SUSTAINABILITY ACTION PLAN
CONTENTS

1. INTRODUCTION: SUSTAINABILITY IS OUR DNA
   SERA STUDIOS

2. SUSTAINABILITY AT SERA

3. THE IMPORTANCE OF TRANSPARENCY

4. ADVOCATING FOR POSITIVE CHANGE

5. PERFORMANCE OF OUR PORTFOLIO

6. DESIGN PROCESS
   PROJECT CHARTER
   PROJECT COMPASS

7. DESIGNING SUSTAINABLY
   HUMAN HEALTH & WELL-BEING
   HEALTHY MATERIALS
   BIOPHILIC DESIGN
   RESOURCE MANAGEMENT:
     EMBODIED CARBON
     ENERGY & EMISSIONS
     WATER
   SUSTAINABLE PLACEMAKING:
     ECOLOGY
     COMMUNITY

8. SOCIAL SUSTAINABILITY DIVERSITY EQUITY & INCLUSION

9. SUSTAINABILITY AS A BUSINESS STRATEGY

10. SUSTAINABLE OPERATIONS

11. STAFF ENGAGEMENT AND EDUCATION

12. RESOURCES, AWARDS & CERTIFICATIONS
Recently, SERA engaged in a “brand assessment” to determine how we are viewed by our clients, consultants, staff, and other collaborators. We wanted to articulate who we are, what we do, and why it matters. After an in-depth process of surveys, interviews, and workshops, a team distilled the outcomes down to five statements:

- We exist to make people’s daily lives better.
- Urbanism is our basis of design.
- We take responsibility for the past, present, and future of place.
- We love gnarly problems. And,
- Sustainability is our DNA.

All of these statements connect with various aspects of sustainability, and the particular ways in which we at SERA approach it. The following pages expand on these statements in specific categories—but most importantly describe actions we are taking to advance sustainability in our work. We make things—buildings, places, environments, and experiences. Having a plan helps us be strategic and optimize our impact. This is our Action Plan!

Over the years, we’ve taken a holistic approach which we’ve organized into three categories of guiding principles: people focused, resource and climate focused, and focused on sustainable placemaking. We’ve developed a Project Compass based on these principles to support holistic goal setting and tracking by teams. (See 6. Design Process.)

As the devastating and escalating consequences of climate change have become more obvious, it’s critical for us to understand, track, and strategically reduce the impacts of our projects. In addition to analyzing and tracking the operational climate impacts, we are now analyzing the total embodied carbon of our projects. We have developed a methodology that will continue to evolve, as tools and resources improve, for calculating the embodied carbon of our entire current portfolio. (See 7. Designing Sustainably.)
SERA STUDIOS

SERA is an interdisciplinary firm offering expertise in integrated architecture, urban design and planning, and interior design. A team in the truest sense of the word, staff shares expertise across studio boundaries. This cross-pollination helps advance our sustainable design approach for all of our projects.

PUBLIC

For more than 40 years, SERA has been committed to improving the public realm and its institutions at both the building and campus scale. We maximize the long-term value and stability of the places we create through preservation, resiliency, and efficiency. We cultivate long-term partnerships with municipalities and institutions to encourage stewardship, and champion inspiring, safe, inclusive, and healthy experiences that enable success of employees, students, and the public. We combine a rigorous analytical process with a collaborative spirit to ensure this tradition continues.

HOSPITALITY

Hospitality projects are complex, with stakeholders who have diverse needs. SERA balances and prioritizes these requirements using the filters of great design and sustainability. Because the experience of guests is a driver for this work, we give close attention to the quality of the interior environments, including use of materials that support health and well-being. We work with our clients to deliver elegant properties that provide enhanced returns on investment, and create a built environment that is respectful of resources and beautiful in every way.

HOUSING

SERA’s 30-plus years of experience with urban infill housing ranges from subsidized permanent supportive, to affordable to market rate apartments. Our Housing Studio thrives on the diversity of housing types, and this experience keeps us at the cutting edge of trends, codes, green building, and current cost effective construction techniques. We are not only deeply committed to high-quality and durable building design, but we strive to connect our projects and their residents to the larger context of their neighborhoods and build bridges to transit, nature and community.

URBAN DESIGN & PLANNING (UDP)

SERA provides innovative yet practical design solutions to facilitate place-making for people. Our projects involve investment in urban areas and revitalization of neighborhoods for both public and private clients. With an inclusive design process to articulate needs and opportunities, we guide communities through change: we help them unlock their conflicts, realize their potential, and empower them to turn their visions into reality. Our contextual solutions bolster community vibrancy, retain historic character, improve the public realm, and maximize development potential. We promote environmental, economic, and social sustainability and resiliency at multiple scales to meet the unique needs of each community. We incorporate principles of flexible and adaptable land use, pedestrian and bike access, mixed-use neighborhoods, transit-oriented development, green infrastructure, and ecological restoration in order to create whole and beautiful places.

WORKPLACE

SERA enhances productivity in the workplace with a holistic planning approach that incorporates improved space utilization, flexible office layouts, and access to formal and informal collaboration space. SERA’s approach focuses on the quality of the interior environment, including access to daylight and views, use of materials that support health and well-being, balance between teamwork and confidentiality, and worker safety through accessibility and ergonomic considerations.

SUSTAINABILITY RESOURCES GROUP (SURG)

We work closely with all of our studios and their clients to assure that we are strategic in our pursuit of a broad range of sustainability and performance categories, including climate-responsive design, highly efficient use of resources, and the creation of interior environments that support health and well-being. While we tune our approach to opportunities that are appropriate for each client, we’ve found that aggressive goals such as net-zero energy and water can be achievable, and have developed a set of tools and procedures to provide analysis which supports decision-making and design. Our experience in pursuing tax incentives, grants, loans, and rebates for incorporating sustainable design into projects reaps lasting benefits for our clients. More importantly, they benefit from an integrated and holistic design process that yields long-term economic benefits, healthier people and stronger communities.
2. SUSTAINABILITY AT SERA

HISTORY, MISSION, AND PURPOSE

Founded in 1968 (as The Design Collaborative) during Portland’s downtown renaissance, SERA was fundamental in planning and building a city that was revitalizing its downtown during a period of widespread flight from urban centers across the United States. SERA’s genesis came from within the context of heightened environmental sensibility of the 1970’s and national legislation such as the creation of the Environmental Protection Agency under Richard Nixon and the Clean Air Act under Lyndon Johnson. This legislation allowed local leadership, including founding Principal Bing Sheldon (Chairman of the Planning Commission during this time), to focus on public transit, urban growth boundaries and walkability. During this era, SERA worked with Bill Naito to bring retail to downtown (The Galleria), restore historic structures (The New Market Building, Portland City Hall), and revitalize old manufacturing infrastructure for new uses (Montgomery Park).

In 2002, SERA leadership went through an intensive training in The Natural Step Framework followed by an extensive office-wide backcasting process. That process reverses the standard forecasting approach by first establishing a future vision and then working backwards to develop the steps required to achieve that vision. The lessons learned during backcasting continue to permeate all aspects of SERA’s culture and operations. One of the most prominent results of this process was the creation of our first Sustainable Action Plan in 2003.

SERA’s future rests on the foundation of its original values–urban infill, re-use, and redevelopment as important strategies in creating community. Today, SERA is recognized as a national leader in sustainable design, with extensive experience in LEED and other green building standards such as the Living Building Challenge (LBC). Our history and partnerships have deepened our understanding of what sustainability can mean–from district resource systems, resiliency and indoor environmental quality (IEQ) to biophilic design, healthy materials and ecology. This platform sets us up to tackle the dynamic and complex challenges that are facing the built environment today, and in years to come.

We understand sustainability to be a basic responsibility–with a holistic, integrated design process at its core. Through interdisciplinary approaches to planning, design, and project delivery, we aim to provide long-term value in every project via economic benefits, healthier and happier people, stronger communities, and vibrant ecosystems.

“If you don’t know where you’re from, you will have a hard time saying where you’re going.” -Wendell Berry
3. THE IMPORTANCE OF TRANSPARENCY

At SERA Architects, we believe that knowing the actual impact of our projects and business operations is central to advancing our approach to sustainability. Understanding how our buildings (and their occupants) are performing, requiring vendors to disclose the contents of their products, calculating the embodied carbon of our projects, and measuring our in-office waste production are all components of transparency.

Without an understanding of actual, measured performance, organizations miss a valuable opportunity to learn for the future. We strive to go beyond ‘predicted performance’ to a process that also tracks ‘actual performance’ whenever possible. We also work to develop standards, processes, policies, and tools that bring transparency to the mainstream and help educate our employees and our partners.

Two parts of later sections are based on the principle of transparency: healthy materials and resource management in Section 7 (Designing Sustainably), and SERA’s JUST label in Section 8 (Social Sustainability).

“If you can’t measure it, you can’t improve it”
- Peter Drucker
4. ADVOCATING FOR POSITIVE CHANGE

SERA has a long history of advocating for policies that improve the health, safety, and resilience of our cities and their residents. From our founder Bing Sheldon’s role in the creation of the Portland Downtown Plan in the 1970s to co-founder Don Eggleston’s leadership on the development of Portland’s seismic retrofit policies in the 1980s and our involvement in citywide energy performance reporting today, we continue to push for positive change in our work and in our industry.

Here are some ways we have stayed involved:

**OREGON**

- RENEW OREGON
  - SERA was an early signer of the effort
  - SERA was a financial contributor to the organization
  - Provided written testimony in support
- CITY OF PORTLAND COMMERCIAL BUILDING ENERGY PERFORMANCE REPORTING POLICY
  - SERA participated in work sessions to help develop Portland’s new energy benchmarking policy
  - SERA provided testimony to encourage adoption of the new policy by City Council
- OREGON ENERGY CODES
  - SERA has collaborated with Climate Solutions, Earth Advantage, and the New Buildings Institute on policies to improve Oregon’s energy codes to reduce the climate impacts of buildings in the state
- URBAN TIMBER PRODUCTION
  - Advocated (in writing and in person) for OR HB 2984 which requires Clackamas County to develop a pilot program for forestry products grown on nonforest land in county to be commercially produced and marketed through forestry product cooperative
- PMTC
  - SERA’s effort is working toward material transparency is in working with other Portland design firms and material advocates via the Portland Material Transparency Collaborative (PMTC). We are a group of advocates working together to improve material transparency and learn from each other. Together we provide one clear voice to product representatives

**CALIFORNIA**

- SUSTAINABLE SILICON VALLEY
  - Served on water reuse Advisory Board
- ILFI SILICON VALLEY COLLABORATIVE
  - Advised Collaborative’s activities around promoting non-potable water reuse
- ILFI - CA CONGRESS
  - Developed multiple, coordinated policy efforts in CA to address water issues in general, the drought in particular, with an emphasis on “using non-potable water for non-potable uses,” with a growing focus on water quality equity
- SPUR - WATER AND CLIMATE POLICY BOARD
  - San Francisco Bay Area Planning and Urban Research Association - Education, research, and advocacy organization that tackles regional issues around sustainability, and promotes good planning and good government in the Bay area
- AIA NATIONAL, CA CONSORTIUM + URBAN FABRICK
  - Developed a national handbook for architects (and engineers) regarding promoting and working with jurisdictions on water re-use issues

**NATIONAL**

- US DEPARTMENT OF ENERGY & NATIONAL LABS
  - Collaborating with the New Building Institute on Grid Optimal content and presentations
  - Participating in a national task force working to develop pathways to ‘outcome based codes’ for the US DOE
  - Collaborating with Lawrence Berkeley National Lab on building performance research
  - Participating in Symposium with NASEO (National Association of State Energy Officials)
- AIA NATIONAL ADVOCACY BOARD
  - Participating in the AIA’s National Advocacy Board on matters related to Sustainable Design
  - Participating in the development of ‘Active Design’ Guidelines for a national standard
- AIA MATERIAL KNOWLEDGE WORKING GROUP
  - Participating in the working group tasked with creating educational content, tools and resources to assist AIA members with Material Transparency and Advocacy
- MINDFUL MATERIALS COLLABORATIVE
  - Tasked with expanding the adoption and use of the mindful MATERIALS Program across the industry
  - Creating a bridge between industry associations (AIA, CSI, IDA, ASID, etc) around Material Transparency
- HEALTHY BUILDING NETWORK (HBN) HOME FREE
  - Serving on Advisory Board
- PROJECT DRAWDOWN, THE BOOK
  - Peer reviewing chapters on Net Zero Buildings and District Infrastructure
- EMBODIED CARBON NETWORK AND CARBON LEADERSHIP FORUM
  - Collaborating on content and providing peer review
- GLOBAL CLIMATE ACTION SUMMIT
  - Attending and participating as invited guest
- UN GLOBAL CLIMATE RESTORATION SUMMIT, CLIMATE RESTORATION FORUM
  - Attending and participating as invited guest
SERA strives to envision and create sustainable physical environments. To ensure momentum in our efforts, we use a three-step backcasting process: 1. Establish a clear and compelling vision/goal. 2. Clearly define the present condition. 3. Design the pathway from the present to the goal. The AIA 2030 Commitment and the work of Ed Mazria’s Architecture 2030 Challenge are strong examples of the benefits that this kind of strategic planning model provides by identifying where we are going and the steps we need to take to achieve this goal.

With regards to energy, SERA has demonstrated our commitment by tracking and reporting the Predicted Energy Use Intensity (PEUI) for our projects annually since 2011. However, SERA’s sustainability goals are not limited to energy savings; they also address water, indoor environmental quality, and district scale systems.

One of the most comprehensive efforts that SERA has undergone in recent years is the creation of a culture of constant improvement and change. We work to avoid getting stymied by tensions that come with cultural change. However, with global issues such as climate change, we realize that our internal cultural change has to be externalized in order to make progress.

This is why SERA is constantly pushing the envelope outside of our office by helping set standards, removing regulatory barriers, creating tools, and spreading awareness. Our hope is that these external efforts will have an equal–or greater–effect towards achieving our goals.

**OVER-ARCHING FIRM GOALS ARE TO:**

- Participate in sustainable building publications and research
- Incorporate leading-edge technology into design at all scales
- Expand policy influence beyond Oregon and California
- Deepen local community participation in all of our projects; and
- Demonstrate the importance of occupant engagement.
SERA is a firm on the forefront of design, fusing social, cultural, economic and ecological insight to create places of lasting significance. Partnering with visionary clients, we create sustainable environments that strive to balance impacts on natural resources while delivering appropriate design solutions.

Since the firm’s founding in 1968, SERA has been instrumental in the development of Portland’s national reputation for livability. Our involvement in urban revitalization, including adaptive re-use and historic preservation projects, formed the early foundations of SERA’s sustainable design expertise. The introduction of The Natural Step’s Four System Conditions and backcasting process further solidified our commitment to sustainability–in both our projects and our operations.

Sustainable design at SERA is based on an integrated practice model of architecture, urban design and planning, and interior design services which utilizes a dynamic team approach that matches staff talent to project opportunities and goals. The Sustainability Resources Group (SuRG) provides in-house sustainable design expertise, research and development, sustainability consulting services, and policy engagement. SuRG is dedicated to an array of sustainable design services including in-house LEED consulting, early energy analysis and programming, embodied carbon analysis, daylighting design and modeling, water efficiency and re-use analysis and calculations, building enclosure analysis, and existing building energy reviews.

The need to address sustainability and to innovate is time-critical for our planet and cannot happen fast enough. SERA has been helping to lead this charge for the last 20 years and has achieved a national reputation for advanced sustainability initiatives.

We have a passion for Research and Development that is beyond the norm in our industry. We frequently use our R&D knowledge to create new tools that advance the capabilities of our practice and abilities to deliver highly integrated sustainable projects.

LISTEN, LEARN & LEAD

We are collaborators, team players, interdisciplinary thinkers and committed partners with our clients. At SERA we firmly believe that highly sustainable, climate responsive design cannot be achieved without a truly integrated design process and collaborative design at all levels. Collaborative design has been one of the core principles of our firm since its inception, and is the very essence of our practice. From concept through development and into project completion, SERA is committed to a design approach that demands the full creative involvement of the architect, the design team, and the client.

This process is one of listening, asking, analyzing and engaging the client as a partner in the design process. The collaboration explores possible physical solutions suggested from a thorough understanding of the project’s needs and unique parameters of the site. The shared goal is to reveal the project’s singular nature and to discover through design an identity that is individual and memorable. Underlying the ability to collaborate is the sense that one can learn.

The most important test of our work—whether it’s a neighborhood plan, site improvement project, or a building—is the daily experience of its users. From the big picture systems, like regional transportation and connectivity networks, to the small details of site furniture placement and design, all of these elements contribute to the daily experience of a space. From early visioning and goal setting to plan and design refinement, we collaborate with project and community stakeholders to co-create solutions.

ADVANCE UNDERSTANDING RAPIDLY FOR TOMORROW

The need to address sustainability and to innovate is time-critical for our planet and cannot happen fast enough. SERA has been helping to lead this charge for the last 20 years and has achieved a national reputation for advanced sustainability initiatives.

We have a passion for Research and Development that is beyond the norm in our industry. We frequently use our R&D knowledge to create new tools that advance the capabilities of our practice and abilities to deliver highly integrated sustainable projects.
INTEGRATED DESIGN AND ANALYSIS

ASKING QUESTIONS

The first priority in our integrated design process is to identify the right questions. What are the drivers, priorities, and concerns for the clients and users? How do we create quality environments that are comfortable and healthy? What are the local climate and weather patterns, and how should the design respond? What will be the project’s global climate impacts due to operational resource use and embodied carbon of the construction materials? How does the project relate to its context and community?

CLIMATE ANALYSIS & ENERGY MODELING

The starting point on each project is climate analysis to understand daily, seasonal, and sometimes future weather cycles. We graph climate data to illustrate wind, rain, sun angles, and cloud cover. Often this analysis leads directly to climate-responsive design strategies, while also supporting deeper analysis of energy and daylighting. Energy modeling is a simulation method that provides valuable information for our design teams and helps us to understand the key energy performance aspects of the building. These models are especially beneficial in the early design process. We perform conceptual energy analysis in-house with consultants to understand the impact of our design decisions on energy and costs. Our internal tools and methods support quick decision-making early in design and facilitate an integrated process. The energy analysis results often provide the highest return on investment of any project activity because they lead to significant improvements in the building’s long-term energy performance.

DAYLIGHT ANALYSIS

SERA also uses daylight analysis software to inform decision-making throughout the design process, from building orientation and massing to window placement and glass type. These analyses can account for the annual weather and offer insight into energy savings and occupant comfort.

LIFE CYCLE COST ANALYSIS

SERA and its mechanical consultants have developed detailed Life Cycle Cost Analyses (LCCAs) for mechanical systems on major projects. LCCAs allow an owner to make well-informed decisions between alternate mechanical systems, considering not only the initial capital cost, but also the lifetime impacts of energy use, operation, maintenance and eventual replacement.

CUSTOM SUSTAINABILITY ANALYSIS TOOLS

To better analyze high-performance building systems, The Sustainability Resources Group (SuRG) has created its own software methods to analyze the following:

- Annual shading from surrounding context such as buildings and trees
- Photovoltaic solar array potential
- A project’s water usage and the potential on-site water collection and reuse

RESOURCE FLOW MAPPING

The Civic Ecology whole systems approach to community design requires a new way of thinking about resource use. To that end, SERA created Community Resource Flow Mapping, a stakeholder engagement tool that enables all segments of the community to envision their desired shared future and create the resource flow systems necessary to achieve it. The process helps participants identify specific projects to catalyze deep systemic change, create the implementation plans necessary to achieve these systems and then measure progress toward the vision and make adjustments as required.

VIRTUAL REALITY

Virtual reality, and to some extent, augmented reality, provides an unparalleled way to engage in sustainable design. At its most basic level, it immerses the viewer in a representation of the space not possible with other media. Vegetation isn’t just color on a screen but something to be traveled through and experienced—much like reality. At SERA, we believe that VR can be more than a presentation tool. When a designer creates in VR, the immediacy of the environment provides a guide for a better outcome. Analytical tools can be employed to augment intuition. Data that was once represented in a spreadsheet can be explored in a more natural way. In the future, as graphics become more refined, making the right sustainable choice will be the obvious one as well.
A project charter is a brief but concise written document used as design/project management tool for defining scope of work, objectives, people who are participating, and project outcomes by the team. The charter should contain a vision statement and a shared understanding of outcomes and/or goals for the project as established by the stakeholders. The document can be supplemented with diagrams, sketches, or photographs to help convey the design/project intent.

A project charter serves as commitment by team members to be held accountable to deliver on the vision and goals established for a preferred outcome that benefits all stakeholders. The charter document should be used as a reference and on-boarding tool for new team members or stakeholders to the team as the project develops in maturity to quickly establish understanding and buy-in on the project goals. At the completion of the project, the charter’s goals should be obvious in the outcome of the project’s use and purpose.

The project charter should come to life in the earliest part of a project and should be used as a guiding light along the journey to the agreed-upon destination. The charter should be referenced at various milestones by team members to confirm or validate the direction the project is headed and to make any adjustments that are required to reach the goals of the charter. The charter should be used as a living document and should evolve with the project—and, in turn, it should be revised or edited along the project’s path of delivery.

If the project charter has been executed, successfully the users will adopt the legacy and philosophy behind the charter and will operate/maintain/facilitate the project as originally intended in the charter. All stakeholders should be able to author communication material based on the logic embedded in the project charter if delivered accurately.

The SERA Project Compass is a design tool we developed to guide our goal setting and decision making through the life-cycle of a project. By collecting the many challenges of resilience and sustainability in one place, we have been using this tool to prioritize and clarify the key performance goals and strategies for a project in the categories of Resource Management, Sustainable Place-making, and Health & Well-Being.

The graphic format helps us convey and review this information quickly and emphasize the holistic nature of the process and outcomes. The length of the colored bars communicates the highest priorities and issues to address most aggressively. As we define success on each project, it may be better on some projects to do a few things really well than to try to do a little bit of everything. The format is flexible and allows project teams to customize the content for their needs and priorities.
7. DESIGNING SUSTAINABLY

Erb Memorial Union, University of Oregon | The transparency of the 'student street' affords occupants more daylight. Operable windows on the north elevation of the new wing give these programs natural ventilation and user control.

Alpine Avenue | With an emphasis on balanced design for both people and vehicles, Alpine Avenue includes a curb-free street environment designed to slow vehicle speeds, prioritize pedestrians and accommodate truck access to the existing businesses. Plaza spaces incorporate custom-designed benches, picnic tables and planter boxes amidst new landscape areas. The streetscape also features the city's first application of stormwater gardens. The design allows the street to be easily transformed into a pedestrian-only plaza for special events and festivals.
DESIGNING ENVIRONMENTS THAT PROMOTE MENTAL, PHYSICAL AND SOCIAL HEALTH TO ENHANCE HUMAN WELL-BEING AND PERFORMANCE

A built environment that supports healthy minds, bodies and social culture is a foundation for human achievement. This is why we aim to create environments that integrate both the human experience and the human condition. Environments should be fun and inspiring, increase motivation, encourage physical activity, minimize stress and inspire positive moods.

Today in the United States, where people spend about 90% of their time indoors, SERA recognizes the impact potential of creating healthy indoor environments for both building owners and occupants alike. Along with our partners, we look for opportunities to define strategies that are integral to achieving the best Indoor Environmental Quality (IEQ), while also recognizing the benefits of creating inviting, comfortable, and effective outdoor spaces.

OUR CURRENT AREAS OF STUDY INCLUDE:

- THERMAL COMFORT Recent research shows that health and well-being are best supported by daily and seasonal temperature variations rather than static conditions. Thermal variation, which allows for user control, can support highly energy-efficient mechanical systems, and creates the potential for reduced operational energy loads.

- LIGHTING, DAYLIGHTING Access to daylight is essential to occupant health and well-being. We employ a spectrum of daylighting strategies, such as building massing and orientation, strategic use of exterior glazing, and the incorporation of exterior and interior elements that help redirect and manage daylight. Paired with high quality lighting and control systems, these strategies can help achieve minimal energy, while also maximizing visual comfort for occupants.

- ACTIVE DESIGN Our built environment should make healthier options more comfortable, convenient, safe, and pleasant. Prioritizing a mix of uses, intuitive way-finding, and access to water and nutrients can provide people the resources they need to stay active, healthy, and alert. Amenities inside and out that support walking, biking, exercise, and healthy food options can enable healthy decisions for occupants and the public.

- ACOUSTICS We account for clients’ specific acoustic needs for separation, sound attenuation, and natural sound enhancement in our projects. We understand the impact that distraction can have on occupants, and that solutions are a combination of programming, adjacencies, and material properties.

- INDOOR AIR QUALITY Healthy interior air quality goes beyond controlling particulates and VOCs, and looks into the proper levels of humidity, CO₂, CO, and ozone. It can be achieved through informed material choices, well-designed mechanical ventilation and flow rates, sound construction practices, and integration of natural ventilation. Being mindful of pollution sources in programming, mechanical system design, and site layout can go a long way toward creating healthy environments.

We also realize that enhanced outcomes arrive with education, the appropriate tools and feedback from the occupants, so we seek opportunities to collaborate with clients to create frameworks and tools for assessing various IEQ metrics. With the intention of highlighting both the synergies and conflicts between IEQ and resource efficiency - energy, water, materials—we can provide an informed context for decision-making that helps to balance and optimize building and human performance.

GOALS

- Discuss human health & well-being goals and occupant benefits with the client
- Provide access to daylight to 50% of regularly occupied spaces
- Create places that encourage exercise and the use of alternate modes of transportation
- Prioritize visible, appealing, and user-friendly stairways
- Provide access to clean drinking water to all occupants in key locations

occupant satisfaction + connection to nature

Post-occupancy evaluations (POE) offer the opportunity to validate and fine-tune building and human performance. SERA uses an occupant survey to gather information on tenant satisfaction with a project’s indoor environmental quality (IEQ). The on-line survey tool was developed by the Center for the Built Environment (CBE) at UC Berkeley and includes questions regarding acoustics, air quality, cleanliness, lighting and daylighting, office layout, furnishings, and thermal comfort.

SERA has partnered with CBE to develop a new custom survey module that aims to measure the relationship of environmental characteristics and connections to nature with our ability to perform in the workplace. We created questions that ask about where people go to meet their basic needs to collaborate, focus, relax, and reduce stress, with the intent to pair that with a building inventory that highlights key features of those spaces.

We want to find out how natural characteristics improve the well-being and performance of building occupants, and how those effects relate to other spatial qualities (for instance thermal comfort). With this new tool, designers and clients can understand and even highlight the positive effects of the natural environment in a real-world setting, which will in turn provide us with lessons on how to improve our work in the future. Of course, it’s also valuable to find out if there are unforeseen challenges or trade-offs as well. The CBE survey will hopefully provide a path for taking evidence beyond focused scientific research to more complete real world case studies.
Building materials are highly complex combinations of synthetic and natural ingredients. One is quickly overwhelmed when investigating potential hazards in many of these complex systems. Couple this with the general lack of available research or data on the hazards of many of the chemicals used today and you quickly see the challenge our industry faces in selecting materials that have minimal impact on the environment and health of people. At SERA, we firmly believe that increased chemical and hazard transparency will create a more competitive environment for safer products and will spur the removal of ‘suspect’ ingredients by using market forces. This is currently happening in a changing market where consumers are demanding increased levels of transparency.

To this end, we are actively engaged in local, regional and national efforts to foster increased awareness around the importance of material ingredient transparency and their associated hazards. We continue to explore means of fully integrating transparency across all project types and studios and have developed master specification language to support a variety of advanced material requirements like the Red List from the Living Building Challenge.

SERA alone can’t make better products, but our hope is that by supporting manufacturers who develop products that share our value for improved human health, we can better facilitate this market transformation.

**GOALS**

- Select a minimum of 10 products that have disclosed content (HPD, C2C, MHC, EPD, Declare)
- Baseline project specifications shall meet or exceed LEED v4 VOC limitations
- Less is more. Explore how design can minimize material use
- Select at least one salvaged product on each project, and weave it into how we tell the story

SERA has been involved in efforts around material ingredient disclosure for more than a decade. From our initial work in helping build the Pharos product library to our founding endorsement of the Health Product Declaration, we have always strived to transform the materials marketplace and our profession.

We continue to engage in this market transformation through active participation in the HPD Collaborative and the AIA Materials Knowledge Working Group, helping to provide educational content and resources to architects and designers on this important issue. SERA is also engaged in the ongoing development of the national Mindful Materials program which leverages the network effect of the building industry to increase accessibility of disclosure and environmental documentation. We were also involved with the founding of the Portland Material Transparency Collaborative, a city-wide cohort of Portland architects and designers, in an effort to share best practices with our local colleagues, and institute market sector change with our collective influence.

**HEALTHY MATERIALS**

**SELECTING MATERIALS THAT DO NOT DIMINISH THE HEALTH OF OCCUPANTS NOR THE HEALTH OF OUR ECOLOGICAL SYSTEMS**

SERA's Sustainability Action Plan 2020
Our environments impact us, just like we impact our environments. Biophilic Design aims to create places that evoke the healthy responses commonly experienced in the natural world. Biophilic places establish a symbiotic relationship between humans, our environment, and the rest of life that contribute to health and long-term resiliency.

In order to create these experiences effectively, we need to understand both the individual and collective relationships we have with the natural world.

HOW NATURE INHABITS THE INDIVIDUAL
We are Nature. Exposure to nature is a basic human need that nourishes our bodies, minds, and spirits. As humans, our relationship to the natural world within and around us influences our health and well-being through a series of common and interconnected attributes.

HOW WE COLLECTIVELY INHABIT NATURE
As we shape our environments to meet our collective needs, nature should be considered an integral part at all scales. We must work to assure equitable and frequent access for all, creating experiences that evolve over time.

IDENTITY OF BIOPHILIC PLACES
We want to belong and understand how we as individuals fit into the larger whole. Connections to geology, ecology, culture, or history of the setting play a role in defining our collective identity and engenders a love of nature and place.

PLACE-BASED SITE DRIVERS
When creating places that aim to connect people to nature, it’s important to understand the many drivers that influence a site and how different systems interact with the occupants and each other. We recognize that the design process for a specific project is only a small piece of the overall history of that place and should consider both its past and how it can contribute to the future.

SUSTAINABLE PLACES MAKE SUSTAINABLE PEOPLE
While maintaining our resources is crucial for the persistence of future generations, sustainable design goes beyond the responsible management of energy, water, soil, and materials. As a firm, SERA continually invests in its employees’ knowledge and abilities to improve the performance of our projects and the people who occupy them. Our staff is well-versed on the growing body of research showing that one’s health, well-being and performance can be positively influenced by characteristics of the natural environment—an area of study known as biophilia. Successful implementation of biophilic design achieves this through emphasizing the most common ways that humans connect to and feel comfortable in their environments.

SERA has an on-going initiative that collects up-to-date knowledge, educates staff, creates collateral, and engages in public forums to discuss and move this important topic forward. We have created a centralized resource that summarizes what we’ve learned in order to share with our staff, our clients, and the public.

GOALS
- Perform an in-depth site analysis that goes beyond sun and wind and generates place-based, inter-disciplinary design solutions
- Create occupiable spaces outside that can be enjoyed in all seasons and that encourage multi-sensory engagement
- Provide views to nature or natural elements from all occupied spaces

BIOPHILIC DESIGN IS CRITICAL AT ALL SCALES

**Neighborhood Scale**
The EWEB Masterplan aimed to provide many opportunities to connect to the Willamette River. The concept plan proposes a change in character across the site from Urban to Natural, depending on proximity to the river. Public spaces closer to Downtown are more geometric and man-made, while spaces closer to the river ecology are more organic.

**Building Scale**
One of the key interventions for the LinkedIn Middlefield Campus was to create strategic penetrations into the existing buildings for common spaces that welcome daylight, frame views to the central meadow, and introduce natural forms and materials.

**Interior Scale**
A check-in pod at the Pearl District Residence Inn creates a welcoming environment with soft lighting and shadows, bold accent colors, and natural materials that you can go up to and touch.
While the total carbon emissions from building operations are incremental at a relatively constant rate over time, embodied carbon emissions all occur prior to building occupancy. This means that the total embodied carbon impact occurs all at once and holds constant (other than major renovations and end-of-life impacts.) Embodied carbon is the amount of CO2 (or equivalent greenhouse gases) emitted during the manufacturing, transport and construction of the building materials, combined with the end of life emissions. In the first ten years of a building’s life the embodied carbon is often about 3/4 of total emissions for that period. Embodied carbon reductions provide an impactful short-term climate solution.

Climate impacts of embodied carbon are measured in global warming potential (GWP). GWP measures how much heat greenhouse gases (GHG) traps in the atmosphere over a specific time period, relative to CO2.

Structure can encompass up to 80% of the building’s GWP (depending on the building type), therefore heavily impacting the embodied carbon of the building. Concrete and steel alone constitute 22% of global emissions from the built environment. The structure is typically decided early in the design process and is difficult to change later. The enclosure is another large category for climate impacts. It can make up 15% of the carbon emissions in the building. Some of the major hotspots of the enclosure are glass and aluminum curtain wall assemblies and foam insulation.

Existing buildings: renovate, restore, reuse
Maintaining, renovating and reusing buildings that already exist is crucial part of reducing the embodied carbon of buildings. By responsibly managing the carbon burden of existing buildings the emissions from new construction are reduced. The enclosure is often the area of a renovation with the biggest opportunity for reduction in the carbon footprint.

GOALS
• Develop an understanding of climate impacts at a portfolio level
• Establish an embodied carbon baseline for new projects
• Create a feedback loop, using embodied carbon data to inform design decisions
• Identify and eliminate the use of high-impact materials at a portfolio level

SERA LIFE CYCLE ASSESSMENT
As a firm, SERA is beginning to use life cycle assessment (LCA) estimates for different building types and structural systems to develop approximations for embodied carbon on a portfolio-wide scale. As we begin to understand embodied carbon at a more complete level through project-specific studies, we will use this information to inform design decisions and make improvements in high-impact areas.

Mass timber from sustainably managed forests can be a low-carbon strategy for many building types. A tree naturally sequesters carbon from the atmosphere as it grows, and when it stops growing it will continue to sequester that absorbed carbon until it burns or rots. Yet only one-third of the carbon sequestered ends up in the long-lived timber product due to sawdust and wood waste, frequently causing the benefits of carbon sequestration to be misrepresented. Currently, LCAs do not consider the impacts of forestry management from the lumber source. The assumption is made that the lumber comes from a well-managed forest. Aggressive logging processes of poorly managed forests damage wildlife habitats and increase carbon emissions in a way that forests cannot recover for over 100 years.

SERA has collaborated with specialty LCA consultants, and is now using BIM tools to comprehensively analyze project models. Our goal is to use analysis at this granularity to understand the climate impacts of conditions that differ from typical scenarios, as well as starting to develop a “carbon intuition.”
CREATING EFFICIENT BUILDINGS AND DISTRICTS WITH MINIMAL DEMANDS THAT CAN BE OFFSET BY RENEWABLE SOURCES AT THE APPROPRIATE SCALE

SERA is committed to reducing energy use and its associated carbon emissions. As early adopters of the AIA’s 2030 Commitment, and one of the few firms that have reported our portfolio performance since the program’s inception, we are steadily paving the path towards energy positive buildings.

Energy-conscious design begins during project conceptualization. Our projects continue with an early evaluation of energy reduction strategies, such as efficient building enclosures, advanced daylighting design, and improved HVAC systems, as these are the critical steps in reducing overall demand. Throughout the project, we continue exploring ways to educate and engage clients and occupants about energy consumption, understanding that real-time feedback encourages behavior that saves energy. Once energy loads are minimized to the extent possible, we evaluate the renewables required to achieve energy-neutral or energy-positive buildings.

In 2015, SERA advocated for the Energy Performance Reporting Policy for Commercial Buildings, adopted by the City of Portland. Beginning in spring of 2016, large scale commercial buildings were required to track and report energy use on an annual basis to the City. This type of data collection facilitates our collective ability to identify opportunities for improving efficiencies and reducing emissions. We continue to be involved in advocacy for improved building energy codes.

GOALS

- Establish an aggressive but achievable EUI target by design development kickoff
- Explore strategies with the potential to achieve the energy reduction target, and identify available incentives
- Share typical energy use breakdown for project type with client and team
- Track the projected energy use of projects against the 2030 Challenge (net positive) targets, and when possible, meet or exceed the targets
- Evaluate methods to track post-occupancy energy use

The Major General George White Headquarters - Oregon Military Department. The building is currently pursuing a LEED Gold certification with sustainable features such as maximized open space, restoration of habitat with native vegetation, stormwater quality control, roofs that minimize heat island effect, water-use reduction with low-flow fixtures, and use of regional materials such as certified wood.
RESOURCES MANAGEMENT: WATER

UTILIZING AND HONORING WATER AS A PRECIOUS AND FINITE RESOURCE

With water, it is important to understand that our influence goes far beyond the selection of interior fixtures. Often unseen are the larger water systems in which our projects participate, such as municipal sewer and storm systems, water needed for generating energy, and a project’s local and regional watershed. Each of these has a larger role to play in a project’s overall water footprint, often with a far greater opportunity for reducing water use and positively influencing our ecosystem. At SERA, we explore these larger system scales to better hone our design approaches to align with the water story most relevant to the project.

Projects like the Collaborative Life Sciences Building and Skourtes Tower, and the Edith Green-Wendell Wyatt Federal Building, begin to demonstrate the capacity projects have in reducing the demand on potable water by capturing rainwater for toilet flushing and irrigation. While this reduces demand at the building scale, it pales in comparison to the water reduction achieved at the utility scale through energy usage reduction.

Together with other organizations, SERA is actively identifying regulatory roadblocks and lobbying for legislation that significantly expands the opportunities for water re-use in Oregon.

GOALS

- Explore as a team how water reduction can strengthen the client’s goals and objectives
- Achieve studio targets for water use reduction.
- Evaluate alternative water sources in context with local, regional and national water issues
- Celebrate water. Ask how it enhances the human experience

achieving water independence in buildings

SERA has been involved in both research and policy advocacy to remove outdated regulatory barriers to water reuse. In a study sponsored by Central City Concern, a non-profit owner of affordable housing, SERA and the CCC team clarified the water systems and regulatory steps required to achieve a water-independent building in Oregon. Our study “Achieving Water Independence In Buildings” illustrated the barriers to, and opportunities for, water harvesting and reuse in commercial buildings, highlighting what is possible today and how any interested party might navigate regulatory challenges.

The team’s work contributed to a transformation of the regulatory environment in Oregon. As a result of efforts made in collaboration with a coalition of interested groups and regulatory officials, Oregon residential and commercial buildings are now allowed to use rainwater for irrigation, toilet flushing and clothes washing; and to use treated greywater (from sinks, bathtubs, showers, and washing machines) to flush toilets and urinals.

The LinkedIn Middlefield campus landscape utilizes a condensate capture system to not only irrigate the extensive landscape, but as an innovative water feature. Before the condensate water is used for irrigation, it is delivered to a concrete bird bath, encouraging an enhanced ecosystem in an area that was once a parking lot.
GUIDING THE UNDERSTANDING OF PLACE-BASED ECOLOGY TO ALLOW ECOSYSTEMS TO FLOURISH AND REGENERATE

Every place has a story. At SERA, we believe those stories began long ago, and continue many generations into the future. Each project should live and breathe its site’s unique ecology of place–both biological and cultural–and embrace the beauty and complexity of ecological systems at all scales. We aim to understand, be inspired by, and positively influence the local environment and culture on both sides of the parcel line, and the underlying resources that flow through them.

Ecological design comes in many forms. From preserving key ecological functions to providing habitat for local species, or using public space to educate on important natural systems, the ecological story of each place is important to our designs. We believe that buildings and cities should reconnect to the cycles of the natural world. Our goal is not only to design places that can adapt and change to the ecosystem around them, but also enhance it. This is sustainability at multiple scales that enables all life to flourish.

GOALS

- All design team members will visit the site during schematic design or earlier
- Projects should maximize the diverse selection of native or adaptive plantings
- Initial site analysis to include ecological history, reference habitats, soil health, native and invasive vegetation, water flows, impervious surfaces, existing natural systems, and ecosystem services of the parcel and its surroundings.
- Teams will develop a story of the site focused on placemaking, intended use, relationship of landscape to buildings, and human experience. Team to create principles based on site analysis that help drive design decisions
- Find opportunities for the project to educate the community and raise awareness about its environment

The Civic Drive project seeks to create a high-density development on an undeveloped 4-acre site in the heart of the Gresham’s downtown civic neighborhood. It reconnects to the former site ecology and the Columbia River Basin, and references a historical creek that is evident in the form of the existing trees. The idea of a riparian environment is expressed on site through the forms and materials, and in the ecology with four native plant communities based in micro-climates generated by the buildings. Existing trees were reused for nurse logs left to decay in place and create habitat, along with local stone and boulders for mulch and playground features. Stormwater planters, which collect and treat all the stormwater from the roofs of the buildings, are featured in the central part of the site to be celebrated. The material selection excluded tropical hardwoods and utilized some wood coming from harvested invasives like black locust.

The site design took advantage of the existing contours and light rail adjacency to efficiently locate a reduced number of total parking below grade. This frees up the civic surface and creates a plaza for people, ecology and community activities. The plaza surface was designed with the structural integrity of an intensive green roof to accommodate a minimum of 18 inches of soil, stormwater planters, medium size trees, fire access, and service traffic. This allowed the planting design to incorporate a diverse array of vegetation, acting as both habitat and food sources for wildlife, and supplemented by several bird baths spread throughout the site. Large planting areas established a strong natural character and allowed for more trees than required by code.

Portland-metro Project

While the facility is located on an existing greenfield hay farm, the site design worked to improve the overall ecological performance of the site, while minimizing the overall site disturbance with a compact design. Native plantings were used to connect back to the historical forest and prairie palette in the region. Large-scale replanting was implemented to increase pollinator and bird habitat with wild flowers and control erosion with drought-tolerant and fast-establishing grasses on the steeper slopes. Native edible plantings were incorporated to add interest and delight around the facility. Many large existing native trees were protected and preserved on site, and designated wetlands were restored with dense native plantings and fresh soil. Large planting islands were incorporated into the parking lot to ensure healthy tree establishment for long-term shading. The team also worked with local jurisdictions to get an arboretum approved for the street trees that encourage the use of small trees planted under power lines.

Soil was restored and amended using all on-site base material for a balanced site, elimination of off-haul, and better water retention. In lieu of built screening elements, vegetation and grading were used to provide security, privacy, and create different zones on the site. The large quantity of boulders found on site during construction were repurposed for security measures, gabion walls, and wildlife habitat area. They were also broken up for riprap and river rock to create conveyance channels for the on-site above-ground stormwater treatment and retention system.
The United Nations estimates that by 2025, over three-fifths of the world’s population will reside in urban areas. Will they be victims of rampant urbanization or residents of sustainable neighborhoods, cities and regions? Addressing that question is the focus of our firm-wide placemaking practice.

**MULTIMODAL, VIBRANT NEIGHBORHOODS**

A truly sustainable city is one that affords movement opportunities for everyone. Providing affordable, accessible transportation options is a key strategy that supports block, neighborhood, district and city resilience. Moreover, the density created along transit lines and at multi-modal mixed activity places can be a strategy to preserve, or even free up, other parts of the city for greenways, parks, urban agriculture, natural habitat corridors and other open spaces.

SERA’s transit-oriented development work weaves bicycles, pedestrians, and bus and rail systems into seamless networks and provides strategies to de-emphasize the single occupancy vehicle in dense urban settings. These networks provide frameworks for civic spaces and the mixed use buildings that animate them, adding to the vitality and richness of urban and suburban communities.

**GOALS**

- Plan for resource flows that are scaled appropriately for their place, and integrated to the greatest degree possible.
- Design flexible and adaptable systems for Climate and Disaster resilience
- Support and enhance regional economies, including cultural resources and food production
- Support communities and planning ideas that enhance strong, local, place-based identity

**DISTRICT SCALE SYSTEMS**

A district-scaled system is a geographically defined campus or neighborhood in which the community members, buildings and the common infrastructure are fully integrated, supporting a synergistic network of social, ecological, and economic systems. SERA has contributed theoretical, analytical and leadership work to district-scaled systems, which can be broken down into two categories:

- **Hardware**: The buildings, streets, parks, and infrastructure of a place
- **Software**: The cultural, informational, governance, economic and resource ‘flows’ of a place

Hardware and software systems operate at a variety of scales, from the regional, to the city, the neighborhood, the block, and down to the building. When designing at a district level, it is necessary to consider and allow for each system to optimize at its appropriate scale while looking for hidden synergies between systems. Within the district, flows of energy, nutrients, resources, information, financial capital, seismic resiliency and cultural resources are systematically analyzed. To the greatest extent feasible, they are localized, integrated, and synergized to reduce environmental impacts and to build community support.

**CIVIC ECOLOGY**

We have created a sustainable communities framework called Civic Ecology which empowers communities to take a whole-systems approach to achieving resilience and enduring prosperity by facilitating citizen-led partnerships and helping civic entrepreneurs envision, implement and manage integrated patterns of energy, water, food, materials, waste, economic, information and cultural resource flows for the shared good of the community. This has led SERA to practice a deeper form of placemaking where a concern for community vitality through a sensitivity to cultural practices and the intentional design of resource flows informs the physical development of the built environment. The outcome of this approach is a citizen-crafted framework for resiliency, a more informed and engaged citizenry, a thriving culture and sense of place, measurable increases in economic, ecological and social wealth, and a more effective democracy.
8. SOCIAL SUSTAINABILITY
DIVERSITY EQUITY & INCLUSION

BUILDING STRONG COMMUNITIES

Social Sustainability is at the core of SERA’s values. The Natural Step’s 4th system condition addresses people’s ability to meet their critical needs and helps guide SERA’s commitment to social equity in our work and in our community. In an internal survey of sustainability topics, SERA staff have indicated that social sustainability is their topic of most interest. We regularly evaluate and take action on the impacts of the products and services we buy, the people we employ and the ways we support them, the communities we serve and how our work impacts occupants and the public, and multiple areas of community engagement. We strive for meaningful interactions during the design process with the project’s stakeholders, user groups, and the broader community to ensure we’re having a positive contribution on each project.

SERA staff are also encouraged to be involved in community events and volunteering. SERA provides each employee with an allowance of discretionary time annually for activities outside of project-related work, and the firm encourages individuals to use some of this time for external volunteer opportunities of their choosing. One example of our commitment to our local community began in 2005 when SERA started participating in the Loaves & Fishes Meals on Wheels program. SERA volunteers have provided meal service for homebound seniors every Friday since then. Some current participants were original volunteers, but the group has grown over the years. Because SERA’s route is within a few blocks of the Loaves & Fishes kitchen, and is walked rather than driven, it is known as “Meals on Heels.”

JUST

In 2019 SERA pursued the JUST label from ILFI as a tool to assess our current practices and track improvement over time in the areas of diversity, equity, stewardship, employee health and benefits, and purchasing. While our employee ownership structure (ESOP) is a fundamental part of the SERA DNA, we’ve recognized that it only goes so far. JUST is a way to connect the individual passions of SERA staff in a cohesive firm-wide strategy. Beyond the alignment with our values, we recognized that pursuing the JUST label would give us a standard by which to evaluate ourselves and reflect on our practices. We felt that “the process would be more important than the score itself.” We’ve adopted this as our mantra while pursuing the JUST label.

Much of our hard work in areas of equity and employee benefits is reflected in our JUST scorecard, and some areas for improvement have been brought to light. SERA is committed to equitable pay across genders and pay scales, and to providing a robust benefits package that ranks in the top tier of the industry. We are continuing to work in the areas of diversity and formalizing our strategies around charitable giving and volunteer efforts. We are focusing on these areas for future clarification and implementation.

We’ve learned that self-reflection is imperative to growth, and the JUST label provides a framework for ongoing self-reflection in a regular renewal cycle. SERA embraces this process, always remembering that “the process is more important than the score.”
DEI COMMITTEE

The purpose of SERA’s DEI committee is to foster the broadest possible worldview in our firm, which informs and applies a deeper, more universal understanding of good design and operations. The group provides a safe forum to raise DEI issues and challenges. It adds value to staff experience by encouraging the expansion of our inclusionary culture. The committee advises SERA’s leadership group on practical matters which impact these goals.

PROJECTS FOR NON-PROFITS

SERA’s work with a variety of not-for-profit agencies is focused on making the best use of resources and anticipating the organizations’ evolving needs. Whenever possible, we collaborate on the design of long-life buildings (60 years or more) that create long-term value. Our clients benefit from our broad project experience and technical expertise, along with a collaborative process that strengthens community by considering the desires of the local neighborhood.

WORKFORCE DIVERSITY & MENTORSHIP

SERA is committed to promoting the advancement and success of minority-owned, women-owned, disadvantaged, veteran-owned and emerging small businesses (MWESB). We are an Equal Opportunity Employer and consider ranges in age, religion, national origin and gender essential to our firm culture. We are proud of our reputation and routinely have a higher percentage of women and minorities on our staff than other firms in our industry.

Mentorship at SERA is taken very seriously. It is our collective responsibility to ensure that the profession has quality, educated, well-trained professionals that can improve our built environment. All employees, including administrative and support staff, are strongly encouraged to participate in our office-wide Mentorship Program. At the project level, project managers and more senior staff mentor younger staff on the complexities of the profession. We also provide external mentoring to MWESB architecture firms.
SERA's Sustainability Action Plan 2020

The Portland Playhouse is a nonprofit that produces culturally-diverse, socially-relevant productions intended to engage the local community both on stage and through school classrooms. Housed in a repurposed historic church, the organization’s spatial configuration created programmatic challenges for the users and the space. SERA partnered with the Playhouse to help to identify the programmatic requirements, functional needs, aesthetic preferences, and growth strategies for the organization. The scope of this pro-bono project includes a significant renovation within the existing building, the addition of a 1,465-sf second building on site, and a defined design intent for the outdoor spaces. The overall goal of the project was to create a “neighborhood gem” that benefits the King neighborhood and larger theater community.

Blanchet House is located just one block from our Portland office and feeds some of our community’s neediest members. In a long-standing tradition, SERA employees periodically volunteer to provide lunch service at the facility. In 2012, SERA’s design for a new home for Blanchet House was completed at an adjacent lot. The new four-story building provides more space for the organization’s needs, including a larger soup kitchen and three floors of residential rooms with a central shared bathroom, laundry and community room on each floor. SERA’s services started with an eco-charrette and climate analysis. By listening to the client’s goals and designing the building with climate requirements in mind, we were able to secure $300,000 in incentives and achieve LEED NC Platinum certification for the project.

SERA worked with Blanchet House to design a village of tiny homes to serve houseless populations. This pro-bono project includes the design of five micro-communities, each consisting of five pods and a central community kitchen and living space. The design of the tiny homes balanced the desire for a comfortable space with the dimensional constraints required to transport the pods to their final project site. Planned community buildings provide a functional and formal center for each micro-community of five pods, supporting tenants with added amenities such as full kitchens, flexible dining and living spaces, and showers. They also provide each micro-community with a feeling of ownership and identity and foster a safe climate for recovery.

SERA teamed with ROSE Community Development, Asian Pacific American Network of Oregon (APANO), Housing Development Center and O'Neill/Walsh Community Builders to design and build this mixed-use affordable apartment building in outer Southeast Portland. Identified as a priority site by the Jade District Visioning Plan, Orchards was designed to reflect the shared goals of the plan, as well as those of APANO, ROSE, and the community, who voiced ideas at a series of SERA-led open houses. Those goals included new greenspace, community gathering spaces and a safer pedestrian environment. With a holistic approach to sustainability, Orchards has achieved Earth Advantage Platinum certification.

SERA’s Sustainability Action Plan 2020
SERA’s vision is to work towards becoming a fully sustainable company. To that end, SERA has created an operational infrastructure that encourages and expects continual improvement in how we run our business.

100% EMPLOYEE OWNERSHIP

In 1995, SERA’s founders chose to address the thorny issue of ownership transition by reorganizing the firm as an Employee Stock Ownership Plan (ESOP). The ESOP provides long term viability and sustainability for the firm and is a unique solution to the difficulties of succession planning. SERA became 100% employee-owned in 2002, and today we are one of only 26% of ESOPs that are 100% employee-owned.

BACKCASTING

Early on, leadership at SERA recognized that the future is in greener buildings and communities, but realized that to truly understand sustainable design, we needed to put our own house in order. In 2002, SERA leadership instigated an extensive office-wide backcasting process. When the backcasting committee started the process, they knew that it would be critical to be able to walk our talk, but they might not have understood at the time how profound and far reaching the results. would be SERA has gained significant credibility for green building expertise; we are always improving the sustainability of our in-house operations and, most importantly, we are making better places that are truly responsive to their environment.

EMBRACING DIVERSIFICATION AS A PILLAR OF STRENGTH

SERA’s expertise in multiple market sectors and disciplines enabled us to survive the 2008-9 recession with success. As an outcome of the backcasting process, we began to broaden our vision and sphere of influence to include the development of our internal sustainability resources. Those included the Sustainability Resources Group (SuRG), involvement in policymaking, research projects, development of our expertise in Indoor Environmental Quality (IEQ), Biophilic Design, and Healthy Materials, and the vision to begin a studio focused exclusively on the needs of existing buildings’ owners. Our recent expansion to the Bay Area provides geographic expansion, as well as further market diversity.

MENTORSHIP

SERA recognizes that students and emerging professionals are our future leaders and change-makers. Each year, we provide summer internship opportunities for college students and recent graduates to get a feel for what daily life is like practicing architecture and design. We offer our interns real-world experience on project teams to help them grow professionally and earn credit hours toward their licensure. SERA has also hosted a Net Zero Emerging Leader through the Energy Trust of Oregon’s Net Zero Fellowship. This internship gives students an opportunity to help support the firm’s AIA 2030 Commitment reporting and analysis.

The need for mentorship doesn’t end when students graduate. SERA has a robust mentorship program that we encourage everyone in the firm to participate in. The program gives junior staff an opportunity to learn and build relationships with people outside of their project teams, while also giving mid-level staff a chance to grow into leadership roles as mentors.

LEARNING FORWARD

SERA knows that one of the best ways to grow as a firm is to work with ambitious, driven clients. Indeed, all the firm’s significant advancements can be mapped back to an inspired client with one or more inspired projects, where we and the client pushed each other forward, learning as we grew together.

In our early days, we worked with Bill Naito on multiple projects and advocacy efforts to re-imagine downtown Portland through lenses of walkability and urban sustainability, long before these ideas were fashionable.

We worked with the federal government (US GSA) to re-imagine federal workplaces and high-performance adaptive reuse projects at the Edith Green Wendell Wyatt building, and got exposed to Integrated Project Delivery (IPD) and Edward Deming’s approach to continuous improvement (Learning Forward) as a way of working.

Since 2010 we’ve been working with Google on efforts to re-imagine the design of the built environment at literally, all scales, from individual workstations to buildings, to campuses, and regional plans. Here we became accustomed to working in agile, variable, and virtual environments.

These are just a few examples of how inspired and inspiring clients have advanced our understanding and all these learnings have been integrated into the firm’s way of working, well beyond the projects for these particular clients. We have embraced “Learning Forward,” and are constantly seeking new opportunities and new challenges which will help us advance ourselves, our clients, and the communities in which we work.
At SERA, we learned early that a sustainable workplace is key to practicing sustainability in our projects. By “walking our talk” we continue to discover new ways to work, interact and create more sustainable environments.

**ENERGY**

At our request, the electricity in SERA’s leased Portland office is separately metered, and we read and record the meter weekly. This allows us to accurately track the effectiveness of our energy reduction measures. Our in-office energy reduction strategies include daylighting, occupancy sensors, 1st floor daylight sensors, EnergyStar-compliant equipment and appliances, solar powered faucets, fluorescent lamps, and a policy requiring employees to put computers to sleep each night. For electricity, we purchase 100% wind power. Though unusual in a leased space, SERA owns its own mechanical systems, giving us full control of the systems’ efficiency.

**WATER**

At SERA, we use our office as testing ground for low-flow fixtures to help us better understand water use reductions and qualitative effects of fixtures. This opportunity to test drive various water fixture technologies benefits our staff and also our projects by showcasing efficient and high-performing fixtures while meeting our water reduction goals. We have low-flow dual or power flush toilets in the bathrooms, and our bike commuters tested and provided feedback on a set of low-flow showerheads.

**PAPER**

We use a paperless central file system (except when paper documents are legally required), and produce electronic documents for our drawings, markups, transmittals and submittals. All default print settings are double-sided and black & white, and our standard copy paper has 30% post-consumer recycled content. All marketing material is printed on 100% post-consumer recycled content paper (as is our plotter paper) that’s manufactured using wind power in the U.S. and is completely recyclable. One-sided scrap paper is collected and bound into note pads for office use. We also issue annual Requests for Proposals to local printing companies, challenging them to use greener products; specifically, to replace foam core with more ecologically sound corrugated cardboard.

**WASTE**

SERA workstations don’t have individual trash bins - only recycling boxes - making all waste sorting a conscious act. We utilize centrally-located sorting bins for various recyclables and have only one main bin for landfill waste on each floor of our office. We recycle a number of non-curbside items, including styrofoam, batteries and fluorescent light bulbs. In 2007, SERA became the first non-food service participant in the City of Portland’s commercial composting program due to our tracking of compostable waste. As a result, we compost all food scraps in the office. Now that many plastics like clamshell containers are no longer recyclable in Portland, employee awareness is key to reducing consumption. Additionally, SERA participates in Terracycle, a program that turns hard-to-recycle items (such as chip bags, energy bar wrappers, and writing instruments) into affordable green products. We conduct an annual waste audit to monitor the effectiveness of our system, and to expose possibilities for further waste reduction or diversion to employees.
PROCUREMENT POLICY

SERA’s Office Supply Procurement Policy stipulates that the products we use be made with the highest percentage recycled content available, and be manufactured not to harm the ecosystem, with preference given to products produced locally by socially responsible organizations. 95% of the firm’s supplies come from a local distributor and a local manufacturer of sustainable office goods. In selecting office furniture, SERA considers third party certifications, recycled content, recyclability, location made, product stewardship, comparison to Living Building Red List, and durability.

COMMUTING

SERA’s Portland office was selected for its central location along the downtown transit mall, within a 1/4 mile of five light rail lines and 36 bus lines. We have a commute policy that rewards those who do not use single occupancy vehicles for commuting, and consequently we don’t provide parking at our downtown office. We provide public transit passes to those who commute via public transit, and provide an equivalent cash bonus to those who commute by walking, bicycling, or carpooling. We track employee commute practices with a daily sign-in system to understand the carbon impacts of commuting.

SERA supports a strong bicycling culture with secure indoor bike storage, two office bikes, changing rooms, and a showering facility. The office also has hybrid office cars for daytime travel such as to job site visits.

TRAVEL

Our Travel Policy includes key sustainability features. We contract with a local rental car company and have a baseline requirement for hybrid vehicles, unless there are extenuating circumstances. We are currently developing a strategy to have our offsets reimbursed as a client-paid expense for projects with significant travel. When possible, we utilize web conferencing to minimize our travel.

HOUSEKEEPING

Our cleaning service is a locally-owned business that uses only non-toxic, biodegradable cleaning products and stocks our restrooms with paper products made from 100% recycled content. We also work with them to ensure that all waste gets into the proper streams when disposal goes beyond curbside and composting.

CATERING

SERA’s catering policy is constantly revised and refined to better reduce waste, encourage sustainably-sourced food options, and support local sustainable businesses. The basics of this policy state:

- No box lunches or individual packages - family style service only
- Only washable, reusable or recyclable containers
- No disposable plates, cups, or napkins as SERA has dishware, cutlery, and cloth napkins in-house
- No plastic dome lids and wraps on foods (aluminum foil acceptable).
- Food should be organically grown, natural, and locally produced
- No bottled water
- Request 30% vegetarian meal options be provided
OFFICE IMPROVEMENTS

In 2004, SERA renovated and moved into the ground floor of its current office which achieved LEED-CI Gold through the USGBC’s pilot program. When we expanded into the 2nd floor in 2006, our new space was certified LEED-CI Platinum.

The building industry is responding to the economic recovery and SERA is growing. In 2015 we added new staff and expanded geographically into the San Francisco Bay Area. Our new office in Oakland (currently pursuing LEED and Fitwel certification) embodies our commitment to sustainability and includes extensive daylight, healthy materials, and biophilic principles to enhance our employee’s health and well-being. Working with local crafts people and utilizing local reclaimed materials enhances our connection to this new place.

As we continue to grow and to expand our Portland office, we are working within a framework of biophilic design and striving to create a healthy work environment for all of our employees.

SERA Oakland’s main conference room

SERA Portland’s “Front Porch”

bike more challenge


The Bike Commute Challenge is an opportunity to test out various strategies of occupant engagement in our office, trying different methods of creating a competitive spirit in the office, all toward the shared goals of greening our transportation options, being active and improving well-being.

In 2019, we had 10,311 miles cycled, encouraged 30 new employee riders, and donated $1,100 to the Community Cycling Center.
11. STAFF ENGAGEMENT AND EDUCATION

KNOWLEDGE THROUGH (INTER)ACTION

The Sustainable Action Committee (SAC) leads the effort to engage staff in our commitment to sustainability at SERA. This effort encompasses a wide range of initiatives, from the greening of internal operations and company practices to external presentations and outreach initiatives that promote sustainability through education. SAC facilitates cross-pollination by providing a venue that enables the intersection of our office culture with the work of the Sustainability Resources Group (SuRG) and the sustainability innovations within our projects. The end goal is a fully sustainable and regenerative workplace that aligns with our firm vision, mission and values, while harnessing the knowledge and passions of our employees.

Everyone on staff is encouraged to join the Sustainable Action Committee—the only requirement is that each member contributes in a meaningful way. Action is key.

SUSTAINABLE ACTION CELEBRATION

Since 2005, SAC has hosted the annual Sustainable Action Celebration where we highlight the sustainability measures at SERA during the previous year—from office operations to green initiatives in our projects to policy-changing legislation. One by-product of our celebration is a set of boards and graphics that we display year-round at our offices, and share digitally on our website. In addition to illustrating our achievements, these materials remind our staff, clients and partners of our goals for the years ahead.

EDUCATIONAL SUPPORT

SERA encourages all employees to continue their learning and to identify ways to share that learning experience with others. The firm annually budgets for education and professional development activities for all staff. Each employee is allocated 12-20 hours of paid time for education purposes, dependent on position. Time and expenses are also budgeted for studio-selected education such as workshops and conferences.

Members of SAC and SuRG also produce a bi-monthly Sustainability Education Series for all SERA staff. These presentations cover a wide range of sustainability topics to implement on our projects, including climate responsive design, resource use and conservation, healthy material choices, indoor environmental quality, and social sustainability. This series helps to continually deepen our understanding of these topics.

“If you want to build a ship, don’t drum up people to collect wood and don’t assign them tasks, but rather teach them to long for the endless immensity of the sea.” - Antoine De Saint-Exupéry

Sustainability Action Celebration 2016 at the SERA Portland office
12. RESOURCES, AWARDS & CERTIFICATIONS

COLLABORATIVE LIFE SCIENCES BUILDING
2015 AIA COTE Top Ten Award
http://www.aiatopten.org/node/446

EDITH GREEN - WENDELL WYATT (EGWW) FEDERAL BUILDING
2014 COTE Top Ten Award, 2016 AIA COTE Top Ten Plus Award
http://www.aiatopten.org/node/494

PERFORMANCE VALIDATION CASE STUDY: FEDERAL BUILDING WITH AN INTEGRATED FACADE (EGWW)
Journal of Building Physics, May 2016
http://journals.sagepub.com/doi/full/10.1177/1744259115611871
NBS BEST4 Conference Proceedings
https://www.brkbase.org/content/performance-validation-case-study-federal-office-building-integrated-facade

CIVIC ECOLOGY: A LIVING COMMUNITY FRAMEWORK FOR SUSTAINABILITY
http://serapdx.com/vision/innovations/civic-ecology/

ALPINE AVENUE
ASLA Oregon Honor Award in Transportation
https://www.aslaoregon.org/2019-design-awards

CERTIFICATIONS
At the time of this publication, SERA has completed 47 LEED certified projects representing 7,400,000 sq. ft. of building space. Nine of the projects were certified at the Platinum level, 29 at the Gold level, eight at the Silver level, and one at the Certified level. More than ten LEED projects are currently underway. We have also certified three Earth Advantage Multifamily projects and an additional project targeting certification will begin construction this year.