

## IMPROVING BUILDING VALUE THROUGH FAÇADE WEATHERPROOFING

### 1.0 Intro

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A project completed on time, within budget, but that does not achieve the specified quality or performance criteria, will be considered to be a disappointment or even an outright failure. Such failures may be prohibitively expensive to rectify and can damage reputations overnight.

**“Quality is remembered long after the price is forgotten” Sir Henry Royce (1)**

The notion of “quality” is multidimensional, complex, and includes aspects that are not easily evaluated or quantified, such as: appearance, function, durability and maintenance. The opposite happens when considering the issue of initial cost – through a quick analysis it might look easy to quantify and evaluate.

The issue of cost is always on the mind of project owners, design teams, constructors and, of course, quantity surveyors. This is the a primary concern for the vast majority of project owners. Questions such as “what is the cost?” or “can it be any cheaper? we do it any cheaper?”, are the most common among construction clients. Should decisions be based only on this quick analysis? Certainly not.

### **Value for Money**

Achieving value for money may be seen as being a balance between satisfying clients’ needs and expectations, and the resources required to achieve them.

Clients always expect to have their projects completed on time, within budget, and in accordance with the preconized quality standards. However, quality is always constrained by cost and time. A balance needs to be achieved, and for this ,it is necessary to prioritize objectives.

A costumer needs to understand that compromising, or changing any of these dimensions, will certainly affect the remaining ones. Achieving a time frame reduction will certainly increase costs, and special measures have to be taken into consideration, in order to avoid quality deterioration.

Most of the times, the main challenge, at the beginning of any project, is to find the right balance between the following three dimensions: time, cost and quality.

The same balance has to be found when choosing has to be applied when choosing any specific construction solution. Most of the times, it is most advisable to do a careful and complete cost-benefit analysis, comparing different options in order to select the solution that has the perfect balance in accordance with the project goals.

### **The analysis of costs and benefits**

The analysis of costs and benefits is not an easy task. Some of the criteria that must be evaluated in an analysis of this type cannot be directly expressed in economic terms. But even though something can’t be expressed numerically, this doesn’t mean that it is less important or that its effect on a project’s success will be lower. In this Ebook chapter we will review some of the criteria that should be evaluated when selecting a façade’s sealing connection solution.

### **The cost of building leaks**

Before starting to review the above mentioned criteria, it is never too much to reflect once more on the cost of building leaks.

Expectations on buildings’ comfort are continuously increasing. We expect temperatures to be optimal, ideal lighting, air quality, and minimal noise. Tolerance for nuisances is minimal, and uncontrolled water penetration is on the top list of building pathologies that adversely affect building quality and indoor comfort. Building leaks affect the integrity of a building’s structure, through corrosion and rot, reducing thermal and acoustic efficiency, damaging interior finishings and largely contributing towards the deterioration of all building materials. Last but not least, leaks affect the health of buildings occupants through mould growth and its associated health risks.

It is also important to point out that building leaks are the number one cause for post-sale claims, and repairs associated with such claims usually have very high costs, and can ruin a company’s reputation.

## Cost-benefit Analysis – Key Criteria

We have made a summary of the key criteria that we believe should be considered in any cost-benefit analysis, when selecting a solution for sealing façade connections. We have divided these into in 3 groups: dimensions related to the material itself or (to the) supplier, dimensions related to the general product performance when related to the intended use, and finally, dimensions related to the installation set-up.

### A - Material / supplier

- Initial cost

The initial cost should always be clearly quantified with as much detail as possible. All accessories necessary for installation should also be identified and quantified in this cost analysis. Many times, the cost of the main product is identified, but the cost of the accessories, or complementary products, is not. As a result, the cost of the final solution will be a lot higher than the one that was initially considered.

- Availability / delivery time

It is essential to know the availability of the material and its expected delivery times, in order to determine if these are acceptable according with project scheduling, or if they will impede the selection of a specific solution.

It is also important to know if, in case of additional material is being required during installation, in a short period of time, due to unexpected motifs such as material robbery or misuse, this will be quickly obtained or not. If not, this might mean that selecting this solution might bring unacceptable delay risks to the project.

- Transport to site

Information regarding transport options and transport costs should be clearly identified. Most offers are ex-works and transport costs may cause substantial variations to the predicted solution final cost.

- Group materials / complete systems

It is a clear advantage if it is possible to group different solutions on a single supplier. Administrative costs will be lower and order management will be easier. Most of the times, when grouping orders, it can be possible for one to obtain price reductions due to higher final order values.

Studding interfacing bewails between different solutions will also be easier and safer. Technical support, during project development and installation, will also be easier and more accurate.

### B – Performance

- Health and safety during the life of the building

Health and safety concerns during installation and over a building's entire service life, must be taken into consideration. In some projects such concerns can be reflected or assured by standards requirements, but many times this doesn't happen. It is the responsibility of the project manager to do this evaluation and choose the safer and healthier solutions, whenever this is possible.

- Structural capability / Durability

When selecting any solution, it is important to have information regarding the expected durability of that specific solution. If a project owner requires a 20 year warranty from the contractor, the contractor needs to make sure that the durability of any selected solution is in accordance with such requirements. The existence of a material warranty for one solution and the inexistence of such warranty for another, may dictate the choice of final solution.

In the scenario were the project manager chooses a solution with reduced warranty, it is important to have this fact present, in order to evaluate the risks of a material failure and take them into consideration.

- Technical characteristics

As we have previously seen, technical characteristics must be aligned with project requirements. Mechanical resistance, UV or moisture resistance, etc., must be clearly assured in accordance with project requirements.

- Maintenance requirements

Identification of maintenance requirements has to be clearly done. A solution with a low initial cost but with high maintenance requirements might not be the ideal solution for a specific project (most of the time it isn't).

## C – Installation

- Installation time

Labour is usually the highest cost item in any construction project. A cheap solution with high installation time will not be the cheaper solution, and this must be taken into consideration at a global analysis.

At the same time, and not focusing only on initial investments, any time-saving solution, which saves time that can be used for other project needs, has a big advantage. Solutions that will contribute to save time, time this that can be used for other project necessities, will certainly have advantages that should be taken into consideration.

**“Time is money” Benjamin Franklin**

- Labour requirements / Ease of installation

Analysing the level of labour specialization that is required for the installation of a specific solution is important, in order to understand if the project manager will need to contract special resources, or if the expected teams are adequate to execute the installation with the expected quality parameters. In many projects it might be extremely difficult and expensive to contract specialized labour.

A solution with higher initial cost but with no need for specialized labour, with a much simpler installation method and lower error possibilities, is most of the time, a solution that will globally contribute to reduce global project costs.

- Health and safety issues on installation

For example, waterproofing solutions that require using open flames, call for safety procedures that have a cost. Also, they bring several risks to the project that need to be evaluate and taken into consideration. If installation will be done in places with low ventilation, the use of solvents may be problematic. An alternative without solvents or other hazardous substances might bring added value to the project.

- Site constraints

Project sites may have constraints, such as reduced spacing, which might prohibit the use of special tools or machines that are usually required for the installation of a specific solution.

- Climate constraints

If a project is located in an area where heavy rainfall or extremely low temperatures are expected, it is important to take this information into consideration, especially when doing a cost-benefit analysis. For example, a solution that needs its application surface to be 100% dry before installation, or that requires ambient temperature to be above 5°C, might make its application difficult during the winter, which might once again introduce significant project delays.

**The Effisus Way – Effisus Ecofacade**

**System options:**

Easy to use accessories and no special tools required  
 Customized dimensions and configurations – pre-fabricated pieces such as corners or collars  
 Self-adhesive strips or clip-in profiles

**Continuous technical support:**

Training on site  
 Inspections on site  
 Maintenance plans  
 Supporting material such as project customized installation manuals

**Consulting services:**

Solutions specification  
 Customization of solutions to specific project requirements  
 Support on mock-ups development  
 Compatibility tests

**Effisus Ecofacade Envelope** - Air tightness and water vapor management facade integrated system.

**Effisus Ecofacade** – Facade waterproofing solution.



(1) <http://arrow.dti.ie/cgi/viewcontent.cgi?article=1028&context=beschreoth>