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THE VALUATION OF "LCC - LIFE CYCLE COST" IN REAL ESTATE MANAGEMENT

Facility Management and Global Service in real estate management

"Facility Management" is the integrated managerial running of all the "no core business" services (referred to real estate, spaces and persons) relative to the management and organisation of real estate patrimony.
"Global Service" is an integrated system of FM services with the provider taking full responsibility for the results in terms of the reaching of the levels of performance pre-established by the grantor (by means of particular types of contracts based on results).
As such the two instruments seem to be strategic with regard to the decisional processes linked to the creation, management and valorisation of Asset Management.
The attractiveness of real estate on the market is directly and strongly conditioned by the maintenance - increase of its technical-functional performance and/or its formal and architectonic characteristics which have defined or can raise its corresponding economic value.
The correct and specific adoption of policies and processes of "integrated" technical management and "planned maintenance" (the key functions of Facility Management and Global Service) can bring definite contributions and support from the decisional, planning and technical-operative point of view.
For these reasons, the technical-running activity involved in Facility Management and Global Service must necessarily be brought back to the broader economic-financial vision of the "Life Cycle Cost" of each single building or real estate patrimony by those involved in the development of the relative decisions.

The "Life Cycle Cost" of real estate

The expression "Life Cycle Cost" (coming from the original expression "Life Cycle Cost", of British and American origin) means the real cost of a building or real estate patrimony, inclusive of all the direct and indirect costs arising during its entire life cycle, and therefore including those composed of the following three categories:

- *initial costs,* including the costs for the study, the design, promotion and construction of a building;
- *management/utilisation costs*, including the costs of the running and maintenance of the building;
- *final costs,* which can be relative to the renewal, the upgrading and the sale of the building.

In this field, there exists a considerable gap in Italy (at both the theory and application level) with respect to other European countries where the "Life Cycle Cost" valuation has been present for a long time in the culture and current practice of public and private grantors, the real estate sectors, designers and asset, property and facility managers.
In fact, still today in Italy the usual practice of valuation of the economic budget of a building or real estate is normally limited to the valuation and planning of the costs relative to the pre-management phases.
However, even though only recently, there has been a gradual and partial change in the philosophy and practice of the "Life Cycle Cost" in the private property market, especially as a result of "new" operators, particularly foreigners, who usually ask for a similar analysis during the project phase and who anyway value the opportunity for an investment not only on the basis of the construction/purchase costs of the real estate but also on the knowledge/control of the running and maintenance costs of the same (the correct investment analysis must consider the flows connected to the general costs and the revenue flows so as to be able to evaluate the "convenience" of the final budget for the investor).

The management/utilisation cost of real estate

The "Life Cycle Cost" valuation is a considerably complex business, especially as far as concerns the definition of the estimated running/utilisation costs.
With regard to this specific aspect, making reference to the criteria of a methodological-operative type, mentioned only by the most recent specialised national literature (see in particular, Dejaco, 2003), it seems opportune to consider a breaking down into two more categories of expense: the first is connected to the *running* costs and the second is relative to the *maintenance* costs contextually calculated during the life span of a building.

It is evident how the components of the “Life Cycle Cost”, even though representing the biggest part, are characterised by being less predictable, both from the point of view of the accuracy of the forecast and that of their quantitative definition.
The uncertainty and lack of precision of this quantification is linked to several factors which go back, for example, to the “prototype nature” of the real estate (to which therefore it is difficult to transfer historical data even though derived from similar contexts); to the uncertainty about what might happen during the lifespan of the building; to the different behaviour of the building and its components in use; to the different choices of maintenance put into practice by the owners and/or users of the building.
Running costs can include:

- Administrative costs;
- Taxes (among which, for example, the refuse collection tax);
- Costs for energy (fuel, electric energy) and water supply (coming in and going out), excluding those connected with industrial production;
- Insurance costs;
- Costs for the safety of the building and its spaces;
- Running costs of the plants.

In practice all the costs that make the building and its spaces useable, with just the costs excluded that are linked to the functions carried out inside the building (specifically connected to its use).
As far as concerns the valuation of the maintenance costs, it is opportune to identify the set of items that are quantifiable during the lifespan of a building and its parts. It is therefore necessary to define a suitable kind of separation of the building into parts to which to refer different types of maintenance and then the relative costs. The details of the division of the parts of the building, the maintenance work to be carried out and their economic quantification depend on the moment at which the valuation is put into practice and on the objectives for which the valuation has been requested.
For the *maintenance costs* reference can be made to the costs referable to the following categories of maintenance, and therefore to its carrying out on parts of the building and the relative work:

- Costs of preventive and/or cyclical maintenance;
- Costs of corrective maintenance or repair of damage;
- Costs of maintenance for improvement or obsolescence;
- Costs for cleaning.

These costs are defined according to the maintenance policies established by the owner and the user of the real estate with direct references to whatever is set down in the maintenance plans and programmes.
This emphasises how the valuation of different “types” of cost cannot be carried out only contextually to the different phases of proposal, project, construction, use and disuse of the real estate, but must be considered and valued, according to different levels of detail, right from the valuation phases of feasibility and design of the work. In fact, it is at this time, in the context of the valuation of “global cost”, that the choices are made that will determine for the most part the running and disuse of real estate.
It is therefore right to make a definition of different values of global cost during the project phase of a building, according to the different techno-typology choices and also the possible ways of organising the management and maintenance of the building in its entirety, its parts and components. This is last but not least in the valuation of the possible different interpretation scenarios of final costs.
These different valuations of global costs can be used to refer the investor to the type and modality of investment that is most suitable to the market situations and to his own organisational and economic resources.

The updating of “Life Cycle Cost”

A problem remaining unsolved concerns the modalities of valuation and comparison of costs, which is difficult to interpret if separated from the development modalities of the building process, both as far as concerns the initial phases but above all for the control and comparison of the costs connected with the phases of the use of the building.
In fact, the “ways” of running and carrying out maintenance, both with regard to the single components and the whole building system, involves quite a potentially diversified costs distribution, both in the case of project alternatives of a technological type, but also for the same building to which different maintenance “profiles” are applied.
In this context it becomes necessary to define the way of comparing the set of initial costs, usage costs and final costs to a conventional model, so as to make the possible investment alternatives comparable, that is by the method of costs updating.
The problem to be resolved is represented in particular by the possibility of making the costs distributed over time comparable, also at a distance from the moment of expenditure, represented by the maintenance costs of the real estate.

It must however be considered how in the real estate field the life cycles to be covered are extremely broad; this makes it necessary to pay particular attention to the use of the method, considering, for example, the variability of the discount rate value to be included in the estimate models over long periods of time.
In conclusion, it is evident how – in the context of the decisional process of real estate – the aspects and the factors outlined up to now cannot represent the only parameters of valuation of the correctness of an investment, in so much that factors of economic-financial valuation come into play which are difficult to interpret with regard to the production of real estate.
In particular, it is necessary to bear in mind the different factors that can influence the cost of money or the discount rate, the first being the value of inflation, which over periods that can be compared to the life cycle of a building (and/or its components) behaves in a way that is difficult to estimate and potentially different (cost of materials, cost of labour etc.).

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[1] The Association "TEROTEC - Laboratory for the Innovation of Urban and Real Estate Patrimony Maintenance and Management" was established in May 2002.
Terotec is a "technological-scientific laboratory" of national importance set up to promote, develop and spread the culture and innovation in the field of the maintenance and management of urban and real estate patrimonies, with particular reference to its application to real estate, historical, artistic and architectonic buildings and works of national heritage, road infrastructures, technological networks, green areas and urban design.
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