Is McCarthy a Green Builder?

A Sustainable Analysis of McCarthy Building Companies, Inc

TGM 586 - Sustainable Business - Private Sector: Construction

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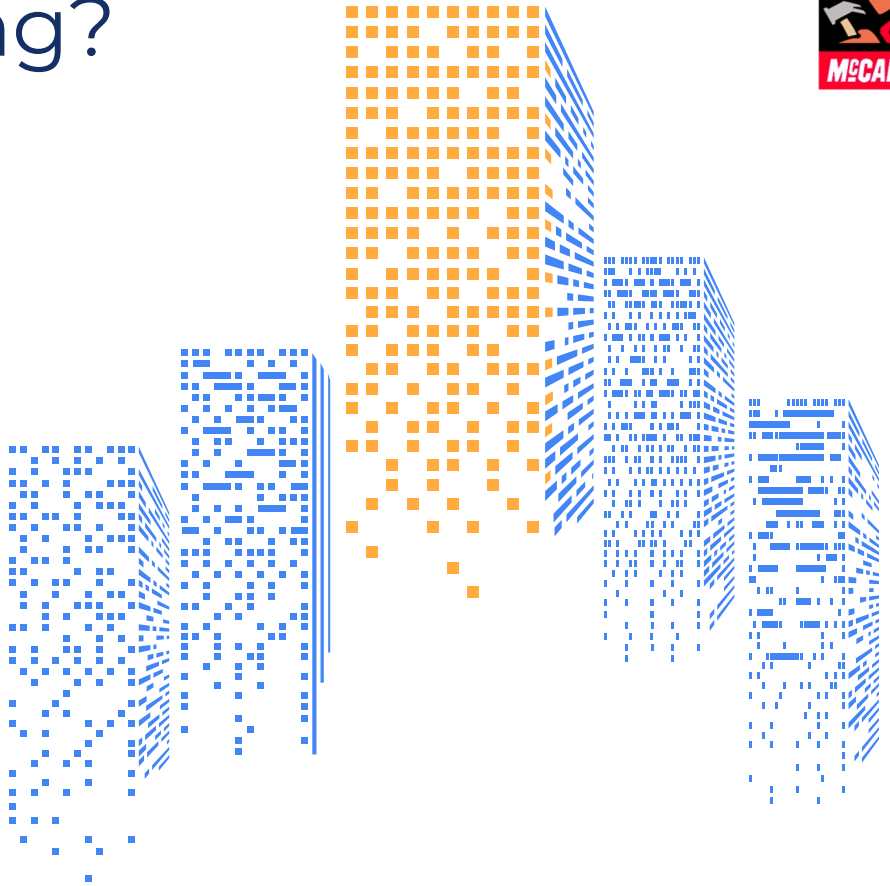
What is Green Building?

DEFINITION

Buildings, that in their development, operation, and design, scale down or eliminate negative environmental impacts and create positive ones as well.

FEATURES IN GREEN BUILDINGS:

- Efficient use of energy, water and other resources
- Use of renewable energy, such as solar energy
- Pollution and waste reduction measures, and the enabling of re-use and recycling
- Good indoor environmental air quality
- Use of materials that are non-toxic, ethical and sustainable
- Consideration of the environment in design, construction and operation
- Consideration of the quality of life of occupants in design, construction and operation
- A design that enables adaptation to a changing environment



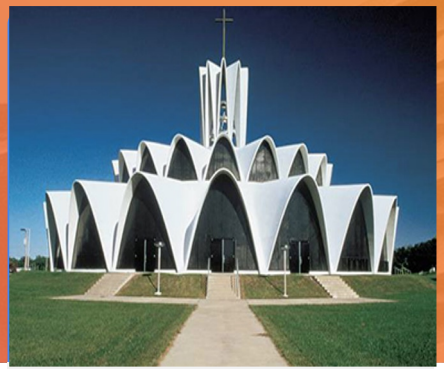
One Measure of Green Building: Sustainable Development Goals (SDGs)

Source: https://www.worldgbc.org/what-green-building

McCarthy History

1864

Timothy McCarthy opens a small business building farmhouses in Ann Arbor, Michigan, founded by an Irish immigrant.



1961

Built the Priory Chapel in St. Louis. Building the chapel's parabolic arches is a challenge and helps establish McCarthy's reputation as a skilled builder developing creative solutions.

1999

The company changes its name to McCarthy Building Companies, Inc., reflecting its employee ownership.

2019

The Arizona State University Biodesign Institute C project, built by McCarthy, is recognized as an Engineering News-Record (ENR) Best of the Best Project of the Year Finalist : Higher Education/Research.

Source: https://www.mccarthy.com/about/timeline

McCarthy's Sustainability **Principles**

Weaving sustainability into all aspects of operations

Bringing viable solutions to the table

Encouraging every partner to consider sustainable practices

Educating and training employees with tools so they can lead the way

Source: McCarthy Sustainability. (2022). *Construction*. McCarthy Building Companies. Retrieved April 22, 2022, from https://www.mccarthy.com/sustainability

McCarthy **Projects**

OMAHA VA AMBULATORY CARE CENTER

- Subsurface utility mapping
- Virtual design and construction (VDC)
- Building information modeling (BIM) and laser scanning

Results:

- ❖ Achieved quicker completion time (from 52 to 36 months)
- ❖ Reduced total project costs (from an estimated $120 to $86 million)

9, 11

Source: Loosbrock, M. (2022, February 24). McCarthy Building Companies Kicks Off 2022 with mobilization of peak workforce on Arrow Canyon Solar Project in Moapa, Nevada. Nevada Business Magazine. Retrieved April 22, 2022, from (source)

3, 7, 8

ARROW CANYON SOLAR

- Providing workforce training and skills development
- Building relationship with the Moapa Band of Paiutes
- Emphasizing on a culture of safety

Results: Provided sufficient clean energy supply and generated low-cost power alternatives .

CHANDLER AIRPORT WATER RECLAMATION FACILITY

- Maintenance of Plant Operations (MOPO)
- Process Piping Installation
- Concrete and Asphalt Removal

Results:

- ❖ Helped the city of Chandler in saving more than $3 million on the expansion project.
- ❖ Completed the project on time.

6

Source: Chandler Airport Water Reclamation Facility. McCarthy Building Companies. (n.d.). Retrieved April 22, 2022, from https://www.mccarthy.com/projects/chandler-airport-water-reclamation-facility

Current Green Building **Performance**

LEED Certification

Industry leading measurement tool

ASU Biodesign C building - Platinum

Certification Vs Membership

Measurements include: Transpo, Sites, Water + Energy, Materials and others.

Solar Panel World

Leading news source for solar PV

McCarthy Ranking: 21st to 5th

Based upon kW added per annum

Added 1038 MWs in 2020

McCarthy's Total MWs: 2800

J Craig Venter Institute

Lab Research Facility at UCSD Campus

One of the highest LEED scores: 87

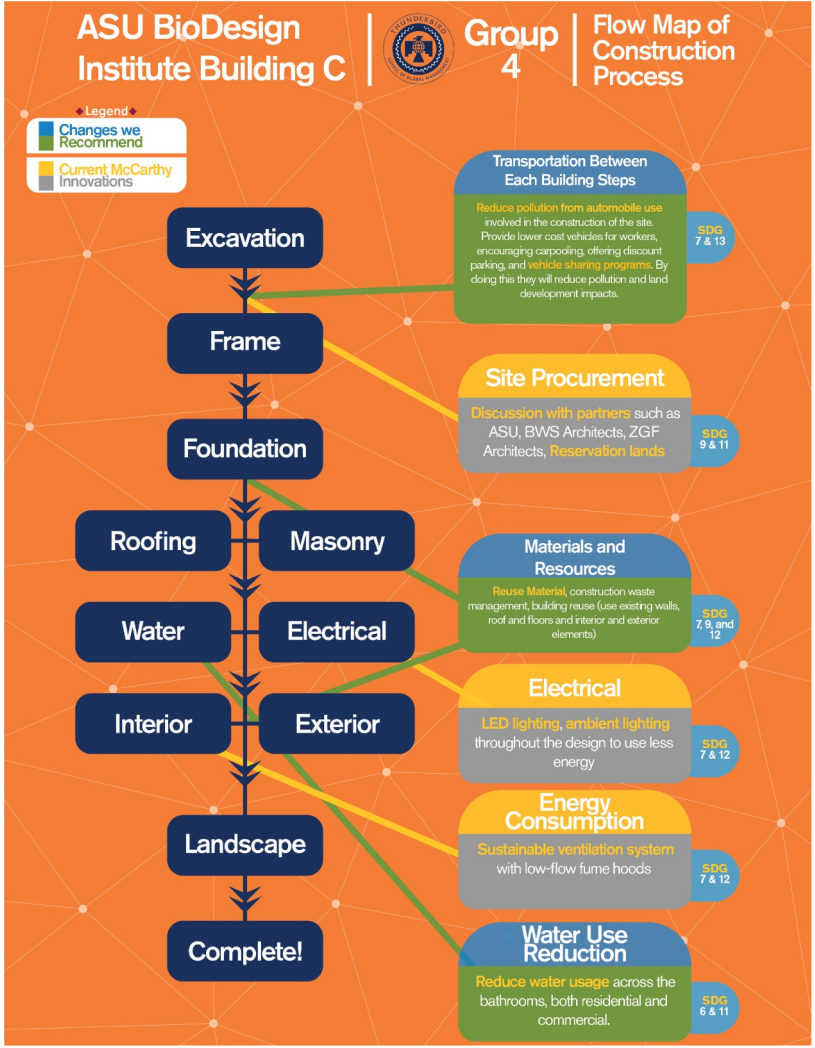
Water conservation system - 90,000 gal.

Photovoltaic roof and recycled concrete

"World's first Net-Zero research lab"

Source: McCarthy Building Cos. (2021, June 21). Solar Power World. Retrieved April 18, 2022, from https://www.solarpowerworldonline.com/suppliers/mccarthy-building-companies/
Source: J Craig Venter Institute West | U.S. Green Building Council. (n.d.). Www.usgbc.org. Retrieved April 25, 2022, from https://www.usgbc.org/projects/j-craig-venter-institute-west-0?view=overview
Source: LEED rating system | U.S. Green Building Council. (2022). U.S. Green Building Council. https://www.usgbc.org/leed

Flow Map


ASU BioDesign Institute Building C
Group 4
Flow Map of Construction Process
Legend
Changes we Recommend
Current McCarthy Innovations
Excavation
Frame
Foundation
Roofing
Masonry
Water
Electrical
Interior
Exterior
Landscape
Complete!
Transportation Between Each Building Steps
Reduce pollution from automobile use involved in the construction of the site. Provide lower cost vehicles for workers, encouraging carpooling, offering discount parking, and vehicle sharing programs. By doing this they will reduce pollution and land development impacts.
SDG 7 & 13
Site Procurement
Discussion with partners such as ASU, BWS Architects, ZGF Architects, Reservation lands
SDG 9 & 11
Materials and Resources
Reuse Material, construction waste management, building reuse (use existing walls, roof and floors and interior and exterior elements)
SDG 7, 9, and 12
Electrical
LED lighting, ambient lighting throughout the design to use less energy
SDG 7 & 12
Energy Consumption
Sustainable ventilation system with low-flow fume hoods
SDG 7 & 12
Water Use Reduction
Reduce water usage across the bathrooms, both residential and commercial.
SDG 6 & 11

SDGs **Addressed**

SDGs Addressed

SDGs Unaddressed

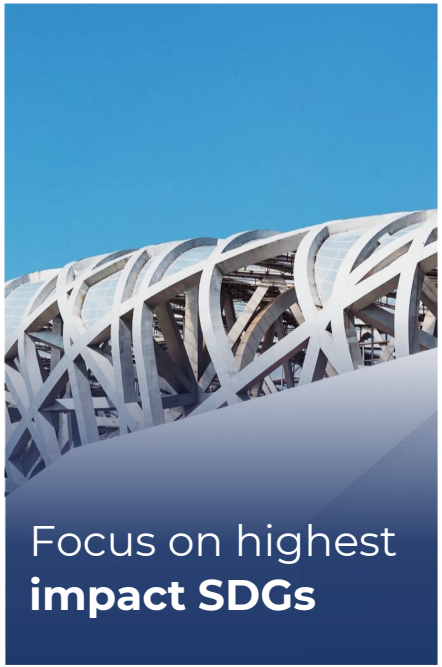
Yellow indicates a Top 10 impact for the industry

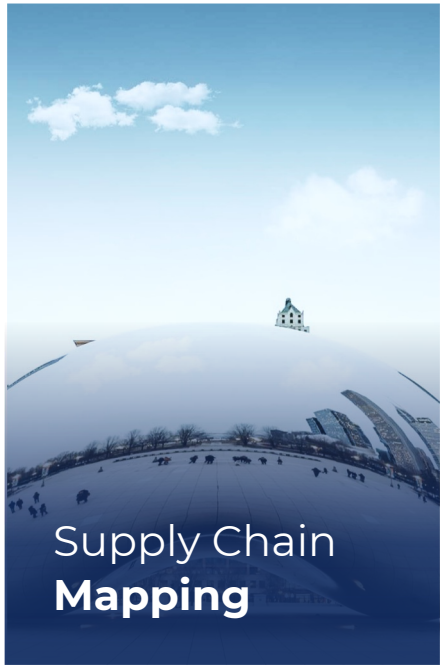
Source: Fei, W., Opoku, A., Agyekum, K., Oppon, J. A., Ahmed, V., Chen, C., & Lok, K. L. (2021). The critical role of the construction industry in achieving the Sustainable Development Goals (sdgs): Delivering projects for the common good. *Sustainability*, *13*(16), 9112. https://doi.org/10.3390/su13169112

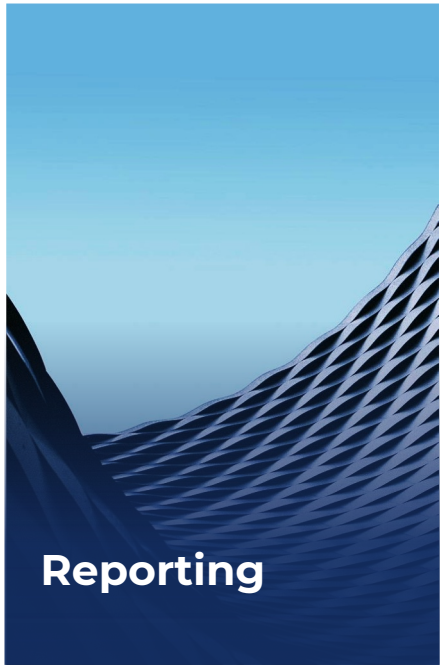
Gap **Analysis - SDG Compass**

Source: SDG Compass. (2015) *The SDG Compass provides guidance for companies on how they can align their strategies as well as measure and manage their contribution to the realization of the sdgs.* SDG Compass. Retrieved April 22, 2022, from https://sdgcompass.org/

Recommendations







Thank you!

Citations

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