



WILLMOTT DIXON

WHOLE LIFE COSTS AND LIFE CYCLE COSTS IN GOVERNMENT PROCUREMENT

Introduction

Willmott Dixon Ltd is part of the Willmott Dixon Group, one of the UK's largest privately-owned construction, housing, property care and investment companies.

This is one of a series of papers which Willmott Dixon is launching in 2009 on issues facing the construction industry. Measuring whole life and life cycle costs may not appear to be a very pressing concern for the construction industry in the current climate; but in fact, as this paper shows, it is more than ever vital that clients procure and builders construct *sustainable* buildings. Taking into account the *real whole life cost* of a building is an important part of the sustainability *and* financial agenda.

Willmott Dixon and Sustainability

Willmott Dixon is committed to being a sustainable business that aims to be carbon neutral by 2012 and to make smarter use of natural resources in order to fulfil its commitment to sending zero waste to landfill by 2012. One key element of being a sustainable business is to achieve the best **whole life value** for clients by creating a building which helps to reduce operating and **life cycle costs** and which minimises the impact on the environment. These are also important considerations for public, and many private, sector clients when procuring new buildings or indeed refurbishing existing buildings.

By insisting on informed life cycle cost data from the earliest stage of procurement, public sector clients can make decisions which meet their business needs and policy objectives, including procuring sustainable buildings with lower life cycle costs.

Definitions: Whole life cost and life cycle cost

The terms **whole life cost** and **life cycle cost** have been used interchangeably – and their meanings have become confused. Furthermore, the components of a whole life cost calculation have varied from client to client, consultant to consultant and among contractors.

With no common ground, clients could not be sure what they were asking for, comparisons were impossible and it was difficult to work out whether actual costs had matched up to the estimates.

This unsatisfactory situation began to be addressed in June 2008, with the publication of two documents on life cycle costing: an international standard and a UK supplement.

The international standard, BS/ ISO 15686-5 Buildings & Constructed Assets, set out clear definitions for the two terms:

Whole life costing is a methodology for the systematic economic consideration of all whole life costs and benefits over a period of analysis, as defined in the agreed scope.

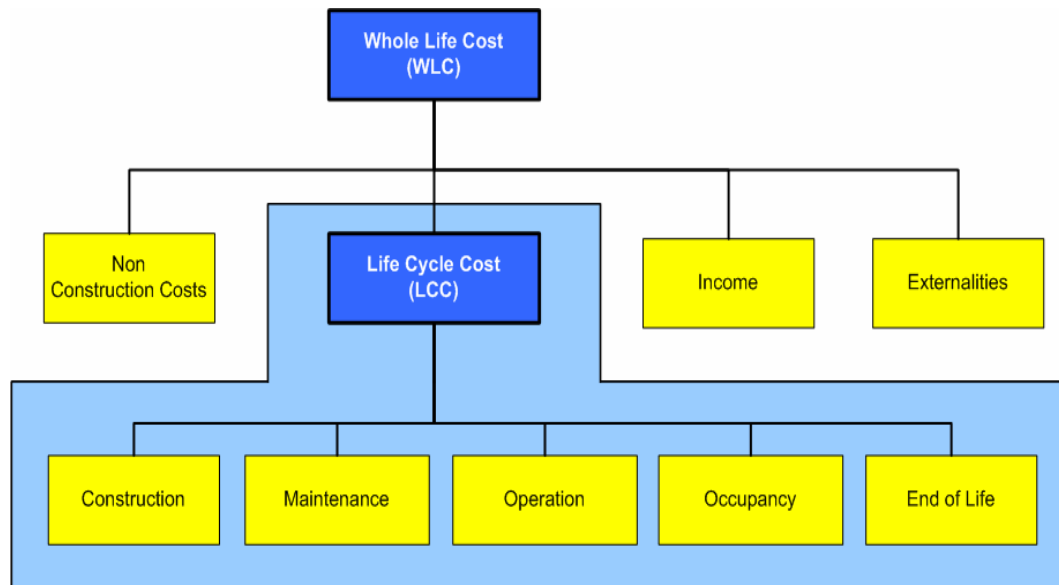
Life cycle cost is the cost of an asset, or its part throughout its cycle life, while fulfilling the performance requirements.

Source: BS/ ISO 15686-5 Buildings & Constructed Assets: Service Life Planning: Life Cycle Costing

Its UK supplement, 'Standardised Method for Life Cycle Costing for Construction Procurement' clarifies the definitions for the UK market and sets down in detail how companies should go about working out a life cycle cost plan.

Broadly, **life cycle costs** are those associated directly with the building; while **whole life costs** include other costs such as land, income from the building and support costs associated with the activity within the building. The expertise of the construction industry is best placed to deliver **life cycle costs**, which its clients can then use to calculate **whole life costs**.

Agreement on these definitions and a consistent approach should enable **life cycle costing** and **whole life costing** to become more widespread.



Recommendation 1

The new BS/ISO on life cycle costing and associated '*Standardised Method for Life Cycle Costing 2008*' should provide guidance for clients, including public sector clients, to make sure they ask the right questions about the sustainability of a project at an early stage of procurement.

The value of life cycle costing

Construction of a building accounts for a fraction of its running cost, which in turn is a fraction of the business costs incurred over that building's life. Exactly what those fractions are will depend on the building and the business. The ratio 1:5:200 is often quoted, especially by the Royal Society of Engineering.

For owner-occupiers who are building their own office block, the value of life cycle costing is clear. For example, there is no point in procuring a flagship HQ only to discover five years later that it's too expensive to heat and maintain. Accurate life cycle costing allows a client to compare different options at design stage, analyse the cost and plan what future expenditure will be in 10 to 15 years' time.

Recommendation 2

Life cycle costing will only be of real use if applied early in the procurement process – in appropriate detail – otherwise designs may be too far developed to make changes in order to reduce life cycle costs.

Recommendation 3

The opportunity to make big savings is greatest at the early stages of procurement and design, so the supply chain must be involved from the outset.

Lowest life cycle cost does not always mean an initial higher capital expenditure, if the right questions are asked early in the process. However, too often, life cycle cost plans are produced too late in the project cycle and only give an estimate of costs. These calculations need to be incorporated at the start of other process, and not be seen as a 'bolt-on' when planning is already well advanced.

Current situation

At the moment, few clients make decisions based on life cycle costs or whole life costs. PFI is a notable exception because the bidder is committing not only to construct the building but to operate it for 25 or 30 years. So the cost to operate and maintain the building forms a vital part of its calculations and tender.

For government clients, who are holding the public purse, life cycle costing should be more important than capital costs. The Office of Government Commerce (OGC), which sets guidance about how national and local government should procure, has already stated that whole life cost should be taken into account when constructing new buildings.

"Long-term costs over the life of an asset are more reliable indicators of value for money than the initial construction cost...This means that the department should be prepared to consider higher costs at the design and construction stages in the interests of achieving significant savings over the life of the facility."

(The Office of Government Commerce's Achieving Excellence in Construction Procurement Guide 7: Whole-life costing and cost management, 2007)

In practice, this has proved difficult for many government clients to adopt because budgets for construction and operation are separate. On small projects where the client may have little experience of procuring a new building, whole life cost can be a difficult and confusing subject.

The National Audit Office has pointed out this gap between Government policy and action on several occasions. For example, in its 2007 report '*Building for the future: sustainable construction and regeneration on the government estate*', it called for government departments and agencies to "exploit the existing scope afforded by the Treasury guidance to take into account whole life costing, including long-term operational savings which can be achieved by adopting a more sustainable approach."

There are some clients – such as universities – who are now starting to make procurement decisions based on life cycle rather than initial costs, though they tend to focus on the heating and ventilation systems where savings in running costs can be clearly demonstrated.

Recommendations 4 and 5

Public sector clients and the industry need to take more concerted action to follow through the recommendations and scope afforded by OGC and NAO. Capital and revenue should be pooled when possible when procuring a new building, even though they are in separate budgets for most organizations.

Adopting a standard such as the proposed UKGBC's Code for Sustainable Buildings will encourage uniform acceptance of life cycle costs at procurement stage.

Conclusion

Most in the public sector recognise that lowest capital cost for a construction project does not give the most affordable solution. HM Treasury defines 'value

for money' as "the optimum combination of whole-life cost and quality to meet the user's requirement"; and OGC advises that "awarding contracts on the basis of lowest price tendered for construction works is rarely value for money; long-term value over the life of the asset is a much more reliable indicator". For the public sector, the use of whole life costing is obligatory in making the case for investment in construction. (See OGC Achieving Excellence Guide 7 and Common Minimum Standards).

However, once the 'whole life cost' box has been ticked when making the case for investment in construction, rarely is that carried through with actions. **When procurement starts, whole life costing slips down the list of priorities.**

It is vital that the views expressed by HMT and OGC above are put into everyday practice by public sector clients.

Willmott Dixon believes that there should be a common ground on distinction between Whole Life Cost and Life Cycle Cost, and that this needs to be embedded into the thinking of public and private sector alike, with the Government leading by example. Jonathon Porritt, current Chairman of the Sustainable Development Commission and now also a Board Member of Willmott Dixon commented as far back as 2004: "***Without whole life costing being embedded at the heart of all capital programmes, applied universally not episodically, ministers should give up on their carbon targets, however worthy and forget any notion of sustainable government estate.***"

Contacts

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