

San Bernardino Valley College Technical Education Project

CMAA Sustainability Project Spotlight submitted by: Farrah Farzaneh, San Bernardino Community College, Director

Project Team

- » **OWNER:** [San Bernardino Community College District](#)
- » **AE:** [HMC Architects](#)
- » **BUILDER:** Icon West
- » **OWNER'S REPRESENTATIVE:** AECOM

Project Statistics

- » **USE:** Educational
- » **SIZE:** 114,897 GSF / 3.92 Acres
- » **CONSTRUCTION VALUE:** \$70.8 million
- » **CERTIFICATION(S):** Targeting LEED Platinum

What is the most exciting sustainable feature of your project?

A set of five solar thermal chimneys within the automotive labs working in conjunction with operable bi-fold doors and high-velocity low-speed fans help to passively cool and heat the large bay automotive spaces. This strategy not only helps



reduce operational energy use and cost, but supports strategy goals that improve student wellness by improving ventilation and air quality within the automotive lab spaces. These strategies and more help achieve 31% below title 24, and a low EUI of 29 kBtU/SF/YR.

What was the biggest challenge your team faced and how did you overcome it?

As a modernization state funded project within the California Community College system, the project team had very specific program use guidelines that needed to be adhered to, which did not always align with the expressed needs of the college program stakeholders. The design team and district worked with project stakeholders to creatively support the needs of their programs while adhering to state guidelines. Strategies

for dual use and flexibility of spaces, utilization of outdoor site areas to serve functional needs, and the creation of 'sticky' spaces within circulation all helped to increase the impact and support of the educational community.

What was the most interesting sustainable feature that didn't make it into the final project?

Our 'Living Lab' design concept informed use of strategies such as photovoltaic glazing, thermal chimneys, and a DC power demonstration system. One strategy the team initially hoped to incorporate but ultimately decided against was the use of a Phase Change Material (PCM) as part of the building thermal envelope approach. A PCM can change phase from solid to liquid or liquid to solid at different temperatures. This characteristic can be used to store and emit heat energy as a form of latent heat. While the strategy could have been of value as a demonstration system, the high cost vs. anticipated impact made other strategies more viable.

What impacts will this project have on the environment and community?

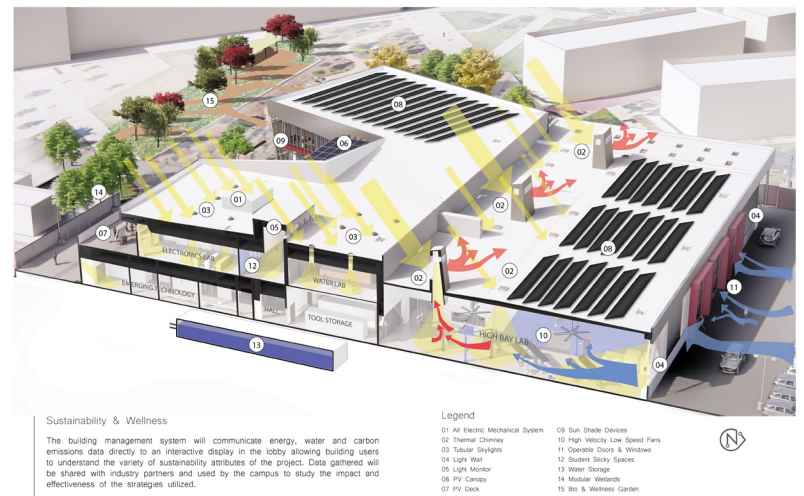
This project is seeking LEED Platinum certification for the project and is Net-Zero Energy Ready. Some of the most exciting features are:

- » Solar chimney
- » Photovoltaic
- » Sun-shade devices
- » Sustainability kiosk for students to view the performance of the building
- » High-Velocity, Low-Speed Fans to circulate air in high-ceiling spaces
- » Tubular Skylights for natural light
- » Operable Doors and Windows for cars to go in and out
- » Phase change material on the ceiling insulation to absorb the energy during the daytime and release it at the evening times

- » PV Deck for Photovoltaic students to learn the technology and installation
- » All of these result in measurable energy and cost savings
- » More importantly, it provides a healthy, comfortable, and highly functional learning environment



South Aerial View



Sustainability Section Diagram

About the Project

CMAA has created the Sustainability Project Spotlight as a regular focus given to member projects nationwide that are building the way to a better future.

This Sustainability Spotlight focuses on the [San Bernardino Valley College, Technical Education Project](#) in California. The San Bernadino Valley College (SBVC) is a service of the San Bernardino Community College District (SBCCD). This facility will replace the previous technology building that was built in 1965. The new building will transform lives and offer courses for several different careers. The project is currently under construction and is set to open in 2025.

The CMAA Sustainability Subcommittee is actively seeking to spotlight your projects! Please email us at communications@cmaanet.org with a project name and person to contact.

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