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Issues affecting building performance, a point of view from the Federal Republic of Germany

REFERENCE: Jockusch, Peter: "Issues affecting building performance, a point of view from the Federal Republic of Germany". *ASTM STP 1029, Performance of Buildings and Serviceability of Facilities*, Gerald Davis and Francis T. Ventre, eds., American Society for Testing and Materials, Philadelphia, 1990.

KEY WORDS: building performance, costs, failures, issues, standards, research

This brief review of issues affecting building performance is intended mainly as a means to foster discussion and to suggest future direction for research and investigation. It is not a systematic review of the situation of public buildings in the Federal Republic of Germany.

The impact of budget cuts on building performance

To program, design, build and equip complex buildings ties up much capital. Yet raising investment capital is not the major problem for real estate administrators, it is the budgeting of on-going operating and maintenance costs which is difficult and can have a major impact on building performance and life span. This applies particularly in the public sector. Insufficient funds are allocated to keeping the building stock in good repair or the yearly funds are diverted for alterations and minor extensions. This causes public buildings to degrade until major repairs are inevitable. When proper operating and maintenance costs are not taken into account and provided for during the planning, programming and design of a building, then those authorities which are in charge of running the buildings often do not have the means to cope. To save money, lighting and/or ventilation might be reduced, affecting users health, safety and satisfaction.

The impact of personnel cuts, turnover and lack of training on building performance

The quality and competence of the cleaning and maintenance staff can seriously affect a well designed facility with the best systems. Expensive automatic controls and technical systems can make matters worse if the staff does not have the technical knowledge to understand them, or the time to maintain and master them. Staff which is not on the payroll of the organization may be less costly but often does not have the sense of pride that members of the organization have. The result can be bad cleaning, inadvertent destruction or rearrangement of users tools, belongings and other objects.

Social psychological impacts of centralized control of building systems

The centralization of buildings control often means that operators and guards often do not make rounds in complex facilities any longer. Users cannot find the staff easily and feel

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anxious in off-peak hours. Vandalism is easier as non-authorized people gain access to the semi-public parts of buildings.

Conflicts between access and security in large facilities

Large modern buildings may be designed to be open, transparent and approachable through many doors. But the need for security of the permanent occupant groups often demands that access be controlled and that many doors be closed, thus creating large social deserts in the middle of cities.

Auditors concerned with low building performance

Public auditors are increasingly concerned with the performance of the investment in public buildings. More and more, they go beyond checking space and costs standards, building costs and verifying expenditures. They also investigate building failures and failure to perform according to the "brief" or facilities program. Architects are often primarily preoccupied with good architectural form at the expense of functional quality, which affects proper performance. The auditors are starting to look at the impact of design decisions on future running costs. Those issues are particularly important when decisions about capital investment are made by authorities different from the authorities responsible for paying the operating and maintenance costs over the whole life of the building.

Health issues

Health and security issues are still understood mainly in a very narrow sense. Security officers are interested in preventing people falling or getting physically hurt. Prevention of biological risks, such as chemical and other pollutants or air-borne diseases is undervalued or glossed over. Although staff representatives have a right to participate in decisions that affect the quality of the working environment, the health-risk issues are not yet high on the agenda. Work opportunities seem more important than work conditions.

Other issues that impact building performance

- Energy savings
In Germany, like elsewhere, it is now apparent that many actions taken to save energy have caused severe damage to buildings.
- Access to the disabled
Many changes are now being implemented in public facilities, in particular post-offices and railway stations, which are intended to make those facilities easier to use by people in wheelchairs and by older people.
- Prevention of fire hazards
Fire protection demands have recently been drastically increased, so that many old buildings which are still quite useable have to be significantly altered. Also many shared spaces in public buildings are now empty, because receptionists and visitors have to be separated by smoke-proof heat resisting glazing from corridors.
- Preservation
There is currently an increased drive to preserve older structures. There is total ban on building demolition. Yet the impact of building retrofits for energy conservation, fire prevention and other added demands often conflicts with historic preservation. Also, the structural stability of older structures, their electric wiring, distribution and control are not in compliance with the new standards. What then, is an appropriate building performance?

Which set of demands should take priority? On what basis should the trade-offs and decisions be made?

- Obsolescence of buildings built in the fifties and sixties

Facilities built in the 50's and 60's, during the biggest building boom in the history of West Germany when resources were scarce, are often below standard. Are those buildings worth retrofitting or should they be demolished? Because of the depreciation schedules which favour retrofits, the economic solution may not be the appropriate solution.

- Run-down buildings and re-use

In European cities, many older buildings and structures are run-down and deemed unusable, yet they are used illegally by occupants who are showing that such buildings are useful for certain purposes and should be revitalized, but the groups using them do not have access to funds to do the necessary repairs. In such cases, building performance takes on a social dimension. How should community resources be allocated to the preservation of older structures? By what criteria should they be selected? Who decides which ones are usable and which are not?

- Rediscovery of "non-technical" solutions

Can building performance be described objectively? There is a current trend in Germany towards a closing down of air conditioning and artificial ventilation systems, a reopening of windows, a reduction of artificial light level, etc. Are these improvements or reductions in building performance, or simply different means to get there?

Current research efforts

Topics that are currently investigated include building physics, technological building systems, the impact of built forms on vandalism, and the handling of dangerous substances. Computer tools for facility management are also being developed. Environmental psychology research has gone beyond theory to a more pragmatic stage. Post occupancy evaluation methods have been developed and used to assess use and building performance failures.