

# **Post Occupancy Evaluation: Its Role in Managing and Maintaining Higher Education Facilities**

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## **This Presentation**

- **What is Post Occupancy Evaluation (POE)**
- **Role and Definition of POE**
- **Developing a Framework: Focus of POE**
- **Developing a Framework: Timeframes**
- **How and Who is Involved**
- **Case Study examples**



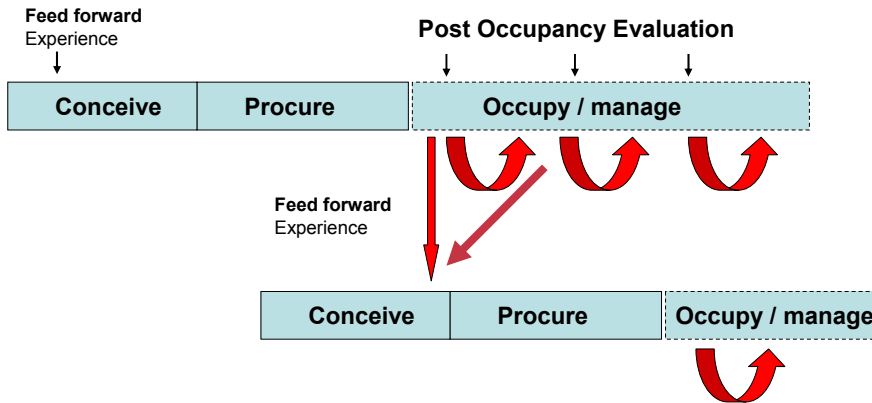
## Defining POE

- **Post Occupancy Evaluation (POE)**
- **Feedback about how buildings perform and how they interact with their users**
- **Provide useable information:**
  - To help manage the building
  - To be fed back into the brief for the next building project

## Role of POE - Manage Facilities by:

- **Understanding how they are performing**
- **How users' needs are changing**
- **Managing response to organisational change**
- **Feeding into the 'Brief' for the next project**
- **Improving process of project delivery**

# POE Across Project Life Cycle



## POEs ask a number of questions:

- Does the building perform as intended?
- Have the user's needs changed?
- What problems need to be tackled quickly?
- How effective was the project delivery process from inception to completion?
- What can be learned for future projects?

## Focus of POE - Research Shows:

- **Seen as more than review of building**
- **Includes:**
  - **Process:** how did the team perform?
  - **Functional Performance:** how does the building support the user aspirations & business need?
  - **Technical Performance:** How well does the fabric achieve its predefined specification



## Focus of POE:

<b>Process:</b>	<b>(Delivery or operational process)</b> <b>How did the team perform?</b>
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- **Brief** – (referred to as Programming in the US)
- **Procurement** – team selection, contractual process
- **Design**
- **Construction** - delivery
- **Occupation** – managing the estate



## Focus of POE:

### Functional Performance:

How does the building support the client and user need?

- **Image**
- **Space** - Size, relationships, adaptability
- **Comfort** - lighting, temperature, ventilation, noise, user control
- **Serviceability** – cleaning, maintenance, security
- **Operational management**



## Focus of POE:

### Technical Performance:

How well does the fabric achieve its predefined specification?

- **Physical systems** – lighting, heating, ventilation, acoustics
- **Environmental systems** – Energy consumption, water consumption, CO<sub>2</sub> output
- **Adaptability** – Ability to accommodate change
- **Durability** - Robustness



## Developing the Framework

<b>Process:</b>	(Delivery or operational process) How did the team perform? How can we do it better?
<b>Functional Performance:</b>	How does the building support the client and user need? What needs to be corrected?
<b>Technical Performance:</b>	How well does the fabric achieve its predefined specification? What can be improved?

## When POE's are Carried Out: Timeframes

3-6 months	12-18 months	3- 5 yrs
<b>Process review :</b> Allows time without losing memory	<b>Process:</b> Operational management	<b>Process:</b> Operational management
<b>Functional Performance:</b> Quick Fix	<b>Functional Performance:</b> Appropriate space	<b>Functional Performance:</b> Long term appraisal
	<b>Technical Performance:</b> Robustness of fabric	<b>Technical Performance:</b> Robustness of fabric
<ul style="list-style-type: none"> <li>•Transient student population</li> <li>•Programme of small projects</li> <li>•Feedback / feed forward</li> </ul>	<ul style="list-style-type: none"> <li>•Seasonal cycle</li> <li>•Feed forward</li> <li>•Manage building</li> </ul>	<ul style="list-style-type: none"> <li>•Focus on organisation as well as building</li> <li>•Organisational change</li> </ul>

## Timeframes

<b>Operational Review</b>	<b>Performance Review</b>	<b>Strategic Review</b>
(3-6 months)	(12-18 months)	(3 - 5 yrs)
Looks back over project delivery	Looks back at the building in use	Looks back but also forward / long term
<ul style="list-style-type: none"> <li>▪ How well did the delivery work?</li> <li>▪ Are there any immediate problems? Fine tuning</li> </ul>	<ul style="list-style-type: none"> <li>▪ How has building performed over seasonal cycle?</li> <li>▪ Is it meeting organisational need?</li> </ul>	<ul style="list-style-type: none"> <li>▪ How has organisational need changed?</li> <li>▪ What should building response be?</li> </ul>



## Framework

	<b>Operational Review</b> <b>(Broad brush)</b> 3-6 months	<b>Performance Review</b> <b>(In-depth)</b> 12-18 months	<b>Strategic Review</b> <b>(Long term)</b> 3 - 5 yrs
<b>Process</b>	Most appropriate time	Some issues can be reviewed	Look at process of operational management
<b>Functional Performance</b>	Quick indicative review	Most appropriate time	Evaluate against changed user needs
<b>Technical Performance</b>	Quick indicative review May be too early?	Most appropriate time	Evaluate how building has responded to change



# Types Techniques for Review

- **Qualitative**
  - Observation
  - Interview
  - Focus group
  - Workshop
- **Analytical**
  - Questionnaire
  - Measurement
- **Not all techniques used at once**
- **Can be carried out internally**
- **Some available commercially**



# Selection Matrix

Most suitable approach Quite useful Least useful Not applicable	Operational Review						Performance Review						Strategic Review									
	Qualitative			Analytical			Qualitative			Analytical			Qualitative			Analytical						
	Observation	Interview	Focus Group	Workshop	Questionnaire	Measurement	Benchmark	Observation	Interview	Focus Group	Workshop	Questionnaire	Measurement	Benchmark	Observation	Interview	Focus Group	Workshop	Questionnaire	Measurement	Benchmark	
<b>Process</b>																						
<b>Functional Performance</b>																						
<b>Technical Performance</b>																						



## Who should be involved

- **Project delivery team:** consultants, contractors
- **Estates managers**
- **Users:** students, staff, visitors
- **University as Client: Key administrators**

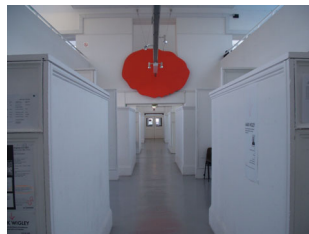
## Some Examples

## Operational Review: 3-6 months

<b>Time horizon:</b>	Looks back over project delivery
<b>Main focus: (Process)</b>	Project delivery
<b>Secondary focus:</b>	Quick indicator of <ul style="list-style-type: none"><li>• Whether project improved work space</li><li>• Opportunity to make minor adjustments</li></ul>
<b>Use of information:</b>	<ul style="list-style-type: none"><li>• Feed information to next project</li><li>• Quick fix for problems on moving in</li></ul>
<b>Approach:</b>	<ul style="list-style-type: none"><li>• Workshops for process evaluation</li><li>• Short questionnaire / small workshop / walk-through for Functional Performance</li></ul>



## Case Study: Operational Review



- **Addition to building included teaching spaces, staff work spaces. Move from cellular layouts (individual staff offices) to sharing spaces.**



## Case Study: Operational Review

<b>Focus:</b>	The focus was to identify what problems there were on moving in to the new building
<b>Specific focus:</b>	Move: managing organisational change. There were new spatial layouts. Did they work?
<b>Approach:</b>	<ul style="list-style-type: none"> <li>Selected staff were interviewed to ascertain whether there were any problems</li> <li>FM staff walked through the building to pick up where things were not working</li> <li>Workshop to introduce staff to building systems</li> </ul>
<b>Findings:</b>	<ul style="list-style-type: none"> <li>Specific problems with some lighting systems and some work space layouts</li> </ul>
<b>Use of information:</b>	<ul style="list-style-type: none"> <li>The findings were used to re-calibrate the lighting systems. Work space layouts amended</li> </ul>



## Performance Review: 12-18 months

<b>Time horizon:</b>	Looks back at the building in use
<b>Main focus:</b> <ul style="list-style-type: none"> <li>Functional performance</li> <li>Technical Performance</li> </ul>	<ul style="list-style-type: none"> <li>On performance of specific areas / functions</li> <li>In depth review of technical and functional performance</li> <li>Identifies where adjustments and corrections are needed to the building and its systems</li> <li>Cost in use</li> </ul>
<b>Use of information:</b>	<ul style="list-style-type: none"> <li>Used to make adjustments to building and to inform the brief for the next project</li> </ul>
<b>Approach:</b>	<ul style="list-style-type: none"> <li>Investigative / diagnostic</li> </ul>



## Case Study: Performance Review



- Refurbishment of existing University buildings to provide more teaching space and upgrade office space.



## Case Study: Performance Review (1)

<b>Focus:</b>	The aim was to evaluate the extent to which the refurbished building met the user needs
<b>Specific focus:</b>	To explore user satisfaction
<b>Approach:</b>	<ul style="list-style-type: none"><li>● Questionnaires were distributed to staff</li><li>● Focus groups were arranged with some staff</li><li>● An energy audit was carried out</li></ul>
<b>Findings:</b>	<ul style="list-style-type: none"><li>● Generally staff were satisfied</li><li>● Black out blinds inadequate</li><li>● Some specific issues on the building over-heating</li><li>● Energy use CO<sub>2</sub> above design levels</li></ul>



## Case Study: Performance Review (2)

<b>Response to findings:</b>	<ul style="list-style-type: none"> <li>• The heating system temperatures were adjusted</li> <li>• Further investigation carried out into natural ventilations systems. Discovered that some ventilation ducts had become blocked</li> <li>• Some blinds altered</li> <li>• Information on blinds fed into specification for a new project</li> </ul>
<b>Length of time for survey:</b>	Total number of days: 4 days over two months
<b>Benefits:</b>	<ul style="list-style-type: none"> <li>• A post-review survey of staff carried showed positive reaction</li> <li>• Energy / CO<sub>2</sub> levels checked and within design level</li> </ul>

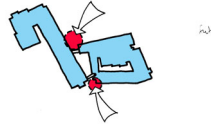


## Strategic Review: 3 – 5 yrs

<b>Time horizon:</b>	• Looks back but also forward / long term
<b>Main focus:</b>	• Response to change / organisational change
<b>Use of information:</b>	<ul style="list-style-type: none"> <li>• Feeds into next project</li> <li>• Asks what is the next project?</li> </ul>
<b>Approach:</b>	• Investigative



## Case Study: Strategic Review



- **Strategic facilities review of a University faculty. The client had identified a lack of space and changing needs due to new courses.**



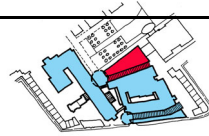
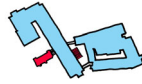
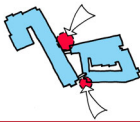
## Case Study: Strategic Review (1)

<b>Focus:</b>	The aim was to evaluate whether the building still met the university's needs
<b>Specific focus:</b>	Whether building should be redeveloped or disposed of
<b>Approach:</b>	<ul style="list-style-type: none"><li>• Time utilisation study carried out to assess how spaces used</li><li>• Selected staff interviewed to establish modes of teaching and spatial response</li></ul>
<b>Findings:</b>	<ul style="list-style-type: none"><li>• Lecture room space inappropriate – fewer formal lecture theatres needed, more flexible rooms needed</li><li>• Significant redundant space</li><li>• Library to be remodelled to cater for new technology and use</li></ul>



## Case Study: Strategic Review (2)

<b>Findings (2):</b>	More coherent timetabling of lecture / seminar space needed. Long term University strategy was to expand Arts Faculty – redevelopment options of site proposed to add significant space
<b>Use of information:</b>	In the short term: remodel internal spaces Long term: develop site masterplan with brief developed for new media centre
<b>Length of time for survey:</b>	Total number of days: two people, eight days over two months
<b>Benefits:</b>	Long term vision developed



## Guidance being produced

- **Corporate Real Estate Management**
- **Planning POE from the start**
- **Toolkit**
  - Select approach
  - Tips and techniques
  - Terms of reference
  - Presentation of output – simple, clear techniques
- **Let me have your business card with email address and we will send you information**



# Corporate Real Estate Management

- **POE must link to Project Briefing**
  - ‘Feed forward’ to next project
- **POE linked to Facilities Management**
  - Feedback to management systems
- **The Guide is good practice CRE**
  - Holistic view



## Summary

