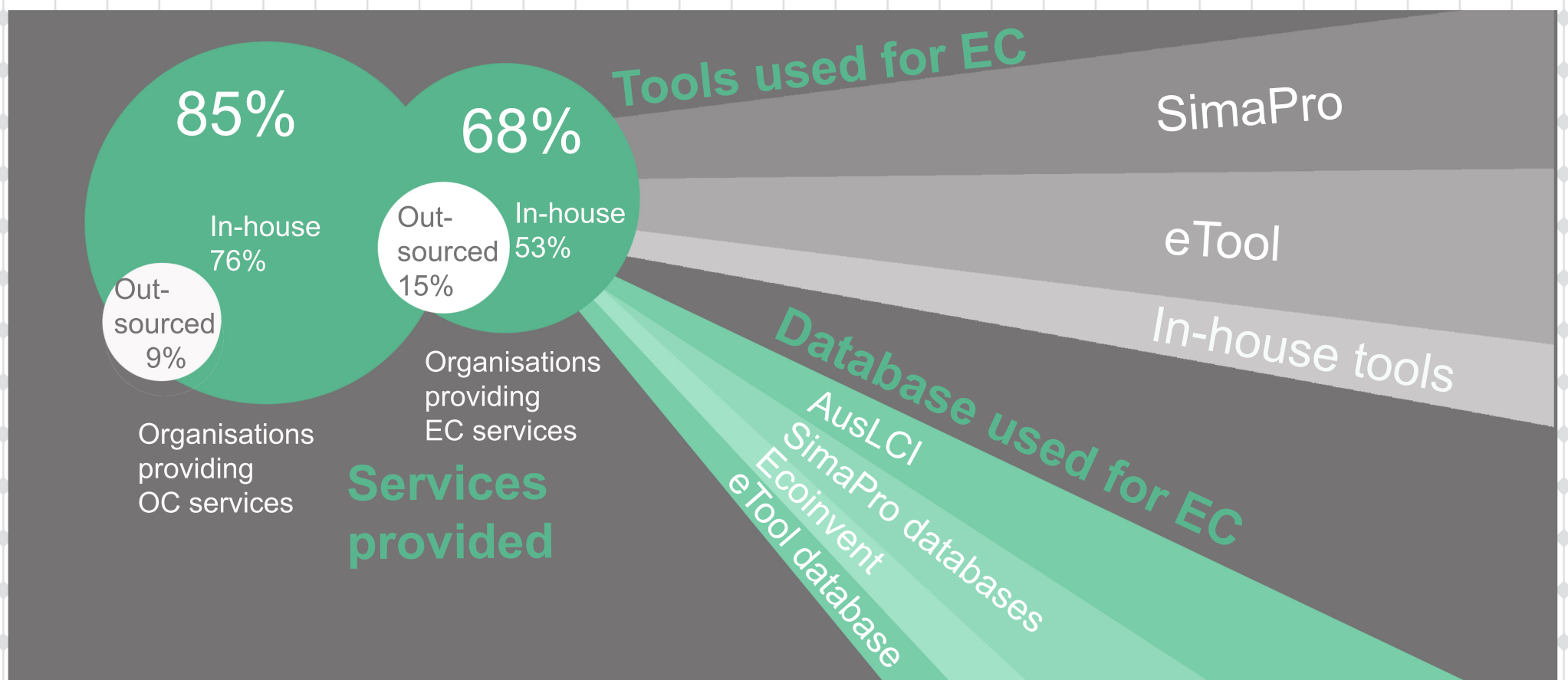


Australian construction industry's approach to embodied carbon: A scoping study

The construction industry emits a significant percentage of greenhouse gas (GHG) emissions a year. Industry and government have been largely focussed on the reduction of operational carbon (OC) emissions, referring to the emissions associated with the operation of the building (cooling, heating, lighting etc.), as a means to tackle climate change. However this focus has left the emissions embodied in the building materials, i.e. embodied carbon (EC) largely ignored. As OC emissions continues to decrease,

EC emissions will start to play a larger role in the life cycle carbon emissions of the built environment. With the lack of literature detailing how the Australian construction industry is tackling these EC issues, an online survey was conducted as part of the Integrated Carbon Metrics (ICM) Project by the CRC for Low Carbon Living. The aim of the survey was to gain an understanding of industry's current approach to EC; identify perceived strengths and weaknesses of current EC assessment tools and identify potential areas for improvement.



EC Tool strenghts

Ability to access multiple databases;
Comparable metric

Comprehensive and in-depth analysis;
integrated with thermal performance

Affordable; Simple and online platform

Compliant with existing ISO standards

Ability to model recommendations;
Nested templates;

Data

Method

Usability

Regulation

Outcomes

EC Tool weakness

Lack of Australian data; lack of product specific data; Data source questionable

Inconsistent methodology; Not a holistic assessment

Time consuming; requires expert knowledge and additional training; no (BIM) integration

Boundary and accuracy questionable

Lack of benchmarks; Inability to compare building products ; No 3D integration