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Environmental Services

Healthy Buildings Initiative

DEVELOPING A PATHWAY
FOR MORE CLIMATE AND
PEOPLE RESPONSIVE
DESIGN AND CONSTRUCTION

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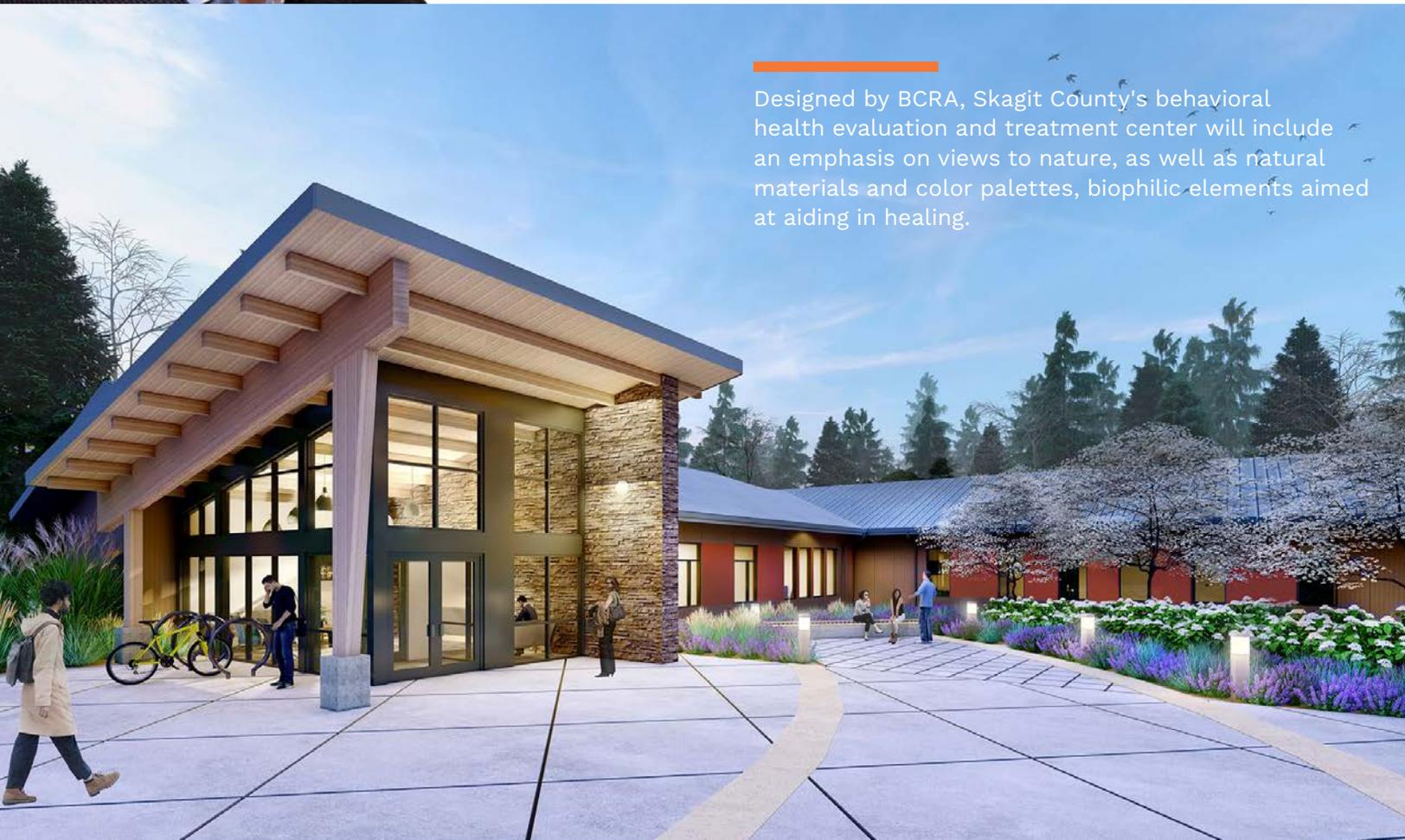
Recent climate impacts and a global pandemic have raised awareness of how buildings may be negatively impacting the health of our environment and the health of users of the buildings we design and construct. **The pandemic has highlighted shortcomings of achieving healthy building environments.**



Stuart Young,
NCARB, LEED AP
Managing Principal

There are many different building certification programs available to help guide building owners and developers toward more planet- and people-conscious outcomes in their projects. There are merits to each of the programs, whether

it be LEED, WELL, Living Building Challenge, Passive House, Green Globes, etc. Given a choice, with an emphasis on what is right for a site and community, **how do we determine which program is best for a particular situation?**



Designed by BCRA, Skagit County's behavioral health evaluation and treatment center will include an emphasis on views to nature, as well as natural materials and color palettes, biophilic-elements aimed at aiding in healing.



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Major Lenses for the Development of a Sustainable Strategy



Skanska's 400 Fairview project has an energy-efficient design, employs multiple strategies for sustainable place-making and is LEED® Gold certified. Sustainable features include a hydronic HVAC system, which reduces energy costs by 30 percent, and a rainwater harvesting system which, when combined with efficient fixtures, reduces potable water consumption by 40 percent when compared to similar non-sustainable projects.

RECENT WASHINGTON STATE LEGISLATION

The Governor signed into law HB1257, Clean Buildings Initiative on May 7, 2019, and it is being implemented through WAC 194-50, issued on October 30, 2020. Beginning in 2026, “Buildings will need to develop energy management plans, including creating energy benchmarking reports. The mandatory standard will require building owners to demonstrate that their buildings consume less energy than a specified energy use intensity target or be in the process of reducing the building's energy use intensity.”

HB 2412 Buy Clean WA is currently in pilot. The act “analyzes the major construction materials in-depth with regards to their embodied carbon impacts and provides recommendations on how to further the development of supply chain environmental data, such as Environmental Product Declarations (EPDs), in Washington.” Those materials include:

- Concrete
- Unit Masonry
- Metal of any type
- Wood of any type, including composites

Clean Building Act compliance deadlines for covered commercial buildings:

2026

June 1, 2026

More than 220,000 sf

2027

June 1, 2027

More than 90,000 sf
Less than 220,001 sf

2028

June 1, 2028

More than 50,000 sf
Less than 90,001 sf



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HEALTHIER BUILDINGS RESULT IN HEALTHIER OUTCOMES FOR PEOPLE

Many strategies for reducing carbon also help with healthy environments, including natural ventilation, connections to daylighting and outdoors, and less toxic materials that include less carcinogens, VOCs, and mold spores.

REDUCTIONS IN EMOBODIED CARBON USAGE

30% ↓

Reductions in carbon usage of 30% don't necessarily have to cost more.

As more attention is paid to the carbon used in the extraction,

making, and transportation of materials, the choices have become greater, bringing the

costs down. The EC3 calculator developed by Skanska is a great tool to utilize in achieving embodied carbon reduction goals.

BEYOND CARBON ZERO - REGENERATIVE BUILDINGS AND SITES THAT SUPPORT THEM

Coalescing around the idea that minimizing carbon is not enough, we should focus on carbon sequestration as well. Soon buildings and their sites can serve as carbon sequestration banks. They can and should generate and store energy on-site for adjacent facilities. They can even use their building envelopes to clean the air of pollutants. The idea goes beyond just using less resources to giving back to the environment and leaving it better than when we started work on the site.



I'm fairly optimistic that in 24 years we'll be able to get pretty close to zero carbon, if not zero emissions in the construction and operation of buildings. There are products coming online that are carbon sequestering and bio-based. Investment in these alternative products might actually take us to negative carbon because the product stores carbon, so buildings could become carbon sinks. The Carbon Leadership Forum is doing a lot of research work around that.

Stacy Smedley, Director of Sustainability, Skanska USA



Skanska's Bertschi School Science Wing project was Seattle's first building designed to meet the Living Building Challenge, meaning the project's goal is a net-zero impact to the environment. The completed facility generates its own power, processes all waste and harvests rainwater.



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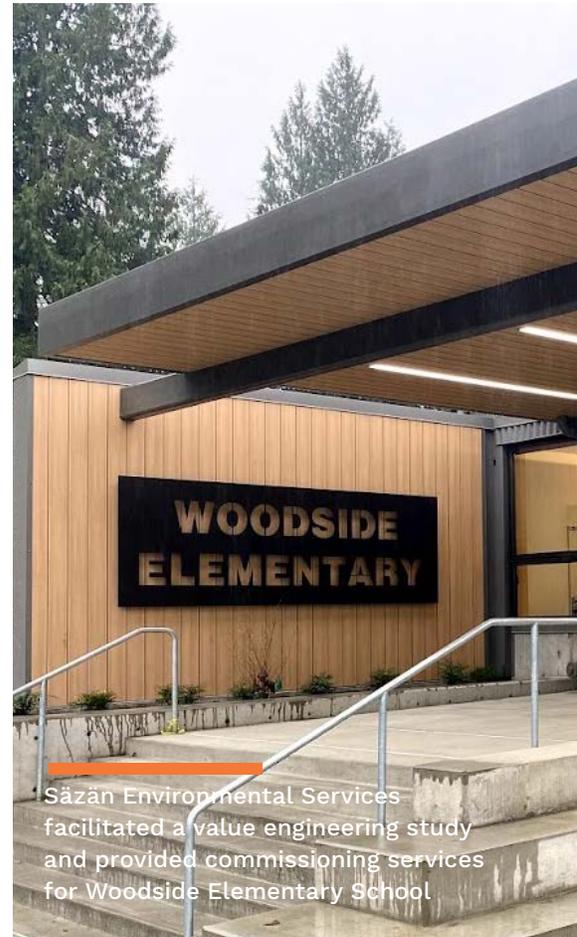
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A Novel Approach to Achieve Goals

We recently worked with a school district to determine their “baseline,” which was beyond code and based on elements from the existing sustainable certification programs in the market. We developed these performance metrics so that they could grow into them as opportunities presented themselves. For example, implementing embodied carbon reduction by 30% in the future, once costs to implement those strategies were lower and within budget for the district. Another example could center around site selection by choosing the site with conditions that reduced stormwater management infrastructure costs. With this type of approach in place, the school district is afforded flexibility over time to achieve their goals by 2030.

The information available for sustainable and healthy buildings can be overwhelming. The approach presented here is not meant to replace the great programs that exist, but rather to incorporate them into a holistic strategy that considers the time and ability to take advantage of opportunities that are unique for each project. This effort works best when undertaken in the context of a community vision for Healthy Buildings and Environments. The synergy of the City government, utilities providers, education and healthcare providers, park districts, private developers and landlords, etc. working together to find community based solutions, has the potential to yield extraordinary results.



Säzän Environmental Services facilitated a value engineering study and provided commissioning services for Woodside Elementary School



Strategic energy planning to reduce operational carbon in schools, for instance, increasingly relies on a combination of grants, funding resources, key partnerships, and maintainable equipment, while centering on measurable outcomes such as building a more inclusive workforce, driven by career connected learning programs and demonstration project implementation. We are seeing workforce development training programs that use classrooms as a living laboratory, with clean energy projects funded through strategic partnerships.

Jack Newman, Director of Clean Energy Solutions,
Säzän Environmental Services



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A Novel Approach to Achieve Goals

This collective action will also be what affects change in addressing our community’s emphasis in equity practices—by sharing a common vision for “workforce programs and apprenticeship programs in renewable energy and health upgrades, with an emphasis in local hiring.”

This will require a comprehensive outreach plan to reach a common vision that reflects the input from everyone in the community.

The time is upon us to develop a community-based Healthy Building/Healthy Environment vision in which a collective effort can be used to guide sensible strategies as we plan our future together.

