



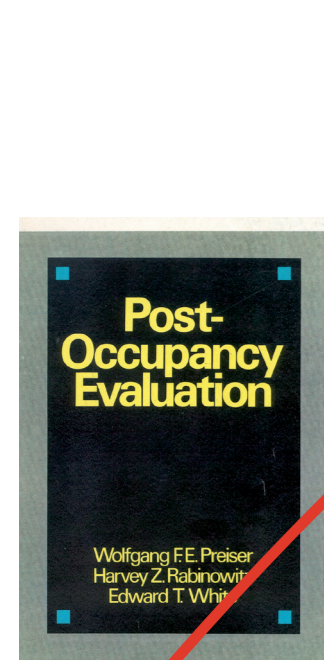
International Building Performance Evaluation (IBPE) Symposium

**Fit for Practice:
How Students apply Building Performance Evaluation**

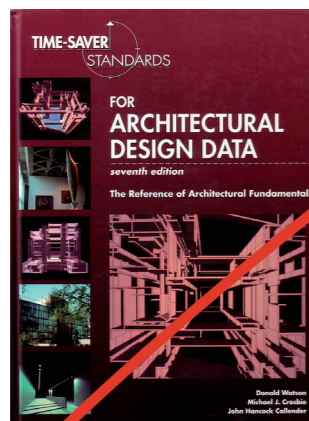
by Ulrich Schramm, Ph.D.
University of Applied Sciences
FH Bielefeld/Germany

Emergent Placemaking:
 „Successful placemaking demands innovative thinking to respond to shifting contexts and life in a world of increasing complexity, hybridity, and uncertainty.“

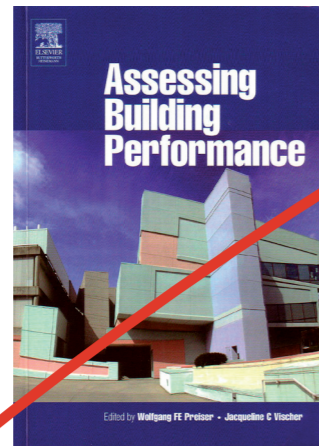
(Source: Flyer of EDRA 43-conference)



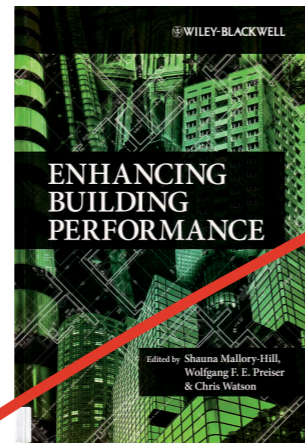
1988



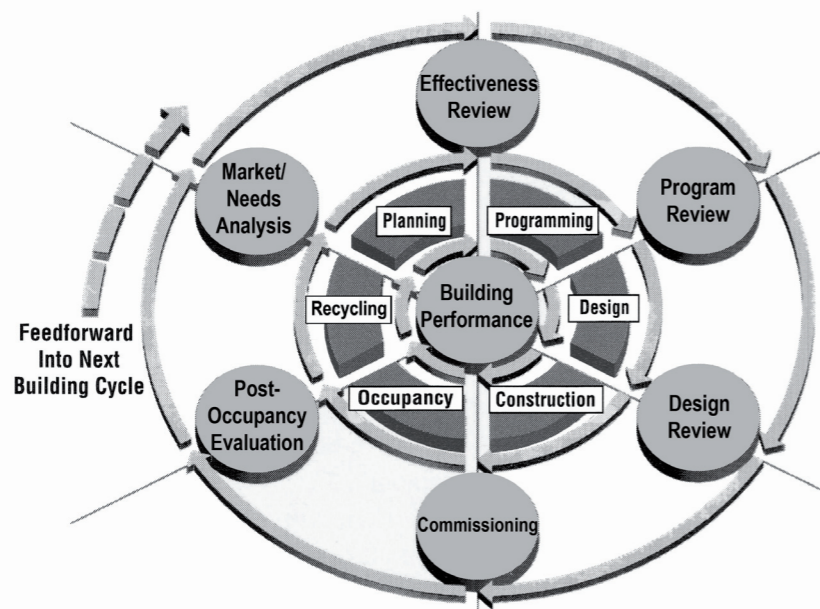
1997



2005



2012

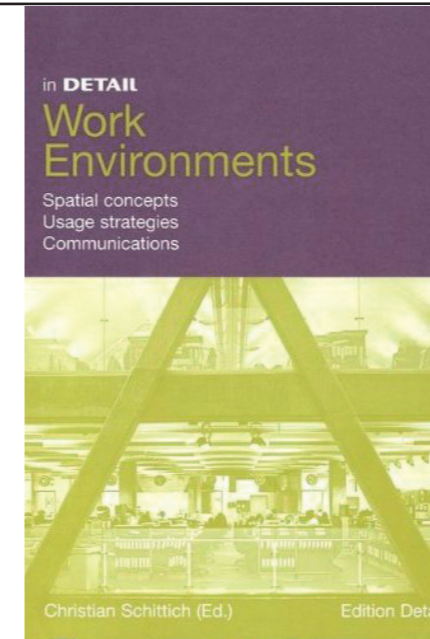


Building Performance Evaluation (BPE) Process Model

(based on Preiser, W./Schramm, U.: „Building Performance Evaluation“ in Watson, D. et al. [eds.]: Time-Saver Standards, New York: McGraw-Hill, 1997, p. 234)

What are the goals of this presentation today?

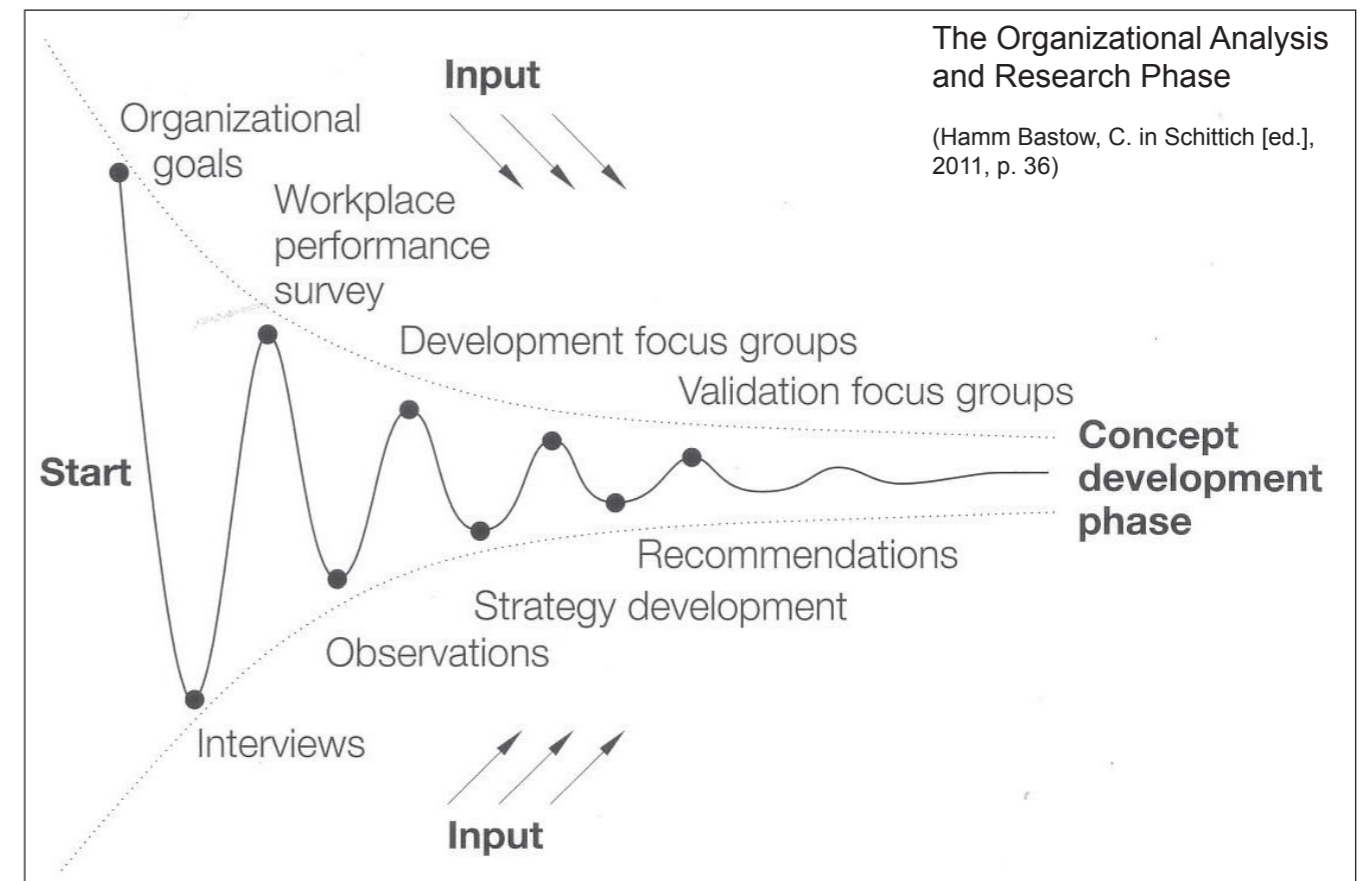
- to take up this year's conference theme
- to contribute to the ongoing evolution of the field of BPE
- to stress the relevance of teaching BPE in the building sector
- to offer insights into the students' competencies to apply BPE



A new workplace strategy is a development process. „The approach consists of several phases encompassing the entire value chain:

- Inception Phase
- Organizational Analysis/Research Phase
- Concept Development Phase
- Change and Transition Management including Post-Occupancy Evaluation.“

(Hamm Bastow, C.: „Success factor office' - myth or key to sustainable business success“ in Schittich [ed.]: Work Environments: Spatial Concepts, Usage Strategies, Communications, Basel: Birkhäuser, 2011, p. 35-37)



The Organizational Analysis and Research Phase

(Hamm Bastow, C. in Schittich [ed.], 2011, p. 36)

What trends in German building sector can be revealed?

- transformation to an information/service society takes place
- puts employees with their knowledge/creativity into the focus
- work environment has to be motivating/stimulating/satisfying
- literature: need for new phases of a holistic building life cycle

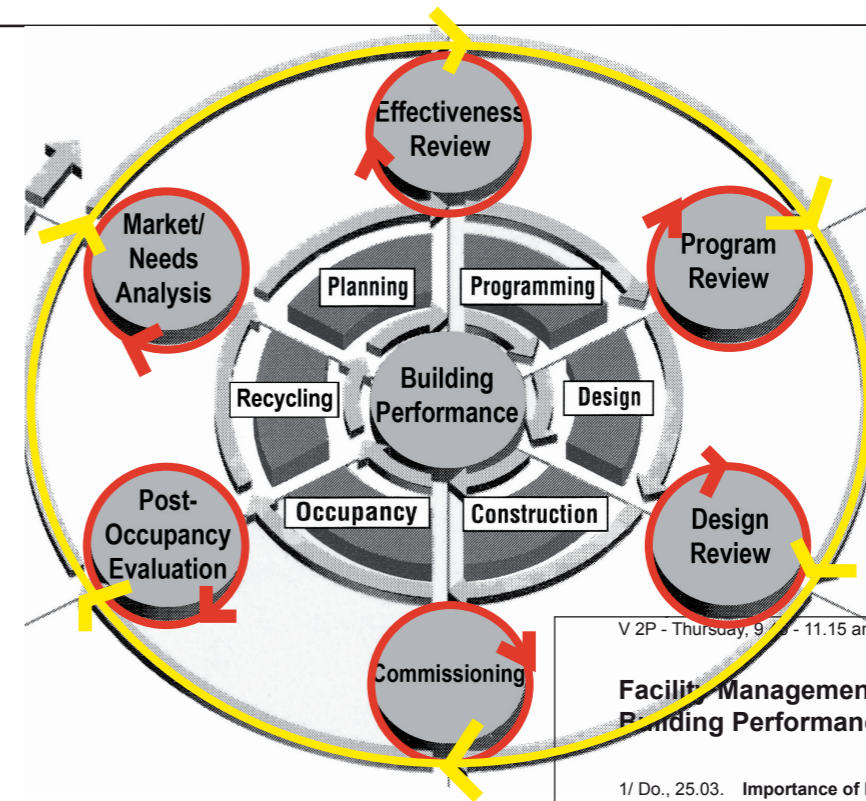
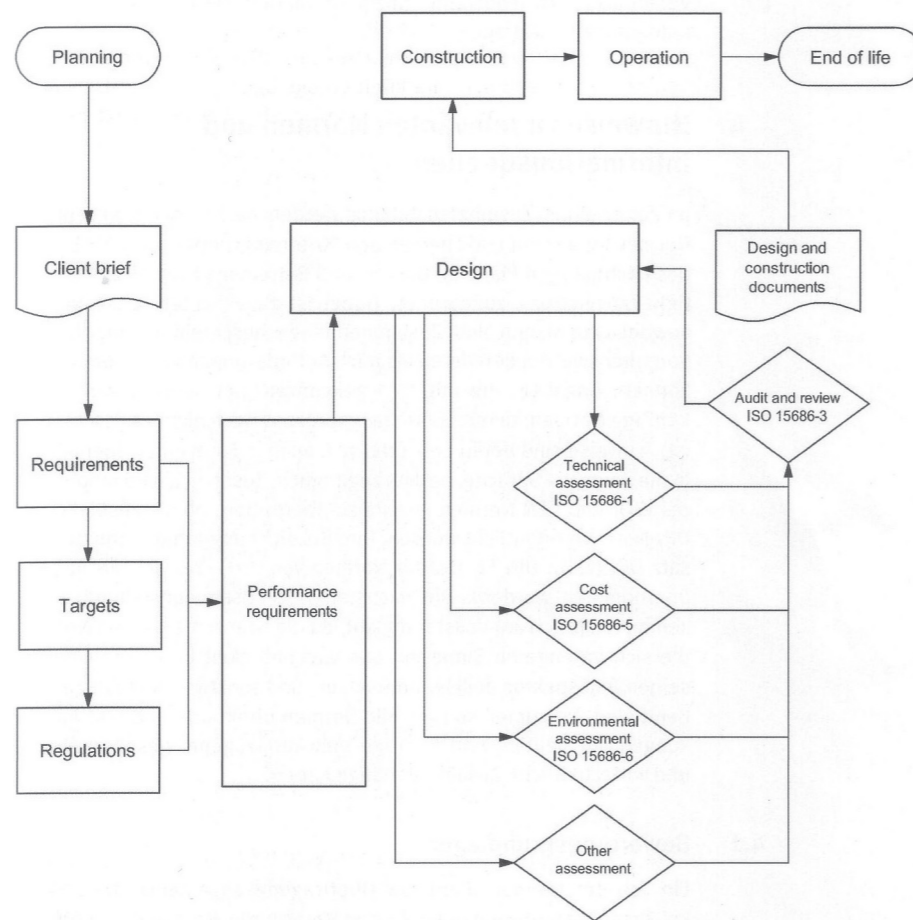


- Green Building Labels**
- BREEAM (UK): the oldest label (1990)
 - LEED (USA): the most popular one (1997)
 - DGNB (Germany): one of the latest labels (2007)

(Bauer, M.; Möhle, P.: „Ganzheitliches Planen, Beraten und Bauen“ in Bauer et. al.: Nachhaltiges Bauen, Berlin: Beuth, 2011, p. 162)

Performance Assessment in the Project Life Cycle: ISO 15686-5: 2008 Buildings and Constructed Assets - Service Life Planning

(Lützkendorf, T.: „Normen als Verständigungsgrundlage und Handlungsanweisung“ in Bauer et. al., 2011, p. 189)



Building Performance Evaluation (BPE) Process Model

(based on Preiser, W./Schramm, U.: „Building Performance Evaluation“ in Watson, D. et al. [eds.]: Time-Saver Standards, New York: McGraw-Hill, 1997)

V 2P - Thursday, 9/27/11 - 11.15 am., Room A 250

Facility Management / Building Performance Evaluation

1/ Do., 25.03.	Importance of FM	• Organization and Literature • Context, Terms, Definitions
2/ Do., 01.04	The Building Life Cycle	• Phases and Internal Loops • Demolition of Bank in Hagen (video)
3/ Do., 08.04.	Participants and Communication within the Building Life Cycle	• Project Phase - Object Phase • Planners - Users - other stakeholders
4/ Do., 15.04.	Phase I: Strategic Planning Loop 1: Effectiveness Review	• Strategic / operative FM • Case study of UK headquarters
5/ Do., 22.04.	Phase II: Facility Programming 1 Loop 2: Program Review	• ISO 9699 / DIN 18205 • Case studies from authors practice
6/ Do., 29.04.	Phase II: Facility Programming 2 Loop 2: Program Review	• Methods and Instruments • Literature Review (Kumlin, Pena etc.)
7/ Do., 06.05.	Phase III: Design Loop 3: Design Review	• Gutenberg High school, Erfurt • Literature Review (Maisch, Fischer)
8/ Do., 13.05.	no lecture (Holiday)	• time to read or work
9/ Do., 20.05.	Phase IV: Construction Loop 4: Commissioning	• Comprehensive School, Gelsenkirchen • Literature Review (Hübner etc.)
10/ Do., 27.05.	Phase V: Occupancy 1 Loop 5: Post-Occup. Evaluation	• DIN 18960 / DIN 32736 • Methods and Instruments (POE, STM)
11/ Do., 03.06.	no lecture (Holyday)	• time to read or work
12/ Do., 10.06.	Phase V: Occupancy 2 Loop 5: Post-Occup. Evaluation	• POE-case study: Campus Minden • Literature Review (Preiser, Baird)
13/ Do., 17.06.	Phase VI: Recycling Loop 6: Market Analysis	• Case Study: Re-Use of ICC, Berlin • Literature Review (Graubner/Hüske)
14/ Do., 24.06.	Building Type Analysis „offices“	• Activities and User Requirement • Office Concepts and Forms

Facility Management / Building Performance Evaluation Lectures Session Dates, Topics and Issues, University of Applied Sciences, Bielefeld

What other trend can be seen?

- certification of sustainable buildings gets into the focus
- national labels and international standards are issued
- literature: need to consider the entire building life cycle
- with various assessments as tool for continual improvement

What to do with the needs revealed by literature review?

- BPE process model takes these demands into account
- with its 6 phases the entire building life cycle is considered
- with its 6 feedback loops the building quality will be improved
- students as future building experts have to be trained in BPE

Students' Competencies I: Sustainable Buildings



LEED-Platin/DGNB-Gold certified 02/2011
Deutsche Bank (renovation headquarters: Greentowers), Frankfurt am Main, Germany

(Wikipedia Public Domain; Author: Dontworry)



Christoph Arns

LEED-Gold certified 04/2010
Süddeutsche Zeitung Publishing, Munich, Germany (new office building)

(Wikipedia Public Domain; Author: Rufus46)

Students' Competencies II: Satisfying work environments

YMCA Youth Center, Lübbecke, Germany, 1979

Main Entrance
(Malte Ramm/Robin Wolke)



Behavioral Mapping

Behavioral Mapping

(Ramm, W.; Wolke, R.: „POE of the YMCA Youth Center in Lübbecke“, University of Applied Sciences, Bielefeld, 2006, p. 9)

How do students apply the BPE process model?

- 1. case study: Competency related to sustainable buildings
- Christoph Arns, Construction Project Management
- Major Project (scientific work on individual research topic): „The rating of sustainable buildings according to LEED“

How do other students apply the BPE process model?

- 2. expl.: competency related to satisfying work environments
- Malte Ramm/Robin Wolke, Construction Project Management
- POE-exercise: „YMCA Youth Center in Lübbecke, Germany“
- tools like behavioral mapping, questionnaires, interviews, etc.



4.2.8 Kitchen / Staff Room

Functions:

- Preparation of food
- Handcraft
- Meetings
- Library

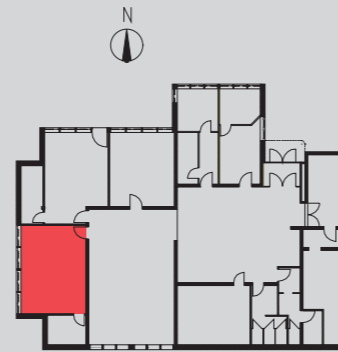
Quotes:

„... there is a lot around, but either it is not working or it is the wrong thing... “
 „... it's time for a new stove... “
 „... the equipment is old... “
 „... need for direct and indirect light... “

Strengths and Weaknesses:

- + room size 2,0
- + natural light 2,3
- + purpose 2,3
- coloring 3,0
- furnishing 2,9
- comfort 3,0
- equipment 3,2
- cleanliness 3,0

Final assessment: 2,7



View to the outside



Seating



Kitchen bar

3-D - Visualization (Malte Ramm)



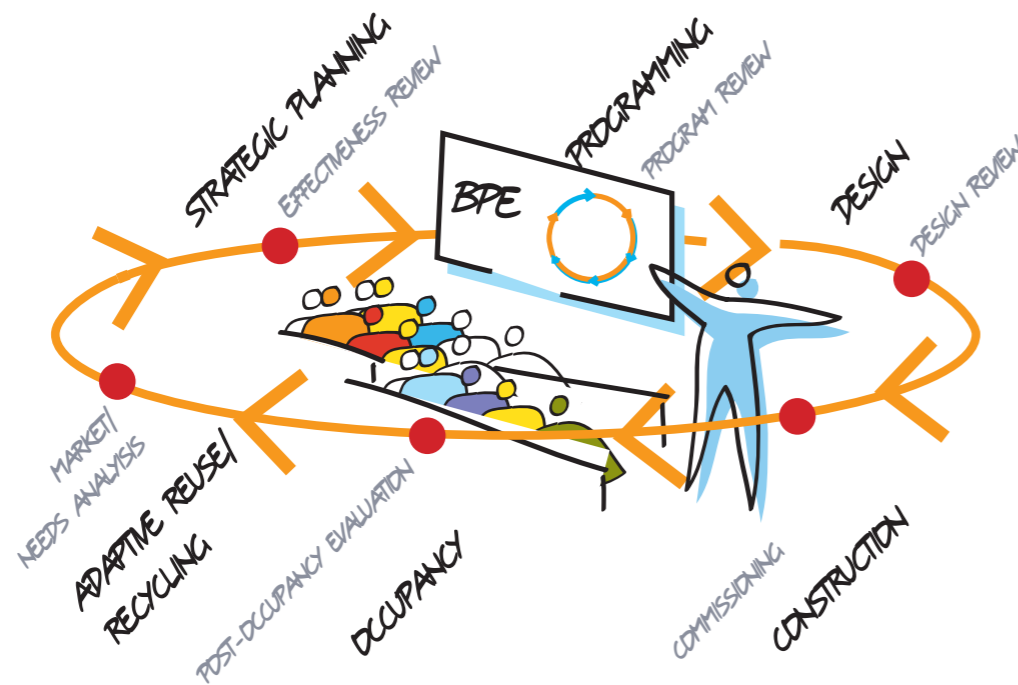
Kitchen/Staff Room, 2011
(Malte Ramm)



What happened with the POE-results?

- students presented results to client, e.g. kitchen/staff room
- YMCA-board wanted recommendations to be implemented
- work was executed voluntarily by members (craftsmen)
- satisfying work environment for staff and cookery course

BPE Process Model
in the Curriculum



Facility Programming Seminar,
University of Applied Sciences, Bielefeld, 2006

M.O.O.CON, Team, 2012



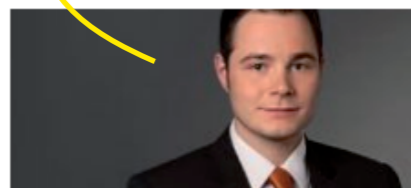
Malte Ramm



Alexandra Wattie



Michael Wiebelt



Robin Wolke



Hans-Peter Wunsch

www.moo-con.com/MOOCON/Team/Beratung/87/de

Why are these graduates fit for practice?

- BPE is part of Construction Project Management curriculum
- graduates have a clear understanding of BPE process model
- its user-oriented methods and instruments
- its potential for creating better work environments + buildings

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References:

- Schramm, U.: Building Performance Evaluation in the Construction Project Management Curriculum“ in: Mallory-Hill, S.; Preiser, W.; Watson, C. (eds.): Enhancing Building Performance, Wiley-Blackwell, Oxford, 2012
- Preiser, W.F.E.; Schramm, U.: „A Process Model for Building Performance Evaluation“ in: Mallory-Hill, S.; Preiser, W.; Watson, C. (eds.): Enhancing Building Performance, Wiley-Blackwell, Oxford, 2012
- Hodulak, M.; Schramm, U.: „Nutzerorientierte Bedarfsplanung: Prozessqualität für nachhaltige Gebäude“, Springer, Berlin, 2011
- Schramm, U.: „Phase 1: Strategic Planning - Effectiveness Review“ in: Preiser, W.F.E., Vischer, J. (eds.): Assessing Building Performance, Elsevier, Oxford, 2005
- Preiser, W.F.E.; Schramm, U.: „A Conceptual Framework for Building Performance Evaluation“ in: Preiser, W., Vischer, J. (eds.): Assessing Building Performance, Elsevier, Oxford, 2005
- Preiser, W.F.E.; Schramm, U.: „Intelligent Office Building Performance Evaluation“ in: Facilities, Vol. 20, No. 7/8, 2002, p.279-287
- Schramm, U.: „Learning from Building-User Feedback: The Post-Occupancy Evaluation Process Model in the Cross-Cultural Context“ in: Dunin-Woyseth, H., Noschis, K. (eds.): Architecture and Teaching: Epistemological Foundations, Chabloz, Lausanne, 1998
- Preiser, W.F.E.; Schramm, U.: 'Building Performance Evaluation' in: Watson, D. et al. (eds.): Time Saver Standards (7th edition), McGraw-Hill, New York, 1997