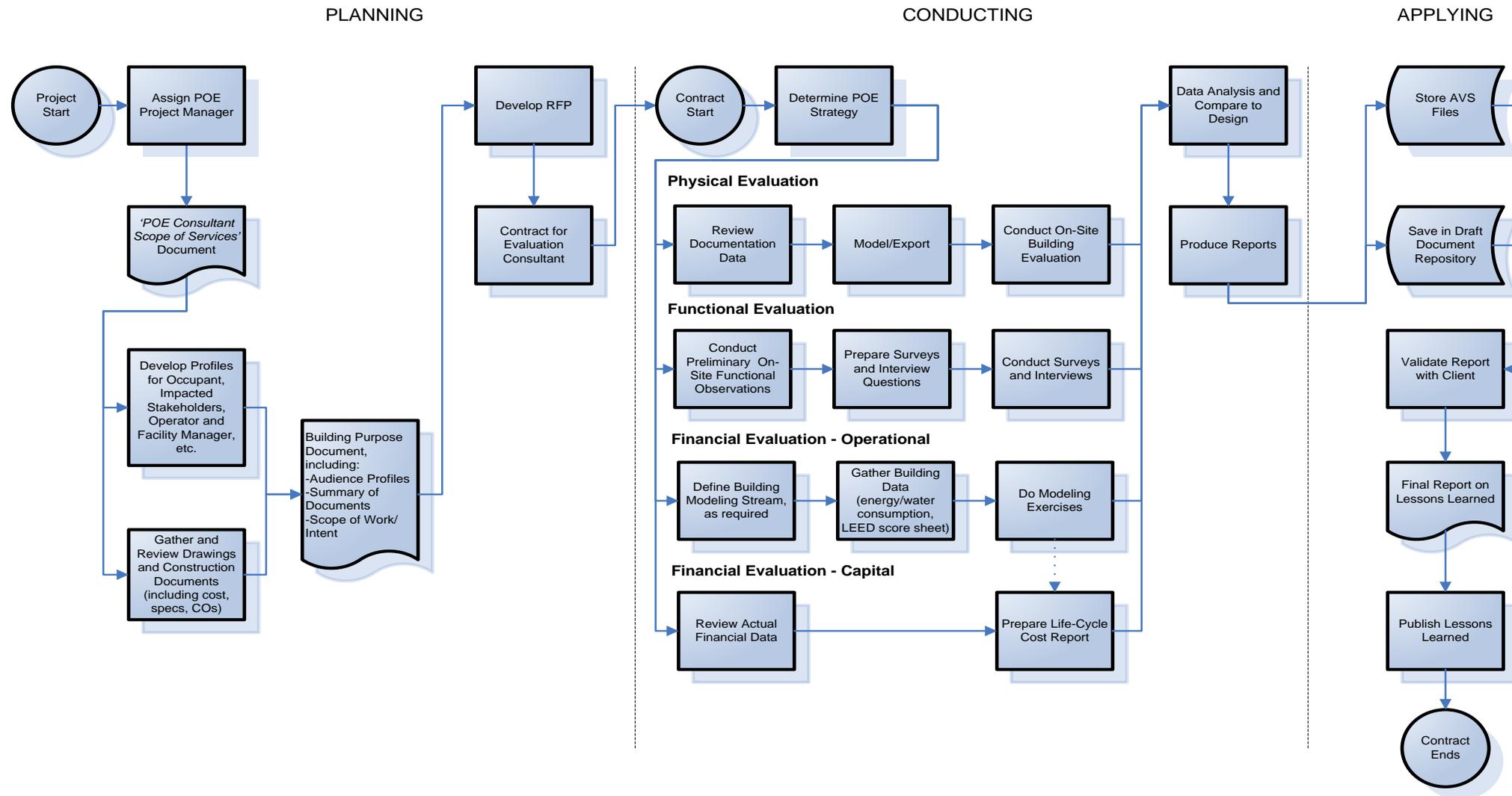


Figure 1 – General Post Occupancy Process

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Definitions

<i>Accommodation Planner</i>	The person or entity responsible for the programming of required spaces and interpreting the <i>Ministry</i> needs, assessing requirements and identifying solutions and developing projects, in consultation with either the intended occupants directly or through a <i>Ministry</i> contact. Note may also be a <i>Project Manager</i> .
<i>Boards</i>	School Jurisdictions, Health boards, or other such entities whose capital projects are funded by the Alberta Government. Note may be the client, and may synonymous with <i>Ministry</i> .
<i>Building Purpose Document</i>	The project summary, that may include items such the stakeholders, project intent and scope, major change orders, inputs and reviews during the project timeline.
<i>Community</i>	The residents directly impacted by the facility.
<i>Construction Warranty</i>	Beginning with the date of <i>Substantial Acceptance of the Work</i> , the time during which faulty materials and workmanship must be corrected.
<i>Consultant</i>	The person or entity identified in the Agreement to perform the <i>Post Occupancy Evaluation</i> .
<i>Contractor</i>	The person, or entity with whom the <i>Owner</i> had contracted to construct the facility. May also be a Construction Manager.
<i>Designer</i>	The person or entity contracted under separate contract by the <i>Owner</i> and responsible for the design of the facility.
<i>Facility Management</i>	A broadly defined term that encompasses the following entities:
<i>Building Operator</i>	The <i>Property Manager's</i> employed person or entity responsible for the day-to-day operations of the facility.
<i>Caretaker</i>	The person or entity responsible for the interior cleaning of the facility.
<i>Certified Employee</i>	<i>Property Manager's</i> representative responsible for the administration of a <i>Property Management firm</i> (as applicable).
<i>Facilities Manager</i>	The person or entity responsible for the overall management of a group of facilities.

Definitions

<i>Operations Manager</i>	The <i>Property Manager's</i> employed person or entity responsible for the day-to-day management of the facility.
<i>Operations Supervisor</i>	The person or entity reporting to and assisting the <i>Facilities Manager</i> .
<i>Property Manager</i>	The person or entity responsible for the management of the facility.
<i>Site Maintenance Personnel</i>	The <i>Property Manager's</i> employed person or entity responsible for the day-to-day maintenance tasks of the facility.
<i>Family</i>	Relatives of the <i>Occupants</i> .
<i>Final Performance of the Work</i>	The point in time when the entire work, except those items arising from the provisions of warranty, have been performed to the requirements of the construction contract documents and certified by the <i>Designer</i> .
<i>Long Term Planning Considerations</i>	These are items for future design considerations and are those that cannot be incorporated into the current facility. It is these long term items that are the aim of the overall <i>POE</i> Program, as they will guide such items as: facility design standards, future facility planning, functionality, energy efficiency, sustainability and durability. These opportunities have no timeline.
<i>Medium Term Improvements</i>	Items that can still be incorporated into the current facility, but with possible re-design and larger cost (and time) implications that exceed normal operational and maintenance thresholds. Examples may include modifications to building components or site changes. Timeline is 13 to 48 months after the <i>POE</i> report is completed.
<i>Ministry</i>	The Ministry for whom the facility was constructed. Note may be the client or synonymous with <i>Boards</i> .
<i>Occupants</i>	The current individuals using the designated area(s) within the facility, which may include the public and who may use the facility on a permanent, short or long-term basis.
<i>Occupancy Permit</i>	Permit provided by authorities having jurisdiction indicating that the Municipality's requirements have been met and the facility could be occupied.

Definitions

<i>Owner</i>	The entity for whom the facility was constructed or is now under their responsibility. Typically this would be Her Majesty The Queen in the right of Alberta, as represented by the Minister of Infrastructure, or other as designated in writing. Terms such as “Crown”, “Alberta Infrastructure”, “Department”, or “Minister” are synonymous with <i>Owner</i> .
<i>POE Manager</i>	The person or entity responsible for the management of the Post Occupancy Evaluation.
<i>Post Occupancy Evaluation</i>	Post Occupancy Evaluation evaluates all aspects of occupied facilities, typically after <i>Construction Warranty</i> expires but no later than 12-18 months after the <i>Occupancy Permit</i> has been issued. Its purpose is to continually improve facility planning, design and delivery. This evaluation documents the performance of integral parts of the facility: its functionality, and how the building meets facility-user needs, activities and goals.
<i>Project Manager</i>	The person or entity that was designated by and responsible to the <i>Owner</i> , for the management and delivery of the design and construction of the facility.
<i>Short Term Corrections</i>	A snap shot of minor physical and functional items, including life safety and code items that can be corrected immediately with minimal or no cost implications within 12 months after the POE report is completed.
<i>Substantial Performance of the Work</i>	The point in time when the <i>Designer</i> verified that the work was more than 97% complete and could be used for the purposes intended. Could be synonymous with <i>Interim Acceptance of the Work</i> .
<i>Tenant</i>	A person or entity leasing space within a facility.
<i>Total Performance of the Work</i>	The period of time when the entire work including those items arising from the provisions of warranty has been performed to the requirements of the construction contract documents and has been certified by the <i>Designer</i> .
<i>Work</i>	The total construction and related services required by the <i>Designer’s</i> construction documents.