

Understanding your project lifecycle greenhouse gas footprint: About the Climate Positive Pathfinder



Designed by Landscape Architects for Landscape Architects

- Developed by Landscape Architect Pamela Conrad with a Landscape Architecture Foundation grant
- The App was launched in November 2019 at the IFLA world conference
- Version 2.0 released August 2020

Free and online

- Online calculator – no software to download
- No MAC or PC limitations
- It is crowd funded, so donations are most welcome to provide ongoing improvements

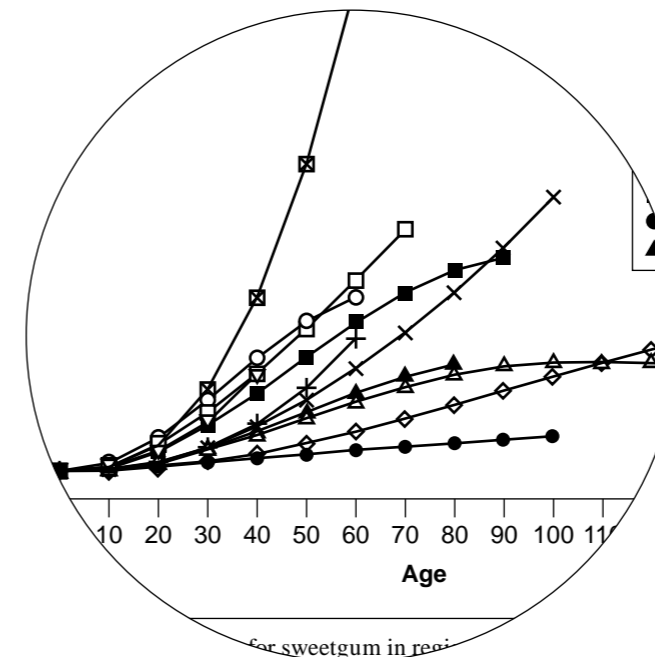
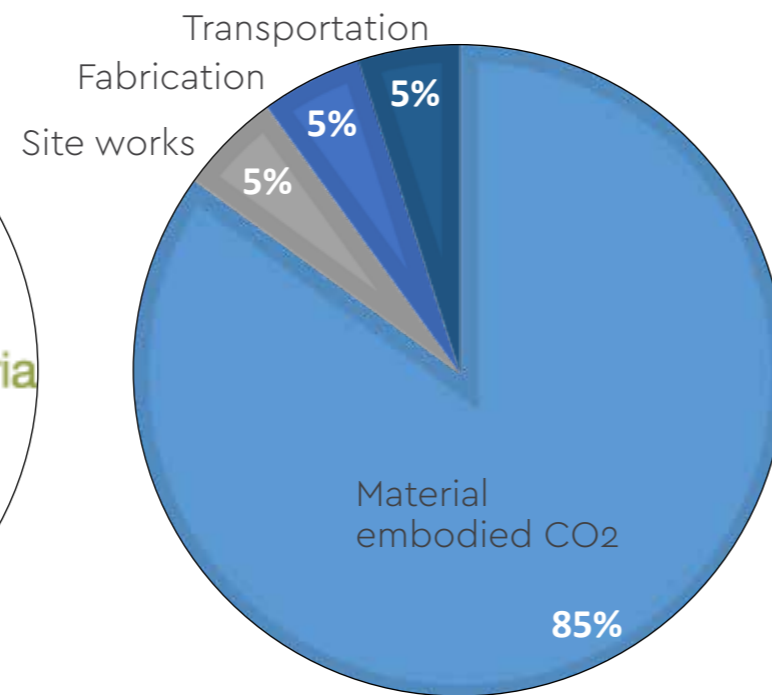
Simple design tool

- It is intended as a design and planning tool - not an in-depth carbon accounting tool
- It is simple to use
- Allows for design iterations and version comparison
- Can be used for student projects and unbuilt projects

AILA is an Allied partner with the App

- AILA now a allied partner along with CMG Landscape Architects, Atelier 10, the Landscape Architecture Foundation, ASLA IFLA, CSLA, & Architecture 2030
- Metric version made following request from AILA and the Landscape Institute
- The biggest question we have been asked is – is this American based data applicable to Australia? - The short answer is yes

Understanding assumptions behind the Climate Positive Pathfinder



Athena data - and average emissions

- The Athena Sustainable Materials Institute is a non-profit research collaborative bringing life cycle assessment to the construction sector
- Average embodied carbon for each material
- Embodied carbon from Environmental Product Declaration forms

Construction emissions embodied in materials

Additional 15% on top to cover:

- Transport 5%
- Fabrication 5%
- Site Work 5%
- Emissions from lifecycle replacements allowed for in 50-year timeframe

Averaged tree

- Simplified to small, medium and large trees
- Evergreen or deciduous
- Urban trees not forest trees
- Data from extensive research by the US department of Agriculture, where they looked at hundreds of urban trees in different climate zones in America.
- It assumes a non-linear parabolic sequestration rate

Averaged climatic growth zones

- Growth zones determine number of growing days per year
- Determined by project location and extrapolated globally from USDA growth zones
- Brisbane / Sydney / Canberra / Adelaide / Perth / **Hobart** are Central zone.
- Darwin / Cairns / Broome is in the South zone

Climate Positive Pathfinder - Data inputs



Materials (Emissions)

- Felled trees at the beginning of a project, and lost carbon and future sequestration
- Embodied carbon in concrete and steel reinforcing and other materials
- Embodied carbon in aluminium seats and furniture
- Embodied carbon in steel and galvanised products like handrails and balustrades
- Direct carbon emissions from transport and installation, workers vehicles etc.
- Embodied carbon in material replacement costs



Plants (Sequestration)

- Primary carbon sequestration in trees
- Secondary carbon sequestration in shrubs
- Carbon sequestration in soil
- Carbon sequestration in wetlands



Operations (Emissions)

- Direct emissions from ongoing maintenance by 2 stroke fossil fuel powered machinery - leaf blowers etc.
- NO₂ emissions from lawn fertiliser regimes
- Construction emissions from growing, transporting and planting trees
- [Loss of sequestered carbon in trees through bushfire]*
- [Loss of sequestered carbon in trees and soil at time of demolition]*

*Not included in app.