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“Vision of a Sustainable Smart-eco Building in 2030” Report of the working group session

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Action required:
Due Date:
Next step: Diffusion to participants, and cluster members, registration on the e-room
Next version issue:

Summary:

A panel of stakeholders (researchers, architects, and other decision makers), has been invited by the Smart-Eco project partners to comment and to help improving the vision of a sustainable smart-eco building in Europe in 2030, as expressed in 10 issues below.

After a detailed presentation by Jean-Luc CHEVALIER of the process, methodology and result of the work performed for elaborating the vision, the discussion took place, guided by 5 questions related to the methodology and the content.

Firstly, the methodology developed to establish the vision was clearly approved by the stakeholders. Then stakeholders admit that few modifications are needed on the 10 issues of the vision, in order to clarify the integration of some key concerns:

- *The vision should be enlarged at the city scale, in order to integrate a sustainable building into a territorial strategy*
- *The adaptability should be emphasized*
- *The designers should consider the human needs more widely than only the occupant's ones*
- *The vision should appear valid for new and existing buildings*
- *The vision in timeless whilst the practice is intrinsically temporal.*
- *The vision has to be ambitious, but the true ambition is to bring it to practice*

Stakeholders are ready to go further supporting the Smart-eco project, through reviewing documents, activating their own network, sharing knowledge

Decision has been taken to amend the 10 issues of the vision, and to insert those issues into a more communicant and “stand alone” document, enriched with explanations and illustrative examples for each issue.

Attendance:

15 participants including:

Convenor - Jean-Luc CHEVALIER

Rapporteur - Alexandra LEBERT

4 SMART-ECO stakeholders

- Fabio TAUCER (JRC ISPRA- Italy)
- Frantz SCHULTMANN (Karlsruhe University – Germany)
- Keido HANIKAT (Tallin University – Estonia)
- Stella KYVELOU (Panteion University, Athens – Grèce)

4 SMART-ECO partners: Christer SJÖSTRÖM, Wim BAKKENS, Hywel DAVIS, Roode LLIAS Paula CADIMA from ACE, invited to give the architect point of view

Others stakeholders

- Agnès LAURET GREMILLET, Ile de France region, France
- Nadir BONNACORSO, architect, Portugal
- Thierry Van STEENBERGHE, consultant, Belgium
- Joanna SKOK, architect, Belgium

Presentation of the Vision:

A detailed presentation has been given by Jean-Luc CHEVALIER of the collective work performed within the WP2 of the Smart-eco project (see annex)

Questions and answers:

3 sets of questions have been asked, first to the SMART-ECO stakeholders, and then to the audience.

In a second part, two topics have been more in depth discussed the answers are gathered below, after each question.

❖ What is your opinion about the methodology for establishing the vision?

❖ Do you share the 10 issues of the vision? Is any key issue missing?

The attending stakeholders expressed a global support to the methodology previously described through the presentation.

The 10 issues appeared as well covering the concerns. From the discussion, there is a need for amending/completing some of the issues, as the result of several points raised:

- A sustainable building cannot be seen only at the building scale: the territory scale seems more relevant
- Sustainability means adaptability, in the various meaning of the term:
 - Adaptability to future different uses of the building (type and purpose of activity, number and needs of occupants...)
 - Adaptability to predictable climate changes (higher temperature, stronger natural events...)
 - Resilience to local – geographical, cultural particularities
 - Flexibility is the common answer
- Not only the occupants needs have to be met: this point has to be considered more collectively, including the neighborhood and the social community as a whole
- The social and/or cultural value may in some extend go up to a visible/provocative architectural signal: is this part of the vision?

❖ **Is this vision feasible? Too ambitious? Not ambitious enough?**

Feasibility is a difficult question, because a vision should by definition remain intrinsically timeless and with no target performance values. Thus the feasibility, which depends partly on the cost and partly on the willingness of the interested parties, is not easily quotable. Feasibility is also strongly related to the communication mode given to the vision, and to how its formulation is easy to understand: for that the content and shape of the vision document is crucial.

This vision may appear not ambitious enough as not any of the issues is a fundamental breaking point. As written, all the issues are realizable, if we remain at the vision scale.

But the vision is very ambitious when it comes to addressing all the buildings in 2030 (including existing ones), and bringing all the issues into practice, then with economic and temporal constraints.

❖ **What do you expect from the next steps of the project?**

❖ **How do you foresee your future involvement?**

The stakeholders would like to see a "stand alone" published document on the vision, built up in 3 parts (a preamble, the 10 issues of the vision, and explanations)

The stakeholders will be happy to contribute to the next steps by reviewing the future documents, informing and consulting the members of their own professional networks for the widest awareness.

❖ **Could the vision be valid for new and existing buildings?**

Firstly the vision must cover existing building, and thus retrofitting design, as 80% of the buildings which will constitute the building park in 2030 are already erected, and also because a new building becomes immediately an existing one when operation begins...

The difference between new and existing is less obvious at the urban scale, as required

There are no strong reasons why the 10 issues would not apply to existing buildings (as the vision does not include performance targets), but it has to be a concern in the mind of the actors, and it needs to be clear in the drafting of each issue.

The differences appear further to the vision, when it comes to its practical application, with performance and cost targets

❖ **How to anticipate adaptation while preserving low environmental impacts?**

The evaluation of the environmental impacts possibly added when anticipating adaptation has to be performed relatively, comparing two options all along the life cycle. Analyzing case studies would help answering that question, but reports are made (for instance CIB "open building" action) where the result is opposite, with a relevant design (with the structure as the only permanent element).

Anticipate adaptation is the best way to minimize the related environmental impacts: otherwise, the occupants will adapt anyway, and with less environmental concern.

A related discussion raised the technical regulations. Of course a sustainable smart-eco building should match the current technical regulations, but for some of the issues, it should be necessary to do better than the current regulations (mechanical resistance, stability, energy performance).

Outputs:

The debate resulted in a revised drafting of the 10 issues. The "stand alone" document will be elaborated, with a preamble stating the objective, scope and targeted users, the 10 revised issues (see below) and an extended description of each issue enabling a clear understanding of the terms, a list of aspects covered by general concepts, and illustrative examples.

This document will be the publishable deliverable of the vision work in Smart-Eco.

The 10 issues of the vision **before the workshop** were the following:

A Sustainable Smart-Eco Building in 2030 in Europe will:

1	Apply the general principles of sustainability
2	Be designed from a Life Cycle perspective
3	Be designed to be adaptable throughout the service life, with an end-of-life strategy
4	Have its environmental impact optimized over the estimated service life
5	Be healthy and comfortable for its occupants
6	Be established with consideration of its economic value over time
7	Have social & cultural value
8	Result from all interested parties involvement and be designed to meet its occupants needs
9	Be completely integrated into local networks, connected to nearby services and urban life; accessible for all
10	Be designed to be user-friendly, simple and cheap to operate, and is monitored to check technical and environmental performances over time

After the workshop, the 10 issues of the vision are now:

A Sustainable Smart-Eco Building in 2030 in Europe will:

1. **Apply the general principles of sustainability;**
2. **Be designed/refurbished from a Life Cycle perspective;**
3. **Be designed/refurbished to be adaptable throughout the service life, with an end-of-life strategy;**
4. **Have its environmental impact minimized over the estimated/remaining service life;**
5. **Be healthy and comfortable for its occupants;**
6. **Be established with consideration of its economic value over time.**
7. **Have social & cultural value.**
8. **Result from all interested parties involvement and be designed/refurbished to meet the occupants needs individually and collectively;**
9. **Be completely integrated into a territorial strategy and accessible for all;**
10. **Be designed/refurbished to be user-friendly, simple and cheap to operate, with its technical and environmental performances measurable over time;**