ALDREN
ALliance for
Deep energy
RENovation in buildings

A step forward to the European Voluntary Certification Scheme (EVCS)

CEN TC371 PLENARY, NOV 2019, BXL
Johann Zirngibl
Johann.zirngibl@cstb.fr
8 European partners are working together to increase the building energy renovation rate and quality.
Why ALDREN?

- only about 1-2% of the building stock is renovated each year;
- only around 15% of building refurbishments incorporate significant energy efficiency improvements.

Energy savings are not the trigger for renovation

Some reasons:

- no sufficient financial interest;
- absence of a holistic strategy;
- lack of communication between the different stakeholders
- (building professionals, building owners, finance).

Communicate all benefits of energy renovation and not only the energy savings:
The ALDREN common language
The ALDREN common language

6 topics for an European Voluntary Certification Scheme related to energy renovation

Overall integration of components in the ALDREN common language

- Energy rating
  - EU Comparability
  - Energy rating calculated & measured EP Confidence
  - Health & wellbeing Resilience
  - Linking EVCS to financial valuation Asset value

Renovation roadmap to nZEB / collected data and results: the building passport
Focus on ALDREN T2.2 Energy rating & targets

INDICATORS

EPBD: The energy performance of a building shall be expressed by a numeric indicator of primary energy use in kWh/(m².y).....

**Example:** numeric indicator of primary energy use for the **same** building

- **no comparability**
- Need for a common indicator
- Need for a common rating (scale)

➢ ALDREN’S MAIN INDICATOR:

**non-renewable primary energy balance** with compensation by exported energy

But also all indicators included, needed by existing schemes (DGNB, IVE, HQE)
ALDREN ENERGY PERFORMANCE SCALE AND ENERGY CLASSES

Relative scale
no absolute values

A curve (not linear)
same effort to change the classes

One reference point
≈ CO level (2013)
upper limit class „D“

Class „A“ - approximation to the NZEB definition

ALDREN scale: EU wide comparability of buildings, not based on energy consumption, but on energy performance related to cost-optimality
Example: Addressing health & wellbeing

TEMPERATURE AND PERFORMANCE OF OFFICE WORK

Source: Seppanen et al. (2005)
CONSEQUENCES

Example: Cost structure in an office building

modest gains in work performance (staff costs) can deliver significant financial benefits

economic interest is more in the increase of productivity (90%) than in energy (1%)

There is a need for:
- European Health + well-being indicator
- link between this indicator
- and financial benefits
ALDREN health + Well-being indicator

Link between energy renovation and economic benefits

Energy renovation actions → Change in indoor environmental quality (IEQ) → Improved work performance → Economic benefits

TAIL describing
- Thermal,
- Acoustic,
- Indoor air quality,
- Lighting
## Summary of ALDREN economic/financial indicators

<table>
<thead>
<tr>
<th>Costs</th>
<th>Risks</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Energy costs and revenues</td>
<td>Sustainability related-risks rating</td>
<td>Rental value</td>
</tr>
<tr>
<td>Maintenance costs</td>
<td></td>
<td>Rental growth</td>
</tr>
<tr>
<td>Other running costs</td>
<td></td>
<td>Discount rate</td>
</tr>
<tr>
<td>Replacement costs</td>
<td></td>
<td>Vacancy and reletting costs</td>
</tr>
<tr>
<td>GhG costs</td>
<td></td>
<td>Occupation rate (hotels)</td>
</tr>
<tr>
<td>Global costs /life cycle costs</td>
<td></td>
<td>Room price (hotels)</td>
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<tr>
<td></td>
<td></td>
<td>(Investment) worth</td>
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</tbody>
</table>
### Performance components

<table>
<thead>
<tr>
<th>Performance components</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Energy class (from T2.2)</td>
<td>A=1; B=2; C=3; D=4; E=5, F=6; G=7</td>
</tr>
<tr>
<td>TAIL score (from T2.4)</td>
<td>I=1; II=2; III=3; IV=4</td>
</tr>
<tr>
<td>Technical obsolescence (from T2.6)</td>
<td>etc</td>
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</tbody>
</table>

### Market uptake components

<table>
<thead>
<tr>
<th>Market uptake components</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Energy regulatory outlook</td>
<td><strong>Climate change</strong></td>
</tr>
<tr>
<td></td>
<td>1 No energy target in regulation for exist. buildings</td>
</tr>
<tr>
<td></td>
<td>2 Energy regulation not yet aligned with NZEB</td>
</tr>
<tr>
<td></td>
<td>3 Energy regulation for existing buildings aligned with NZEB already implemented</td>
</tr>
<tr>
<td></td>
<td>etc</td>
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</tbody>
</table>

### Risks: Sustainability related-risks rating
Example:
how qualitative assessment of “performance” is translated into a financial value
(Part of mandatory method for asset valuation for bank loan secure in Slovakia).

Example Location: Assessor has to choose between classes:

<table>
<thead>
<tr>
<th>The class</th>
<th>Value per class</th>
<th>+ guidelines</th>
</tr>
</thead>
<tbody>
<tr>
<td>I.</td>
<td>2,400</td>
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<tr>
<td>II.</td>
<td>1,600</td>
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<tr>
<td>III.</td>
<td>0,800</td>
<td>ALDREN provide guidelines for energy performance (e.g. energy -, maintenance costs, comfort)</td>
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<tr>
<td>IV.</td>
<td>0,440</td>
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<tr>
<td>V.</td>
<td>0,080</td>
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</tbody>
</table>

The mortgage / market value is then calculated by multiplying:
Localisation Differentiation coefficient X technical value

The technical value are the construction costs for similar new building with depreciation by age of the given building.

Mandatory method for asset valuation for bank loan secure in Slovakia.
ALDREN propose Policy support on EPBD
Contribution to the transposition of revised Directive - May 2018

<table>
<thead>
<tr>
<th>Art 1 Amendments Directive 2010/31/EU</th>
<th>T2.1 Overall integration</th>
<th>T2.2 EVCS</th>
<th>T2.3 Measured energy</th>
<th>T2.4 Health Wellbeing</th>
<th>T2.5 Financial evaluation</th>
<th>T2.6 Building passport</th>
<th>T3.2 Training</th>
</tr>
</thead>
<tbody>
<tr>
<td>‘(2) Article 2a Long-term renov. Strategy’</td>
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<td>(g) evidence of expected energy savings and related to health, and air quality.</td>
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<td>3. mobilisation of investments</td>
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<td>(b) the reduction of the perceived risk</td>
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<td>(4’) Article 7 existing buildings</td>
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<td>high-efficiency alternative systems and shall address healthy indoor climate’.</td>
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<td>(6) Article 10</td>
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<td>‘6. link their financial measures to the targeted or achieved energy savings’</td>
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ALDREN outcomes are related to 17 paragraphs of EPBD amendments
The ALDREN Alliance is a keystone to work out the consolidation and articulation of the overall ALDREN procedure, in a business perspective, all along deep renovation projects development.
<table>
<thead>
<tr>
<th>Pilots</th>
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</thead>
<tbody>
<tr>
<td>DUNAJSKA (SLOVAKIA)</td>
<td>MALY TRH2 (SLOVAKIA)</td>
<td>KUPKA (FRANCE)</td>
<td>LA SAMARITANNE (FRANCE)</td>
<td></td>
</tr>
<tr>
<td>HOTEL DYNASTIC (SPAIN)</td>
<td>HOTEL LES DUNES COMODORO (SPAIN)</td>
<td>HOTEL RH BAYREN &amp; SPA (SPAIN)</td>
<td>HOTEL FLAMINGO OASIS (SPAIN)</td>
<td></td>
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<tr>
<td>HOTEL BENIDORM CENTRE</td>
<td>HOTEL POSEIDON PLAYA</td>
<td>IVE - VALENCIA INSTITUTE</td>
<td>MADELEINE (FRANCE)</td>
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</tbody>
</table>
Résumé

• Energy savings alone do not trigger building renovation
  ➢ *ALDREN offers an holistic approach on energy* (e.g. linking it with health and well being, finance)

• Communication between the different stakeholders involved in building renovation is needed
  ➢ *ALDREN express building performance in reliable, transparent indicators and translate them into financial asset*

A methodology to stimulate the increase of renovation rate and quality has been created

But…
...nothing will happen...

...without a strong strategic partnership for market uptake
Potential partnerships (even for modular market uptake)

• Skilled professionals
to train / certify experts to apply the ALDREN method
  e.g. REHVA, CEN-CE project (www.cen-ce.eu)

• Voluntary environmental certification schemes
to take over ALDREN indicators and methods (e.g. HQE, DGNB, BREEAM)

• Financial institutes
to include ALDREN in asset valuation, linking interest to building performance

• Asset managers, building owners
to include ALDREN methodologies in decision making/taking process

• European Commission
to reference ALDREN as quality benchmark for EU funding
  (e.g. as voluntary common certification scheme)

Thank you for your attention
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