climatepositive design

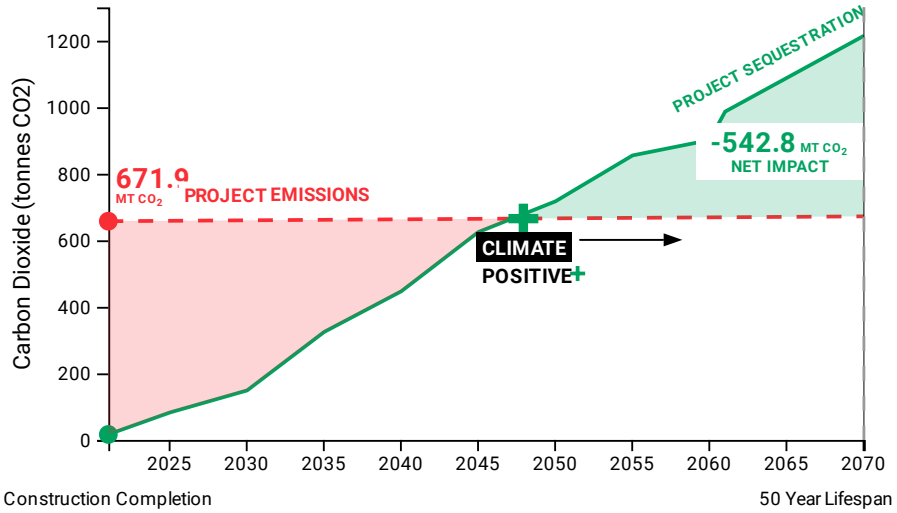
27
years to positive

Climate Positive Design **Scorecard**

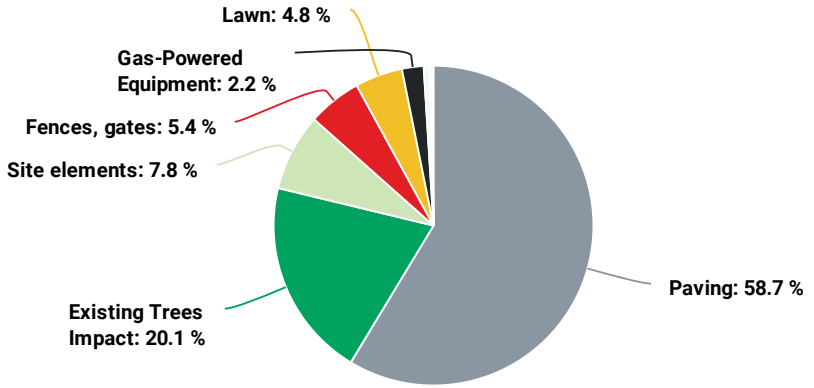
Project Name **Pacific Plaza**
Type of project **Park**

Net Impact over 50 years	**-543 Metric Tons**	**Total Area**	**163,078 sq feet**	**4 acres**
Total Material Emissions (Embodied Carbon)	486,181 kg CO_2-eq	Planted area	96,812 sq feet	59% of total area
Total Plant Sequestration	1,214,719 kg CO_2-eq	Emissions per area	4.1 kg per sf	
Total Operational Emissions	185,727 kg CO_2-eq	Sequestration per area	7.4 kg per sf	

Net Project Impact



Project Emissions



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Project Name **Pacific Plaza**
Type of project **Park**

Materials

Element	Total impact
Steel	36,677.9 kg
Gravel Mulch	1,447.1 kg
Organic Mulch	0 kg
Rubberized Play Surfacing	58,435.1 kg
Vehicular Concrete	46,939.6 kg
Concrete Subslab	15,442.9 kg
Concrete Unit Pavers	127,230.1 kg
Stone Paving	124,438.1 kg
Steel Reinforcement - #3 rebar @ 18" OC	20,366.3 kg
Steel Reinforcement - #4 rebar @ 24" OC	2,589.7 kg
Stone Block Terrace	52,573.2 kg
Steel Trellis/Built in Feature	40.4 kg
Subtotal	**486,181 kg**

Plants

Element	Total impact
Moderate management lawn	3,256.7 kg
Intensive management lawn	29,093.6 kg
Deciduous Small shrubs	319,939 kg
Evergreen Small shrubs	85,261 kg
Deciduous Small trees	15,366 kg
Deciduous Large trees	410,863 kg
Evergreen Large trees	392,696 kg
Deciduous Medium trees	22,942 kg
Subtotal	**1,214,717 kg**

Operations

Element	Total impact
Asphalt Paving	3,817.7 kg
Existing Trees Impact - Deciduous Medium	135,680 kg
Lawn-mowers	4,353.7 kg
Trimmers/Edgers/Cutters	10,445.4 kg
Regrading	1,355.2 kg
Organic Fertilizer	0 kg
Subtotal	**155,652 kg**

Net Impact over 50 Years 572,884 kg CO2-eq

Pacific Plaza
Dallas, TX
Carbon calculation result interpretation
SWA Group, XL Lab
210608

Method:

- Pathfinder carbon calculator, a landscape architecture-specific tool
- Construction document area takeoffs
- SWA-custom spreadsheet

Highlights:

- In 27 years, the project will be climate positive/carbon negative. That is in 2046. That means all the carbon that plants are sequestering has offset the material emissions, or embodied carbon, as well as the total lifetime operational emissions.

- 20 years is the suggested target for plazas like this one, so it is close to that target.

- After 50 years, the project will have sequestered 543 metric tons of CO2. This is equivalent to 118 passenger vehicles being driven for one year. See the attached PDF from the EPA for other equivalencies.

- Paving is the largest carbon emitter, which is why plazas with lots of hardscape take longer to become carbon negative versus parks.

- The areas of deciduous shrubs offset a lot of carbon. Deciduous shrubs sequester more carbon than evergreen shrubs.

- The many trees planted and preserved sequestered the most carbon. Evergreen trees sequester more carbon than deciduous ones.

- In terms of construction and maintenance, the most carbon was generated/emitted by removing existing trees.