

LOWER LIFECYCLE COSTS – A FUNDAMENTAL YET OFTEN OVERLOOKED STRENGTH OF STAINLESS STEEL

The 'simply brilliant' look and feel of stainless steel means it has always been associated with top quality construction and finishes. Unfortunately, this presents something of a double-edged sword since by virtue of its premium nature, it's also traditionally seen as more expensive in comparison to other initially cheaper options.

In the short term, that may well be case but over a 100-year lifespan of a building that is certainly not the case. Realising the need to turn this misperception on its head, the Southern Africa Stainless Steel Development Association (Sassda) launched its first Lifecycle Costing App in 2016, which has subsequently lifted the lid on the 'bigger picture' - namely stainless steel's ability to ensure far lower overall life cycle costs (LCC).

The benefit of the app is that it allows for the real-time calculation of the LCC of stainless steel via an easy to use, pre-programmed calculator. This requires the entry of key top-line data, followed by the simple click of a 'Calculate' Button which in turn generates a breakdown of the relevant costs and the ability to e-mail this to the relevant recipients.

Sassda executive director, John Tarboton elaborates: "We developed the app specifically because the calculation of the long-term cost benefits is a complicated process - influenced by several complex factors such as the cost of capital, net present value and discounted cash flows.

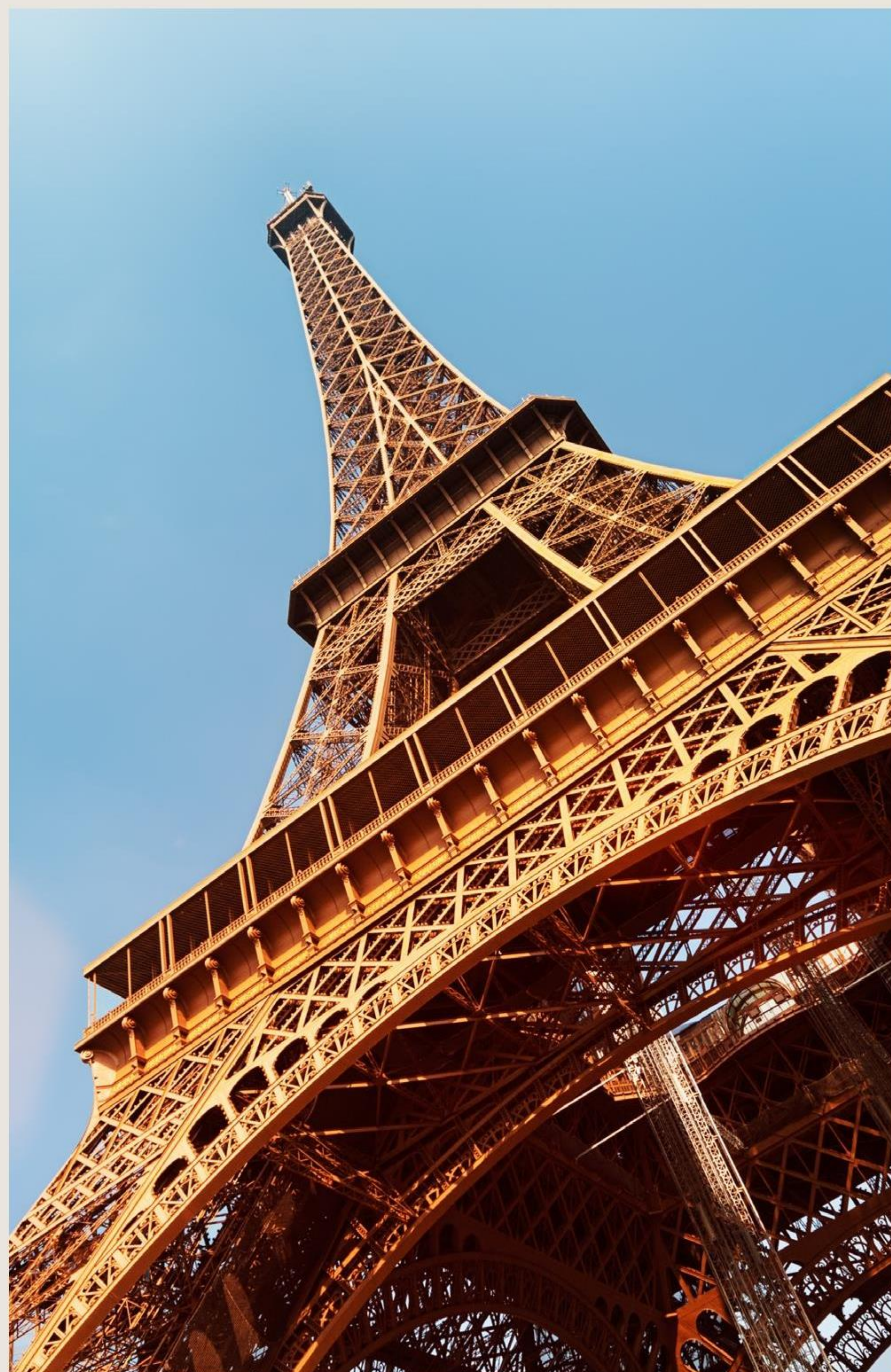
"While engineers do consider these costs, they are not accountants and it became clear that a tool was needed to simplify the process and allow for accurate material cost comparisons over the entire life-cycle of a project.

The app therefore assists engineers to calculate total LCC using the standard accountancy principle of discounted cash flow, so that total costs incurred during a life cycle period are reduced to present day values. This allows a realistic comparison to be made of the options available. In terms of material selection, the app also enables potential long-term benefits to be assessed against short-term expediency.

To cement the app within the local market, Sassda ran a highly successful LCC competition during 2017, which culminated in the award of a R125 000 prize of a trip to Paris. This tied in with the competition requiring entrants to download the LCC App and calculate the cost savings that could have been achieved if the Eiffel Tower had been constructed out of stainless steel, either 3CR12 or LDX 2101, rather than mild steel.

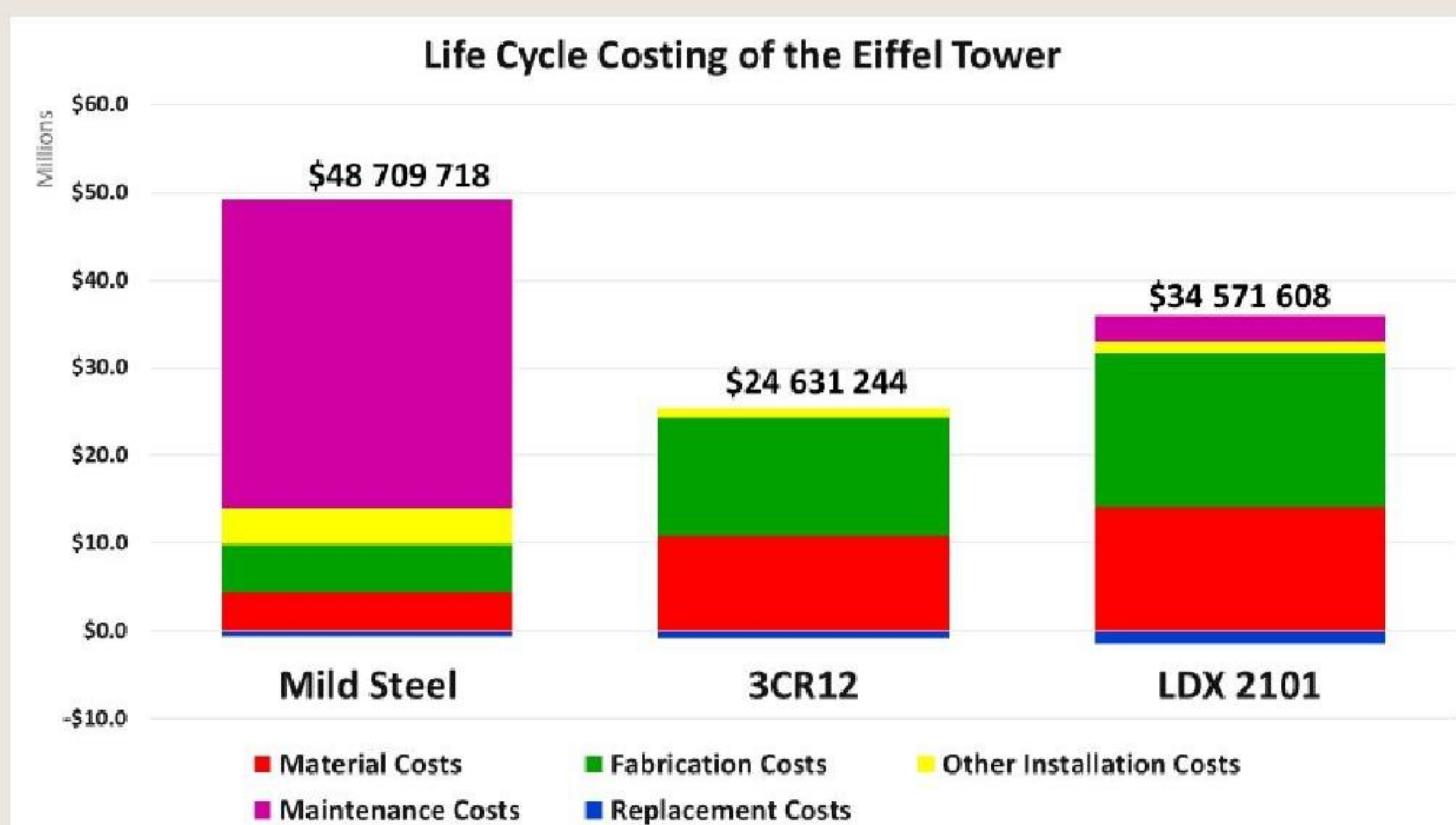
The calculation needed to take the current inflation rate, the cost of capital and the real interest rate into account, together with its ongoing maintenance and painting expenditure.

Due to the success of the app's capabilities, Sassda is considering holding a life-cycle costing competition every two years, to continue proving the value of stainless steel over the long term and strengthen demand for the material in architectural and structural applications.



Net Benefits of Sustainable Construction

The graph below illustrates the total life cycle costs of the Eiffel Tower, if it were made today in mild steel, 3CR12 or LDX 2101. The initial costs (material costs + fabrication costs + other installation costs) are shown in 2017 present day value.



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