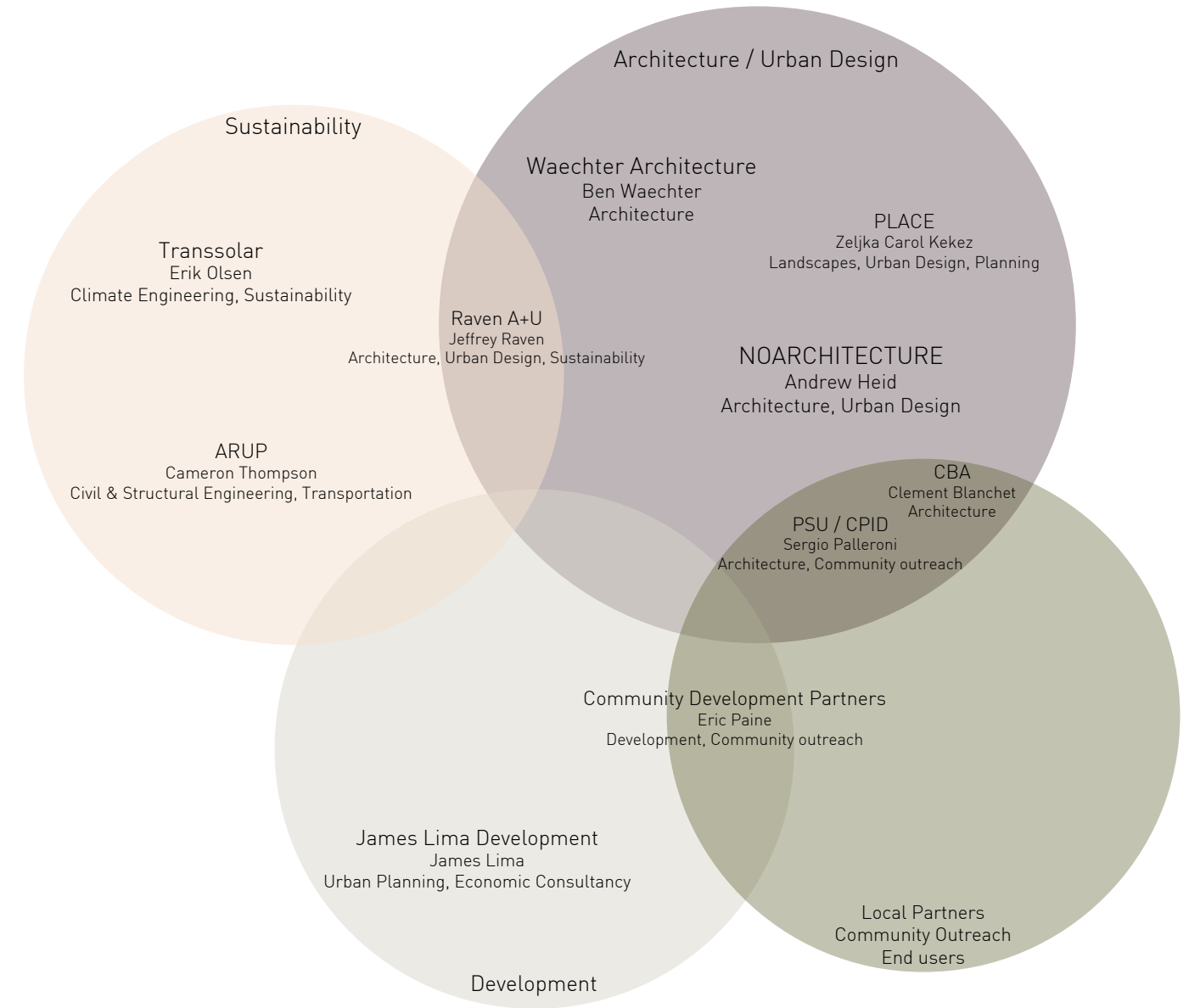


We begin each project with a single question: How can we take the best from nature and urban life and connect them?



Site of the competition your team is bidding for:

CLINTON TRIANGLE, PORTLAND, OR

Name of the project team:

NOA

Fair.ground

Toward a Clinton Living Triangle

1. Vision
2. Site + Context
3. Phasing
4. Life Outdoors
5. Life Indoors
6. Ecological Response.



VISION.

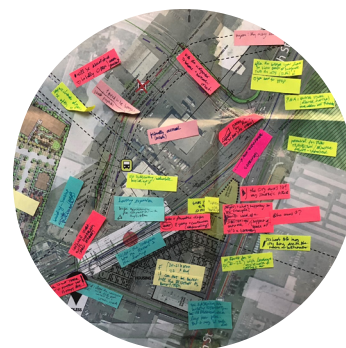
PUBLIC ENGAGEMENT FOR A NEW ECO-SOCIAL LANDSCAPE.

This project builds upon Oregon's rich heritage of visionary planning; from Bennett's 1912 "City Beautiful" plan to today's Eco-District Protocol. From the Portland Comprehensive Plan to the Oregon Model for Sustainable Development, these frameworks have laid the foundation for Portland's creative culture of civic development and planning, now recognized around the world. In solidarity with the region's history of citizen-led movements, our project continues the path laid out by 1000 Friends of Oregon, and likewise, will place the empowerment of individual citizens and their community at its heart.

This legacy provides a framework for promoting citizen engagement and participation, which we believe is the key to not only the health and well-being of cities, but also to a climate positive and resilient urbanism that is sincere, authentic, and innovative. The highest ideals of these efforts, however, have rarely been realized at the scale of architecture, much less human-centric design at the scale of the urban experience. Therefore, we propose to reverse the conventional process

for programming urban development. Bottom-up, instead of top-down, we propose a participatory co-design process as our team's core methodology from day one. Grounded in fieldwork and dialogue, public engagement will nurture the evolution of the site into a new district that is socially conscious, environmentally sustainable, and economically accessible to all.

With an emphasis on equity full-stop, the site will evolve into Fair.ground: a new eco-social landscape will frame the conditions for a new model of urbanism that is inclusive and self-organizing. The site's defining spatial logic will be a verdant web of outdoor living spaces or forums, diverse in both scale and geometry, optimized to support a full spectrum of community-driven programs. All-day and year-round, a micro-climate for public assembly will be achieved through an archipelago of buildings sculpted to maximize solar access and natural ventilation. Under the threat of climate change, the optimistic urbanism at Fair.ground will be a living display and celebration of the latest advances in green infrastructure (modular mass timber, thermal exchange loops, rainwater harvesting and waste management) and social innovations (shared economies of co-living and co-working, affordable housing typologies, ecological art exhibition and fabrication). 113 years after Portland's



Lewis and Clark Exposition, Fair.ground will again showcase proudly the region's progress in forestry, building, agriculture and irrigation technologies. However, in an act of revision, this project will heal past generations' mistakes. Rather than demonstrate how much we can extract and profit from the land, Fair.ground will be a living display of how we must act as stewards, not masters of the Earth; a collective celebration of humanity's interdependence with nature; a perpetual exhibition of the most recent technological and social advances towards a carbon-neutral, climate positive future.

SITE + CONTEXT.

INTERSECTIONS

Clinton Triangle sits near the geographic center of a city built from the resources, assets, and histories of its 90+ neighborhoods. The site's immediate assets are its neighbors and the density of its infrastructure in which it is physically embedded. The site is the western tail of a larger industrial triangle that extends to the river between SE Division St and SE Powell St. In contrast, the site is bounded by two residential neighborhoods—Brooklyn to the south and Hosford-Abernethy to the north—both beloved for their pedestrian scale, walkability, and density of tree canopy.

The site's unique potential lies in unleashing these multiple intersections. It is well-suited to become a meeting ground at the confluence of these various urban conditions. Connections for pedestrian and cyclists, as well as MAX Station access are priorities, which can be fulfilled by deploying the neighboring fine-grained urban fabric throughout the site.

PHASING.

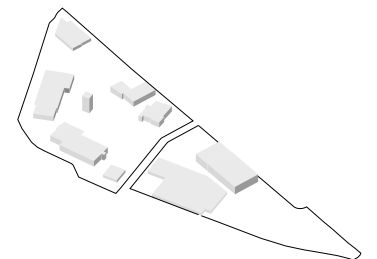
YEAR 1

SITE REVEGETATION + IMMEDIATE ACTIVATION

An initial priority is opening the site to pedestrians and cyclists: fences and barriers to circulation will be removed, and all impervious hardscapes throughout both parcels will be replaced with native plants and porous surfaces. Our landscape architects will develop the ideal mix of plants and microorganisms for de-contaminating industrial toxins as well as supporting pollination and bird migration. Simultaneously, operators on our team will immediately activate the site with bold interim solutions that preview Fair.ground's future.

Outdoor Forum.

Surrounding the concrete training tower, the parking lot will be transformed into a park-like forum. This greened urban void



EXISTING

· Original building on the site

condition is the inspiration for the site's future development into a web of flexible, programmed outdoor spaces. The forum is well-suited to host concerts, farmers markets, and activist rallies for the surrounding neighborhoods from day one. In addition to pitches for sport and leisure, the public will test our designs for outdoor furniture tailored for work.

Hybrid Community Center + Co-Work Space.

The art-deco warehouse along S.E. Milwaukie Avenue will be retrofitted into a hybrid community center with exhibition and event space for community meetings, workshops and charettes. With an open layout, the community will be able to witness a co-work space in action.

Multi-Use Sports Facility.

Operated by Le Five North America, the large industrial shed on the Stacy Witbeck parcel will be enclosed to shelter indoor soccer fields that can convert into tennis, paddle, and basketball courts.

Bio-Material Exposition.

On the city-owned parcel, the concrete building along S.E. Powell Blvd. will be demolished to make room for a temporary architectural pavilion that showcases modular mass timber construction and will serve as a stage for pop ups and fundraisers. Throughout both parcels, young artists and architects will be invited to partner with

bio-material manufacturers to produce innovative installations and pavilions.

Photovoltaic Arrays.

On-site power generation will begin with PVs on all roofs.

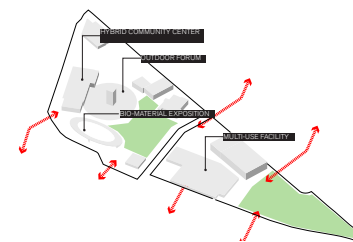
YEAR 5

FIRST MICROCLIMATE COMPLETE

After extensive on-site community engagement, the first prototypes for affordable housing, market-rate condominiums, co-living and co-work lofts will rise from the site along S.E. Powell Blvd. and S.E. 13th Place. Between the buildings, green space will be formally activated based on community discussions. Outdoors, dedicated trails for pedestrians, runners, and cyclists will flow like streams through the site's interior. Broad sidewalks will support café seating, outdoor performances, and urban vitality. With numerous perimeter access points, the forums will carve a porous border, and prevent the district from becoming a self-isolated island.

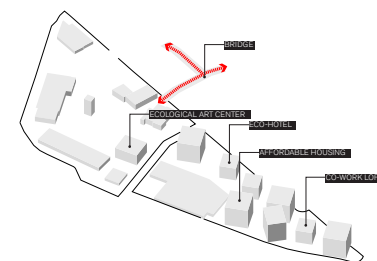
Ecological Art Center.

Dedicated to the intersection of aesthetics, ethics, and activism, this groundbreaking center will offer exhibition space, artist residencies, and a fabrication lab. Ecological art is an emerging genre that seeks to



YEAR 1

- Fences and barriers removed, connection with surroundings
- Hardscapes replaced by native plants and pervious surfaces
- Reorganizing program



YEAR 5

- Bridge connecting railway station and site
- Ecological art center
- First prototype of affordable housing and co-work loft

preserve, remediate and vitalize the Earth's life forms, resources and processes. Led by Jérôme Sans—co-founder of Paris's iconic Palais de Tokyo—the ecological art center will amplify Fair.ground's holistic approach to sustainability and allow internationally-acclaimed artists and local artists to share ideas and resources.

Green Infrastructure.

Transsolar's thermal loop, rainwater harvesting, and greywater recycling systems will be in operation, and respective educational field stations will open to academics and the public.

Eco-hotel.

Operated by Light Human Hotels, an energy positive boutique hotel will allow out-of-town guests to experience the district's sustainable lifestyle.

Active Transport.

Nike Biketown will install a hub; all freight will be delivered exclusively by Portland's sustainable bike services.

Bridge.

Spanning the rail tracks, a bridge for pedestrians and cyclists will connect SE 13th Place with SE 14th Avenue and improve access to the MAX station.

YEAR 50

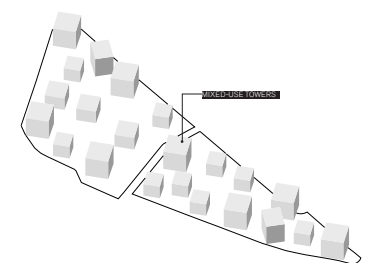
DENSITY ACHIEVED

All retrofitted buildings and the fire station will be torn down in favor of density, and their programs will move into new mixed-used towers. Evolving economies and community needs will require building interiors be converted from office to residential use, or vice versa. With modular mass timber components, these renovations will be cheap, easy, and fast. A revegetated S.E. 13th Street will close to all motor vehicles, including autonomous ones. The urban fabric's landscape will mature into restored biotopes and networked habitat corridors.

Energy Positive. The roof-mounted PV arrays are replaced with more efficient models, and surplus energy is exported; the thermal grid exchange expands to serve the neighboring communities.

Modular Mass Timber. Buildings will receive updates to their modular enclosure components, while the structural lifespan lasts another fifty years.

Green Loop. Fair.ground's dedicated bicycle lanes will seamlessly integrate into Portland's planned greenways.



YEAR 50

- All original buildings torn down, program moved into new mixed-use towers, maximum density achieved.

LIFE OUTDOORS.

GREEN FORUMS

Rather than view parkland as an escape from the urban condition, Fair.ground will assert public green space as the district's core element. Planted with native flora, a verdant mosaic of interpenetrating outdoor forums, diverse in both scale and geometry, will organize the entire district into a fine-grained urban fabric. Sculpted to maximize solar access and natural ventilation, buildings will frame the forums to achieve a comfortable microclimate: taller massing along the southeastern site boundary will block winds in winter; lower and more porous massing along SE Milwaukee Avenue will capture breezes from the river gorge in summer; extensive deciduous canopy coverage will offer solar gains in winter and shade in summer. All-day and year-round, the forums will define places to gather for work and leisure not only for Fair.ground's office tenants and residents, but also the surrounding neighborhoods. Whether for playgrounds or tennis courts, urban farms or open meadows, each forum's program will be defined through extensive and authentic community outreach.

Preparedness for hotter, drier summers and the Urban Heat Island effect will directly shape Fair.ground's built form. Since increasing the degree of roughness or irregularity in a city's fabric stimulates cooling breezes, potentially reducing urban heat by about 2 to 3°C, the fine-grained urban fabric and network of outdoor spaces at Fair.ground will be configured for self-shading and ventilation corridors. This also means that rather than rectilinear volumes with smooth facades, all buildings will be

dynamically textured with cantilevered terraces, rotated floor plates, and cascading roof gardens. While providing shade, tree canopy coverage further alleviates heat through photosynthesis and evapotranspiration, impacting perceived temperature by as much as 5 to 10°C cooler.

RESILIENCY HUBS

For residents as well as neighboring communities, the site's extensive network of public forums will serve as resiliency hubs and evacuation sites, providing not only cool shelter during heat waves, but also backup electricity and charging stations during power outages via the district's thermal grid and on-site solar and geothermal production. Urban farms and community gardens will further aid resiliency with on-site food production. With these forums, Fair.ground will prioritize the public realm, and thus, contribute an additional dimension of emergency preparedness—social connectedness—since when members of community are regularly involved in each other's lives, they are more empowered to help each other when in need.

LEARN

The built environment of Fair.ground—defined by mixed-use space, flexible buildings, and green infrastructure—means that learning will occur in places not traditionally dedicated to classrooms. Formal learning will become embedded throughout the district and tailored to the needs of students, educators, and employers. Education will occur inside and outside the contemporary art center, urban farms and sports facilities—spreading throughout the abundant common green space which will become a living lab. From cradle to career, Fair.ground

will support lifelong education.

FIELD STATIONS

Integrated into Fair.ground's state-of-the-art green infrastructure, each component system (modular mass timber, thermal loop, water + waste management, urban farms) will be associated with a dedicated field station, each coordinating critical research and outreach programs such as educational tours. Addressing the divide between low-income and wealthy families with resources to supplement formal schooling, these field stations will supply extracurricular classes and internships to students who have fewer connections to such opportunities.

PSU Center for Public Interest Design (CPID) will initially operate these field stations to increase awareness about the sustainable technologies in operation at Fair.ground. Students and faculty will monitor and measure the effectiveness of the district's climate resilience strategies.

Oregon Forestry Center is suited for a pop-up incubator and field station to promote new mass timber products and construction methods.

The Portland Audobon Society will be invited to study the impact of Fair.ground's rainwater harvesting and greywater recycling systems has on habitat and fauna.

Oregon Museum of Science + Industry will be provided with an annex to extend their current educational classes and experiential labs only one station away from their main campus.

OUTDOOR DESKS

Outdoors, a commitment to the shared economy will extend throughout Fair.ground's public realm, which will be optimized for working in public. Fair.ground will redesign the conventional picnic table to accommodate independent workers as well as business meetings and workshops; creative design and fabrication; continuing education and community organizing.

With universal Wi-Fi coverage and electrical plugs, these optimized work tables will be as ubiquitous as outdoor benches. A mobile app will deploy a reservation system with OpenTable as a model. These outdoor workspaces will be available not only for Fair.ground's tenants, but also the surrounding community free of charge.

OUTDOOR CLASSROOMS

Achieving a comfortable outdoor microclimate allows for outdoor furniture to be intentionally designed and configured into outdoor classrooms, which will also be bookable free of charge to the surrounding communities, such as the two elementary schools within walking distance of the site. This strategy is in addition to the park space that can be reserved by the Abernathy and Brooklyn's many gyms and yoga studios for outdoor fitness classes. An outdoor amphitheater as well as more informal spaces will be available for performances, serving the on-site contemporary art center, studio tenants, and artists from all over Portland.

MOBILE APP

Like all flexible real estate in the district, these spaces will be designed and programmed with a mobile app to share av

ailability. This will allow for the intelligent activation of spaces chronotypically; for example, the contemporary arts center, which like all museums will be traditionally less busy during early morning hours will be bookable by teachers from the surrounding public schools.

In addition to an online reservation system, the mobile app will help Fair.ground track user preferences and analyze supply and demand for public amenities as Fair.ground grows. The resulting database will be an open resource made available to planners of future ecodistricts around the world. Data privacy will be honored by providing permission controls for every user ID, as well as the option to use the app anonymously.

LIFE INDOORS.

PARTICIPATORY DESIGN

From day one, we will listen to community needs and expectations. Targeted for cultural, economic, and generational diversity, local residents from the surrounding neighborhoods will play an active role in both the research and design phases. Initially, researchers from PSU's Center for Public Interest Design will use interviews and community charrettes to identify and explore the key issues facing local communities. Throughout the design process, our architects and urban planners will engage future residents, tenants, and their neighbors, in formalizing their needs and envisioning future benefits. This bottom-up process will be essential for defining the appropriate mix of housing typologies, such as affordable housing, micro-units, live/work studios, and market-rate condominiums. Investing in the shared economy, we will also work with the community to develop context-specific co-living and co-working solutions.

CO-LIVING

In order to grow a diverse community that is both resilient and equitable, Fair.ground will offer housing designed to advance the emerging market for co-living housing options, tailored to the specific needs of students, young workers, single-parent families, and seniors. While residents rent either private rooms within shared apartments or their own private units, they share spaces, events, and utilities. Residents are offered flexible contracts and all-inclusive bills with no additional fees for internet, bi-weekly cleaning, laundry facilities, gym access, and well-designed communal leisure and work spaces.

Student Population. With an attractive price and useful services, we will establish partnerships with nearby academic institutions. The Portland State University campus is only 15 minutes by bike from Fair.ground, and three stations away on the MAX Orange Line. Similarly, Reed College is 15 minutes by bike, and 25 by train.

Young Workers + Entrepreneurs. In addition to quick connections to surrounding commercial districts, Fair.ground will grow its own local economy with an emphasis on green start-ups and B corporations, whose entrepreneurs and employees will have the opportunity to walk to work and share living costs.

Single-parent families. Addressing the challenge of affordable child-care, Fair.ground will offer daycare as a shared amenity to support working parents.

Seniors. Retirees and empty-nesters are offered a convenient path to downsizing without sacrificing easy-access to amenities and community.

CO-WORKING + INCUBATORS

Fair.ground will offer hybrid co-work spaces designed specifically to incubate projects and businesses related to climate and community resilience. Naturally illuminated and ventilated, open-plan workspaces will offer desks and private offices for rent, while premium amenities such as kitchens, showers, and common lounges will be available to all tenants. In addition to providing physical workspace, incubators dedicated to green technology and community services will support the growth of emerging companies by providing a menu of ser-

vices, including financing, legal, marketing, operations, as well as training and access to investment.

B Corporations. Certified by the nonprofit B Lab to meet rigorous standards of social and environmental performance, accountability, and transparency, Fair.ground will concentrate like-minded B Corps to bolster community impact.

Micro-businesses + Freelancers. Increased flexibility and lower overhead costs, combined with the ease of leasing co-working space, will attract those without the resources for real estate and facilities management.

Artists + Designers. In addition to community exhibition spaces, those working in creative fields will have access to an art fabrication facility at the district's contemporary arts center operated by EURL Jérôme Sans.

Green Technology Startups. A natural extension of Fair.ground's green infrastructure—modular mass timber, the thermal grid, waste + water management—includes incubating startup companies interested in extending these fields.

SEDUCING CIRCULATION

Promoting active lifestyles requires designing compelling circulation routes that become destinations in themselves, like Rome's Spanish Steps or Portland's Pioneer Square. Within buildings, those able to bypass elevators will be encouraged to follow staircases and ramps arranged in playful architectural processions, which will be naturally ventilated and illuminated.



ECOLOGICAL RESPONSE.

MODULAR MASS TIMBER

Oregon is at the forefront of foresting and engineering sustainable wood-products such as cross-laminated timber (CLT) that is treated to be more dense and fire-resistant than previous wood construction. Fairground will turn to this locally-sourced, renewable resource as an alternative to conventional steel and concrete construction, which accounts for an estimated 10 percent of global greenhouse gas emissions. Fairground will advance Oregon's leadership in this growing movement by utilizing CLT panels in modular configurations across all new construction, both residential and commercial. Modular interior fittings and façade modules will allow buildings to be flexibly reconfigured over time as user needs evolve. With components that can be interchanged and recycled, modular mass timber construction increases the functional lifespan of buildings while reducing material waste and carbon emissions. Although not required by law, all manufactured wood products will be sourced according to the sustainable harvest standards established by the Forest Stewardship Council.

Since it is a matter of when, not if, the Cascadia subduction zone earthquake hits the Pacific Northwest, Fairground's modular mass timber construction will undergo start-of-the-art seismic testing and implement Oregon State University's recent advances in self-centering post-tensioned CLT rocking-walls. This is in addition to advantages of fire-resistance, and more efficient repairs through modular components.

THERMAL GRID + ON-SITE POWER

At the district scale, a net-zero energy operation will be achieved by combining a smart thermal grid with on-site power generation. By replacing steam with water as the heat exchange medium, a thermal grid facilitates synergetic heat and cool exchanges between buildings. A network of hot and cold water circulating loops will capture and recycle waste heating and cooling from buildings and return it to a central on-site facility with storage tanks and heat pumps. A collective geothermal system will serve as the primary heat addition/rejection source for every building's mechanical system. Biomass cogeneration, roof-mounted photovoltaic arrays and seasonal thermal energy storages in the ground will ensure Fairground's sustainable energy supply. Examples from university campuses such as Stanford suggest that this system can meet 60 percent of the district's heating/cooling needs. In 2017, our partners at Transsolar successfully completed a thermal loop for the Portland State University School of Business Administration.

HYDRONIC SYSTEMS

At the scale of a room, Transsolar has developed an innovative hydronic heating/cooling technology—the radiant wave—with almost two times more capacity than a suspended radiant panel system due to the increased convection from the wave-like profile. This radiant wave technology will be immediately implemented across affordable and market-rate housing. Domestic hot water will be heated geothermally and augmented by solar thermal collectors

TWO-STREAM WASTE MANAGEMENT

Food waste accounts for the largest portion, or one-fifth, of the garbage greater Portland sends to landfills, where it releases methane and exacerbates global warming. The region is currently alleviating the situation by collecting food scraps for conversion to energy and fertilizer at regional facilities in Corvallis and Eugene. This year, the city announced negotiations for a new anaerobic digester in North Portland. Fairground will advance the city's resource recovery efforts by installing organic-waste disposal units in every office and residence. Across the district, a two-stream waste system will conveniently separate organics and recyclables.

RAINWATER HARVESTING + GREYWATER RECYCLING

Efficient water management will be achieved through two strategies: rainwater harvesting and greywater recycling. Rather than channel rainwater into storm sewers, Fairground will first mimic the ways natural areas absorb this increasingly scarce resource. Rooftop rain gardens, permeable public plazas, bioswales and detention basins will integrate into a rainfall-capture and flood-prevention system.

Second, Transsolar will leverage their expertise to design a two-stream water system which serves potable and non-potable uses separately. The reduced purification requirements for toilet water and washing machines, landscape irrigation, industrial purposes and cleaning will save energy and reduce waste. By recycling rainwater and wastewater as clean but unpotable greywater, Fairground's consump-

tion on public water supplies will be 50% less than comparable high-density, new-build districts.

TECHNOLOGY + TYPOLOGY

All buildings will be equipped with highly-insulated envelopes, triple-pane glazing with inert gas filling, and seasonal heat storage via an architecturally-integrated passive thermal storage system. The ventilation concept will include earth ducts to precondition fresh air supply, and exhaust chimneys to extract used air by a natural stack effect. Fairground, however, will not only integrate and enhance technological innovations, but also propose new spatial typologies that realize passive heating and cooling through architectural form itself.

Our ancestors adapted to diverse climates and geographies, achieving today's comforts, the efficiencies of prefabrication and standardized building components, without a destructive reliance on fossil fuels. At Fairground, new multi-use building typologies will emerge from time-tested, climate resilient forms: ventilated courtyards, shared walls, stepped terraces, wind towers, and arcades. These replicable typologies will demonstrate how passive design strategies from the past and present can be translated to serve the accelerating scale and density of urban centers in the 21st century.

