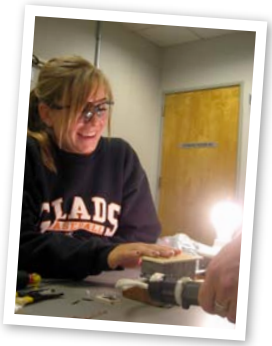
Clackamas County Environmental Youth Corps* Construction 2007

Building Sustainable Futures

The 2007 Construction Crew program aimed to further CCEYC's forest-related educational goals by teaching Clackamas County youth ages 16-21 the significance and uses of sustainable building practices.



Eligibility requirements for the Construction Crew program varied slightly from other CCEYC crews. Applicants were residents or wards of Clackamas County, completed basic math courses, and had a documented interest in the construction industry. Two crews consisted of eight to ten youth each, one adult Crew Leader and one adult Assistant Crew Leader.

Just like all other CCEYC crews, youth were paid minimum wage for all learning and working time. But unlike the other programs, construction crew students took on a much longer, more intense experience. The crews worked for eight full weeks consisting of three days building at a jobsite and one or more days each week on educational field trips, which focused on sustainable building practices and philosophies.

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* CCEYC is funded by Clackamas County through the Secure Rural Schools and Community Self-Determination Act of 2000.

The Projects

Building Community

Hopkins Memorial Tree Farm

The crew assigned to Hopkins Memorial Tree Farm built a retaining wall and constructed two small shelters. The retaining wall project proved to be quite a team-effort, as students had to work out how to shape the wall to best direct storm water runoff and then how to move tons of 200-pound stones into place.

The Hopkins crew were also asked to design and build two small movable shelters built primarily out of materials found in the forest. The crew broke into two groups to address the design challenge. Students interviewed their client, the tree farm managers, to understand end-use expectations and building restrictions. Then each group sketched a plan and built a 3-D model of their proposed shelter. Next they worked with forest personnel to find their building materials from the the forest floor. Both groups used felled branches to frame their structures, which were both open on three sides as per the client's request. One group sided and roofed their structure with cedar shakes, which they split by hand, while the other group used reclaimed wood siding and metal roofing.

John Inskeep Environmental Learning Center

Resourcefulness was a primary trait among students who worked at the Environmental Learning Center at Clackamas Community College. The crew designed its shed onsite and deconstructed a dilapidated shed as the source for their building materials. In the middle the of the project, The ReBuilding Center in North Portland generously donated windows, which presented additional challenges as no two windows were the same and the crew had to adapt their design accordingly. The crew finished the front of the shed with cob, a mixture of sand, clay, straw, and water, to provide an attractive alternative to siding. They fashioned a cob bench with found tile and glass decorative touches for the shed's front porch.

Career Exploration

Building Futures

Students supplemented their on-site learning with construction industry-led field trips. The syllabus for the off-site field trips focused on the key skills and knowledge needed to be successful in a construction career such as safety training, construction math, general knowledge about the trades, and an understanding of building materials- all viewed through the lens of sustainable building.

Off-site field trips were all facilitated by industry experts whose varied perspectives on sustainable building introduced students to the topic from many different angles. Leaders from local non profits, contractors, architects, and tradespeople all hosted students in order to help them understand the critical thinking skills involved in sustainable building and how it will influence their futures as the next generation of construction professionals.

In their own words

"I felt I learned a lot about architecture and environmentally sound building methods, which really interest me and I enjoyed them a lot!"

- Solveig Lee

"I learned [building] techniques from my crew leaders and the field trips were invaluable."

- BJ Moses

"[The apprenticeship training centers] were most valuable because they opened my eyes to other aspects of construction."

- Chris Hollenhors

HVAC & Metals Institute

June 25, 2007

On their very first day of work, students learned about OSHA standards for construction safety and explored opportunities in the sheet metal industry.

Greater Portland Roofers & Waterproofers JATC

June 26, 2007

Crews explored ecoroof construction and waterproofing techniques by constructing mini green roof planters.

The Big Pipe

June 27, 2007

Students learned about Portland's largest storm water management construction project to date and then took a self-guided tour to learn what individual businesses and homes are doing to keep storm water out of the city sewer system.

Tryon Life Community Farm

June 28, 2007

Crews got their feet wet, literally, in the day-long natural building workshop where students learned the basics of working with cob and other natural materials.

Willamette Carpenters Training Center

July 2-3, 2007

Students spent two days at the training center, learning the basics of carpentry, construction math, and communication skills necessary to successfully complete their own building projects.

NECA-IBEW Electrical Training Center

July 19, 2007

Crews explored renewable energy technologies, energy efficiency, and the basics of electrical systems.

The ReBuilding Center

July 26, 2007

Students volunteered at the North Portland warehouse for reclaimed building materials. They sorted donated supplies, built desks, and located a few key building materials they used in their own projects.

Clackamas High School hosted by BOORA Architects

August 2, 2007

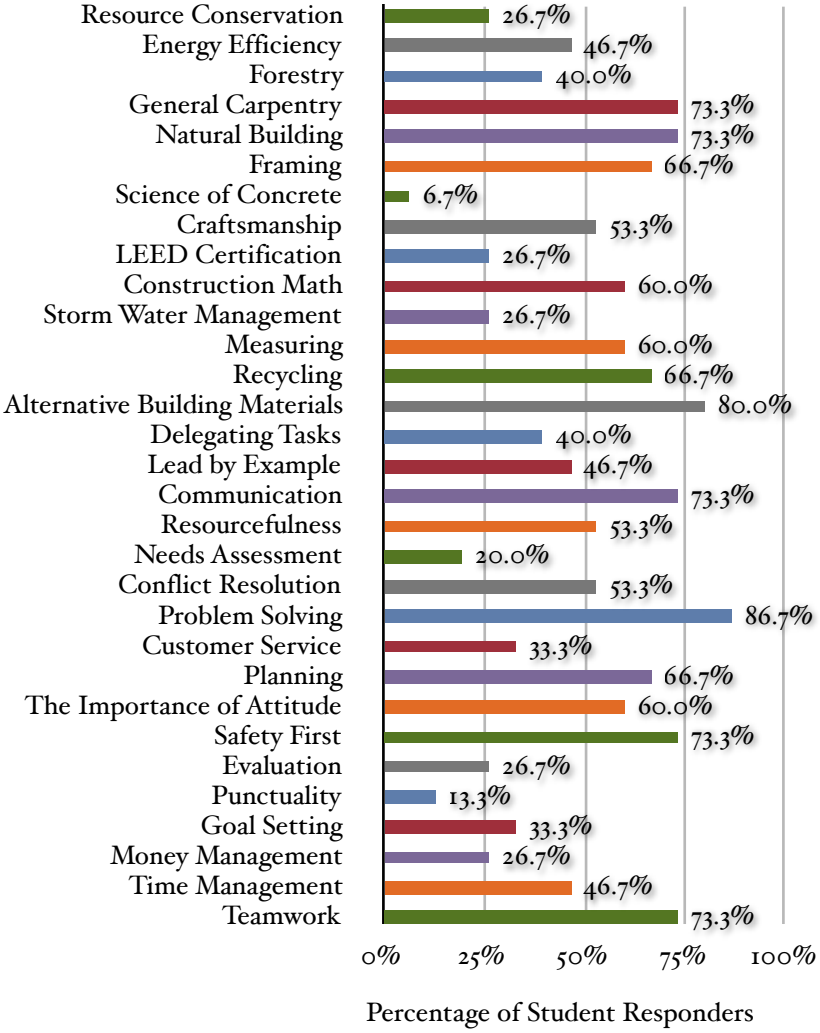
None of the students knew that Clackamas High School was one of the first green schools built in Oregon. Students discovered how a myriad of sustainability-related concepts were integrated into the high performance, LEED-certified school.

Outcomes

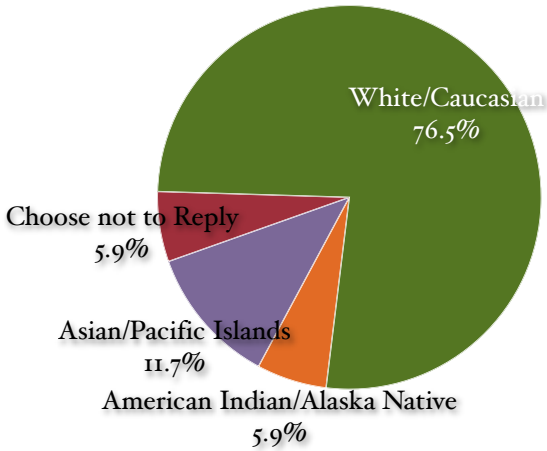
Building Quality Programs

At the end of the summer, 100% of student responders said they felt more prepared for another construction job. Just under half of the students noted that the CCEYC Construction Crew experience changed their perceptions of construction workers in a positive way. Seventy-three percent of crew members noted that they plan to pursue a construction-related career and ninety-three percent would recommend the program to their friends. On average, students' test scores improved twenty percent from the pre-test given on the first day of the program to the post-test given on the last day.†

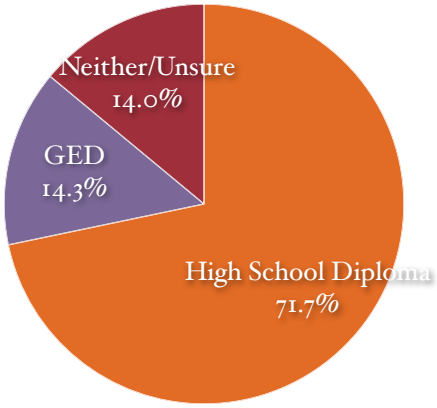
What Building Skills and Knowledge Did You Learn this Summer?



Self-Disclosed Ethnicities



Educational Ambitions



† All data in this report compiled using 2007 pre-and post-tests and student-completed evaluations.

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August 28, 2007