

Linking ALDREN's energy and IEQ performance assessments to financial value of buildings



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Current levels of investment are insufficient to meet the European Union's energy renovation objectives. There is a growing awareness that energy, health and comfort performance is relevant for the financial value and attractiveness of building assets, but sustainability information remains underexploited in multi-year provision plans, financial valuation and risks appraisal. ALDREN participates in bridging the gap between energy experts and engineers on one side and real estate financial experts and banks on the other side.

Sustainability and financing: a quickly evolving context

Climate and responsible finance are booming with the development of new green financial products. Banks and insurance companies start questioning additional financial risks associated with the extra financial performance of their assets related to environmental performance, quality and resilience to climate change. Growing concerns for environmental issues and reinforced political targets will impact real estate strategies in the coming years. Sustainability topics are expected to become more and more reflected in the rental and market value of building assets.

However, sustainability-related information is still overlooked in common valuation approaches. Financing the required up front investments for deep energy and climate related renovation remains a challenge. Most financing approaches consider traditionally that energy savings result in not very favourable return

of investments (ROIs) in some countries and exclude all the potential co-benefits of energy renovation on asset value and risk reduction in the mid to long term.

ALDREN has therefore identified a clear need to better highlight financial benefits of deep renovation related to energy and indoor environment quality (IEQ) performance. A more consistent and detailed information sharing between energy and environmental engineers/consultants on one side and real estate financial experts, banks and financial analysts on the other side could help mobilize further investment and improve market financing conditions.

The ALDREN methodology for financial valuation – Indicators and information sharing

ALDREN has developed a methodology for financial valuation of renovation action, which focuses on the

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement 754159. The sole responsibility for the content of this paper lies with the authors. It does not necessarily reflect the opinion of the European Commission (EC). The EC is not responsible for any use that may be made of the information it contains.



provision of relevant ALDREN sustainability metrics (energy, IEQ) and detailed technical and performance information about renovation actions to financial analysts. ALDREN specifies which indicators and information should be shared alongside the most relevant financial information for building valuation (such as the building's lease structure or local market data, including rental values, rental growth rates or duration to let).

Reflecting sustainability-related information on financial value and risks **strongly depend on local market conditions as well as the property itself and lease terms**. Estimating those conditions requires a specific expertise from real estate experts and assessors which is beyond ALDREN's scope. ALDREN specifies which financial indicators should be collected and taken into account, not how they should be evaluated in asset valuations: ALDREN does not override the expertise of qualified real estate experts, financial analysts and assessors who have to follow special legal or professional rules. However, ALDREN aims to show to all stakeholders involved in decision making process towards renovation the impact of energy related renovation by presentation of some partial financial indicators.

The ALDREN methodology is composed of two parts:

- A list of indicators, including definitions, sources of data and protocols for their calculations. A **new risk indicator related to the obsolescence of non-renovated buildings** has been introduced.

- A guidance protocol for the incorporation of these indicators into financial valuation studies for renovation decision-making, in close combination with ALDREN's Renovation Roadmap that identifies renovation actions, packages and steps over time [1]

To select the most relevant indicators, three main financial types of direct and indirect benefits from deep energy related renovation have been identified:

- Global benefits from energy costs savings and potentially extending beyond the energy savings, to encompass reduced maintenance costs and replacement costs in life cycle approach / **Direct benefits**
- Asset attractiveness, property value / **Indirect benefits**
- Reduced risks for the providers and investors and better conditions for loans / **Indirect benefits**

Direct benefits are directly cashed by the occupant or owner: costs savings that can be easily expressed (e.g. energy costs, maintenance costs, replacement costs) and have a direct impact on cash flows.

Indirect benefits result from benefits to other stakeholders: increased asset attractiveness, reduced obsolescence, higher rents and lower risk of vacancy, which result from preferences of tenants and investors and thus also from local market conditions.

This has led to a selection of indicators related to global costs, financial value and financial risks (Figure 1)

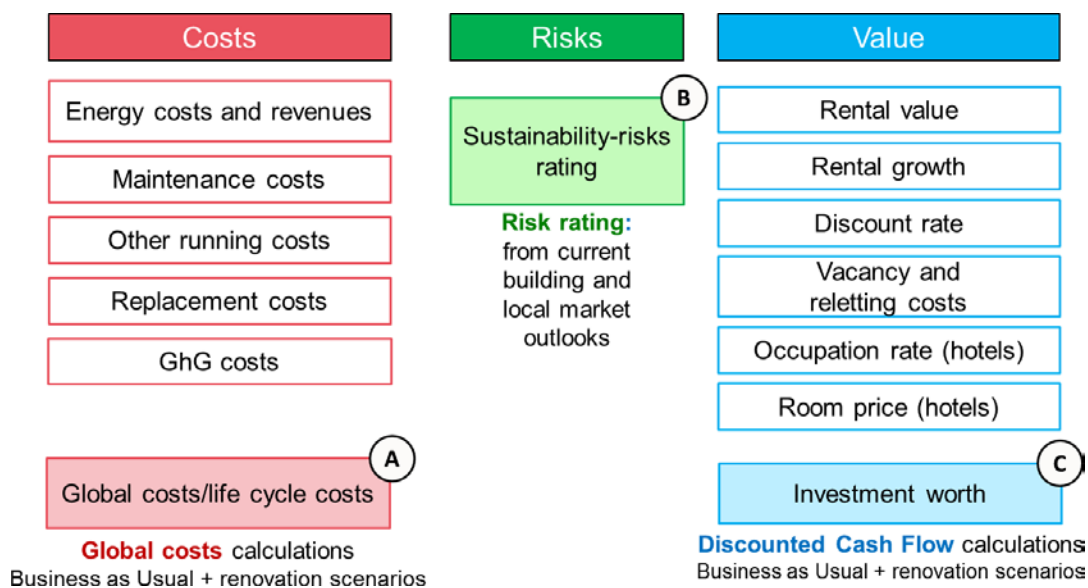


Figure 1. Selection of key economic and financial indicators.

Financial comparisons between renovation scenarios

One of the main objectives of ALDREN’s financial methodology is **to compare impacts from different renovation scenarios on the financial value of a building, to help owners decide when to invest in deep renovation.**

Two main steps are presented on **Figure 2**:

- **initial appraisal, business as usual scenario** (Step 1 on **Figure 2**): appraising the financial value of an existing building if no major refurbishment is undertaken
- **renovation decision making process** (Step 2 on **Figure 2**): appraising and comparing several deep renovation scenarios. The latter are based on the renovation packages reported in the ALDREN Renovation Roadmap with different scheduling of major renovation steps.

Comparing several scenarios based on the same set of elementary renovation actions and packages [2] answers key concerns: is it more interesting to fully renovate the building now or in 10 years? Is it better to wait and do a complex deep renovation at once or to plan several renovation steps with successive renovation works on different years?

Investment worth (value) is the indicator that is calculated for each scenario. According to International Valuation standards, it is defined as “*The value of an asset to a particular owner or prospective owner for individual investment or operational objectives.*” This indicator measures the benefits associated with the ownership of the building, encompassing benefits which may not be fully reflected in standard market analyses but are relevant to the owner. Investment worth has been chosen instead of Market Value, which is rather used for transactions and for accountability purposes.

The calculation method is the **Discounted Cash Flow (DCF) method over a 15–20 years long calculation period**, in which forecasted cash flows (earnings and costs) are discounted back to the valuation date. It is consistent with international practices used in real estate valuation and recommended in best practices since it allows for a more transparent integration of benefits associated with major investments in energy, health and comfort performance, while accounting multiple effects on the different value drivers.

The key difficulty is **to adjust key financial parameters in the DCF calculation, such as the discount factor, with information provided by other ALDREN modules about the building’s performance** (such as

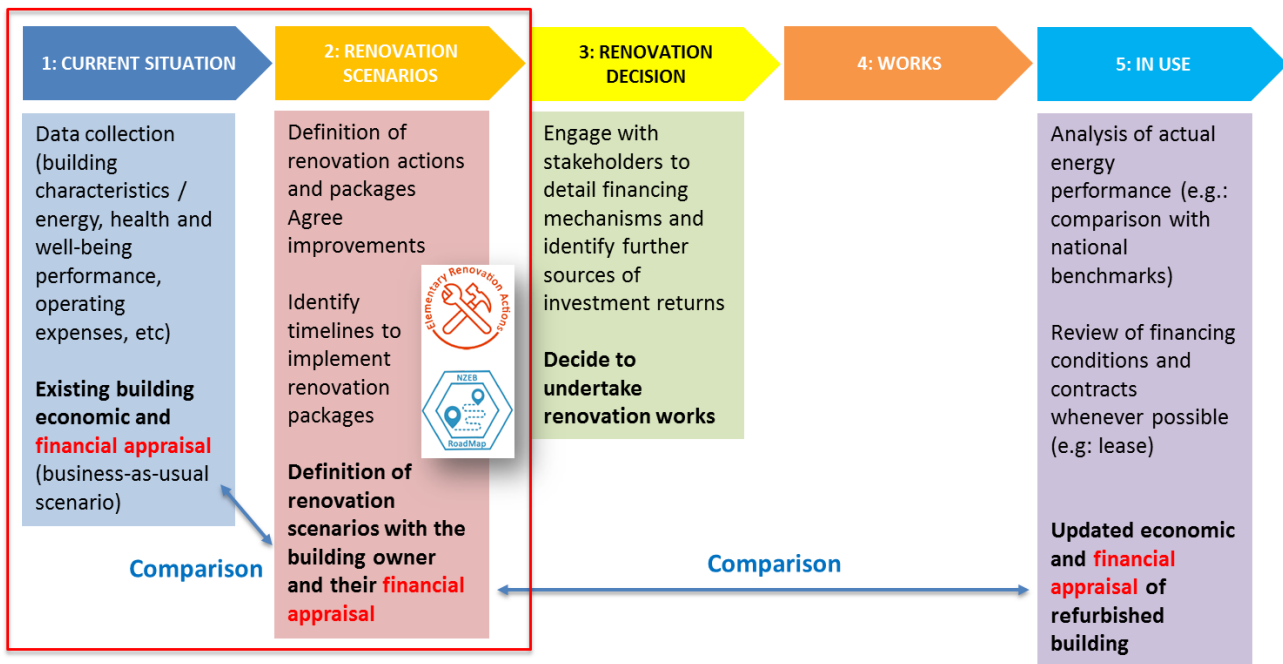


Figure 2. Overview of the ALDREN guidance protocol for financial valuation of renovation scenarios.

energy performance ratings and TAIL-rating). This is not done through a formula.

Deeply renovated well-equipped buildings tend generally to benefit from a better attractiveness, competitive rental values, and lower risk rates which relate to parameters in the DCF calculation. The assessment of such parameters depends strongly on local market conditions and should be accurately examined by qualified real estate valuers, based on market evidences.

The ALDREN approach is therefore to pass information about energy and IEQ to real estate valuers/financial analysts. ALDREN reporting tools such as the ALDREN EVC or the Building Renovation Passport (BRP) can be shared, as shown in Figure 3. Valuers then analyze local market conditions, lease terms and opportunities and evaluate parameters of the DCF calculations with their own methods: they translate ALDREN detailed technical information into financial parameters of the ALDREN evaluation protocol for the Investment Worth indicator.

Sharing detailed and holistic information contained in the ALDREN EVC and BRP is a step forward by comparison with current practices.

The methodology has been tested by Cushman & Wakefield on a pilot building located in Spain.

Risks appraisal

Another main outcome of the ALDREN methodology is to provide a simple and consistent risk rating for the banking sector, to appraise and compare buildings in terms of technical and financial obsolescence.

Banks can play a leading role in deepening renovation by promoting and providing financing for energy improvements. Banks and other financial market players may finance sustainability upgrades in the building stock through different means:

- mortgage transactions and other secured lending for the property
- specific loans for sustainability upgrades: this would occur for example when an owner asks for a loan to renovate its building
- corporate lending and debt financing: owners may issue bonds to finance among other things their real estate portfolio. Sustainability-related features may be included in this bond issuance. This is typically the aim of Green Bonds.

Lenders have a clear interest in better assessing the risks of their investments, including risks associated with energy, health and well-being performance. A risk rating would allow to assess within a single figure the potential impacts of energy, health, well-being and a good understanding of building characteristics and

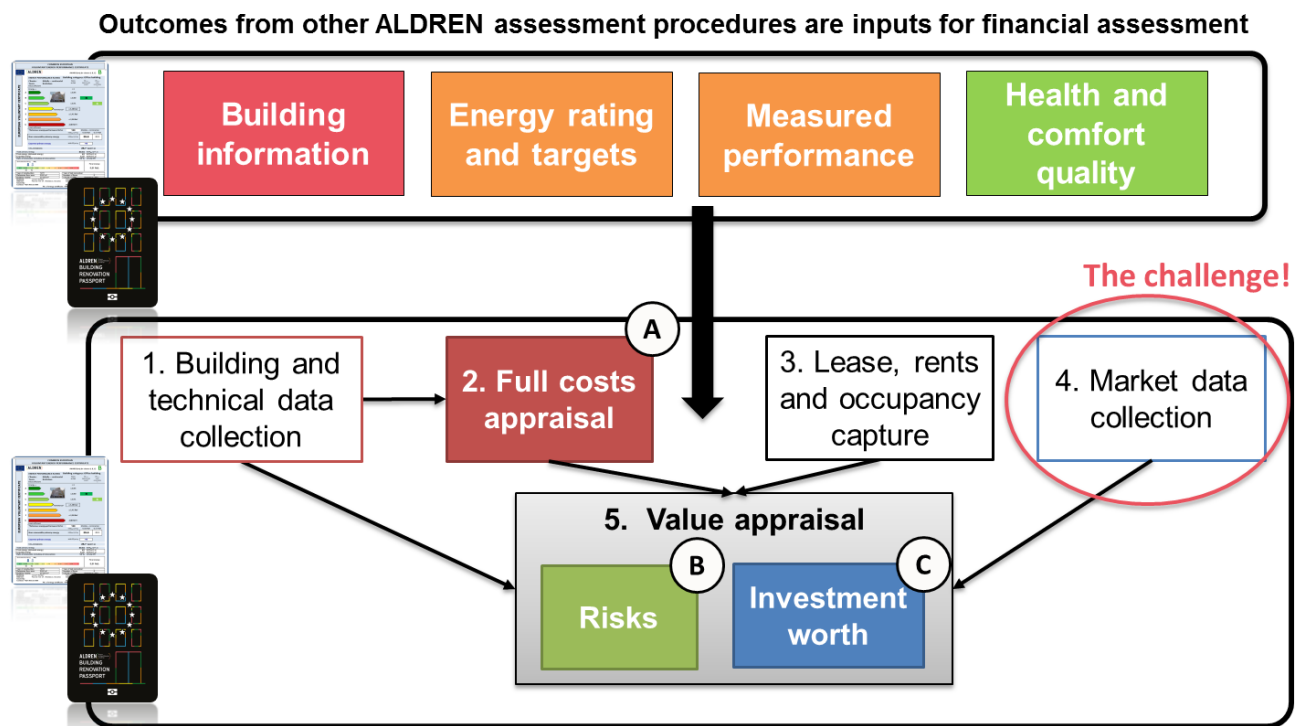


Figure 3. Information sharing between ALDREN modules on energy and IEQ and financial valuations.

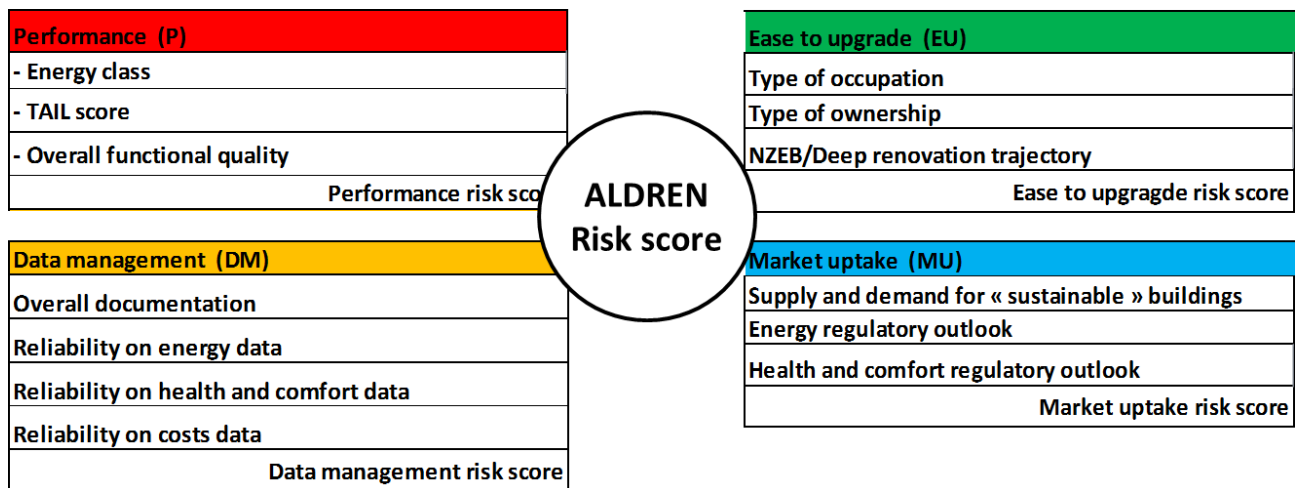


Figure 4. Sub-Indicators of the ALDREN Risk score.

pathway towards deep renovation, in terms of financial risks and futureproof quality of the asset.

Risk can be defined as "an uncertain event or circumstance that, if it occurs, will affect the outcome of a programme/project" [3]. Different types of risks exist according to the types of events or circumstances: legal risks, political risks, environmental risks, market risks, etc. Risk assessment approaches rely on investigating potential events that could negatively impact a given project/operation.

There is no standardised and widely acknowledged methodology to account for financial risks associated with sustainability-related obsolescence of building. Only a few projects and initiatives have proposed sustainability related risk rating in an asset valuation context.

ALDREN has started to develop a dedicated risk score that is based on a first simple and qualitative indicator. Risks are limited here to sustainability topics and features encompassed in the ALDREN project. The ALDREN risk rating comprises four main risk categories relating to energy performance, health and well-being performance (IEQ), energy and renovation cost management, information management. Environmental hazards, adaptation to climate change, functional obsolescence associated with new ways of working have not been considered.

Evaluation of the ALDREN risk score is based on a questionnaire that is currently being consolidated, regarding scoring and display of results, with possibility of weightings that could be introduced. The main sub-indicators are presented on Figure 4.

Conclusion

ALDREN proposes a methodology to better highlight energy, health and comfort topics into financial valuation of building assets, risk appraisal for investors and decision-makers and renovation decisions.

ALDREN helps overcoming three main barriers:

- To address financial market players with their own language
- To be easily integrated into current building valuation practices
- To help better integrate sustainability criteria into investment decisions for deeper renovations

ALDREN's methodology is transparent and based on a consistent and thorough review of existing reference international financial standards. It may:

- Help increase awareness about environmental issues among financial analysts,
- Provide a new framework for environment-related data analysis,
- In the long term, participate to shifts in market practices, especially on the financial level. ■

References

- [1] The ALDREN Renovation RoadMap is presented in a separate article about the ALDREN Building Renovation Passport in this REHVA Journal Special Issue.
- [2] As explained in our article about the ALDREN Building Renovation Passport and Renovation Roadmap.
- [3] Management of risk, 1st edition – RICS guidance – RICS, 2015.