

ATEQUE, French working group on assessment of building environmental quality

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ABSTRACT :

ATEQUE is a French working group created in June 1993 by the Ministry of Housing in order to harmonise and to facilitate the development of tools concerning the improvement of building environmental quality (assessment methods, books of specifications, recommendations, etc...). The methodological aspects play an important role in ATEQUE.

ATEQUE is composed of the authorities concerned, and of 26 members representing all the categories of building professional actors (researchers, manufacturers, owners, designers, builders, consultants, service providers).

ATEQUE is divided up into several working groups :

- WG1 has worked on the identification of actors concerned by building environmental quality, of types of impact and of assessment criteria.
- WG2 has dealt with the inventory of functional, structural and time-based typologies. It has identified the descriptive building languages in functional and structural terms, which may be used for the assessment of the building environmental quality, and the different phases of the life cycle of buildings.
- WG3 has worked on the building actors' sensitivity and awareness of the environment.
- WG4 has started to analyse the specific quality of the newly developed tools, and to undertake the comparative assessment of these tools by means of case studies.
- WG5 concerns the structuring and improvement of methods, by the definition of reference buildings and reference occupancy scenarios, and by the structuring of data in order to feed the tools under development.
- WG6 concerns the role of construction products in the environmental quality of buildings.
- WG7 focuses on the improvement of existing buildings' environmental quality.

This paper presents ATEQUE, the main issues that are considered of most importance in France, linked to the environmental quality of buildings, the main results of the different sub-groups, and the prospects.

1 - INTRODUCTION.

ATEQUE (French working group on assessment of building environmental quality) was created on the initiative of the Construction and Architecture Plan (CAP) in 06-93, with the following objectives:

- to facilitate and harmonise the development and use of tools for the assessment of building environmental quality (BEQ) for buildings to be constructed or existing buildings,
- to provide assistance in the qualification processes initiated as a result of the improvement in the BEQ.

To achieve these objectives it was necessary, in advance:

- to bring together all the required skills,
- to propose an efficient working structure,
- to initiate a forced march to complete the exploratory work required to assist in the development of the tools as soon as possible.

ATEQUE has 26 members whose skills include those of the environmentalists and modellers of building quality, and whose roles within ATEQUE include those of tool developers, experts capable of assisting in their development, or parties requiring tools. Permanent representatives of the CAP, the Housing and Construction Management of the Ministry of Housing, the Environment and Energy Management Agency, are monitoring the work of ATEQUE.

The rules of operation of ATEQUE have been established in a Charter, and the operating structure adopted is as follows: a technical office provided by G. OLIVE (GOIC), quarterly plenary meetings, working parties meeting more or less every two months, distribution of the liaison bulletin according to internal communication requirements.

Let us review the work carried out within ATEQUE.

1 - WORK OF THE WORKING PARTIES.

Seven working groups have been set up since the creation of ATEQUE.

1.1 - The WG1 (Identification of major targets and pollution levels).

It operated from June 93 to February 96, under the supervision of Philippe DUCHENE-MARULLAZ (CSTB).

Its role was to assist the BEQ assessment tool developers in identifying the environmental impacts of buildings and their assessment criteria and hierarchising these impacts.

Its working objectives were as follows:

- To draw up a list of impacts. Although not exhaustive, it was intended to prevent the developers from weakening the effect of their work by omission.
- To draw up a list of players involved in the BEQ assessment.
- To draw up a list of impact assessment criteria. Although not exhaustive, this list was intended to prevent the developers from weakening the effect of their work by omission.

- To carry out an initial hierarchisation of impacts according to experts, to enable the developers to concentrate their efforts on the main impacts, even if this meant completing their development work on the impacts unfairly and initially assessed as secondary at a later date, and then to divert their attention to impacts which were in fact of a secondary nature.

Three technical files were produced:

- "DT01. Identification of the players concerned in the BEQ", 12-94.
- "DT02. Identification of the environmental impacts associated with buildings", 03-95.
- "DT04. Identification of the assessment criteria structuring the views of the actors involved in the building", 07-96.

1.2 - The WG2 (Inventory of functional, structural and time-based typologies).

It operated from June 93 to June 94 under the supervision of Jean-Michel RABRAIT(APOGEE-PERIGEE).

Its role was to assist the BEQ assessment tool developers in defining the functional and structural units and content of the lifecycle sequences to be applied in their tools.

Its working objectives were as follows:

- To draw up an inventory of the elements of the descriptive language relating to building and indicating the functional and structural partitions of the buildings used by the various professionals in their work, based on a concern for providing overall traditional building quality, but elements which could also be used for assessing environmental quality according to the first approach which may be adopted.
- To draw up an inventory of activity phasing elements in building.

A technical file was produced: "DT03. Inventory of functional, structural and time-based typologies", 07-95.

1.3 - The WG3 (Requirements and sensitisation of the building actors).

It operated from June 93 to November 96 under the supervision of Roland FAUCONNIER (FNB/DAT), then of Jean HETZEL (CVP network) from April 96.

Its role was to identify the explicit or implicit requirements of the different actors concerned in the BEQ in terms of tools to assist in taking decisions on improving this quality to help developers direct their work and sensitise the actors to the problems of BEQ.

Its working objectives were as follows :

- To analyse the current motivations of the actors with regard to BEQ and to predict their future position.
- To determine the desirable characteristics of the decision-making aids to be developed for the different types of actors.
- To determine the desirable characteristics of the messages to be transmitted to the different types of actors to deal with the problems inevitably arising in the wake of the increase in potential associated with a new aspect of building quality.

A technical file was produced : "DT05. Sensitivity and sensitisation of the actors involved in BEQ", 04-97.

1.4 - The WG4 (Evaluation, use and development of the tools).

This was created in March 1996 under the supervision of Sylviane NIBEL (CSTB).

Its role was to assist the BEQ improvement tool developers in assessing their tools, using them for operational purposes and developing them.

Its working objectives were as follows :

- To analyse the intrinsic quality of the tools.
- To compare the use of the tools about operations or technics (products, systems and processes) for improving the BEQ.

1.5 - The WG5 (Structuring and improvement of methods).

It operated from January 95 to October 96 under the supervision of Bruno PEUPORTIER (EMP).

Its role was to assist the developers of methods used as an aid to taking decisions on BEQ improvement in structuring and improving their methods.

Its working objectives were as follows :

- To determine the references in terms of characteristics of the buildings and the scenarios for their use to be taken into consideration in the relative assessments.
- To assist in the structuring of integrated assessment models by assembling specialised models.

1.6 - The WG6 (Role of construction products in building environmental quality).

This was created in November 1996 under the supervision of Jean-Luc CHEVALIER (CSTB).

Its role was to compare the environmental quality approaches of construction products and buildings, and to draw up an inventory of the respective requirements and contributions.

Its working objectives were as follows:

- To inform ATEQUE of the work carried out on the environmental quality of construction products.
- To identify the requirements and data on the environmental quality of the construction products for BEQ assessment.
- To determine the role of the products in BEQ.

1.7 - The WG7 (Improvement in the environmental quality of existing buildings).

This was created in January 1997 under the supervision of Gérard GRANDJEAN (UNFO-HLM/DPT) assisted by Jean HETZEL (CVP Network).

Its role was to identify the specific characteristics of the aids used to improve the environmental quality of existing buildings.

Its working objectives were as follows:

- To identify the importance of taking into account BEQ in supervising the improvement in the overall quality of buildings.
- Identification of the requirements for aids used to improve the environmental quality of existing buildings.

2 - WORK OF THE MEMBERS.

2.1 - The development of BEQ improvement aids.

Seven teams were devoted to the development of these aids

- the team "EMP, INERIS, DUMEZ, S'PACE, P. DIAZ-PEDREGAL" : Development of a detailed assessment tool to assist in design (EQUER project),
- the team "CARAT Environment, APOGEE-PERIGEE, SAEC" then the team "CARAT Environment, H.PENICAUD, IMBE, INTAKTA France" : Development of a simplified assessment tool to assist in design (BATIMPACT HQE project),
- the team "SOCOTEC Environment, GFC, ESIGEC" : Development of an environmental assessment tool and project quality management tool,
- the team "TRIBU" :Development of a decision-making aid for environmental quality criteria intended for project managers (PAPOOSE project),
- the team "CSTB, GOIC" :Development of a tool to assist in the selection of projects by the project manager (ISEP project),
- the team "GOIC, Quillery, Mulhouse Habitat" : Development of a tool as an aid in the environmental management of a construction project (ORGANISATEUR project).
- the team « CSTB » : Development of an environmental assessment tool adapted to the iterative process of building design.

2.2 - The associated work.

The following may be quoted from among some fifteen studies:

- ACT Consultants : "Environmental impact of the thermal design of tertiary public buildings", 03-94,
- Team "INESTENE, TRIBU, AAE" : "FEE project. Draft social housing specification as a design aid", 06-94,
- ACT Consultants : "Taking into account the environment in the building construction process. Analysis of operational documents", 01-95,
- CAPE VERDE : "Structural analysis of the Environment-Building system" 03-95,
- INESTENE : "Calculation of emissions of atmospheric pollutants in the residential sector", 09-95,
- CSTB : "Perception by construction actors of the necessity to take the environment into consideration", 11-95,
- INTAKTA France : "BibliATEQUE : BEQ database", 04-96,
- AIMCC, "Development of an environmental communication specification on building products", in progress.

3 - APPRAISAL AND PROSPECTS OF ATEQUE.

During its first two years of operation (06-93/05-95), ATEQUE focused its efforts on developing BEQ assessment methods. The following may be stated with regard to this period of its work:

- that the problem of defining BEQ was the subject of an initial detailed investigation: the different aspects of this quality were identified, the methodological problems of assessing them were highlighted and largely resolved.
- that the assessment tools developed, once they were themselves assessed, may be used to help design new building projects with high environmental quality (HEQ) and carry out the strategic investigations of HEQ (close examination of the question of quality, the objectives of HEQ to be given priority, etc.).

In the course of its third year of operation (06-95/05-96), ATEQUE widened its field of activity, extending it to the development of all the tools to be used as an aid in BEQ improvement. In fact it may be noted that the different decision-making processes of HEQ, in programming, design, "construction/adaptation/deconstruction" and the use of a building, not only presuppose direct or indirect use of the BEQ assessment tools but also the use of tools employed as an aid to management of this quality for a period or a sequence of periods in the life of the building. Thus the tools to be developed are not only BEQ assessment tools but also, more generally, tools used as an aid to taking decisions on improving BEQ. A certain amount of work has been carried out in this direction. As far as this working period is concerned it may be stated that experience gained by ATEQUE now enables:

- the members of ATEQUE to play a discerning role in defining building projects at HEQ,
- ATEQUE to establish international relations with teams which were generally involved in the work before ATEQUE, and to participate in international work.

During its fourth year of operation (06-96/05-97), ATEQUE undertook work on two new subjects:

- The role of the products in BEQ,
- The improvement in the environmental quality of existing buildings.

In a fifth and final year of operation (06-97/05-98), ATEQUE will complete its work of supporting the development of a first French generation of BEQ improvement aids.

The HEQ Association, which was set up in 10-96, will be taking over in order to support the development of a second generation of these tools, among other things.

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REFERENCES :

- G. OLIVE, "L'ATEQUE : Atelier d'évaluation de la qualité environnementale des bâtiments", CSTB Magazine, novembre 1994.
- PCA, "Premier éclairage sur deux ans d'études et d'expérimentation", PCA, mai 1995.

- B. PEUPORTIER, "Un outil pour évaluer la qualité environnementale des bâtiments", Le Moniteur, 7 mai 1995.
- G. SANDRET, "Une méthodologie pour construire autrement", Actes du Colloque "Le bâtiment face aux défis de l'environnement", PCA, Paris 16 mai 1995 p. 189.
- Ph. DUCHÊNE-MARULLAZ, "Le bâtiment face aux défis de l'environnement", PCA, Paris 16 mai 1995, "Identifier les nuisances", PCA, Paris septembre 1995.
- G. OLIVE, "Travaux de l'ATEQUE : perspective et résultats à court terme", Actes du Colloque "Le bâtiment face aux défis de l'environnement", PCA, Paris 16 mai 1995 p. 219.
- G. OLIVE, "Architecture et défi écologique. Institutionnel. Cadre, références et contenu", Archi Créé, octobre 1995.