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Four Paradigms for Building Evaluation - How They Address Users' Needs

Intensive Sessions Title:

Four Paradigms for Building Evaluation - How They Address Users' Needs

Submitter Email:

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Sub Title:

This half-day intensive session focuses on transdisciplinary design and collaboration to explore the relationships and boundaries between these four approaches to building evaluations and how they relate to a more comprehensive context of building evaluation. The session will consist of a brief introduction of the agenda for the session, the featured speakers, and participants lead by a moderator.

The presentations will be followed by participants questions and discussion of a duration similar to each speaker's presentation, led by a moderator and followed by a summary of observations. Participants who wish to receive HSW CEUs will be given the opportunity to participate in a 10 minute feedback activity at the end of the session.

The session is sponsored by the Programming POE Knowledge Network.

Learning Objectives:

- identify four leading models of building evaluation currently being employed.
- associate the methods and results each model of building evaluation
- able to articulate the relative strengths of each model of building evaluation
- identify the most appropriate approach to building evaluation for given needs

Intensive Sessions Abstract:

Although owners have undoubtedly been evaluating buildings for as long as humans have been constructing, the last 60 years have seen a number of models emerge to structure the process of building evaluation. Four of the major approaches to emerge include post occupancy evaluation (POE), building performance evaluation (BPE), facility condition assessments (FCAs), and building forensic investigations. Each has a constituency and one or more specific uses, but they also overlap one another in ways that suggest, if not a continuum, at least a constellation of services in which the four are bound and overlapping.

This half-day intensive session focuses on transdisciplinary design and collaboration to explore the relationships and boundaries between these four approaches to building evaluations and how they relate to a more comprehensive context of building evaluation. The session will consist of a brief introduction of the agenda for the session, the featured speakers, and participants lead by a moderator.

The presentations by the speakers will begin with conceptual content followed by case studies:

- an overview of the four models and their characteristics followed by a case study of the use of the Serviceability Tools and Methods in an evaluation of a design proposal for a U.S. Passport Agency office;
- a discussion of five issues whose resolution can guide the future teaching and practice of BPE;
- a case study of the use of BPE to assess the implementation of United Nations sustainable development goals in the facility management of hospitals;
- BPE evaluations of the indoor air quality performance of six LEED-rated building;
- POEs of four prototype residences for unhoused First Nation youth to inform the following year's building design and delivery process;
- a case study of using experience mapping to evaluate the social, intellectual, restorative, and symbolic associations one building has within the context of its site and surrounding buildings.

The presentations will be followed by participants questions and discussion of a duration similar to each speaker's presentation, led by a moderator and followed by a summary of observations. Participants who wish to receive HSW CEUs will be given the opportunity to participate in a 10 minute feedback activity at the end of the session.

The session is sponsored by the Programming POE Knowledge Network.

presentation id# 15025

Overview of Four Paradigms for Building Evaluation and Case Study of Design Evaluation

Mr. Greg Allen Barker AIA, M.Arch, AIA, Greg Allen Barker, AIA, San Luis Obispo, CA

Abstract Text:

Building evaluation has become increasingly formalized over the last 60 years, with additional breadth as well as specialization along the way. Post Occupancy Evaluation, began with the idea of evaluating an individual building after a full year's operating cycle. Building Performance Evaluation extended the idea of evaluating buildings through an entire design, construction, occupancy, and decommissioning cycle. Specialized disciplines emerged independently: facility condition assessments emphasize the deferred and ongoing maintenance needs of building from a facility management perspective while building forensic investigations examine very specific building failures with an eye towards remediation and/or informing standards and practices to prevent future failures. An overview of these four paradigms sets the context for the conceptual and case study presentations to follow.

The overview is followed by the first case study, the use of the Serviceability Tools and Methods (ST&M) to evaluate construction documents for a design's ability to meet a profile of user's needs. A team experienced in the use of ST&M worked with employees of the U.S. Passport Agency in New York to develop a user requirements profile for their office space, then evaluated the construction documents for new agency offices for the features needed to support that requirements profile. This served as a demonstration of an approach to facility procurement that would be fully responsive to user needs. For the purposes of the intensive session, the case study illustrates an application of BPE at the point of design and construction documentation within a facility's life cycle.

presentation id# 15033

Teaching Building Performance Evaluation for Sustainable Buildings: Chances and Challenges

Ulrich Schramm, Ph.D., Bielefeld University of Applied Sciences and Arts, Minden, Germany, Germany

Abstract Text:

With its consideration of the entire building life cycle, the Building Performance Evaluation (BPE) process model constituted a challenge for planners in the building sector when it was introduced in the 1990s: Traditionally, the building delivery process has been understood as a linear course of activities that ends with the opening of the building. At that time, with the new understanding of the building life as a cyclic sequence of phases – including occupancy – and internal review loops, the establishment of performance criteria and their evaluation from a human-centric perspective became crucial. This basic idea of the BPE process model has been verified with the emergence of similar concepts in the building industries, such as certification systems for sustainable buildings (like LEED in the U.S. or DGNB, BNB and QNG in Germany). Thus, universities connected to the building sector have to take these changes and developments into consideration and adapt their existing degree programs – or even develop new ones! But what is the main content and who are the addressees for BPE? Some of the unresolved challenges and questions are:

Which are the pivotal processes, phases, and review loops to focus on in the context of BPE?

What are the relevant topics, methodologies, and instruments to be taught?

Does BPE fit into programs for designers, construction project managers, or facility managers?

Should BPE become part of other transdisciplinary programs for new specialists to appear yet in the building sector?

How can the collaboration with building users be strengthened throughout the BPE process in order to meet environmental, economic, and social challenges in general and to optimize user satisfaction in particular?

The presentation will discuss these issues based on the author's professional background as an architect, his teaching experience, and his research activities in the area of BPE.

presentation id# 15028

Facility Management Approach to Apply UN Sdgs and Jci Standards for Building Performance Evaluation of Hospitals

Dr. Akikazu Kato, Ph.D., FM Metrix, Nagoya, Japan, Japan

Abstract Text:

The 2030 Agenda for Sustainable Development adopted by all United Nations Member States in 2015 provides a shared blueprint for peace and prosperity for people and the planet. More hospitals are advocating 17 Sustainable Development Goals (SDGs) to challenge the change of their services for the better. However, those reports of advocacy tend to be anecdotal and do not clarify the depth of their commitment. The lack of suitable Key Performance Indicator KPI may be the cause. Although 17 SDGs and supported by 169 Targets showing numerical values of endeavor, some Targets do not fully meet the management conditions of Japanese hospitals and those in other industrial countries. It should be noted that SDGs for hospital management require a comprehensive approach to promote health of citizens.

JCI Joint Commission International is an independent not-for-profit organization to identify, measure and share best practices in quality and patient safety around the world.

Currently, JCI Standards for Hospitals, seventh edition is used in number of hospitals outside USA. In Japan about thirty hospitals are accredited by JCI. The standard consists of over three hundred clauses requiring over 1,200 reports on measurable elements or evidence for rigorous assessment.

Thus, the application of both approaches should provide for the comprehensive, scientific and evidence-based evaluation. The presentation will discuss the extracted suitable Key Performance Indicator KPI for the building performance evaluation. Lastly, the issue of

Facility Management is included in both approaches, and the presentation will focus on the impact of physical environment.

presentation id# 15030

Building Performance Evaluation and Indoor Environmental Quality Research – Evidence-Based Guidelines for Sustainable Buildings Design

Dr. Ihab Elzeyadi, Ph.D., FEIA, LEED AP, Dept. of Architecture, Eugene, OR

Abstract Text:

How can we design a better indoor environmental quality (IEQ) in sustainable buildings? The current approach for achieving IEQ in high-performance buildings relies on segregated metrics that predict user-independent comfort attributes--such as visual, thermal, and acoustical comfort--with failed accuracy. In real settings, especially those designed with sustainable objectives, the occupant interacts with the overall ambiance of the environment combining space performance, indoor comfort metrics, user experience, as well as spatial functionality and aesthetics. This presentation reports on a series of comparative Building Performance Evaluation (BPE) projects of LEED™ rated buildings that provide insights into the complex nature of IEQ findings and how BPE protocols can help clarify the interrelationships between multi-comfort phenomena and building performance from the user's perspective. For these studies, we employed a systemic BPE protocol for assessing IEQ parameters, building performance, and occupants' multi-comfort and satisfaction of ten LEED-rated buildings. A comparative analysis of the design strategies and spatial performance of the buildings and patterns of indoor experiences are outlined and compared. In addition, the presentation will focus on six different sampled spaces --of different spatial configurations and IEQ strategies—to develop a framework for the relationship between the various IEQ parameters from the occupant's perspective. The session will present the patterns and LEED credits that contribute to a better IEQ as perceived by the occupants and measured through validated metrics. Methodological innovations for conducting comprehensive BPE studies as a research paradigm will be summarized. The hope is to provide a decision support process and methods for environmental researchers, practitioners, occupants, and owners that would help them design and evaluate green buildings and IEQ comprehensively.

presentation id# 15032

One House Many Nations: Community-Led Sustainable Housing Design for Houseless First Nation Youth

Dr. Shauna Mallory-Hill, Ph.D, LEED AP, University of Manitoba, Winnipeg, MB, Canada

Abstract Text:

One House Many Nations (OHMN) is an initiative created by the Idle No More movement of Treaty People in Manitoba, Saskatchewan and Alberta, Canada, to address the poor housing conditions of First Nation (FN) and other Indigenous communities. The initiative seeks to use land-based and community-based processes to design and build sustainable housing using local skills and resources to increase indigenous autonomy, sovereignty, and

self-sufficiency. This presentation reports on the findings of OHMN's five-year-long community-led project to explore solutions to the critical housing needs of youth living in FN communities who are at risk of, or are experiencing, houselessness. The interdisciplinary and diverse project team comprises scholars, architects, engineers, tradespeople, land-based users, knowledge keepers and community members. Participatory design sessions with FN youth determined housing design requirements and site selections. The homes were constructed in partnership with a special collegiate program, which helps students aged 18-20 get grade 12 credits as they build. After each building was delivered, investigators undertook a post-occupancy evaluation (POE) process to inform the following year's building design and delivery process. To date, four tiny houses have been constructed and delivered, each a single case study that makes up the overall project. The project's findings reveal the opportunities and ongoing challenges to achieving affordable and sustainable housing for youth living on First Nation reserves in Canada..

presentation id# 15034

Student Experience Mapping

Brian Schermer, Ph.D., University of Wisconsin-Milwaukee, Shorewood, WI

Abstract Text:

In conventional building evaluations, the focus is often on individual structures as the primary unit of analysis. However, within the university campus milieu, there are scenarios where it becomes imperative to shift the unit of analysis, considering the building within the broader context it inhabits. This paradigm shift forms the core of Student Experience Mapping, an innovative approach to building evaluation.

Student Experience Mapping utilizes an online, participatory survey to assess social, intellectual, restorative, and symbolic engagement with the physical campus. By soliciting input from students, it aims to evaluate the significance of a specific building relative to other key locations on and near campus that hold personal importance to them. The assessment comprises four distinct types of 'campus capital':

Social: Spaces facilitating social bonding and the creation of new connections.

Intellectual: Environments for thinking, studying, collaborating, and creating.

Restorative: Areas designated for relaxation, rest, and re-energizing.

Symbolic: Places contributing to campus pride and a sense of belonging.

Supplemented by demographic data, the survey sheds light on the role of the physical campus in fostering community, inclusion, and belonging. Going beyond mere evaluation, Student Experience Mapping serves as a strategic tool for guiding planning decisions and future capital investments. It establishes a baseline understanding of how specific buildings contribute to student experiences and provides benchmarks against which the success of future physical changes can be measured.

With participation from over 5,000 students across nine campuses, insights derived from Student Experience Mapping have played a pivotal role in shaping student center planning and design. This impact extends to both ongoing projects and those in the planning stages, showcasing its practical significance in enhancing the overall student experience within university environments.

Organizer

Greg Barker AIA, M.Arch, AIA

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Biography: Greg Barker is a registered architect with over 35 years of professional experience. He has managed a broad range of correctional planning services, including needs assessments, master plans, architectural programs, and applied research. Much of his recent work has involved mental health populations in both correctional and court settings for the State of California and the counties of Contra Costa, Los Angeles, Sacramento, San Francisco, and Santa Barbara. Mr. Barker holds a bachelor's degree in architecture from California Polytechnic State University (1978) and a Master of Architecture degree from the University of Illinois (1983).

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Biography: Dr. Shauna Mallory-Hill is an Associate Professor in the Faculty of Architecture, and Research Affiliate with the Center on Aging at the University of Manitoba, Canada. She teaches in the areas of building technology, sustainable design, universal design and environment and behaviour. Mallory-Hill is also a LEED BD+C Accredited Professional. Mallory-Hill's work in the field of Building Performance Evaluation has been presented at many conferences including EDRA and published in several articles and book chapters. Her book Enhancing Building Performance (Wiley-Blackwell), co-edited with Wolfgang Preiser and Chris Watson,

was published in 2012.
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If necessary, you can make changes to your intensive sessions between now and the deadline of **Friday, January 12, 2024** .

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Any changes that you make will be reflected instantly in what is seen by the reviewers. You DO NOT need to go through all of the submission steps in order to change one thing. If you want to change the title, for example, just click "Title" in the intensive sessions control panel and submit the new title.

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