



2004 Annual Report

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Highlights

Building Futures. OBC selected the Daily Journal of Commerce (DJC) as the new publisher of *Building Futures* magazine. OBC believes this new relationship with the leading trade journal in Oregon will enhance the quality of the magazine and give OBC a greater media presence. DJC is also serving as the Media Sponsor for the OBC Annual Awards Banquet.

New Marketing Materials. To help gain new sponsors for its expanding programs, OBC has created a totally new marketing brochure and separate sponsorship opportunities pullout page. We have also totally redesigned our web site.

Sustainable Building Initiative. Skanska USA Building Inc. (Oregon) provided OBC with a \$10,000 grant to support its Sustainable Building Initiative. With these funds OBC will develop a resource and "how-to" textbook for high school and community college construction technology teachers. Spencer Hinkle, Department Chair of Portland Community College's Building Construction Technology Program and OBC's "Educator of the Year," will be the primary adviser on this project.

Teacher Workshops. This summer marked the eighth year in which OBC has sponsored its weeklong summer workshops for teachers. This past summer OBC conducted two simultaneous Science Workshops, one in Klamath Falls and the other in Medford. Following these workshops, OBC scheduled



Contractor of the Year Walt Gamble demonstrates Pascal's Law at the Klamath Falls Summer Science Workshop.

a Math Workshop in Portland and a pilot Math Workshop in Eugene. In the past eight years 346 teachers have been "students" at these workshops, and over 90% of these teachers have rated the workshops in the top 10 or 20% of all their professional development activities.

Teacher Survey Shatters Assumptions. The results from our January survey of teachers who attended our Summer Math Workshops from 1997-2003 shatter any assumptions that teachers don't change their ways or connect to the world of business and industry. A remarkable twenty-seven percent (27%) of the teachers reached completed the survey during the school year. The survey results:

- Forty-one percent (41%) of the teachers use the workshop materials in their curriculum every year!
- An additional twenty-two percent (22%) use the materials occasionally.
- An amazing thirty-seven percent (37%) of the teachers said the workshops changed their teaching methods.
- Forty-three percent (43%) of the teachers talk to their students every year about career opportunities in the construction industry.
- Another twenty-two percent (22%) talk to their students occasionally about such career opportunities.

Teachers from our workshops reach over 40,000 students each year (an average of 117 students per teacher). So, in any given year, these teachers may be talking to from 17,000 to 26,000 students about construction career opportunities.

Construction Academy Program for ESD 112.

This summer OBC presented its fourth annual Summer Construction Academy for high school students, all from Clark and Cowlitz Counties, Washington. In a change of curriculum to help prepare students for their work assignments during the summer, the students spent four full days at the Willamette Carpenters Training Center, learning safety and tool use and building stairs, roofs, and mini-structures. They later had two full days of additional training at the Rock Creek campus of Portland Community College.

Construction Academy Program at

MacLaren. With inspiration from Bill Moe, former AGC president, and Jan Dawson of Union Bank of California, and with funds donated by the Heavy Equipment Operators Local 701, OBC launched a new program at MacLaren Youth Correctional Facility, directed at students who would soon be released from incarceration. OBC consultant John Martin conducted a ten-week class of three hours per week, using *Tools for Success—Soft Skills in the Construction Industry* as the text.

Construction Academy Program at

Riverbend. Thanks to a grant from the Youth Council of Clackamas County, OBC was able to organize a construction class, again led by John Martin, for youngsters at the Riverbend School in Clackamas, many of whom suffer from emotional and mental disorders. It has been our experience, observing elementary students on up to adult apprentices, that students of any age gain greatly in self-esteem when they learn how to build something correctly. Once the students completed their construction classes, they went on to build structures on the Riverbend campus.



Jim Murphy shows Construction Academy students how to build a mini-structure at the Willamette Carpenters Training Center.

Summer Science Workshops

Klamath Falls Science Workshop

June marked the first workshop in Klamath Falls for OBC, using the science lab at Mazama High School for the class presentations and activities. The two Science Workshops in Medford and Klamath Falls were made possible by grants from Washington Mutual and the Southern Oregon Education Service District. In Klamath Falls eight stalwart science and professional/technical teachers attended, and the teachers expressed enthusiasm for this kind of workshop. As one teacher noted, *"It exceeded my expectations as far as what I can actually use in my classroom."* Another teacher said, *"This workshop not only gave me a better idea of the various construction trade fields, but also the needed link ... to provide for students as a teacher toward these areas (apprenticeship programs, etc.)."*



Rich Tolvstad exclaims, "Eureka! Archimedes was right."

The core instruction team consisted of the same AGC members who helped to develop the original Science Workshop in 2000. Walt Gamble (Gamble Construction Services) led the way with his session on Pascal's Law, which states that "pressure applied to a confined liquid [or gas] is transmitted undiminished through the liquid in all directions, regardless of the area to which it is applied." This is the basic law of hydraulics. Walt then showed the class how to "levitate" the instructor on a table with nothing more than eight plastic trash bins with wooden inserts for the floors, four garbage bags with straw inserts between each stack of two pails per table leg, and four teachers willing to blow through straws simultaneously. Presto! The table and instructor were lifted from the floor with "hydraulic" force. *"I will definitely use this next year,"* commented one teacher. Bob Pyritz (Western Paving Co.) presented the necessity of compaction in building roads, noting how various ma-

terials are used in road building and how they and different soils react to compaction. Bob's presentation was followed by Rich Tolvstad (RT & Associates, Inc.), who took the class back to ancient Greece



Steve Malany demonstrates the fine art of concrete mixing at the Klamath Falls Science Workshop

and the great scientist, Archimedes, and his famous Principle on Buoyancy: "The buoyant force on a body immersed in a fluid is equal to the weight of the fluid displaced by that object." To end the day, Steve Malany (P & C Construction Co.) led his class in hands-on mixing of various concrete formulas and then testing them for strength. One teacher described the experience as *"fun hands-on activities that could be used in the classroom."*

Dr. Nason McCullough (from one of AGC's newest members, CH2M Hill), also one of the 2000 Science Workshop instructors, gave a morning presentation on earthquakes and their effects on buildings and other structures followed by a demonstration of saturated soil reacting to the shaking of an earthquake. In the afternoon Ralph Henderson (Rogue Community College) and Dale Bohannan (Building Department Services) demonstrated how buildings are constructed to "take the quake." After a presentation on and demonstration of loads and lines of force, the teachers formed teams to build their own suspension bridges, using string, pencils, cardboard strips, and some clamps. The test—which bridge would hold the most weight? One teacher spoke for all in praising the class, *"Walls to show shear panels—great. Suspension bridges exercise—wonderful."*

The next day Les McLain (Pacific Electrical Contractors) and Marc Wooldridge

(Crater Lake Electrical Training Center) arrived from Medford to discuss electrical theory and to lead the class in a number of electrical experiments that could be used in the classroom. In the afternoon the presentation moved to electrical distribution systems, including transmission, substations, and local distribution.

The teachers left the classroom for several tours during the week. The teachers went to AGC member Jefferson State Redi-Mix to learn the mysteries of cement, concrete, and aggregates. Greg Juell (Lehigh Cement Co.) gave a presentation on the manufacture of cement and the chemical properties of the ingredients. Then Al Pranghoffer of Jefferson State gave the class a tour of the facility, showing how concrete is mixed and loaded onto concrete trucks for particular jobs. The last morning of the week consisted of a very interesting tour of the IFA Nursery in Klamath Falls, hosted by AGC member Jack Markgraf (President of Horizon Erectors Inc., contractor for the main building). This tour gave the class a look at the use of geothermal water for heating and the science involved in growing tree seedlings for forest managers.

Medford Science Workshop

Walt Gamble, Rich Tolvstad, Steve Malany, Bob Pyritz, Ralph Henderson, Dale Bohannan, Nason McCullough, Les McLain, and Marc Wooldridge all duplicated their Klamath Falls presentations in the Medford Science Workshop held at Rogue Community College. In addition, the following AGC members contributed their time to the workshop. Rob Hernandez and Steve Miller of S & B James Construction Co. hosted the Medford teachers for a session on "green building." Dale Lininger of LTM, Inc. was kind enough to arrange a visit to the LTM concrete plant, and Russ Batzer of Batzer Inc. set up a visitation to one of his construction sites.



Medford teachers construct a suspension bridge at the Medford Science Workshop

Summer Math Workshops

Portland Workshop

Six teachers participated in our Portland Summer Math Workshop this summer, five middle school teachers and one high school teacher. All were math teachers, and one also taught science. Although several teachers noted that some of the math applications were beyond their students' levels, all the teachers rated the workshop in the top 10-20% of all their professional development activities.



One stringer completed by proud Portland teachers at the Willamette Carpenters Training Center

The curriculum followed the usual Portland schedule with the exception of the "electricity day," held for the first time at the PGE Electrical Training Center in Wilsonville. The teachers started their week with a tour of the Sheet Metal Training Center (HVAC and Metals Institute) in Portland and a description of the trade by Ric Olander, Assistant Coordinator. The class went right to work with Ralph Shaeffer, retired Senior Math Instructor, constructing 90° elbows on intersecting ducts, using a bit of projected geometry to draw two-dimensional shapes and turn them into 3-D models. "Great math! Excellent projects," commented one teacher. Tuesday and Wednesday were carpentry and building layout days at the Willamette Carpenters Training Center and Portland Community College at Rock Creek. Vocational Instructor of the Year Jim Ortega led the class at the Training Center with some construction math (using the Pythagorean Theorem) in building a gazebo roof and then a set of stairs and stringers. "Awesome! I had a great time," wrote an enthusiastic teacher. At

Portland Community College, Kirk Garrison of the Building Construction Technology Department introduced the class to architectural drawings and building layout. After lunch, Department Chair Spencer Hinkle taught the class how to read site plans and use geometry to lay out a building using a Total Station instrument. Then it was out to the grassy fields to test their skills with the instrument and lay out the building corners from a fixed location (radial layout). The next day the class spent an "electrifying" Thursday at the PGE Training Center in Wilsonville. At PGE four different instructors described various aspects of PGE's electrical distribution system and its training of apprentices. The class then learned about calculating pole strength, determining wire sizes, sizing transformers with ratios and proportions, and applying Ohm's Law, ending the day with a review of Programmable Logic Controllers, using Boolean math. The teachers ended the week with a construction site tour of the Hillsboro Civic Center project, courtesy of OBC's president, Ross Vroman, Vice President of Skanska USA Building, and his site construction managers. A final teacher comment—"Perfect! These guys were great. Kids will get really motivated by learning about construction sites and seeing their math in action."



OBC President Ross Vroman (4th from right) with Portland teachers at the Hillsboro Civic Center

Eugene Workshop

Thanks to grants from the AGC Educational Foundation and the Lane Education Service District and the use of facilities at Lane Community College, OBC was able to bring its Summer Math Workshops to Eugene for the first time. In addition, Central Electrical Training Center hosted the teachers for a day of electrical instruction (and an excellent lunch) at its first-class facility in Tangent. The teachers capped their week with a climb to the top of the

new I-5 bridge over the Willamette River, courtesy of Hamilton Construction Company.



Eugene teachers check their stair stringer with instructor Eric Kersgaard

The general curriculum followed that of the Portland Workshop. Ralph Shaeffer journeyed to Eugene to demonstrate again the uses of geometry and trigonometry in sheet metal work. Eric Kersgaard, AGC's apprentice carpentry instructor, took the class through the intricacies of stair construction and roof building and then showed the class how to use a transit and trigonometry to lay out a building. The class also visited the nearby Operating Engineers Training Center where Richard Perkins, head instructor, gave a PowerPoint presentation. Dan Campbell, Training Director at the Central Electrical Training Center in Tangent, hosted the teachers for a day of electrical theory and applications under instructor Ray Beauvais. On the last day Jim Sly, Vice President and Operations Manager of Hamilton Construction Co., gave the teachers a wonderful overview of the I-5 bridge project over the Willamette River in Eugene. One teacher's evaluation described the experience perfectly—"This was the best!! It really tied all areas together."



Jim Sly (4th from left) of Hamilton Construction Co. explains bridge-building to Eugene teachers on the I-5 bridge

Construction Academy



Cutting rafters for mini-structures at the Willamette Carpenters Training Center

ESD 112 Program. Nineteen students representing nine different high schools in Cowlitz and Clark Counties in Southwest Washington participated in ESD 112's summer work-study program. This class included nine female and ten male students in grades 10 through 12. Nearly half the group consisted of students whose families had emigrated from Russia, the Ukraine, and Poland. For the major part of the summer the students worked on the construction of houses for low-income families, where they were able to apply what they had learned at the beginning of the summer about framing, stair-building, and rafter construction at the Willamette Carpenters Training Center and at the AGC apprenticeship program and the Building Construction Technology program at Portland Community College.



ESD 112 students tour the "Big Pipe" project by Impregilo/S.A. Healy in Portland

The Construction Academy program also included an extensive tour of the "Big Pipe" storm sewer project in Portland, courtesy of the Heavy Equipment Operators and Impregilo/S. A. Healy, tours of the Portland Sheet Metal Training Center, and a visit to a remodeling site, courtesy of N.W. Renovations and Design Co., arranged by the Portland Metropolitan Home Builders Association. In addition, the students spent a day with PGE-Earth Advantage learning about energy conservation and visiting a "green building" project.

Green Building Program—Clackamas County Environmental Youth Corps. Students from Clackamas County in a work/study program performed construction work at several sites. One group built an addition to the ranger station in the Wildwood Recreation area in Welches, Oregon. Another group worked at the Aquila Vista site in Molalla and later at the Walter Horning Tree Seed Orchard in Colton. For the "green building" portion of their program, these students made visitations to the LEED-certified Clackamas County Public Services Building in Clackamas, to the Street of New Beginnings in Cornelius, to the Portland General Electric-Earth Advantage program in Tualatin, to the Renaissance Homes development in West Linn, to a Weyerhaeuser sustainable forest, to The Rebuilding Center, and to the Waste Management Recycling Center. All of these visitations were designed to teach the students about "green building" and the important role construction plays in building the infrastructure to make a cleaner environment.



Students visit the Renaissance Homes development in West Linn

MacLaren Program. Thanks to AGC member Bill Moe, this 10-week pilot program introduced students to such topics as resume writing, behaviors prized by employers, diversity, conflict management, drug and alcohol abuse, teamwork, and stress management. Presenters from both labor and management were recruited to tell their stories about their construction careers.

In addition to the class, a mentorship program was established with the Young Constructors Forum of the Associated General Contractors. Special thanks go to Laura Schauer, O'Brien Constructors, and Tary Carlson, Ethos Development, Inc., who head this AGC Council.

We are most pleased to state that one of the MacLaren graduates entered the Laborers apprenticeship program and began work a week after leaving MacLaren, and at the time of this report, he has successfully completed five months of work for Coffman Excavation, including two weeks of training at the Laborers Apprenticeship Training Center at Camp Adair in Corvallis.

Operating Engineers Local 701 has agreed to fund the MacLaren program a second time, again with OBC consultant John Martin as the lead instructor. As was done previously, both contractors and apprenticeship trainers and recruiters will be joining John in making presentations to the students.

Building Industry Diversity

This year the OBC Board of Directors formed a committee to determine the best ways to encourage more women and minorities to consider careers in construction. As discussions progressed during the year, the committee started seriously to consider creating a high school or school-within-a-school focused on architecture, construction, and civil engineering. Committee members met with school officials from various districts in the Portland area, and several attended conferences sponsored by the State of Oregon and the Small School Initiative, funded by the Bill and Melinda Gates Foundation. Five OBC Board members traveled to charter schools around the country and reported back their findings that these schools were succeeding in bringing greater diversity and a better caliber of student into the industry.

Portland Public Schools has hired a new superintendent, Dr. Vicki Phillips, who believes the problems of performance in Portland Public Schools can be successfully met by creating career pathways to bring relevance to students, by developing an academic core that all students must achieve to bring rigor to the curriculum, and by encouraging a small school approach that will enhance teacher/student relationships. OBC has proposed starting a dialogue focused on the concept of developing a small architecture, construction, and engineering school within a high school that will reach out to all Portland students, and especially to young women and minorities. Such a small school could make a significant contribution to OBC's mission—"Partnering with educators to increase the quality and diversity of applicants into the building industry."

2004 Sponsorships and Grants

AGC, Oregon-Columbia Chapter Foundation
Clackamas County Educational Service District 112 (Vancouver)
Lane Education Service District
National Energy & Gas Transmission Operating Engineers Local #701
Skanska USA Building Inc.
Southern Oregon Education Service District
Specht Development, Inc.
Washington Mutual
Youth Council of Clackamas County

This year OBC launched a new sponsorship effort to support its programs. Sponsors can contribute at three levels—Platinum (\$5,000), Gold (\$3,000), or Silver (\$1,000)—and in turn receive various kinds of recognition in *Building Futures*, at OBC's Annual Banquet, in the Daily Journal of Commerce, and on the OBC web site. This year OBC has received grants and sponsorships from the organizations listed in the accompanying box, and we sincerely appreciate their support.

Grant Proposals

To augment the income from membership dues and sponsorships, OBC decided this year to make a greater commitment to grant writing and has submitted major proposals of approximately \$260,000 to support both its Construction Academy programs and its Teacher Workshops in 2005. In addition, it continues to partner with Educational Service District 112 in Vancouver, the Clackamas County Environmental Youth Corps, the Lane County Education Service District in Eugene, and the Southern Oregon Education Service District in Medford. The new initiatives and the continuation of our collaboration with existing partners will allow OBC to steadily expand its programs

To augment its existing grant from Skanska USA Building for its Sustainable Building Initiative, OBC is seeking a program grant for 2005 to conduct a Summer Workshop for construction technology teachers on sustainable building practices. OBC's goal is to have sustainable building practices taught in all high school and community college construction technology programs in Oregon and Southwest Washington. The Spring/Summer 2005 issue of *Building Futures* will have an article about this program.

Awards Banquet

This year's Awards Banquet will be held at the Benson Hotel on November 3 to honor those persons who have made outstanding contributions to OBC programs this year. We have also recognized with Certificates of Appreciation the support and contributions of the many people who make our programs successful. Their names will appear on the Awards Banquet Program with the following award winners:

Pete Anderson Educator of the Year

Spencer Hinkle, Portland Community College, Building Construction Technology Department

Vocational Instructor of the Year

Jim Ortega, Willamette Carpenters Training Center

Ray Baker Congressperson of the Year

Michelle Windsor, Associated General Contractors

Contractor of the Year

Walt Gamble, Gamble Construction Services

Past President Award

Carolyn Kidd, Operating Engineers Local 701



Spencer Hinkle



Jim Ortega



Walt Gamble



Michelle Windsor



Carolyn Kidd

Oregon Building Congress

Officer/Directors

President: Ross Vroman, Skanska USA Building Inc.
 Vice President: Mark Johnson, Willamette Carpenters Training Center
 Secretary: Ken Kline, Portland Public Schools
 Treasurer: Bob Strader, Associated General Contractors
 Immediate Past President: Carolyn Kidd, Operating Engineers Training Center
 Executive Director: Richard O'Connor, Ph.D., Oregon Building Congress

Directors

Russ Batzer, Batzer Inc.
 Thomas Goodhue, SMACNA-Columbia Chapter
 Dan Graham, Associated General Contractors
 Spencer Hinkle, Portland Community College
 Brian Hunt, Daily Journal of Commerce
 Jim McKune, Emerick Construction-AGC/CAF
 Neil O'Connor, Western Partitions
 Jada Rupley, Educational Service District 112, Vancouver, Wash.
 Eric Sander, USI Northwest
 Todd Sanders, Portland Community College
 Loretta Young, City of Portland

Organizations and Members

ORGANIZATIONS:

Associated General Contractors of America, Oregon-Columbia Chapter
 Batzer Inc.
 City of Portland
 Construction Industry Training Trust & Affiliated Training Programs
 Contract Administration Fund
 Daily Journal of Commerce
 Educational Service District 112
 IUOE Local 701 Operating Engineers
 Portland Community College
 Portland Public Schools
 Sheet Metal Training Fund
 Skanska USA Building Inc.
 USI Northwest
 Willamette Carpenters Training Center (Oregon-Washington Employers-Carpenters Apprenticeship and Training Trust)

INDIVIDUALS:

Neil O'Connor

HONORARY:

Ray Baker
 Doug Ellis
 Darlene Fritsche

OBC Mission Statement

To partner with educators to increase the quality and diversity of entrants into the building industry.

OREGON BUILDING CONGRESS

9450 SW Commerce Circle
 Suite 260
 Wilsonville, Oregon 97070

Phone: 503-685-8313
 Fax: 503-682-1696
 E-mail: dicko@obcweb.com

www.obcweb.com