



## **Declaration of Cooperation**

### **Oregon Solutions**

### **Green Modular Classrooms Project**

#### **Introduction**

The Green Modular Classroom project arose from a multi-year effort by Portland State University, the American Institute of Architects Portland Chapter, and Oregon-based manufacturer Blazer Industries to create a greener, healthier modular classroom for students across the state and beyond. Governor John Kitzhaber designated this effort as an Oregon Solutions project and appointed Dennis Wilde, Chief Sustainability Officer at Gerding Edlen Development Company and an expert in sustainable building, as convener of a multi-sector team. The team began meeting in August 2011 to focus on designing, developing, testing, and monitoring a prototype of the modular classroom at a school or other educational facility.

The team's long term aim is to advance healthier and more productive learning environments for children on a statewide, national, and even international scale. This project has obvious environmental benefits, will make better use of resources, and has the potential to improve Oregon's economy by capitalizing on the state and national portable classroom market. This project addresses the Triple Bottom Line of Oregon's Sustainable Community Objectives and advances Oregon's reputation as a leader in sustainability.

#### **Background**

School districts in Oregon struggle to undertake capital projects, including major renovations or additions. To deal with the fluctuation in school enrollment, districts use operating funds to purchase a temporary portable building that often remains onsite permanently due to extensive infrastructure investments required at the site. As a result of their perceived temporary nature, portables are usually designed at a low cost, resulting in an inferior, inefficient, unhealthy, poor educational environment. Since

2008 almost 200 portable classrooms have been purchased for use in Oregon's schools. Oregon's modular building industry has the potential to be a national leader for Green Portable Classrooms which could have a significant economic impact for Oregon when this product is exported to other states. Evidence suggests there is a national market for green portable classrooms, as thousands of portables are ordered across the country.

With a grant from the PSU Institute for Sustainable Solutions (ISS), an interdisciplinary team led by PSU's Department of Architecture collaborated to identify and explore approaches for greening our schools with portable classrooms. As part of PSU's and the American Institute of Architects' Symposium, *Activism in Architecture*, a forum and design charrette engaging industry, school officials and PSU faculty and students was held April 9-10, 2010. Participants included representatives from modular manufacturers, school district administrators, teachers, behavioral psychologists, architects and engineers. By the end of the charrette, preliminary designs and models emerged.

Based on the charrette's outcome and the Governor's designation of the Oregon Solutions Green Modular Classrooms project, ISS provided \$10,000 to sponsor the Oregon Solutions process.

### **Project Elements**

Over the course of the Oregon Solutions process, team members divided their work into five core activities. While initially the team was focused on identifying a school district to purchase the prototype classroom and team members included both Portland Public Schools and Reynolds School District, both of whom provided invaluable advice and insight into how school districts purchase and install portable classrooms, the dire financial situation many districts throughout the state faced over the 2011-2012 school year dictated refocusing team efforts in other directions in order to design, develop and produce a prototype classroom for future distribution and testing. The five core activities were:

#### ***Design***

A Design Sub-Committee was formed to finalize the initial designs that had emerged from the charrette and to conduct a series of tests on lighting, energy efficiency, and blower door. The design aims to increase portability, reduce site infrastructure, decrease noise and air disturbance, create flexible orientation possibilities, and increase natural daylight. Public agencies, such as Oregon's Building Codes Division, consulted on state regulations and codes pertaining to modular buildings.

#### ***Marketing / Outreach***

The Marketing / Outreach Sub-Committee initially focused on outreach to Oregon school districts and created a flier and sent representatives to give presentations and

represent the Team at conferences in the state (Living Futures, OMSI, OSBA). Over the course of the project, outreach expanded to include other educational facilities (OMSI, the Zoo) as well as school districts outside the state (Chehalis, WA) in the Pacific Northwest. Team members also engaged branding and marketing specialists to develop a name for the building, a logo, a website, and other marketing materials to continue to do outreach and education on the design to school districts, teachers, and parents upon completion of the Oregon Solutions process.

### *Greenbuild*

After hearing about the project at the Modular Building Institute's annual meeting, Building Design + Construction Magazine (represented by their parent media company SGC Horizon) approached the Team about showcasing a prototype building at the 2012 Greenbuild conference, the leading international conference on green building in San Francisco, November 14-16. Over 20,000 participants attend the conference over the course of three days, and the prototype classroom will be sited at the entrance to the conference and will include signage describing the design and the Team's work.

Team members worked with SGC Horizon on seeking donated materials for the prototype and on publicizing the building's presence at the conference for additional outreach. The team also sought support for the costs of transporting the prototype from Oregon to the conference in San Francisco.

### *Financing*

As the Team consulted with public school facilities directors to understand the financial constraints of districts, a Financing Sub-Committee was formed to explore financial models for feasibility. These include:

- Energy incentives through Energy Trust of Oregon
- Lease options through financing packages developed by modular distributors
- Donations of building materials from suppliers and manufacturers to lower the cost of initial prototype buildings

### *Ongoing monitoring and research*

Once the prototype classrooms are sited in Oregon and Washington, PSU faculty and students will lead additional research on the models through real time monitoring towards continued improvement on the design. A proposed dashboard system will provide information on interaction between the classroom and students and teacher. Additional testing will be conducted on:

- Air quality testing through CO2 monitoring
- Monitoring of thermal comfort levels
- Periodic evaluation of occupant interaction with HVAC and lighting controls

- Envelope testing for thermal leakage
- Monitoring of lighting levels
- General performance of chosen building materials
- Overall occupant satisfaction

### **Purpose of Declaration of Cooperation**

Oregon Solutions provides a structure for the public, private, and civic sectors to collaborate in addressing Oregon's Sustainable Community Objectives. That collaborative process, which results in agreements between the partners and resource commitments, created the basis for this Declaration of Cooperation.

This Declaration of Cooperation, while not a binding legal contract, is evidence to and a statement of the good faith and commitment of the undersigned parties.

This document outlines the commitments that all parties have made to successfully carry out the project and to achieve their collective goals of the Oregon Solutions process. By consent of all parties, this document may be amended from time to time to represent changing situations often found during project development.

### **Team Commitments**

All team members acknowledge that the best solutions depend upon cooperation by all entities at the table. Accordingly, they recognize that each party has a unique perspective and contribution to make, and legitimate interests that need to be taken into account for the success of various elements of the project. The following sections provide each entity's contributions to the project.

## Convener

Dennis Wilde, Principal at developer Gerding Edlen, has served as Convener of this project at the request of Governor Kitzhaber. He has a strong interest in the success of this project as an advocate of green building and sustainability. In support of the Green Modular Classroom project, the Convener will commit to the following actions:

- Continue to provide leadership for the project and encourage all parties to work in a collaborative effort toward promoting the design.
- Support efforts to seek donated materials for prototype classrooms
- Participate in public events and presentations to help promote the project.
- Provide leadership for a re-convening of the Oregon Solutions Project Team within the next year to evaluate the status of the project and progress made toward the commitments contained in this document.

Signed by:  Date: 7.16.12

Dennis Wilde, Convener

## Portland State University

Multiple departments and offices at Portland State University served as key members on the team alongside community partners, particularly as sponsors and initiators of this project. PSU partners will continue to move the project to completion following the signing of the Declaration of Cooperation by committing to the following:

### Architecture

The Department of Architecture at Portland State University offers a professional education in architecture with a four-year undergraduate major in Architecture and a two-year Master of Architecture. It is committed to exploring and redefining the possibilities within architectural education and research.

- Will approve or deny changes to the design to accommodate different environmental conditions or end user needs within two weeks for cosmetic changes, and within 6 weeks for substantive changes such as those to the building envelope, mechanical, electric, or other aspects which may affect the performance of the Unit.
- Will act as primary applicants and principal investigators for further research involving the design or on the performance of the classrooms
- Will continue to support development of promotional materials, marketing, and branding with MSpace and Pacific Mobile

- Will grant Blazer Industries a 5 year exclusive, non-assignable, non-sublicensable right to reproduce the design in accordance with an exclusive license agreement between PSU and Blazer Industries
- Will grant additional licenses to third parties outside the field of use upon consultation with Blazer to the extent necessary to assure quality standards and to meet the needs and requirements of Blazer's distribution partners.
- Support outreach efforts through presentations at national conferences
- Manage and host an educational website for the design, providing a history of the project, details of the building features, and links to distributors for building purchase

Signed by: Margaretta Leite Date: 6-7-12

Margaretta Leite, Professor

Signed by: Sergio Palleroni Date: 6-7-12

Sergio Palleroni, Professor

Institute for Sustainable Solutions

The Institute for Sustainable Solutions (ISS) advances sustainability research, education, and outreach at Portland State, leading the University to be a powerful catalyst and model for a more equitable, ecologically balanced, and economically vibrant future.

- Provided sponsorship of project
- Will continue to promote the project and classroom through press, website, profiles, conferences and events
- Explore covering transportation to Greenbuild (possible development support)

Signed by: Jennifer Allen Date: 6/7/12

Jennifer Allen, Director

Office of Innovation and Intellectual Property

Innovation & Intellectual Property (IIP) within Research & Strategic Partnerships serves as the technology transfer office for Portland State University. IIP is responsible for administering the Oregon University System's Intellectual Property Policies and for managing PSU's intellectual property around innovations from research and other activities. IIP also provides support for any intellectual property related questions or concerns that arise around research contracts, relationships with external organizations, and internal intellectual property guidelines.


IIP will administer an exclusive, non-assignable, non-sublicensable right to reproduce the green modular classroom design in accordance with an exclusive license agreement between PSU and Blazer Industries.

Signed by:  \_\_\_\_\_ Date: 10-26-12

Joseph Janda, Director

Oregon Solutions

Oregon Solutions commits to reconvening the project team within one year from the Declaration of Cooperation signing ceremony. The reconvening is an opportunity to check in on implementation of all commitments and to provide the team an opportunity to review the team goals (if/as needed).

Signed by:  \_\_\_\_\_ Date: 6-7-12

Jim Johnson, Interim Director

Blazer Industries

Blazer Industries, Inc. is a modular building manufacturer located in Oregon and primarily serving the Pacific Northwest market of Oregon, Washington, California, Idaho, Alaska and Hawaii. Beginning in 1976 building mobile restroom trailers, Blazer

now provides construction site offices, permanent classrooms, medical facilities, restaurants, fast lube stations, pump stations, public restrooms/concessions/storage buildings, high-end custom single family residences, and much more.

- Has provided extensive research and development for this project over the course of the process (\$11,000 in kind)
- Will agree to a 5 year exclusive license to use the PSU design to manufacture and sell modular classrooms for distributors in the Pacific Northwest, including the states of Washington, Oregon, Idaho, northern California, Hawaii, Alaska, Montana, North Dakota and the provinces of British Columbia, and Alberta.
- Will assist PSU in identifying builders outside the Pacific Northwest region to assure quality standards and meet the needs and requirements of distributors
- Will build and deploy Units based on the design within the following times:
  - 1 Units within one (1) year of the Effective Date
  - 5 Units within two (2) years of the Effective Date
  - 10 Units within three (3) years of the Effective Date
  - 20 Units within four (4) years of the Effective Date and every year thereafter.
- Will provide the engineering for design and units (\$4,000 in kind)

Signed by: Kendra Cox Date: 6/7/12

Kendra Cox, Project Manager

### MSpace Holdings

M SPACE is a nationwide, full-service modular general contractor, serving a wide array of industries. M SPACE offers a diverse range of building types- custom and traditional, permanent and temporary, new and pre-leased- from small single buildings to large multi-story complexes. M SPACE is dedicated to providing green modular building options, including environmentally friendly designs and energy efficient materials that provide healthy and productive environments for our customers. Flexible leasing, sale and financing options are available.

- Provided modular expertise and technical expertise from modular distributors' experiences
- Contributed resources to development of and review of marketing, including conducting brainstorming sessions and focus groups and naming of the building
- Contributed resources to development of and review of exclusivity agreements



- Provided outreach to private schools in Oregon on the Oregon Solutions Green Modular Classrooms project
- Will continue to promote the industry's movement toward healthy classrooms

Signed by: Ali Orlovsky Date: 9/19/12

Ali Orlovsky, MSpace Holdings

### Pacific Mobile

Pacific Mobile Structures, Inc. is a provider of quality classroom facilities throughout the Western States from eight branch office locations, including our local Oregon City location. In business since 1983, our capabilities include the design and construction of customized modular buildings. Through our Construction Services division, we can provide all aspects of project management and site related requirements to provide a turn-key solution for our clients.

- Will purchase a prototype classroom to be displayed at the Greenbuild international conference in San Francisco (November 14-16, 2012)
- Will promote the classroom to school district clients
- Continue to support development of promotional materials, marketing, and branding with PSU entities
- Will work in collaboration with Blazer to identify builders outside the Pacific Northwest region to assure quality standards and meet the needs and requirements of distributors


Signed by Garth Haakenson Date: 10-26-12

Garth Haakenson, CEO / President

### Portland Public Schools

Portland Public Schools has provided technical advice and shared facilities' expertise into how districts purchase and install portable classrooms. PPS has also shared school preferences on aspects of modular classroom design and will continue to do so as necessary to support the project. PPS will consider opportunities to utilize Green Modular Classrooms in the future as funding allows and work in collaboration with the

Oregon Solutions Team in possible siting and permitting issues and reconvening if necessary.

Signed by:  Date: 6/22/12

Randy Miller, Director of Project Management, Facilities and Asset Management Department

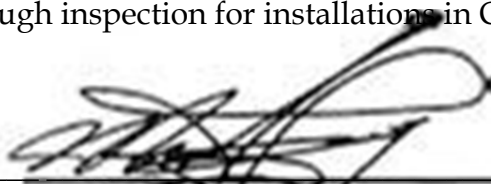
State of Oregon Building Codes Division

Oregon's building construction policy is set by the Department of Consumer and Business Services, [Building Codes Division](#) (BCD). As part of its statewide policy setting responsibility, BCD provides up-front technical assistance and guidance on code related questions covering structural, life safety, accessibility, and energy conservation and sustainability.

To date, BCD has provided technical assistance to this project and will continue to do so as necessary to support the project as it shifts from design to permitting and inspection to ensure state building codes are met.

In support of the implementation of the Green Modular Classroom project, BCD will commit to the following actions:

- Provide plan review, permitting, and inspection services for units located in Oregon, Washington, and Idaho through an agreement made with those states.
- Provide any on-going assistance to ensure a smooth transition from design through inspection for installations in Oregon communities.

Signed by:  Date: 6/26/2012

Mark Long, Administrator

American Institute of Architects Portland Chapter

The American Institute of Architects Portland Chapter is the leading professional membership association for licensed architects, emerging professionals, and allied partners in the Portland area. The AIA serves as the voice of the architecture profession and the resource for members in service to society. One of AIA Portland's goals is to promote partnerships, awareness and advocacy for sustainable K-12 facilities.

In support of the project, AIA Portland will commit to the following actions:

- Host the Declaration of Cooperation signing event, including complimentary beverages and provision of meeting space.
- Promote the Green Modular Classroom project through newsletters, membership, events and conferences.
- Support project fundraising efforts.
- Continue to support development of promotional materials and outreach strategy with Team

Signed by:  Date: 6/7/2012

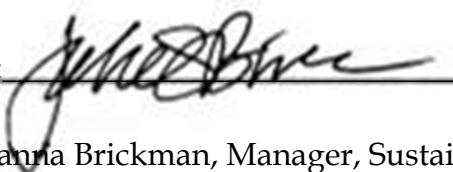
Stefanie Becker, Board Member

Oregon Built Environment and Sustainable Technologies Center

An independent, nonprofit established by the Oregon Legislature, Oregon BEST builds on Oregon's reputation as an international leader in cleantech innovation. Oregon BEST's charter is to connect businesses and investors with a university-based network of shared-user lab facilities and faculty expertise to more efficiently commercialize cleantech research into on-the-ground products, services, and jobs that power Oregon's economy.

- Oregon BEST will continue to reach out to its network of industry partners to seek product or technology contributions towards the modular classrooms, as well as customers to purchase the units. We commit to doing that in the near term, in the time leading up to Greenbuild in support of a successful exhibit there, as well as after Greenbuild. We will harness our network of green building contacts locally, regionally, and nationally to support the successful launch of this product.

- In addition, to companies that donate product towards the prototype unit, Oregon BEST will offer an additional consideration for applications for our Commercialization Grant program, which awards funds for research to remove technical barriers in the effort to commercialize a new clean technology innovation in Oregon.
- To increase the amount of research funding available for in-situ performance monitoring of these modules, Oregon BEST will give preference to applications for matching funds by Oregon BEST faculty proposing such research projects through our Proposal Matching Program.

Signed by:  \_\_\_\_\_ Date: 6/7/12 \_\_\_\_\_

Johanna Brickman, Manager, Sustainable Built Environment Program

Northwest Renewable Energy Corp.

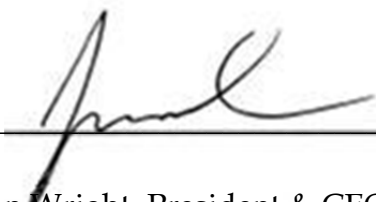
North West Renewable Energy invests and researches in “green” technologies through taking common building components used in the commercial and industrial markets that consume electrical energy, and redesign them to be solar powered providing a reduction in grid supplied energy and thereby providing reduced energy costs to the company owners.

NWREC participated as an active member of the Oregon Solutions "Green Modular Classroom Project" through its President & CEO Jason Wright.

NWREC supports the development of more efficient modular classrooms to improve the educational setting for students while simultaneously demonstrating that improved energy efficiency can be accomplished without significant cost increases.

In support of achieving the affordable Green Modular Classroom vision, NWREC commits to provide the following:

- Participate as an active member of the Project Team.
- Provide consultation to improve the HVAC efficiency of the Green Modular Classroom.
- Initiate and seek corporate donations for four roof mounted skylights.
- Provide by donation, up to two SunCooler™ ventilator units equipped as needed for two modular classroom prototypes. (\$6500.00 total retail value)

Signed by:  \_\_\_\_\_ Date: 6-7-12 \_\_\_\_\_

Jason Wright, President & CEO

### ecoREAL

ecoREAL, a green building leader that offers an array of LEED® certification services, is donating use of their proprietary *Green Building Integrated Management (GBIM)* tracking software to verify healthy and sustainable attributes for the initial material selection for the GreenBuild 2012 prototype:

*Green Building Integrated Management GBIM* tracking software:

- Cloud-based on-line repository of sustainable material choices for future *Green* modular schools and team collaboration
- Material choices for the prototype will be vetted by our *GBIM* software to track sustainable attributes and avoid *green-washing*
- *GBIM* will alert indoor environmental quality health concerns based national third-party standards
- An on-line Sustainable Material Dashboard shows the aggregate total of the sustainable attributes to verify compliance with LEED, CALgreen, CHPS the IgCC and other standards
- Results from the software can streamline the LEED documentation process and avoid change orders from not meeting green building standards
- *GBIM* communicates Green Building guidelines in an easy-to-understand way to create a repeatable process for any team
- The result is a streamlined process to keep costs down for certification and ensure they are *future-ready*

ecoREAL's Green Building Design and Construction Services:

- ecoREAL will help integrate Green Building requirements with traditional Health, Safety and Welfare protocols
- Work with the team to assess the Life-cycle of products and systems to help districts meet their goals for healthy high-performing schools

- Integrate the sustainable goals with the controls system for an educational dashboard and classroom signage to enhance a sustainable building curriculum
- Collaborate with team to augment acoustical, day-lighting and indoor air quality performance
- Continue to work with the USGBC's Center for Green Schools to maximize savings and incentives for schools to adopt *Green Modular Schools*

Signed by:      Date:     06-07-12    

Summer Gorder, Founder

### LVD Media

LVD Media is a Native American and woman owned agency specializing in marketing, branding, public relations and digital services for small businesses in the retail, tourism, hospitality, arts and entertainment industries. Located in Portland, Ore., LVD empowers its Pacific Northwest clientele by crafting individualized creative services to distinguish them from their competition and sharing the blueprints for their own marketing success.

Help in outreach through promotional materials, branding, logo design, website development

#### **Branding**

- Identify Key Messages, Values and Themes
- Create or Redesign Logo
- Construct Style Guide
- Activate New Image

#### **Public Relations**

- Incorporate Brand/Style
- Create Boilerplate
- Demographic Community Outreach
- Social Media Education
- Implementation of Social Media Plan
- Media Outreach
- Content Development
- Create and Distribute E-mail Communiques/Newsletters

- Cross Promotion
- Calendar Maintenance

**Digital Marketing**

- Create, Set up and Implement Social Media Accounts Plan
- Online Advertising Plan Design and Implementation
- Create Open Source and Custom Content Management System
- Concept/Planning/Development of Web Presence
- Custom Website Design Using WordPress
- Create and Implement Search Engine Optimization (SEO) Campaign
- Custom Database Design and Implementation
- Newsletter Creation and Implementation
- Integrated 3<sup>rd</sup> Party Tools
- Mobile Website Compatibility

Signed by:  \_\_\_\_\_ Date: 07-24-12 \_\_\_\_\_

Annie LaVerdure - O'Brien, Principal

Energy Trust of Oregon

Energy Trust of Oregon is an independent, nonprofit organization dedicated to helping utility customers benefit from saving energy and generating renewable energy. It provides cash incentives, technical assistance, and customer services to help residential, commercial, industrial, agricultural, public and nonprofit customers improve energy efficiency and add renewable energy solutions in homes, businesses, schools, and other facilities. Energy Trust investments help Oregonians keep energy costs as low as possible, create jobs and build a sustainable energy future.

Energy Trust is planning to provide grant funding to the Portland State University Foundation in support of PSU Institute for Sustainable Solutions. The funds will help support energy modeling for the designed portable buildings, construction of the net zero portable prototype, and installation of an energy monitoring and tracking system. The energy modeling and monitoring information will enable Energy Trust's New Buildings program to analyze the energy efficiency of the portable buildings and use the data to inform future program offerings.

Signed by:  \_\_\_\_\_ Date: \_\_\_\_\_

Jessica Rose, Business Sector Manager

## **Resources Committed and Realized during Process**

In addition to the commitments documented in this Declaration of Cooperation, Team members spent many hours building relationships, sharing information, and providing technical assistance, particularly on design development. The following parties made contributions and shared resources that were crucial to the success of this project:

- **KPFF Consulting Engineers**, a multi-office, multi-discipline engineering firm, provided consultation on structural foundations.
- **McKinstry**, a full-service design, build, operate and maintain (DBOM) firm, provided control system design and electrical design and layout (value \$2,475).
- **PAE Consulting Engineers**, a mechanical and electrical engineering firm, consulted on HVAC design and function (value \$4,100).
- **Luma Lighting Design**, a lighting design company, consulted on lighting fixtures, layout and controls and natural daylighting.
- **SERA Architects** provided early consultation on natural daylighting and artificial lighting.

## **Appendix:**

**Timeline for implementation**

**Team Members**





## **Green Modular Classrooms Project Team**

Dennis Wilde, Convener (Gerding Edlen)

Portland State University

Institute for Sustainable Solutions

Department of Architecture

Office of Innovation and Intellectual Property

Blazer Industries

MSpace Holdings

Pacific Mobile Structures, Inc.

Portland Public Schools

State of Oregon Building Codes Division

American Institute of Architects, Portland Chapter

Oregon Built Environment and Sustainable Technologies Center

Northwest Renewable Energy Corp.

ecoREAL

LVD Media

Energy Trust of Oregon

The following parties made contributions and shared resources that were crucial to the success of this project:

- KPFF Consulting Engineers
- McKinstry
- PAE Consulting Engineers
- Luma Lighting Design
- SERA Architects

## Timeline for Implementation

	<u>June</u>	<u>July</u>	<u>August</u>	<u>September</u>	<u>October</u>	<u>Novemeber</u>	<u>December</u>
<u>Final Design Elements</u>							
<u>Engineering</u>							
<u>Donated Materials</u>							
<u>Oregon Building Inspection</u>							
<u>Greenbuild Building</u>							
<u>Marketing, Press, Outreach</u>							
<u>Website Development</u>							
<u>Greenbuild Display</u>							
<u>OS Reconvening</u>							