

URBAN FURNITURE CASE STUDY

Life cycle costing in the city of Melbourne



Introduction

In recent times the city of Melbourne in Australia undertook a life cycle costing comparison between Carbon Steel and Stainless Steel for use for its street furniture. The products considered and manufactured included bins, seats, benches and drinking fountains.



Considerations

The city administration team considered the life cycle cost for both materials over a 25 years term. Essentially two broad costing components were considered, namely;

- a. The initial cost of the different products in the two materials (known as the procurement cost)
- b. The ongoing maintenance cost which included costs associated with the following situations
 - Items physically destroyed when in situ and in service
 - Repairable damage to items when in situ and in service (e.g. graffiti on items)
 - Any required repairs due to natural corrosion and degradation



Considered furniture



| Bins

- 1200 tradition waste bins
- 500 recycling bins



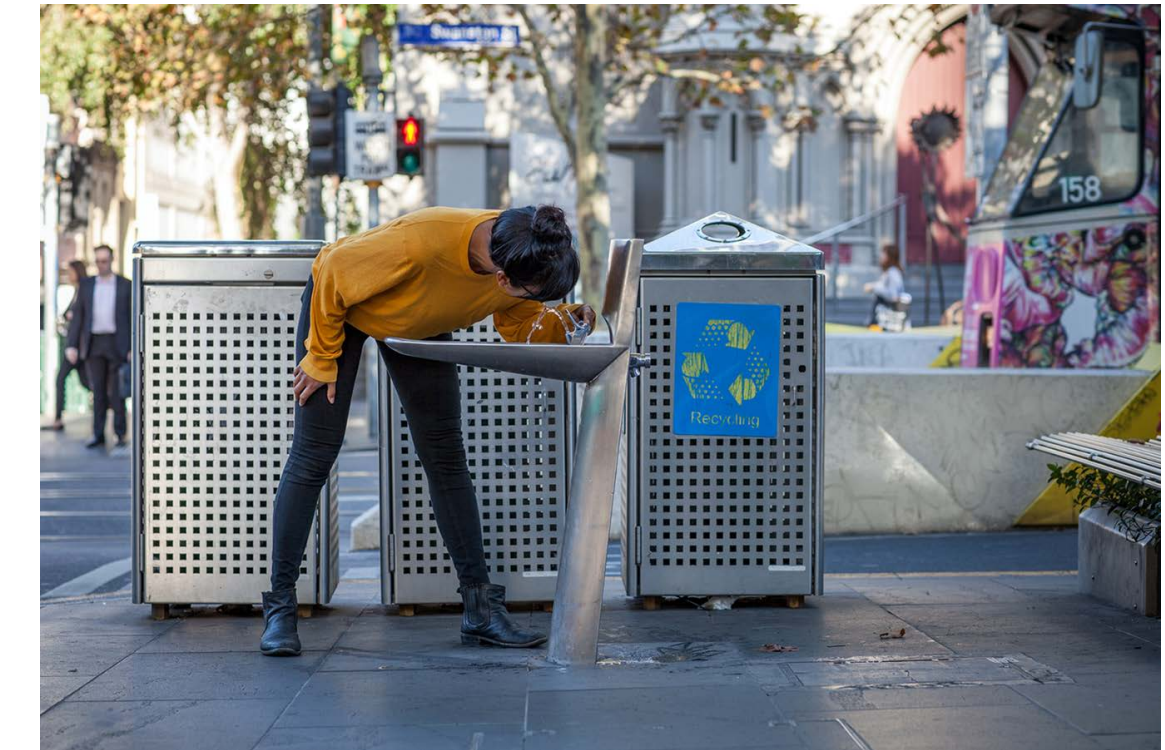
| Seats

- 800 urban seats



| Benches

- 400 urban benches



| Drinking fountains

- 80 drinking fountains

Typical annual damage

For stainless steel items		For carbon steel items	
156 traditional and recycling waste bins destroyed		260 traditional and recycling waste bins destroyed	
10 seats and benches destroyed		10 seats and benches destroyed	
1 drinking fountain destroyed		4 drinking fountains destroyed	
40 traditional and recycling waste bins repaired		200 traditional and recycling waste bins repaired	
		120 seats repaired	
		40 benches repaired	
Destruction rate	5.6%	Destruction rate	9.2%
Repair rate	1.3%	Repair rate	12.1%



Study results

The study showed the following results for the same number of items over the 25 years term

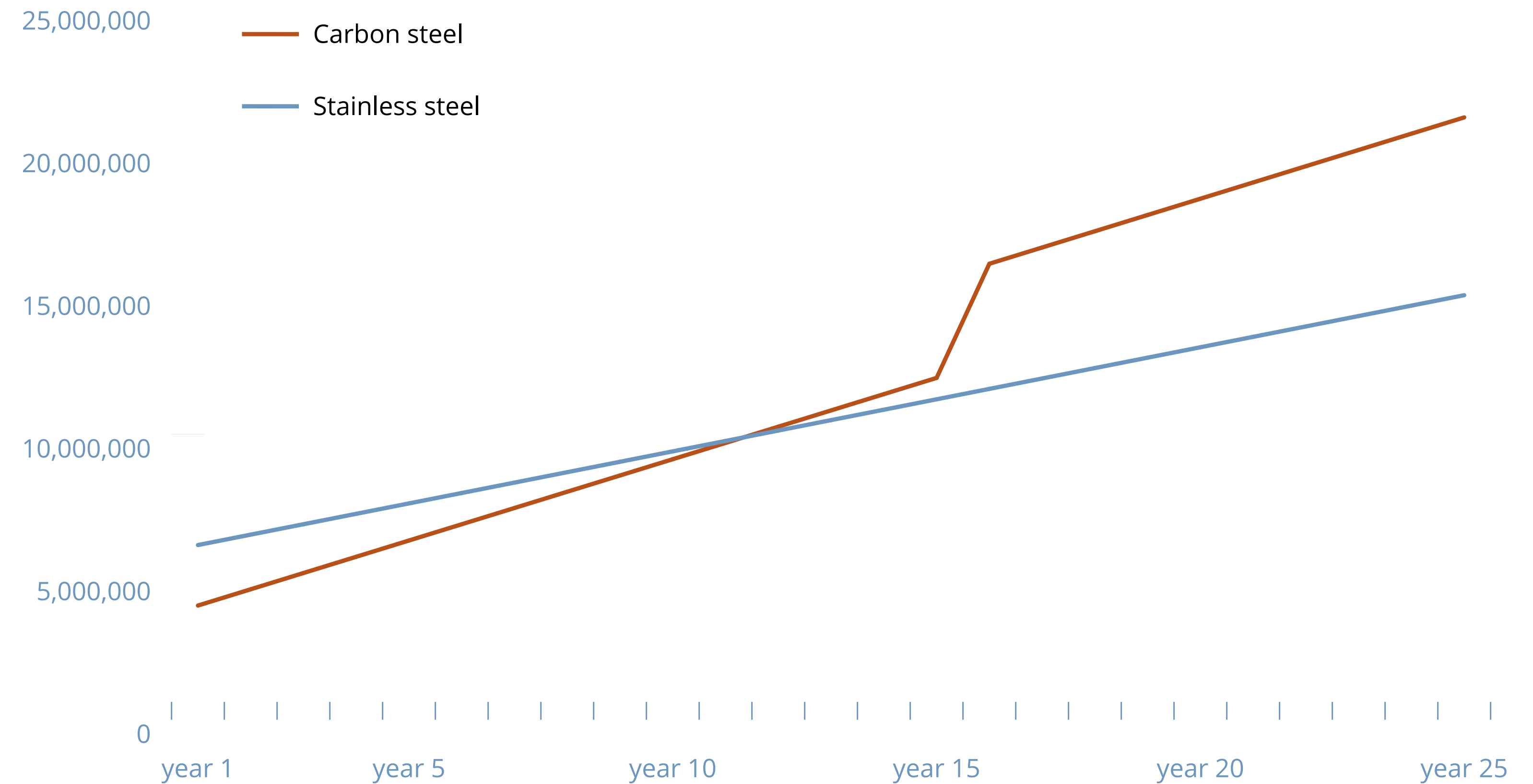
a. Products made from Carbon Steel cost in total 21.1 million AUD which comprised

- 4.0 million AUD of initial procurement cost
- 4.0 million AUD of early replacement (re-procurement) cost
- 0.6 million AUD of maintenance cost (ie; graffiti removal and re-coating of surfaces) per year

b. Products made from Stainless Steel cost in total 14.8 million AUD which comprised

- 6.2 million AUD of initial procurement cost
- 0.4 million AUD of maintenance cost (ie; graffiti removal) per year

Total cost in AUD for 25 years



Conclusion

Hence the benefits of choosing stainless steel for their street furniture was a financial saving of 6.2 million AUD over 25 years or 249k AUD per year. The stainless steel products are expected to last much longer than 25 years which will make the realized saving even larger. In times of financial pressure, choosing sustainable long-life materials is always a wise use of available funds.

All pictures and information courtesy of the City of Melbourne (melbourne.vic.gov.au)



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About worldstainless

worldstainless is a not-for-profit research and development association which was founded in 1996 as the International Stainless Steel Forum.

Its primary roles are to undertake stainless steel industry beneficial tasks that are better coordinated centrally in the fields of

- Promoting industry and material sustainability benefits
- Conserving resources and promoting the circular economy
- Providing economic and industry-leading statistics
- Support industry health & safety needs and developments
- Outlining market development and expansion opportunities
- Maintaining brand reputational positioning
- Materials education

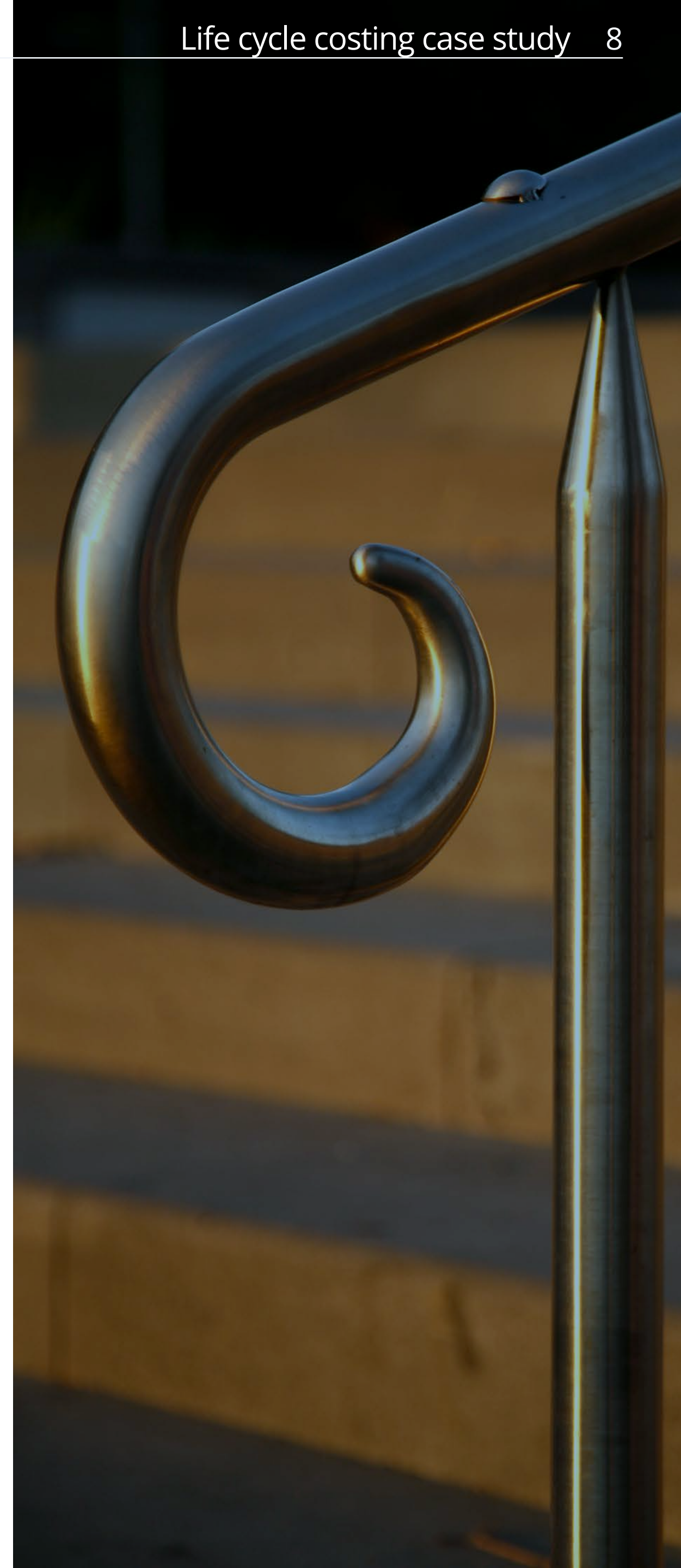
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