

# User Guide

September 21, 2021

## The Jim and Janet Sinegal Center for Science and Innovation



**Design + Construction**

**Seattle University**

User Guide 1.0

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## Building Overview

Welcome to the Jim and Janet Sinegal Center for Science and Innovation. The Center is named for dedicated supporters of Seattle University for over a quarter of a century. Jim Sinegal is the co-founder of Costco and has been involved with Seattle U for the past 27 years. He has served as chair of the board, honorary co-chair for The Campaign for the Uncommon Good, is a co-founder of the Seattle University Youth Initiative and a co-founder of the Costco Scholarship Fund, which benefits underrepresented students at Seattle University and the University of Washington. Together, Jim and Janet have served as Seattle U Gala chair and have supported the university's College of Nursing, including the Clinical Performance Laboratory.

The Sinegal Center (SINE) is home to the Departments of Biology, Chemistry, and Computer Science, the Center for Community Engagement, the Billodue Makerspace, radio station KXSU, and the Convergence Zone café.

## General Arrangement

The building is divided into two main sections: to the east of the atrium is the lab block and to the west is the faculty office block. Within the lab block research labs are located along the 12<sup>th</sup> Avenue façade and teaching labs are located along the atrium. There is a one story service area along the south side which houses mechanical and electrical rooms and other infrastructure.

## Size

The building is approximately 111,000 gross square feet and has five floors plus a mechanical penthouse.

## Building goals

The Board of Trustees and President Sundborg gave the Design + Construction team a number of goals for the project these included:

- The new building should showcase our mission at the entrance to campus.
- Every SU student should visit the building at least once a week.
- The complex should be a keyhole showing students all the opportunities available to them at SU.
- Students should visit the building and think “people like me can succeed here.”
- The building should facilitate Ignatian pedagogy.

## Building Design

The building was designed by EYP Architects with Mithun as their local partner. The full team of design professionals includes:

EYP – architecture and lab planning - <https://www.eypae.com/>

Mithun – architecture and landscape design - <https://mithun.com/>

KPFF – structural and civil engineering - <https://www.kpff.com/>

PAE – mechanical, electrical and plumbing engineering - <https://www.pae-engineers.com/>

ARUP – lighting design - <https://www.arup.com/expertise/services/technical-consulting/lighting-design>

JRS – building envelope consultant - <https://www.jrsengineering.com/>

Neudorfer - Owner’s commissioning agent - <https://neudorferengineers.com/commissioning/>

G. Scott Souchuck – signage design

### **Building Construction**

The construction team was led by Skanska USA for pre-construction and as the General Contractor - <https://www.usa.skanska.com/who-we-are/media/constructive-thinking/look-inside-seattle-university-s-new-science-and-innovation-building-in-seattle-washington/>

The primary sub-contractors were:

McKinstry - mechanical and plumbing - <https://www.mckinstry.com/>

Veca - electrical, data and AV - <https://www.veca.com/>

ISEC - woodwork, doors and laboratory casework - <https://www.isecinc.com/>

## Sustainability

### LEED

LEED (Leadership in Energy and Environmental Design) is the most widely used green building rating system in the world. Available for virtually all building types, LEED provides a framework for healthy, highly efficient, and cost-saving green buildings. LEED certification is a globally recognized symbol of sustainability achievement and leadership. The Sinegal Center is designed to LEED standards; the certification review is underway by the US Green Building Council. The building is on track to achieve Gold certification.

### Sustainability features

- The calculated Energy Use Intensity (EUI) of the building is 87 – a typical lab building designed to energy code standards has a EUI of 185.
- The reinforcing steel (rebar) in the concrete structure is 93% post-consumer recycled content.
- The roof houses a solar array in the southwest corner and is solar ready in other areas.
- The atrium provides a break between the high intensity air handling needed in labs and the lower intensity needed for office space - allowing for the use of two systems and energy savings.
- Controlled power outlets: Designated by a blue plug these energy code required devices are tied to the building controls and an occupancy sensor in the room. They can be set to power off the outlet during times when an area is not in use such as school breaks.
- Slow start lights: You will notice that light fixtures come on gradually this is a function of the control system required by the energy code; it took over 80 days to program the lighting controls for the building.
- Daylight sensors and occupancy sensors are present throughout the building and will turn off lights when enough daylight is present and turn lights on when occupants enter rooms.

## Landscape Design

### Kubota Legacy Garden

The site chosen for the SInegal Center included an approximately 60-year-old garden which was part of the legacy of Fujitaro Kubota's years designing our campus landscape. To honor this legacy, the project relocated six large trees and 18 boulders to the Union Green at the start of the project and returned them to the site as a new Kubota Legacy Garden. This area is located in the northwest corner of the site and was designed to provide a place of quiet and peace off the hustle and bustle of the lower mall.

### Bioretention planters

The area around the SU campus is served by a combined sewer and storm water system. When we have heavy rainfall – which is becoming more common – this system can become overwhelmed and lead to flooding and sewage backing up into buildings. To mitigate this, the SInegal site has an extensive bio retention system. The planters with high concrete edges are part of this system. The planters are very deep and collect surface run-off and the roof drain water and direct it to a five-foot diameter, 60 foot long tank under the Marion sidewalk which slowly releases the collected water into the combined sewer system.

### Planting for biodiversity

The landscape design team was tasked with creating a landscape that would support biodiversity and native plants. The landscape includes a wide range of plants to provide interest and habitat throughout the year.



## Building Features

### Gender Inclusive Restrooms

The building includes a single user gender inclusive restroom on every floor.

### Lactation Room

There is a two-person lactation room on the second floor in the southeast corridor. Staff and Faculty may obtain a cipher code for the room through DPS, students should contact Parent and Family Engagement for their code. Note that the Lactation Room is not including on wayfinding signs for safety reasons.

### Shower room

A shower room for bike commuters and others is located on the third floor in the southeast corridor.

### Tutorials

Throughout the building there are spaces designated for students to use as tutorials or study spaces. These are included to enhance Ignatian pedagogy in the building – providing spaces for students to experience, reflect, act and evaluate. These spaces can generally be spotted on the exterior or interior as stacks of glass walled rooms. Many are open to all SU students on a first-come basis. They include:

- *Departmental student studies* – located at the center west face of the building next to the departmental offices for Computer Science, Biology, and Chemistry these spaces give departmental majors a place to call home within their department. The studies include both tables and chairs and lounge seating.
- *North and South tutorials*: these spaces are located in the faculty wings and provide students with space to meet with faculty or other students in a closed or open setting, they include tables, monitors and whiteboards.
- *Computer Science tutorial* – located on the north end of the second floor this area features a large table for group gatherings.
- *The north studies*: located on floors 3-5 at the north face of the building these areas provide for quiet contemplation.
- *Write-up rooms* – located at the NE and SE corners of the building these provide a space for students to compile notes and findings and work with their research teams. They include both individual and group work areas.
- *The atrium studies* – these are located at the south end of the atrium, they include tables, monitors and whiteboards.

### Unique Materials

#### Cross Laminated Timber (CLT)

Cross laminated timber can be seen in the west wall of the Makerspace and is used for tables in the atrium and Computer Science tutorial on the second floor.

A relatively new construction material in North America, CLT is a large-scale, prefabricated, solid engineered wood panel. Lightweight yet very strong, with superior acoustic, fire, seismic, and thermal

performance, CLT is also fast and easy to install, generating almost no waste onsite. CLT offers design flexibility and low environmental impacts

A CLT panel consists of several layers of kiln-dried lumber boards stacked in alternating directions, bonded with structural adhesives, and pressed to form a solid, straight, rectangular panel. CLT panels consist of an odd number of layers (usually, three to seven,) and may be sanded or prefinished before shipping. While at the mill, CLT panels are cut to size, including door and window openings, with state-of-the art CNC (Computer Numerical Controlled) routers, capable of making complex cuts with high precision. Finished CLT panels are exceptionally stiff, strong, and stable, handling load transfer on all sides

### **Intumescent paint**

In the very Northeast corner of the building in the research write-up rooms you will see a set of four steel rods painted black. This corner of the building is actually hanging off the roof structure by these rods – which makes protecting them from fire is critical. They are coated in an intumescent coating for that purpose. Intumescent paint is a fire-retardant coating that when heated forms a foam produced by nonflammable gases, such as carbon dioxide and ammonia. This results in a thick, highly insulating layer of carbon (about 50 times as thick as the original coating) that serves to protect the coated substrate from fire.

## Art Collection

The CSI project includes the collection of art to enhance both the Sinegal Center and Bannan Center. The art was collected under the guidance of a committee led by Fr Josef Venker, S.J. the SU campus art curator. The curatorial goals for this new collection are:

- Art that enhances the strength of the campus collection as a whole and supports the university's commitment to foster diversity, equity, and inclusion.
- Art in conversation with the disciplines taught in the Center for Science and Innovation
- Art that reflects and deepens a sense of place - Seattle, the Pacific NW; natural landscapes, the environment, the city and the indigenous land.
- Art that addresses the environment and environmental issues and promotes sustainable practices
- Art created by artists working today and by local artists and NW Indigenous artists.
- Art that references contributions of the Jesuits and others of faith who made significant contributions to science and technology

In addition to the art collection, there are two new pieces built into the construction of the building – both represent information in coded form.

At the front desk to the makerspace you will see a pattern of letters cut into the steel face of the desk. This is a cipher of a quote by a prominent person. If you think you have cracked the code submit your answer to the Dean of the Library to see if you are correct.

Above the 12<sup>th</sup> Avenue entrance to the Sinegal Center you will see a series of horizontal red stripes. These stripes are a representation of part of the DNA sequence of the Pacific Yew tree *Taxus brevifolia*. This sequence was selected to represent what can develop when the three academic departments housed in the Sinegal Center – Biology, Chemistry and Computer Science work together to tackle a problem. Paclitaxel (aka Taxol) is the anticancer drug that was discovered in the bark of the Pacific Yew. The trees are native to the Pacific Northwest and were historically useful to Native Americans. They are part of the “climax” stage of the PNW forests and provide food and habitat for many wildlife species including songbirds, small herbivores, and ungulates like moose. It can even help provide valuable shade to cool streams for salmon. The discovery of Taxol also led to discussion about the destruction of old growth forests and thus is connected to the spotted owl story and conservation biology.

The Taxol story is a great example of how biology, chemistry and computer science can combine to discover medical breakthroughs.

- *Biology* - exploring botanical samples, recognizing key endophytic fungi, investigating the anti-mitotic cellular processes, and sequencing the genome to identify gene candidates for synthesis.
- *Chemistry* – LCMS +NMR to isolate and identify the active chemical ingredients
- *Computer Science* – Phylogenetics and sequencing analysis and pharmaceutical model development.
- <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3925984/>

## First Floor Destinations

### The Billodue Makerspace

The Billodue Makerspace is managed by the Library and is open to the entire campus community. Equipment includes laser cutters, 3-D printers, a kiln, sewing machines, a loom, jewelry making and bike repair tools, and electronics and metalworking tools. The makerspace will be hosting workshops, will have drop-in hours and is available for coursework.

### The Fr. Stephen Sundborg, S. J. Center for Community Engagement

The Sundborg Center for Community Engagement (CCE) connects classroom, campus and community to promote a more just and humane world. The CCE is the hub for the Seattle University Youth Initiative (SUYI). Launched in 2011, this signature initiative unites campus and nearby neighborhoods to support youth and families. Our "cradle-to-career" network prepares local youth for success. The Center has its own exterior entry off the 12<sup>th</sup> Avenue terrace; this location was selected to place our mission at the front face of our campus. It also can be entered from inside the building next to the Porter Conference Room.

### The Porter Conference Room

This twelve person conference room located at the 12<sup>th</sup> Avenue lobby is assigned to the Center for Community Engagement during business hours but is open to campus users after hours.

### The Convergence Café

The café is operated by Chartwells. Its name was derived from the term "convergence research" but is also a reference to our local climate zone.

The National Science defines convergence research as "a means of solving vexing research problems, in particular, complex problems focusing on societal needs. It entails integrating knowledge, methods, and expertise from different disciplines and forming novel frameworks to catalyze scientific discovery and innovation. Convergence research is related to other forms of research that span disciplines - *transdisciplinarity, interdisciplinarity, and multidisciplinarity*. It is the closest to transdisciplinary research which was historically viewed as the pinnacle of evolutionary integration across disciplines.

NSF identifies Convergence Research as having two primary characteristics:

- *Research driven by a specific and compelling problem.* Convergence Research is generally inspired by the need to address a specific challenge or opportunity, whether it arises from deep scientific questions or pressing societal needs.
- *Deep integration across disciplines.* As experts from different disciplines pursue common research challenges, their knowledge, theories, methods, data, research communities and languages become increasingly intermingled or integrated. New frameworks, paradigms or even disciplines can form sustained interactions across multiple communities.

From its inception, the convergence paradigm intentionally brings together intellectually-diverse researchers to *develop effective ways of communicating across disciplines by adopting common*

*frameworks and a new scientific language*, which may, in turn, afford solving the problem that engendered the collaboration, developing novel ways of framing research questions, and opening new research vistas.

### **The Amazon Project Center**

This is the home of the Computer Science Project Center students and includes two mentoring rooms in the north atrium for the students to meet with their industry partners in a professional setting.

### **Classrooms**

There are two 50-person general assignment classrooms off the north atrium which may be combined into a large event space by raising the center partition into the ceiling. There is a storage closet in the NW corner so check there if furniture is missing.

### **Computer Science Grad Suite**

This suite features team huddle rooms, touch down space and a lounge area to provide a campus home for our growing group of graduate students in CS.

### **The Materials Management Suite**

Located just south of the elevators is the dispensing window for the Materials Management Suite. In accordance with the Fire Code, this area provides specially designed storage for chemicals and gases. It also includes a special delivery and pick/up room for out chemical and gas vendors.

### **The Mudroom**

Located in the south service corridor is a mudroom for Biology Field Sciences students to clean up and store their gear when returning from field trips.

### **Trash/Recycling**

The building has a room serving as a collection point for trash and recycling outside the SW door. Access to the room is limited – call Facilities Services if you need to move something into the room for disposal.

## Second Floor Destinations

### The Oberto Commons

Located at the center of the west side of the building is the entry to the Oberto Commons. This event space can accommodate mid-sized campus gatherings and has state of the art AV systems and an adjacent catering kitchen.

### The Quinn Faculty Staff Lounge

At the north end of the atrium is the College of Science and Engineering's Faculty Staff Lounge with a kitchen and seating area.

### The President's Dining Room

Tucked away in the Northwest corner of the building is a dining room for the President to entertain donors and guests. This replaces the previous dining room in the Casey building.

### KXSU 102.1 FM

KXSU is Seattle University's student-run radio station. Seattle University students, staff, and alumni have been broadcasting since 1994. They moved to Sinegal from the basement of Campion Hall and are delighted to be above ground so they can actually hear their station on the air! KXSU has an FCC low-power license which allows them to broadcast to an area that covers about 40,000 listeners over about a three-mile radius; they have about 300 student DJs in any year who provide a wide variety of programming.

### Computer Science faculty offices

Offices and research space of the CS faculty are located off the north atrium

### General Chemistry Teaching Labs

### Anatomy and Physiology Teaching Lab

## Third Floor Destinations

### Computer Science Departmental Office

Located at the center of the west side of the building

### Computer Science Faculty Offices

Located along the west side

### Biology Teaching labs

### Anatomy and Physiology Teaching lab

### Biology Research lab

## Fourth Floor Destinations

### Biology Departmental Office

Located at the center of the west side of the building

### Biology Faculty Offices

Located along the west side

### Biology Teaching labs

### Biology Research labs

## Fifth Floor Destinations

### Chemistry Departmental Office

Located at the center of the west side of the building

### Chemistry Faculty Offices

Located along the west side

### Chemistry Teaching labs

### Chemistry Research labs

## Safety Features

### The Atrium

The term atrium has a very specific meaning in the building code related to the fire and life safety systems required to build multi story open spaces. The reason for this is that this type of space can allow fire to spread quickly through all areas of the building unless special controls are in place. Some of the key code requirements are:

#### Limits on furniture and materials:

Seattle University has signed a legal agreement with the City of Seattle regarding what we can place in the atrium; it dictates the following:

- “All furniture in the atrium must be of solid wood or non-combustible materials.”
- “With the exception of lightweight moveable chairs, all furniture must be bolted to the floor.” In practice this means that no additional furniture should be moved into the atrium.
- “No objects, furniture or other items composed of synthetic materials such as plastic or composed of foam padding (typically found in sofas) will be located in these areas.” Note that this would include things such as foam core display boards.
- “Indoor plants, trees and vegetation in fixed planters will be regularly maintained by the university. This includes promptly removing any diseased or dry parts of the plants and manually irrigating the plants using an integral irrigation bladder system.”

#### Specialized Sprinkler System:

You will notice throughout the building that there are sprinkler heads at the top of most of the glass walls. In addition, many of the glass walls include a railing across the glass. The purpose of the sprinklers is to maintain a separation from the atrium and adjacent areas in the event of a fire. The sprinklers must fully coat the glass to maintain its integrity which means that nothing can be taped to the glass or placed too close to the glass; the railings are the indicator of the required clear areas in front of the glass. Nothing should be placed closer to the glass than the rail.

#### Smoke Evacuation System:

The atrium has a sophisticated smoke evacuation system consisting of a laser smoke particulate detection system, large exhaust fans and automatically opening doors for make-up air.

The system is required to perform an automated test on a weekly basis, so every Wednesday morning at 7:15 you will see the exterior building doors on the first floor – including in the classrooms and the south doors on the second floor slowly swing open. They will stay open for 2 ½ minutes and then slowly closes. While they are open you will hear the fans come on at the top of the atrium and feel air rising up the atrium. The fans will power down as the doors close. DPS is aware of the test and will monitor the building during this time.

#### Door closers

The doors which open into the atrium life-safety controlled area are all either rated fire or smoke control doors; they have automatic closers that ensure they remain closed or have specialized devices tied to the fire alarm system that close them in the event of a fire. These doors may not be propped



open unless they have a magnetic hold tied to the fire alarm system; temporary doorstops are not permitted. The purpose of this is to ensure that any fire does not spread into building evacuation routes.

### Fire Stairs

There are two fire stairs in the building located at the north and south ends; these stairs provide a fire rated enclosure to the building exterior and should be used in the event of an emergency.

### Laboratories

All labs are provided with a safety station with showers, eyewashes, and first aid kits.

Labs are equipped with red PURGE buttons near the exit. These will do a rapid air change in the area. In the event of a spill or hazardous event this button should be pushed as the area is evacuated. You should **not** remain in the area while it is purged.

### Back-up generator

Life Safety systems and some critical lab equipment are connected to a 500KW back-up generator located on the low roof next to Sullivan Hall. The generator is tested monthly.

**Red outlets** indicate the outlet is on the emergency power circuit tied to the back-up generator.

## Furniture

The Sinegal Center has been provided with all new furniture. At the time of this writing, not all the furniture has arrived but it is all expected to be in place by November. All furniture is under warranty so if there is an issue, please contact Design + Construction. All furniture is assigned to a room and must remain in that room for Fire Code, inventory and warranty purposes. If you would like a piece removed, relocated or to add a piece of furniture please contact Design + Construction.

## Punch List items

The building is under warranty by Skanska until the end of May 2022. If you notice an item you feel to be a punch list issue please submit a work order. D+C will review each work order to determine if it is Skanska's responsibility and determine who should address it.

If there is an item that you would like a change to the building please send a request via email to either Carolyn Stenbak or Ranleigh Starling.