

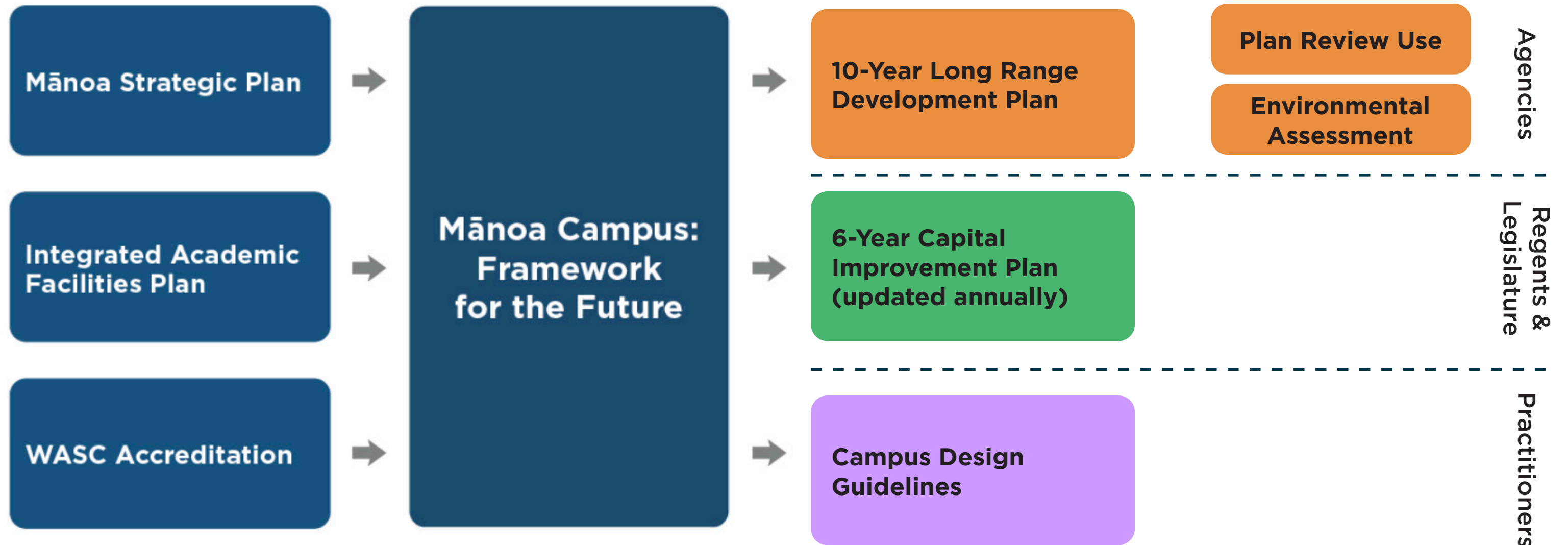
UH Mānoa Design Guidelines

New construction and major renovations

FEBRUARY 2022

THiNK^{MK}

Aligning the campus with University's goals



What are design guidelines?

- Practical application of campus framework to new construction and major renovations
- Achieve framework goals
- Codification of framework principles for design, engineering and other teams
- Promote consistency across projects
- Living document evolves over time

Design guidelines library

Campus

CAMPUS GUIDELINES

Space types

CLASSROOM

RESEARCH

ADMINISTRATION

GATHERING

OTHERS

Elements

COLOR

FURNITURE

AUDIO VISUAL

TECHNOLOGY

SIGNAGE

ARBORETUM

INCLUSIVE
DESIGN

OTHERS

Infrastructure

ENERGY

MECHANICAL

DRAINAGE

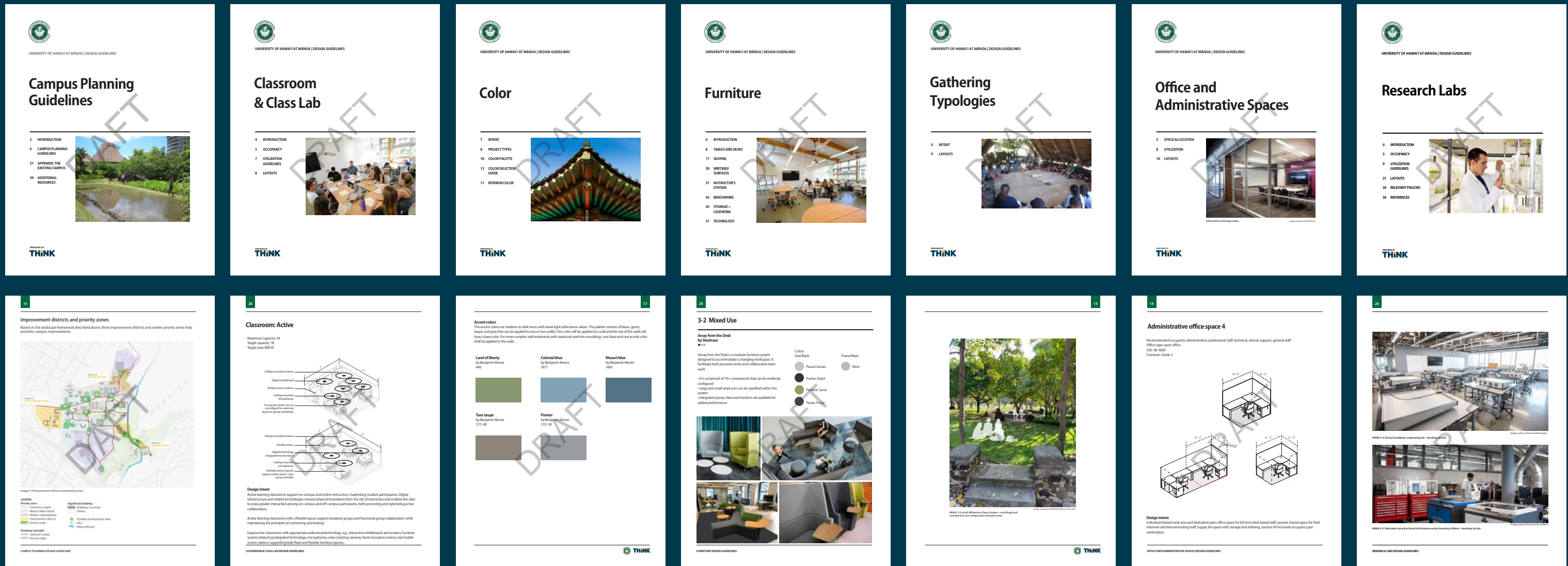
ELECTRICAL

SUSTAINABILITY

OTHERS

Excerpts from design guidelines

<https://www.manoaframeworkfuture.info/design-guidelines>



Campus planning

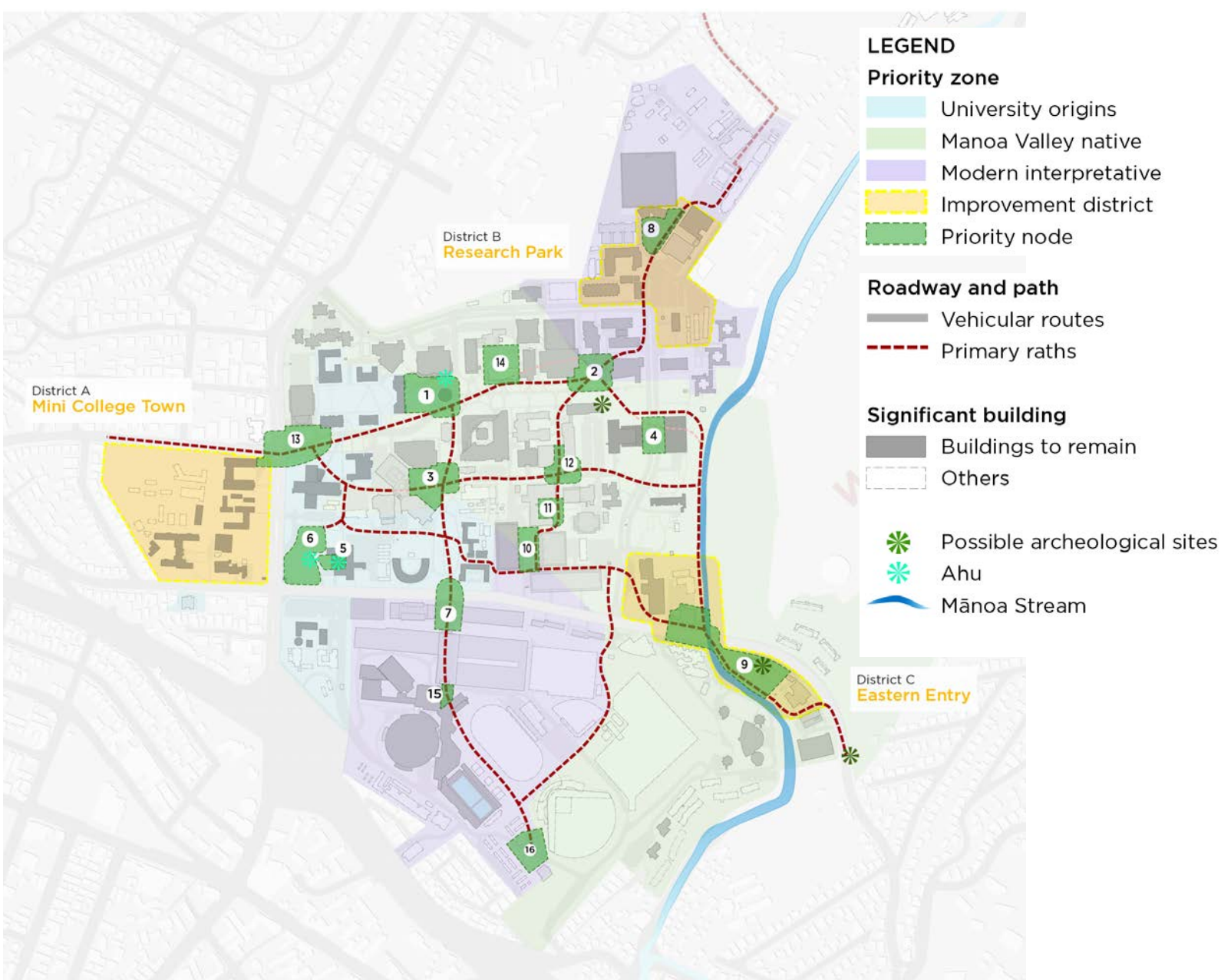
Key content

- Campus planning guidelines
- Campus relationship to natural site and neighborhood
- Historical context

	ZONE CHARACTERISTICS:	MAJOR IMPROVEMENT AREAS:
NATURAL SURROUND	<ul style="list-style-type: none">• Extensive native vegetation• Pedestrian priority• Reclaimed street space• Stream restoration• Ecological orientation• Flood mitigation• Human scale	<ul style="list-style-type: none">• Campus Drive• Correa Road• Repurposed parking lots
EXISTING CONDITIONS	<ul style="list-style-type: none">• Western-style campus gateways• Historic landscape• Open lawns as prominent public edge• Urban scale	<ul style="list-style-type: none">• Campus gateway at Dole Street• John Henry Wise Field
PROPOSED DEVELOPMENT	<ul style="list-style-type: none">• Contemporary art• Urban identity• Compact design	<ul style="list-style-type: none">• Major pedestrian junctions• Major pedestrian paths

Improvement districts and priority zones

Based on the landscape framework described above, three improvement districts and sixteen priority zones help prioritize campus improvements.

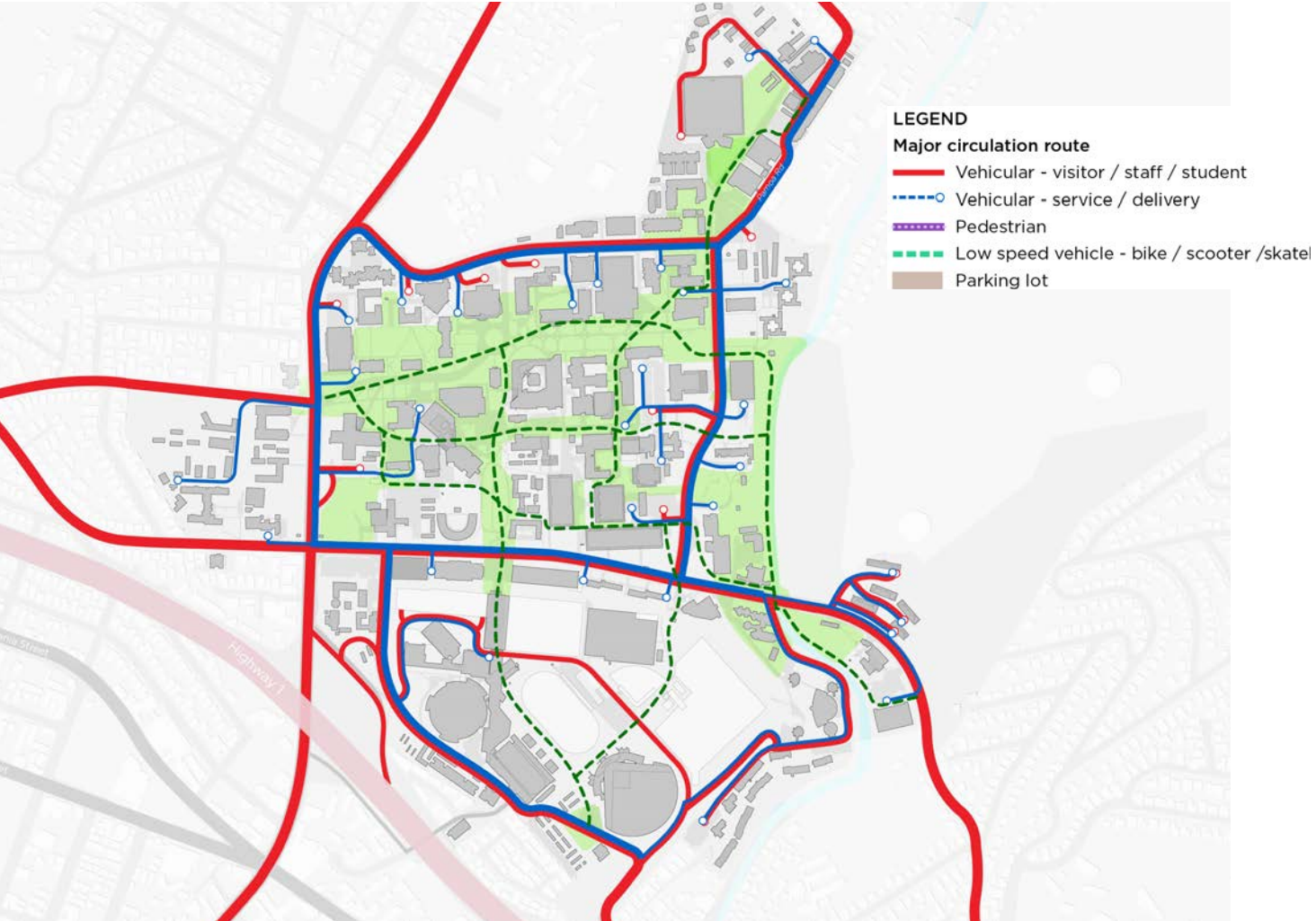


Circulation

Flow, direction, and volume are common traffic parameters. Classifying different types of traffic in a hierarchy and understanding the parameters of each type of traffic are keys to improve traffic efficiency and safety.

Here, campus traffics are classified into four categories:

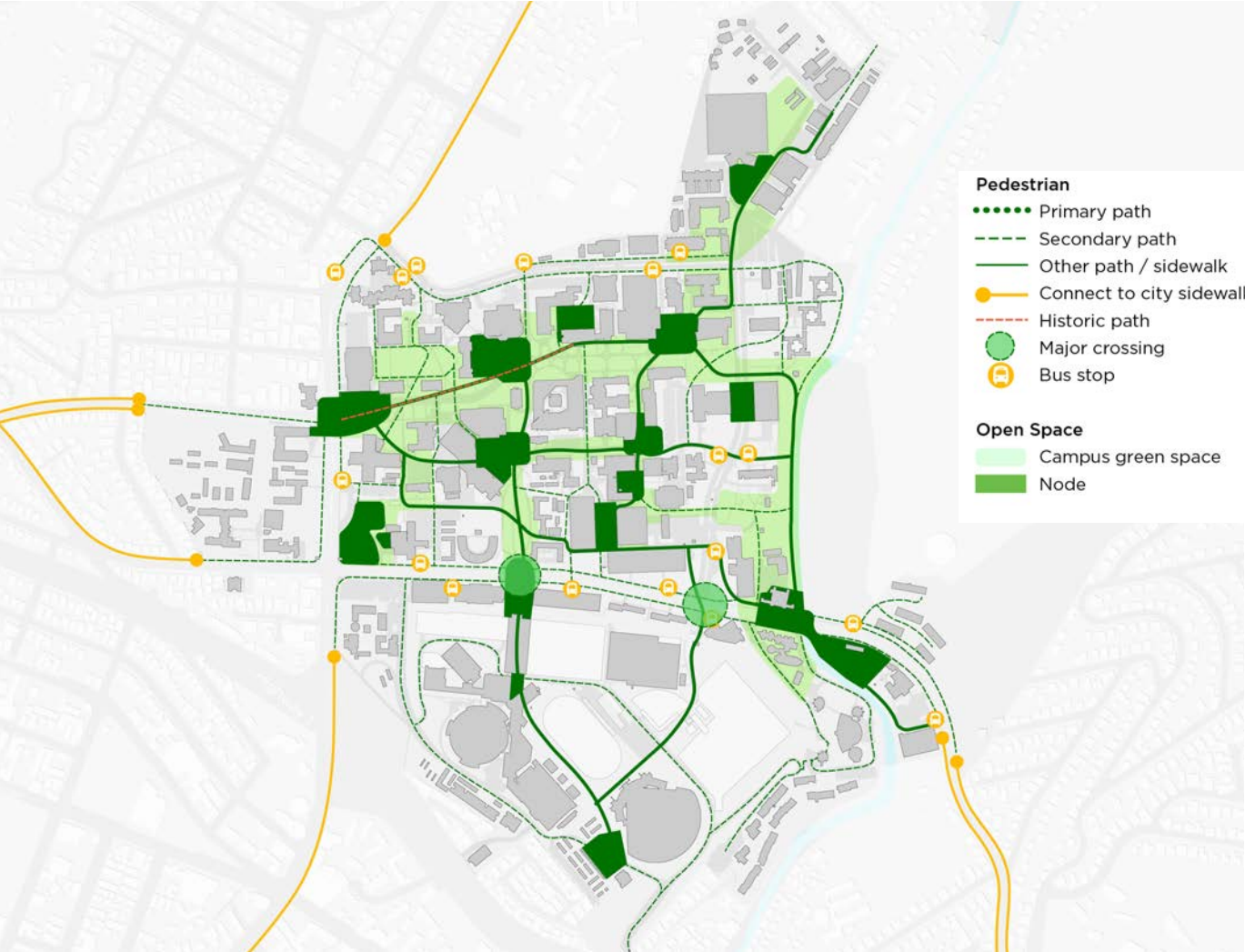
- a. Pedestrian
- b. Low speed vehicles: bike / scooter / skateboard
- c. High speed vehicles: student / staff / visitor
- d. High speed vehicles: service / delivery



Green spaces

Green spaces on campus support robust outdoor activity and enriched pedestrian circulation. Mature landscaping within the University Origins and Mānoa Valley Native campus zones provides shaded outdoor gathering places and protection from the elements, including intermittent showers common to Mānoa Valley.

Landscaping in these zones should reflect Hawai i’s uniquely diverse plant and animal life, blending campus edges within surrounding landscapes. Native species adapt best to the micro-climates and ecosystems on campus and also connect campus, visitors with the Hawaiian agricultural legacy of Mānoa Valley.

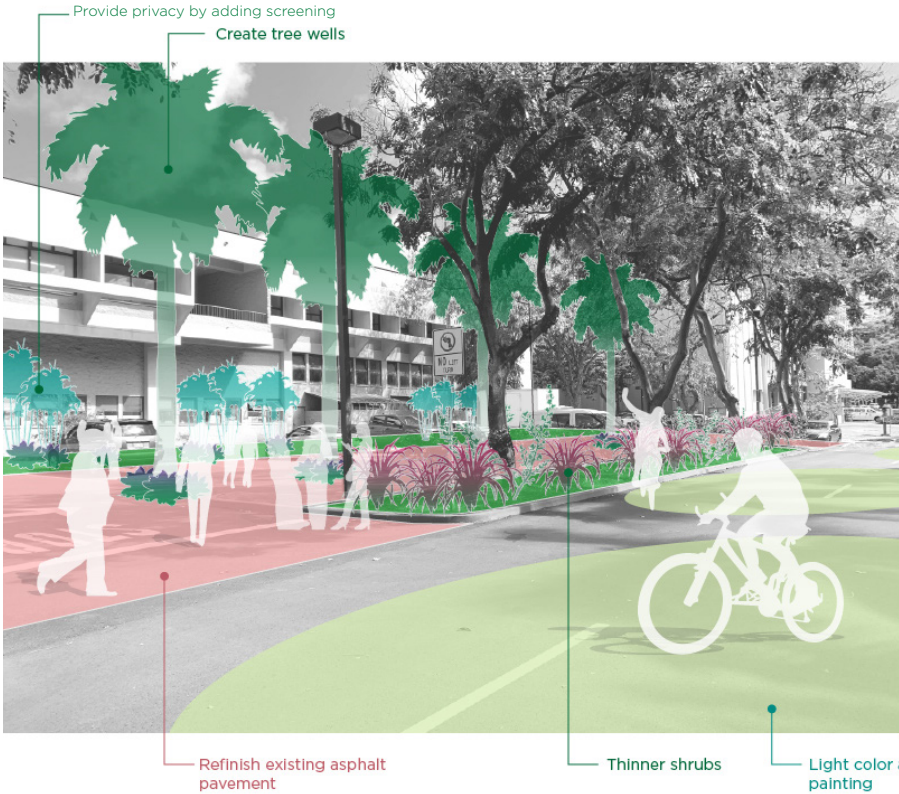


Short-term improvement scenarios



Correa Road: Remove on-street parking and replace with green medians and gathering places, paint asphalt at select locations to define flexible gathering places on existing roadways, add appropriate urban furniture.

Correa Road: Consolidate bike parking at designated locations; screen unwanted sights with plants or bamboo fences.



Correa Road: Convert the existing parking lot into usable campus space; create thinner buffering planters to provide good street visibility; screen building edges to provide privacy and reduce noise.

University Avenue parking lot: Add green to parking lot at Sinclair Library to reduce heat island effect and surface runoffs while screening vehicles from surrounding viewshed and reinforcing street continuity; designate safe pedestrian crossing with asphalt paintings; reclaim excessive entrance space by converting asphalt pavements into planting areas.



Gathering typologies

Key content

- Gathering space types and sizes
- Prototypical examples
- Space qualities and opportunities

OPEN	
PRIVATE	<ul style="list-style-type: none">• Outdoor theatre, e.g. Andrew's Amphitheater• Univerity building courtyards• Open seating with some level of privacy• Open seating within an open area• Furniture arrangements within a classroom, e.g. for a breakout session or landing space• Café-like layouts offering varied levels of privacy
	<ul style="list-style-type: none">• Quads• Campus Center courtyards• Open seating around or under a tree• Outdoor furniture arrangements• Outdoor open perfomance spaces• Students gathering along the steps of a building• Football and practice fields• Open pop-up events on campus• Campus landscapes with architectural features
PUBLIC	<ul style="list-style-type: none">• Carrels• Private booths• Meeting rooms• Sitting nooks• Conference rooms• Private offices• Enclosed atheltic complexes
	<ul style="list-style-type: none">• Stadiums• Enclosed large lecture rooms• Indoor theaters• Dismountable outdoor tensile structures
ENCLOSED	



Image courtesy of AM Partners



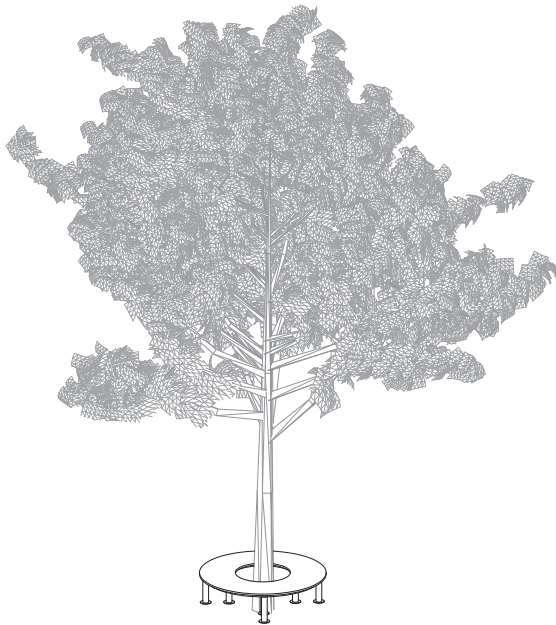
Image courtesy of AM Partners

Sudent success center—hybrid, open, enclosed, public/private.

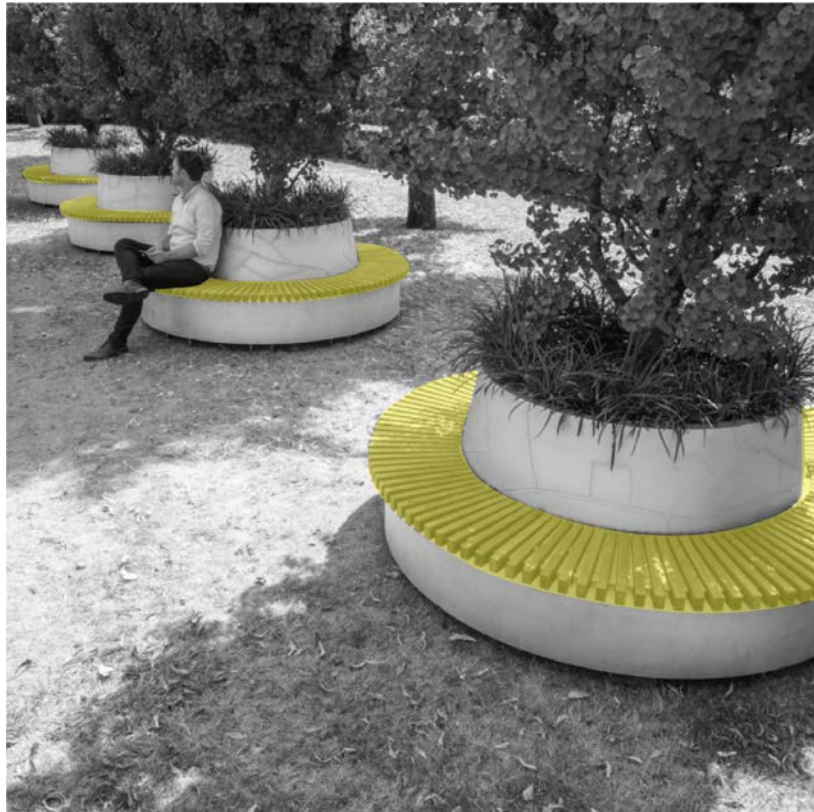
Gathering Type: Extra Small



Open / Private: A single or two-person space within an open area.



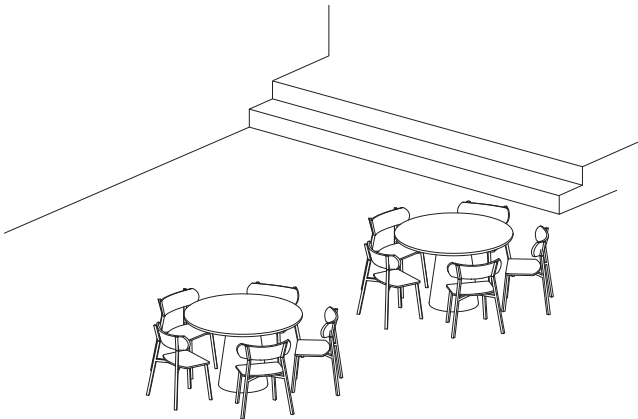
Open / Public: Open seating around the base of a tree.



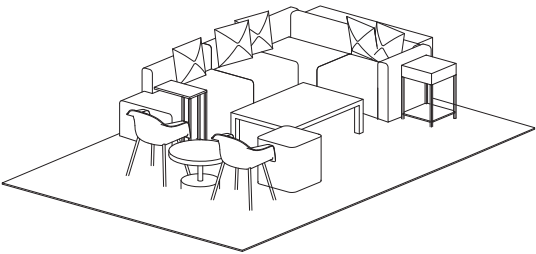
Open and public.

Image courtesy of Streelife

Small Gathering Spaces



Open / Private: An open table with chairs within a larger space for 4-6 people.



Open / Private: Open lounge seating within a larger open space.

Design intent

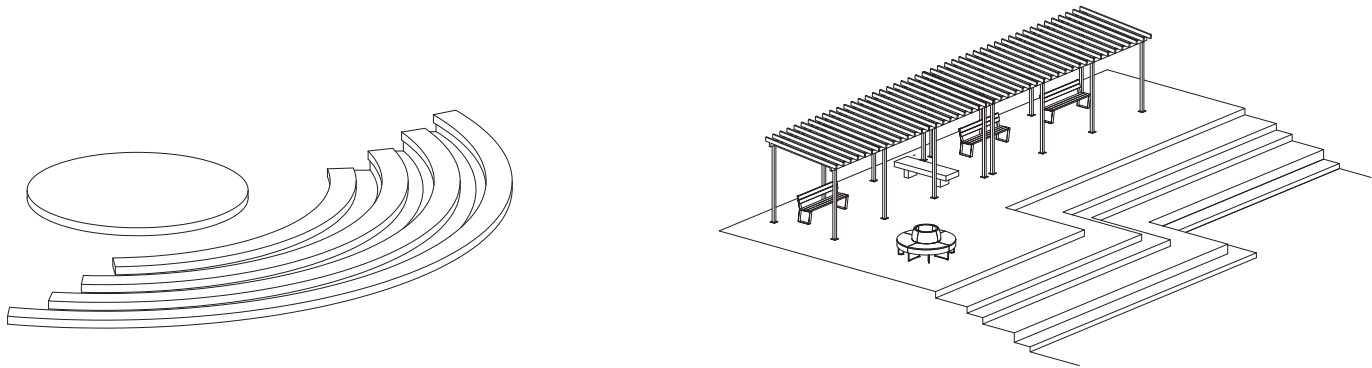
Small gathering spaces support small group meetings, informal landing spaces for students and faculty, breakout groups, and discussions. These spaces can be enclosed within partitions or walls, or open to larger outdoor or indoor spaces.



Campus Center outdoor courtyard—open and public.

Image courtesy of Hawaii News Now

Large Gathering Spaces



Open / Public: An outdoor open performance space.

Hybrid mix of semi-enclosed and public: shaded open outdoor space, seating along steps, and urban furniture.

Design intent

Large gathering spaces typically accommodate up to 72 occupants and support traditional lectures, presentations, events, and programs.

Large gathering spaces offer a variety of layouts that maximize efficiency and accommodate diverse programs. Alternative layouts include movable furniture, tiered fixed seating, and U-shaped layouts suitable for indoors or outdoors.



Andrew’s Amphitheater—semi-enclosed, semi-private.



Hawaiian hula and chant ensemble performance—open, public.



Open outdoor seating at Warrior Recreation Center— extra small spaces nested within a large open, public space.

Classrooms and class labs

Key content

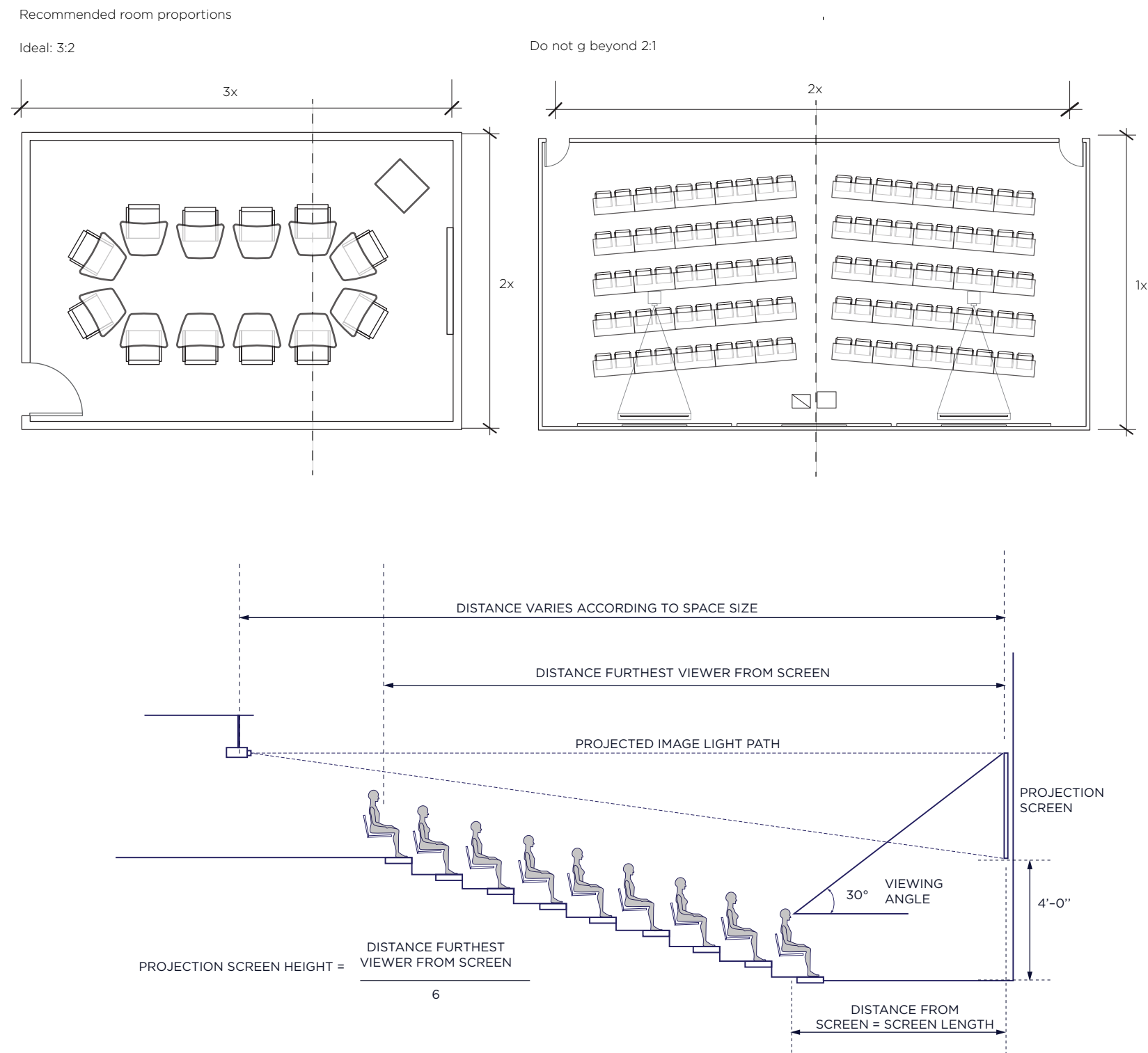
- Space allocation standards
- Prototypical layouts
- Key functional specifications

Classroom occupancy

Recommended capacity occupancy and square footage for classrooms.

Size	Capacity	Target occupancy	Target ASF
Seminar	16	12	480
Small	30	24	750
Medium	60	48	1,125
Large	90	72	2,000
Extra-large	80-100+	80-100	2,345
Hybrid	80-100+	80-100	2,345
Active	24	18	800
Lecture Recording Studio	3	2	420-552

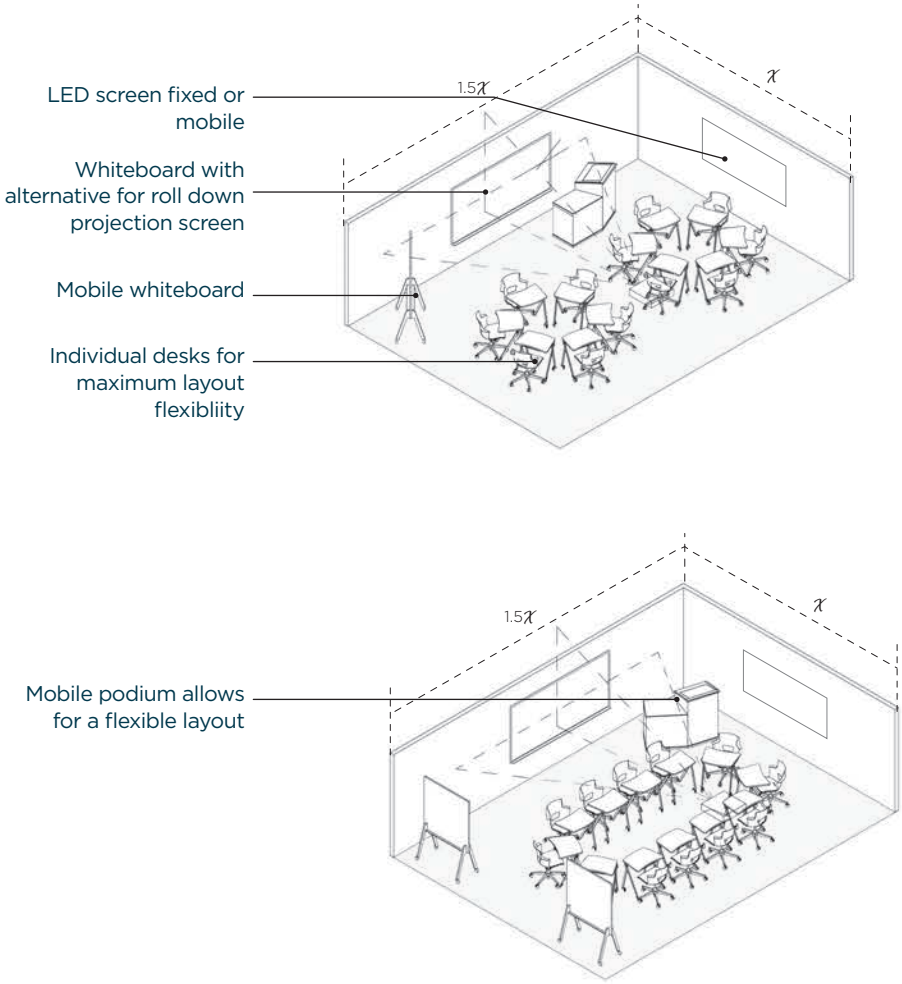
Exceeded: seats are outside of a 90° degree angle of the screen or whiteboard.



Recommended projection screen placement and size in a room with tiered seating.

Classroom: Seminar

Target capacity: 12
Maximum capacity: 16
Target area: 480 SF

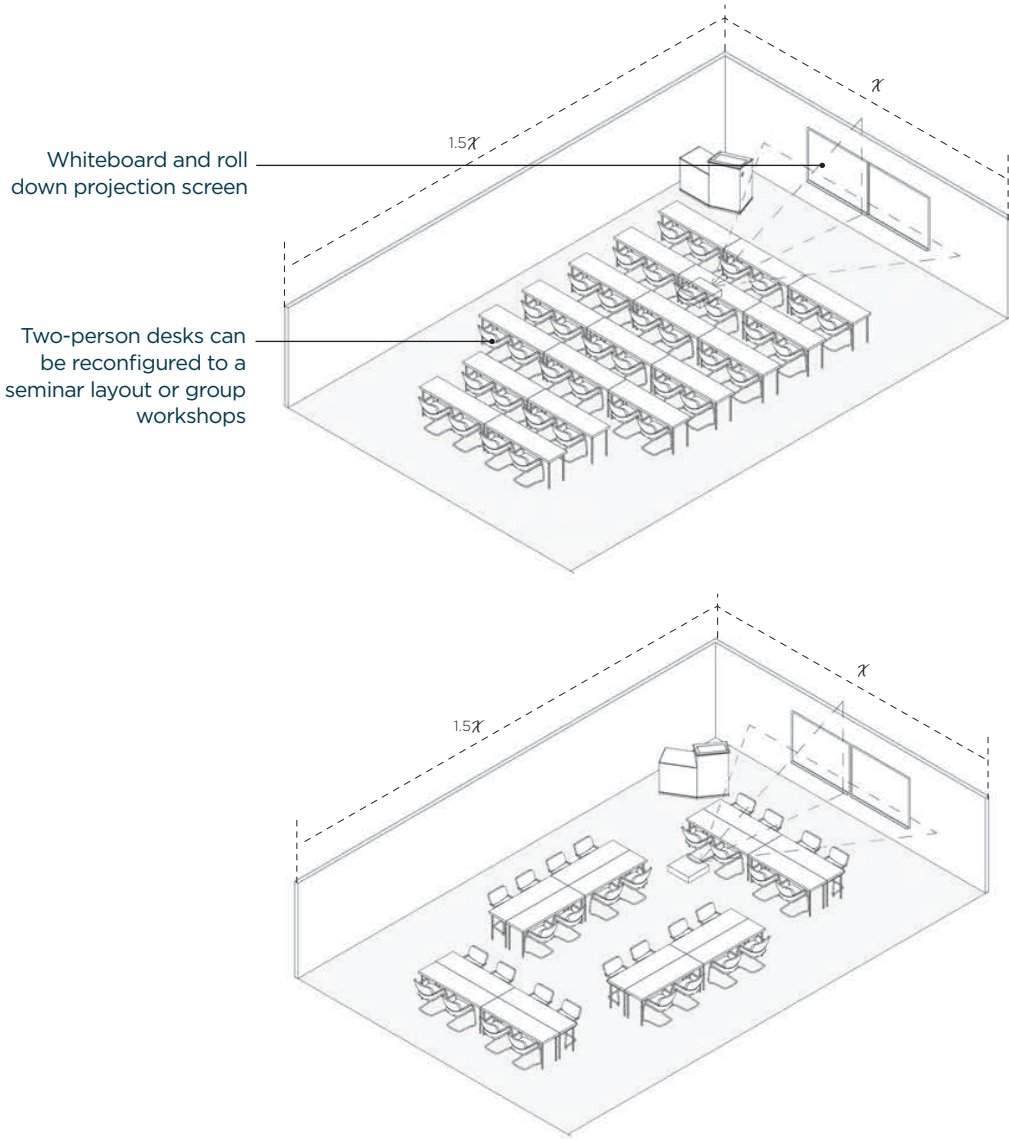


Design intent

Assume a target capacity of 12 occupants; use mobile single-seat desks; ensure a minimum of two active teaching walls that support easily rearranged, alternative furniture configurations, including a standard seminar layout, breakout groups, and round table discussions. LED screens are preferred if a screen meeting the size requirements is available within the project budget, otherwise specify a projector and screen.

Classroom: Medium

Maximum capacity: 40
Target capacity: 32
Target area: 1,000 SF

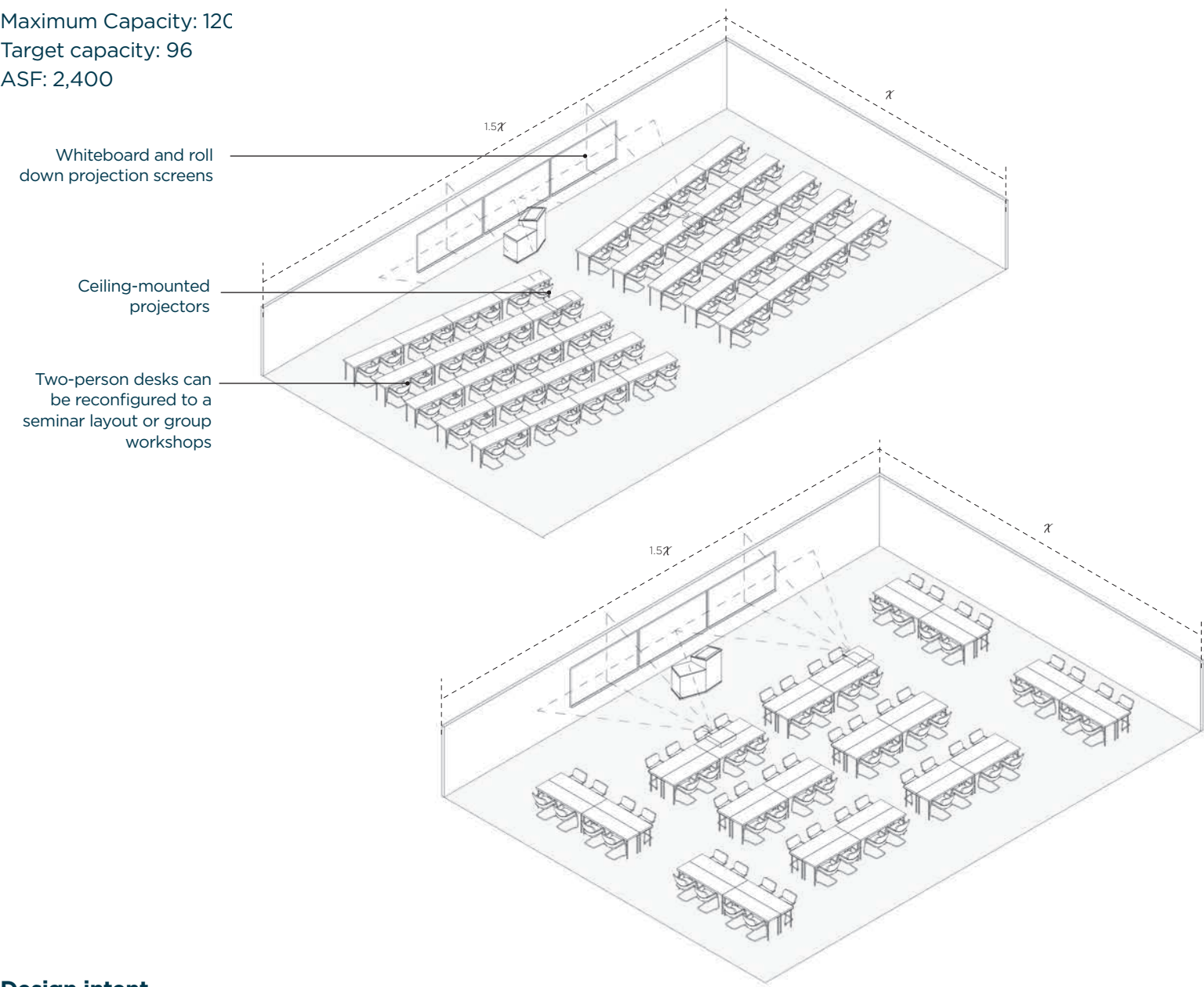


Design intent

Assume a target capacity of 32 occupants; use mobile double-seat desks and at least two active teaching walls to ensure maximum, easily rearranged, alternative furniture configurations, including a standard lecture layout, breakout groups, and round table discussions.

Classroom: Extra-large

Maximum Capacity: 120
Target capacity: 96
ASF: 2,400

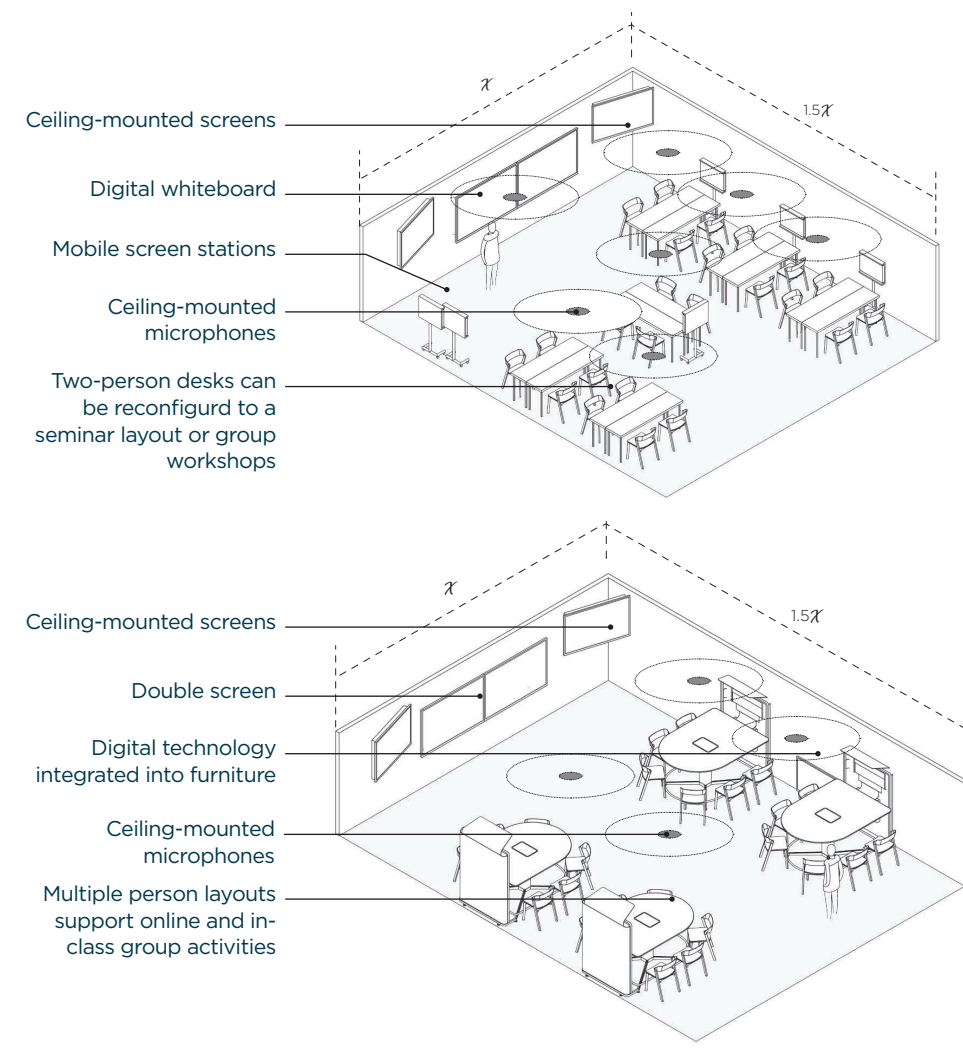


Design intent
Extra-large classrooms support traditional lectures, presentations, and large-group test-taking. Select movable furniture systems that support reconfiguration for group work or room division into smaller, discrete, learning spaces.

The aspect ratio of extra-large classrooms optimizes sight lines and audibility, movable risers can be incorporated into the design to improve visibility.

Classroom: Active

Maximum capacity: 24
Target capacity: 18
Target area: 800 SF

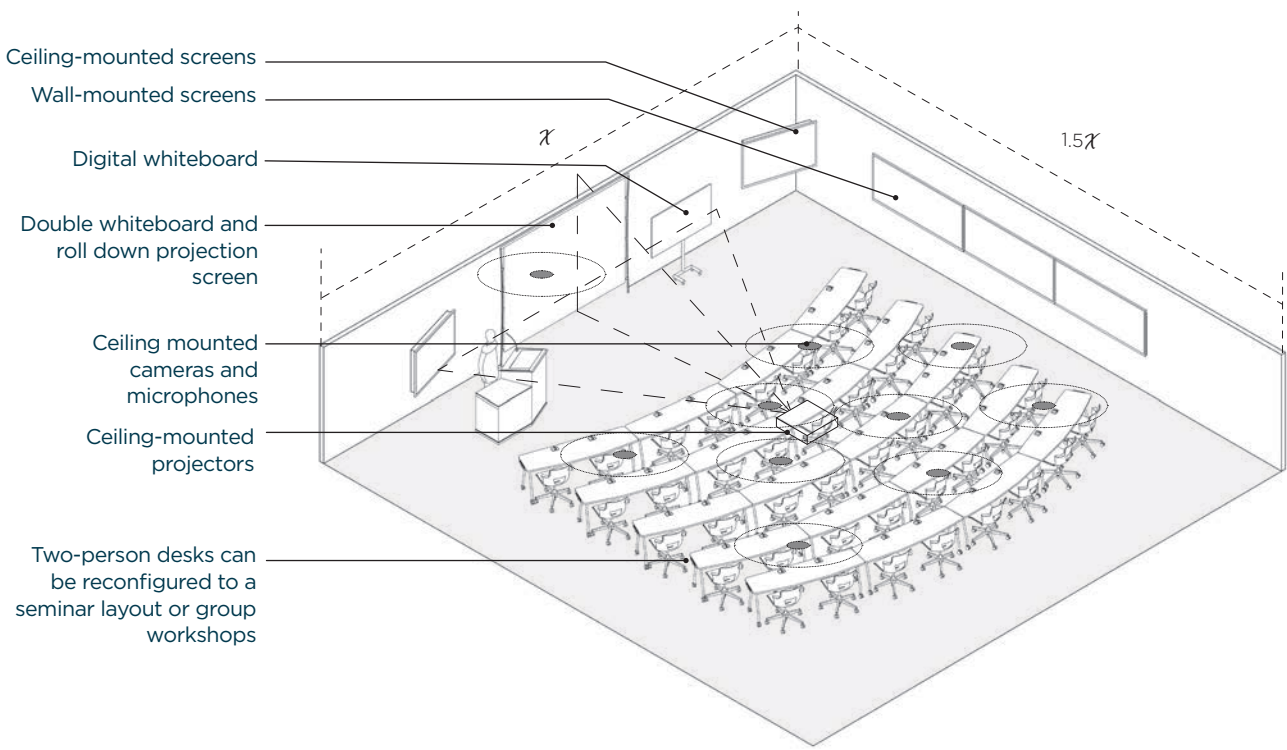


Design intent
Active learning classrooms support on-campus and online instruction, maximizing student participation. Digital infrastructure and related technologies remove physical boundaries from the site of instruction and enables the class to enjoy greater interaction among on-campus and off-campus participants, both promoting and optimizing active collaboration.

Active learning classrooms with a flexible layout support breakout groups and functional group collaboration while maintaining the principles of connecting and sharing.

Classroom: Hybrid

Capacity: 40
Target capacity: 32
ASF: 1,200



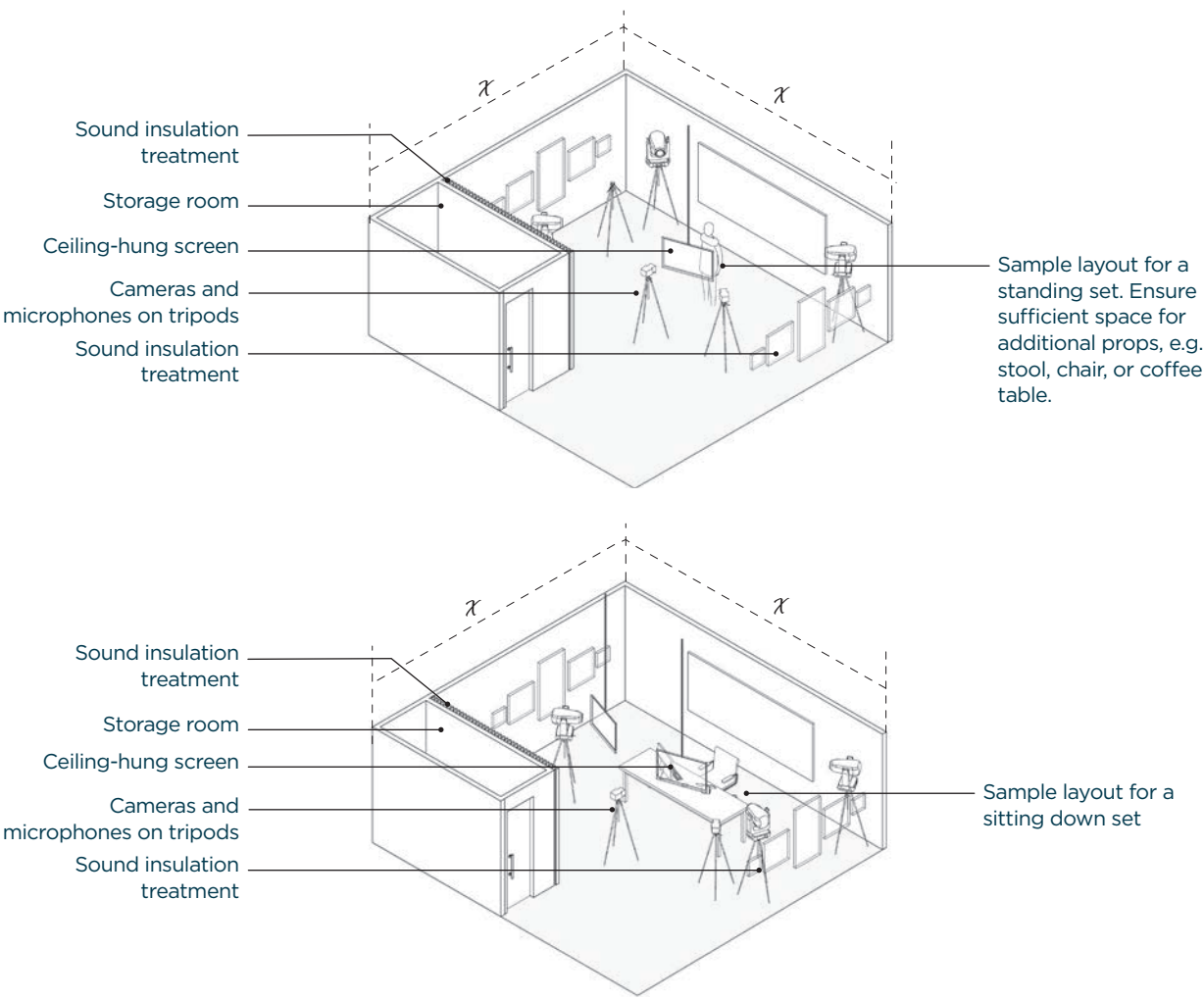
Design intent

Hybrid classrooms support traditional and online lectures, where students can attend the class on-site, allowing off-site students to join through video conferencing technology. The large lecture room layout supports projector presentations as well as whiteboards and digital tools.

Movable furniture and add-on technology can accommodate hybrid seminars within existing classrooms, enabling faculty members to use rooms as needed.

Lecture Recording Studio

Maximum capacity: 4
Target capacity: 4
Target area: 400 SF



Design intent

The recording studio supports a space for both synchronous and asynchronous online teaching. Faculty members can record lectures ahead of time for online classes or conduct lectures.

Equip space with acoustic and environmental control, lighting controls, microphones (desk, overhead, clip), cameras, tactile screens, studio monitors, computer, software/plugins, storage, desk type furniture layout, seats or stools, coffee table, lounge furniture layout, and backdrop options.

Office and administrative spaces

Key content

- Office space utilizations
- Prototypical layouts with functional specifications

Administrative staff space allocation

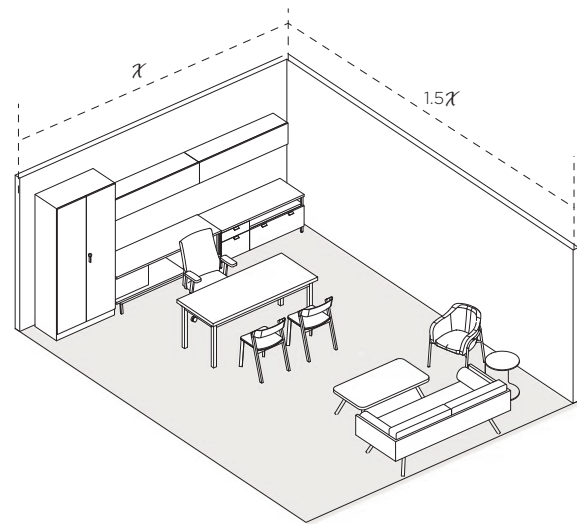
Space category	Occupants	Space type	ASF	Furniture grade
Administrative 1	<ul style="list-style-type: none">• President/Executive	Private office	300SF	Grade 1
Administrative 2	<ul style="list-style-type: none">• Provost• Vice Chancellor• Associate/Assistant Vice Chancellor• Vice President• Vice Provost• Dean• Director• Executive	Private office	200SF	Grade 1
Administrative 3	<ul style="list-style-type: none">• Associate/Assistant Dean• Manager• Supervisor• Program director	Private/Shared office	120SF	Grade 2
Administrative 4	<ul style="list-style-type: none">• Administrative• Professional staff• Technical staff• Clerical staff• Support staff• General staff	Open office	48-80SF	Grade 3
Administrative 5	<ul style="list-style-type: none">• Temporary staff• Part-time staff• Student staff	Open office	36SF	Grade 3

Academic staff space allocation: space size

ASF	Occupants	Space type	Space category	Furniture grade
140SF	<ul style="list-style-type: none">• Faculty-tenure / tenure-track• Full-time faculty	Private office	Academic 1	Grade 1
70SF	<ul style="list-style-type: none">• Faculty-adjunct /lecturer• Emetiti (active)• Off-campus based faculty	Shared office Open office	Academic 2	Grade 2
64SF	<ul style="list-style-type: none">• Post-doctoral student• Emeriti (non-active)• Senior lecturer• Consulting faculty• Visiting faculty	Open office	Academic 3	Grade 3
48SF	<ul style="list-style-type: none">• Graduate student	Open office	Academic 4	Grade 3

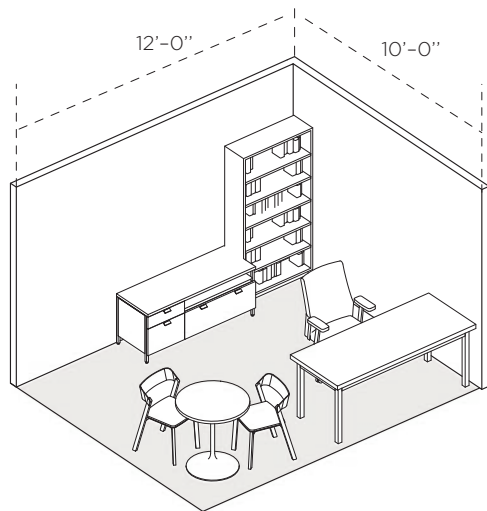
Administrative office space 1 & 2

Recommended occupants: president/executive, vice chancellor, provost
Office type: private
ASF: 200-300SF
Furniture: Grade 1



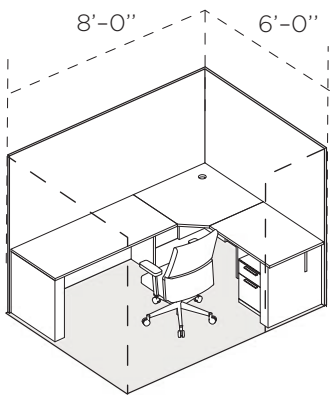
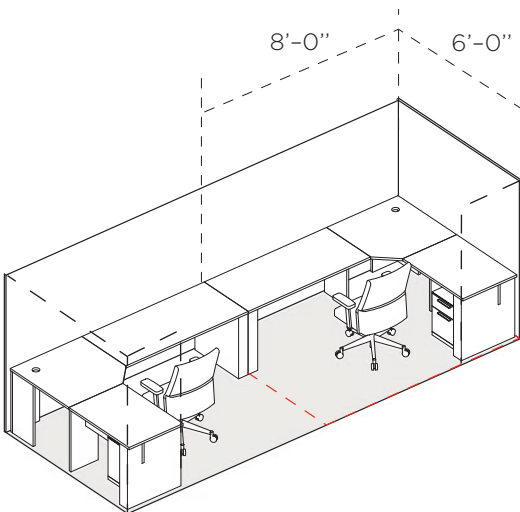
Administrative office space 3

Recommended occupants: vice chancellor, provost, president/
excutive
Office type: private, shared pffice
ASF: 120SF
Furniture: Grade 2



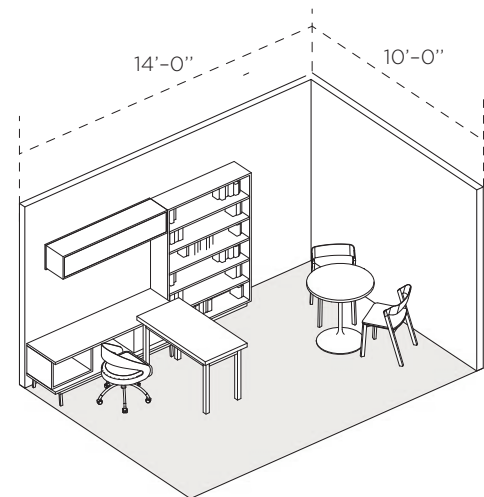
Administrative office space 4

Recommended occupants: administrative, professional staff, technical, clerical, support,
general staff
Office type: open office
ASF: 48-80SF
Furniture: Grade 3



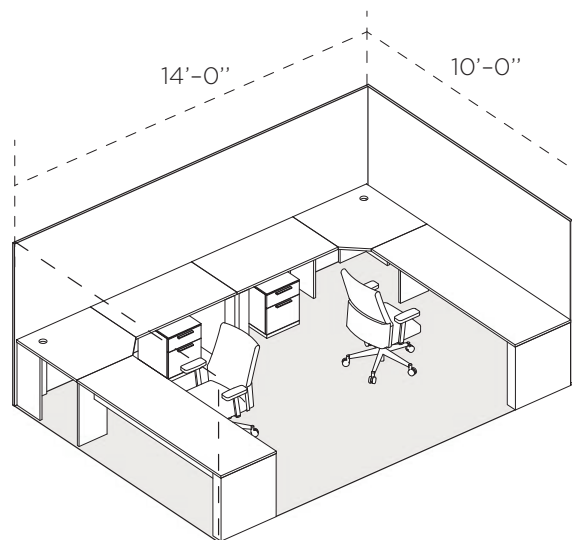
Academic office space 1

Recommended occupants: faculty-tenure/tenure track
Office type: private
ASF: 140SF
Furniture: Grade 1



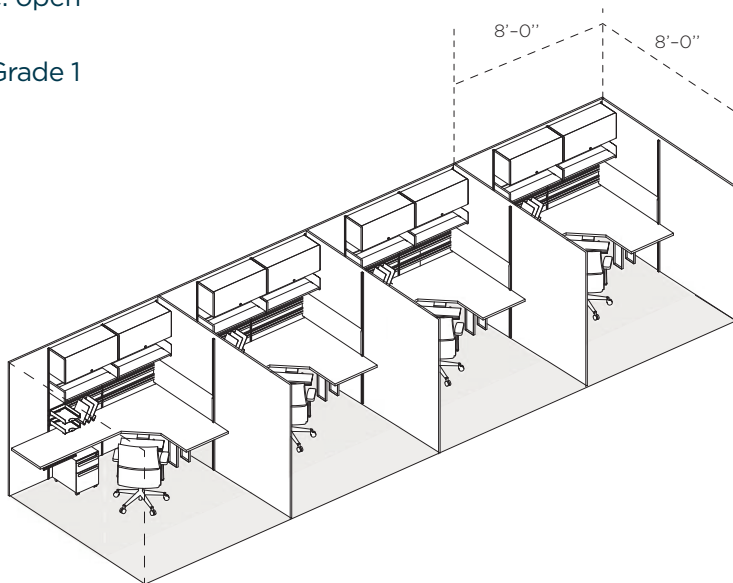
Academic office space 2

Recommended occupants: adjunct faculty lecturer
Office type: shared
ASF: 70SF
Furniture: Grade 2



Academic office space 3

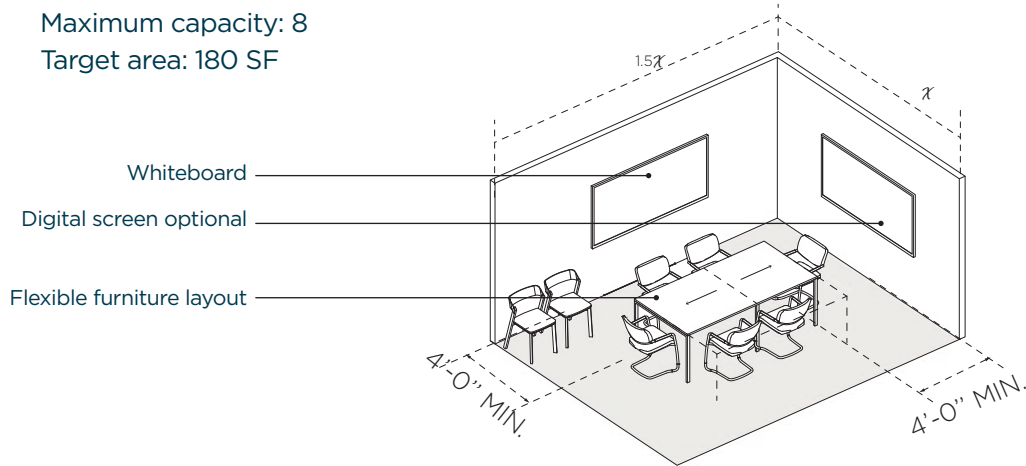
Recommended occupants: post-doctoral student, emeriti (non-active), senior
lecturers, consulting faculty
Office type: open
ASF: 64SF
Furniture: Grade 1



Meeting and conference rooms

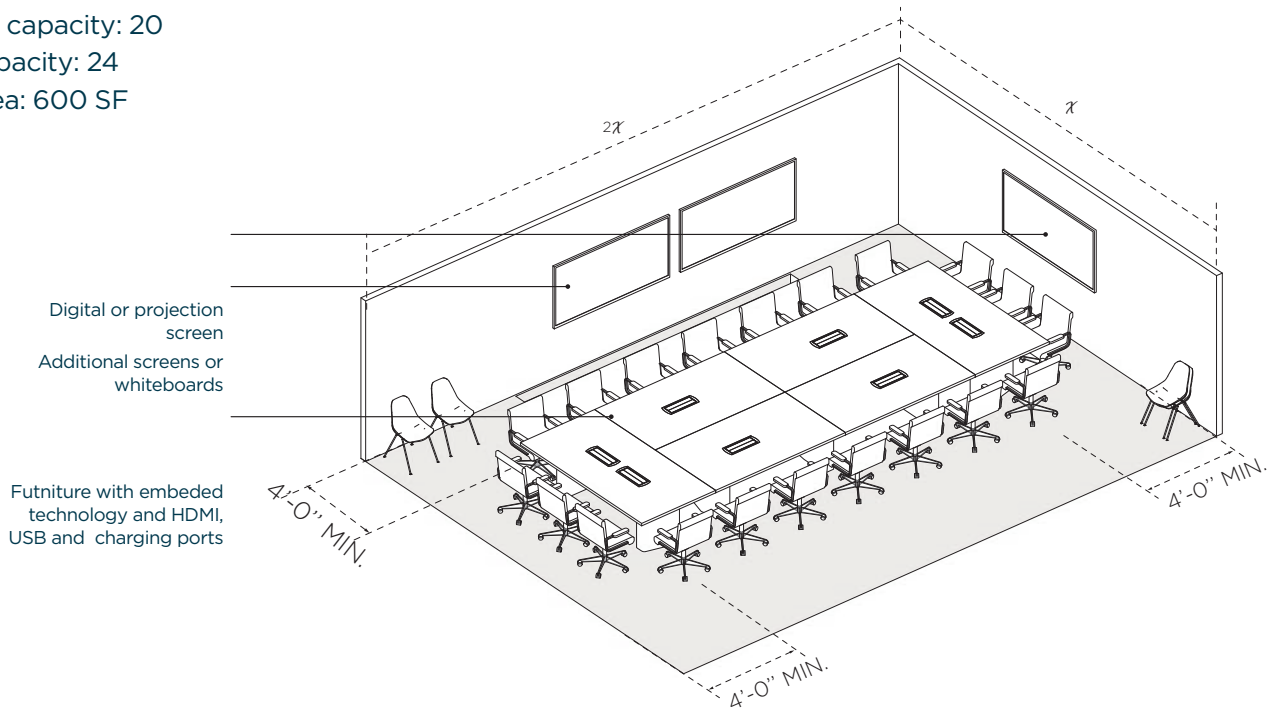
Small meeting rooms

Target capacity: 4-8
Maximum capacity: 8
Target area: 180 SF



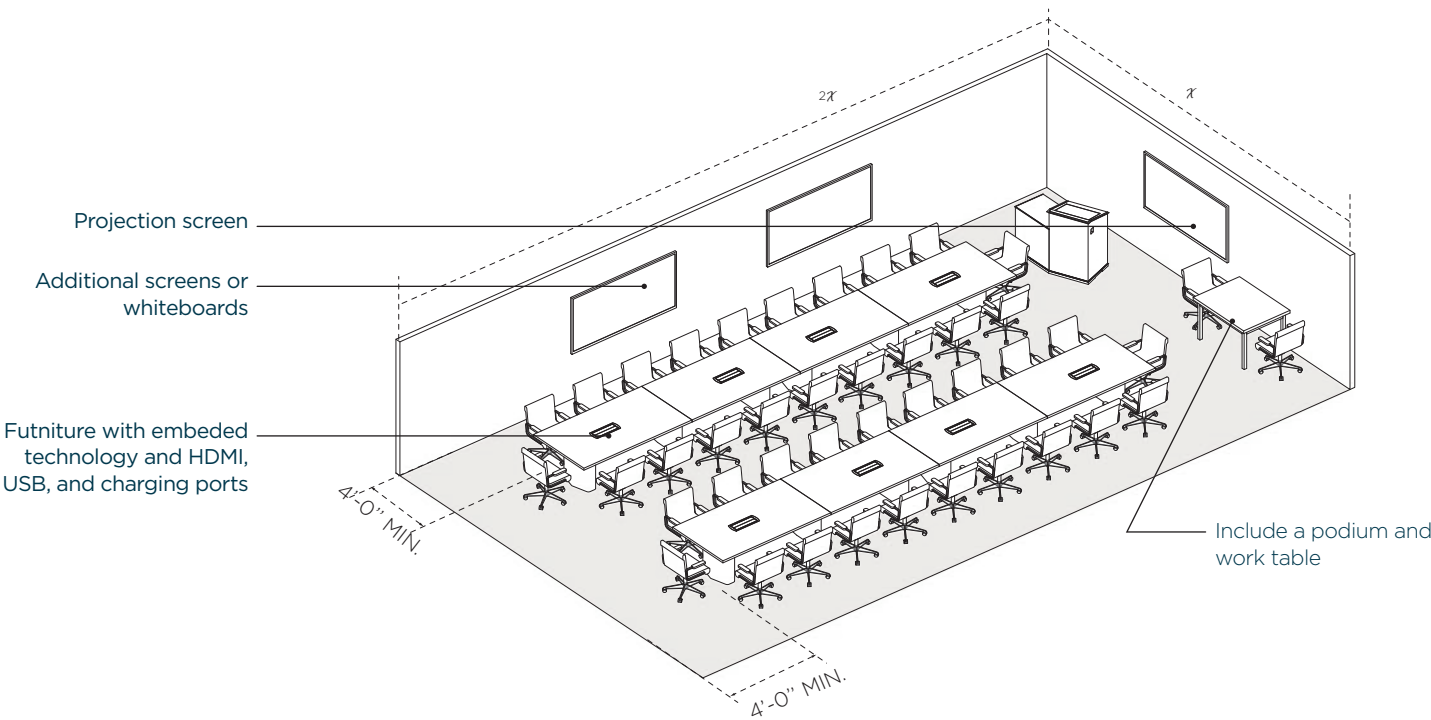
Medium conference rooms

Maximum capacity: 20
Target capacity: 24
Target area: 600 SF



Large conference rooms

Maximum capacity: 32
Target capacity: 40
Target area: 1,000 SF



Research labs

Key content

- Laboratory typologies
- Requirements
- Example layouts

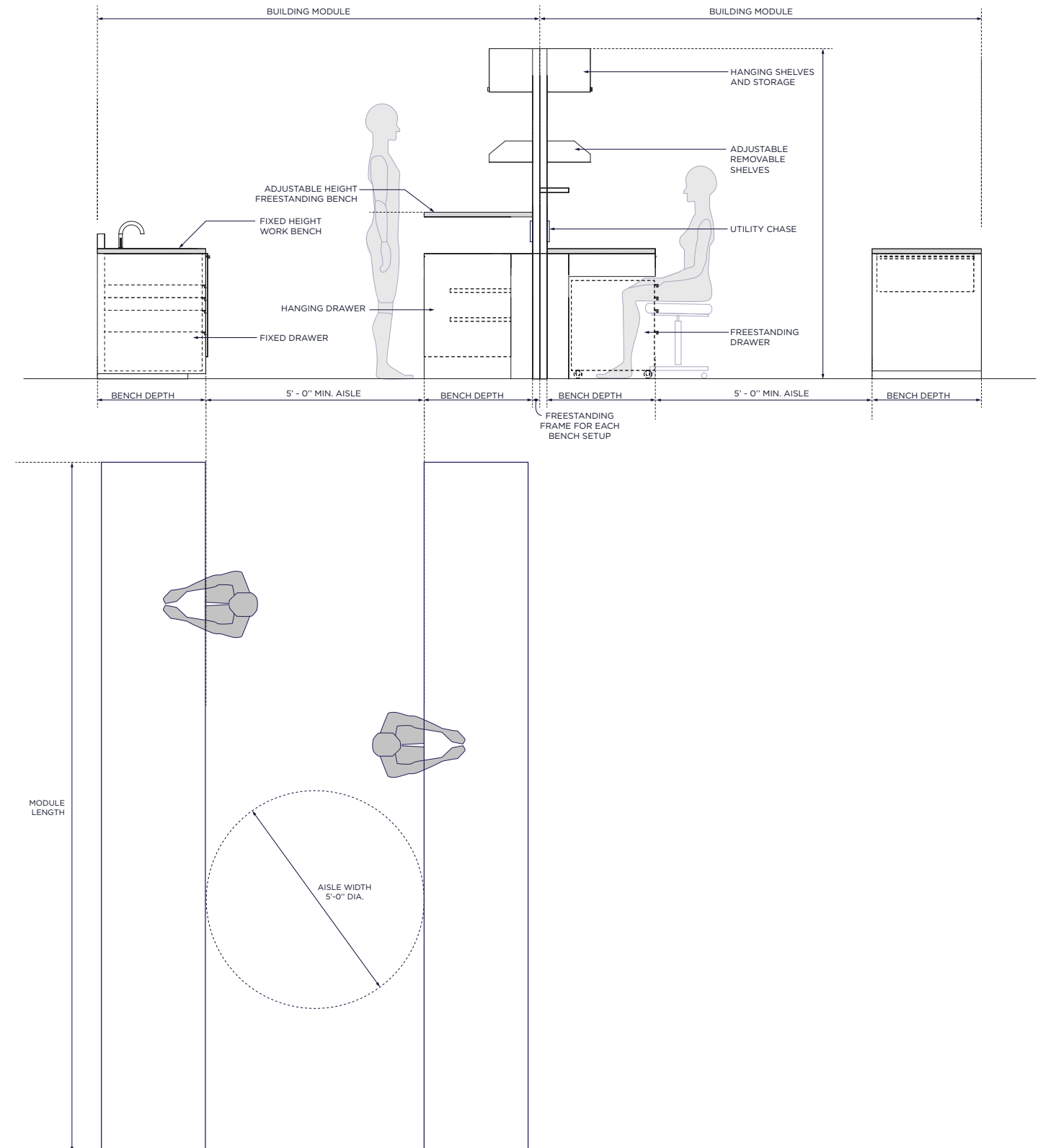
						Either/or calculation for plus up	
	Type of Research Space	Definition	Number of PI's	Base Lab SF	Faculty Office SF	Extramural Funds	per 1.0 FTE
Theory	Office-Based	Computer-based analytic research that does not require equipment with specialized power, cooling, security or lighting controls.	1	N/A	Faculty-T/TT = 100–120 Faculty-Adjunct/Lecturer = 80	\$250/SF	Staff/post-doc = 48–60 SF
	Computational Lab	Computer-based analytic research utilizing equipment with specialized power, cooling, security and/or lighting controls.	1-3	275–350	Faculty-T/TT = 100–120 Faculty-Adjunct/Lecturer = 80		Full-time faculty member = 140 SF Staff/post-doc = 48–60 SF Graduate Students = 36–44 SF
	Collaborative Research Cluster (Shared)	Computer-based analytic research utilizing equipment with specialized power, cooling, security and/or lighting controls. Space is assessed based on research goals for the cluster.	4+	500–600	Faculty-T/TT = 100–120 Faculty-Adjunct/Lecturer = 80		Full-time faculty member = 140 SF Staff/post-doc = 48–60 SF Graduate Students = 36–44 SF
Benchtop	Dry	Advanced computational or applied mathematical analysis/simulation research.	1	300–400	Faculty-T/TT = 100–120 Faculty-Adjunct/Lecturer = 80		Staff/post-doc = 48–60 SF
	Wet	Research requiring access to water of varying degrees of purity, laboratory exhaust and specialized plumbed utilities.	1	300–400	Faculty-T/TT = 100–120 Faculty-Adjunct/Lecturer = 80		Staff/post-doc = 48–60 SF
	Loft	Research requiring large open areas for individual or team-based projects.	Varies	500–600	Faculty-T/TT = 100–120 Faculty-Adjunct/Lecturer = 80		Full-time faculty member = 140 SF Staff/post-doc = 48–60 SF Graduate Students = 36–44 SF
	Collaborative Research Cluster (Shared)	Interdisciplinary research requiring direct proximity between computational and experimental areas conducted in a cluster or team-based environment.	2+	110–140	Faculty-T/TT = 100–120 Faculty-Adjunct/Lecturer = 80		Full-time faculty member = 140 SF Staff/post-doc = 48–60 SF Graduate Students = 36–44 SF

Calculations occupancy table

General requirements

- Codes and regulations
- Planning and building design considerations
- Breakrooms
- Health and safety
- Fire sprinklers
- Gas
- Fume hoods
- Emergency eyewash
- Sinks
- Freezers
- Darkrooms
- Radiological laboratories
- Electrical considerations
- Telecom and data
- Laboratory ADA guidelines
- Mechanical considerations
- Plumbing
- Ventilation
- Laboratory finishes and furnishings

LABORATORY MODULE ILLUSTRATING COMBINATIONS OF FIXED AND MOBILE FURNISHING



Color

Key content

- Project types
- Color palette
- Color selection guide



Rules for repainting, as illustrated in the CDC Report page 10.

Architectural character

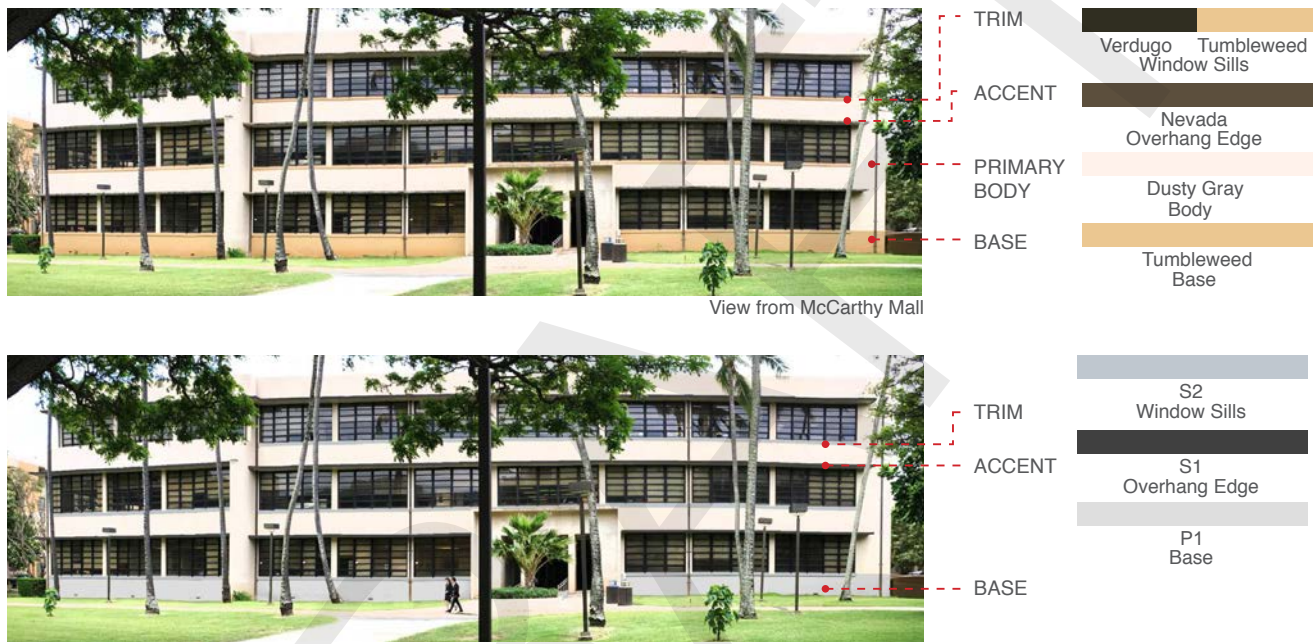
Color selection should be specified and located with emphasis placed on highlighting or identifying architectural features:

- Overall visual aspects
- Close range visual character
- Relationship between spaces
- Historic buildings
- Functional attributes
- Perceptual attributes

Example: large scale testing

A large sample of the proposed palette on a test building shall allow decision-makers to evaluate colors in situ under sun and shade conditions. Digital modeling and color testing shall be presented to the decision-makers prior to large scale paint testing. The digital testing shall provide colors selected for all faces of the buildings under sun and shade conditions.

Bilger Hall



Large color testing example at Bolger Hall. Page 110 from UHCDC Report.

Furniture

Key content

- Furniture selection guide and tiered system
- Recommended furniture for space types
- Technology and equipment recommendations

Desks

Verb Chevron (Double)
by Steelcase
●●●

Tabletops

- Verb worksurfaces are 1-1/8” thick wood-core with High-Pressure Laminate top and plastic edge band.

Plastic components

- * Plastic components are optional and used to provide storage and display for Verb whiteboards.

Chevron Shape


- The chevron shape tables provide a sense of personal space division as well as creating a subtle arc when in lecture mode to allow line of sight to everyone in the row.





Colors

Table top

Frame/Base

 Fawn cypress

 Silver

 White

Mixed use furniture

Away from the Desk
by Steelcase
●●●

- Away from the Desk is a modular furniture system designed to accommodate a changing workspace. It facilitates both personal works and collaborative team work

- It is comprised of 70+ components that can be endlessly configured
- Large and small work aces can be specified within the system
- Integrated power, data and monitors are available for added performance.

Colors

Seat/Back

Frame/Base

 Pause:Canvas

 Silver

 Frame: Grey3

 Palatine: Sand

 Pause: Forge



Using the guidelines

- New projects
- Major renovations
- RFPs
- Space planning
- Space assignment

- Deans, directors, leadership
- Facilities and design managers
- Faculty and staff committees
- Planning committees

Design guidelines key contributors

The design guidelines draw on best practices from the UH system and peer institutions. Guidelines will be updated with evolving pedagogies, technologies, and priorities.

Univeristy of Hawai'i at Mānoa

- B. Keolamaika'i Annino
- Blake Araki
- Brian Strawn
- Chad Walton, PhD
- Daniel S. Friedman, PhD
- Daniela Bottjer-Wilson, PhD
- Glenn Cadalzo Grande
- Joseph T. Jarrett, PhD
- Kathleen O. Kane, PhD
- Katherine Pananganan
- Laura E. Lyons, PhD
- Lin Shen, PhD
- Nelson A. Lee
- Philip vonDoetinchem, PhD
- Sheri Mau
- Mark Nakamura
- Vanessa Ito

University of Hawai'i Community Design Center

MKThink

- Nate Goore,
AIA Principal in Charge, MKThink
- Odile Schlossberg,
Project Designer, MKThink
- Christine Koroki,
Senior Associate, MKThink

Accessing the design guidelines

UH Mānoa Campus

FRAMEWORK FOR THE FUTURE

Framework for the Future

Feedback Forum

Content

FAQ

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Classrooms and class labs

Research labs

Office and administrative spaces

Furniture

Color


Design guidelines

Design standards and guidelines address the quality of all built environments that support the university enterprise. When applied to the development of RFPs, CIPs, academic and administrative programming, RIM projects, and routine building modifications, these standards and guidelines seek to ensure the optimization of physical, spatial, financial, economic, and operational resources through evidence-based planning, design, construction, and maintenance.

Campus planning

In 2020, the university unveiled Mānoa 2025, its ten-year strategic plan, an especially suitable academic framework within which to understand these physical design guidelines. The strategic plan seeks to ground Mānoa's commitment to the defining characteristics of a Native Hawaiian Place of Learning, which references deeply rooted cultural practices and perspectives on both the poetic and practical interdependency of natural and human systems, illuminating an ethos of community and care at the heart of the university's enterprise. The plan presents four goals: becoming a Native Hawaiian Place of Learning (NHPoL); enhancing student success; excellence in research; and building a sustainable and resilient campus environment.

Among related Native Hawaiian values, it anchors its mission in the principle of "E ho'omālamalama i kō mālama" — "cultivating the potential within" — to grow and extend UH Mānoa's premier teaching, research, discovery, community engagement, and service, enriched in its summoning of local and regional ways of knowing.



Click Here

Gathering typologies

The University of Hawai'i at Mānoa offers a diverse range of indoor and outdoor gathering and collaboration spaces across campus. These important spaces constitute the connective tissue of campus life. They enable students, faculty, staff, and visitors to enjoy comfortable meetings and interactions, both structured and spontaneous, in small groups or large— formal, informal, personal, and professional—

← → ↺

manoaframeworkfuture.info/design-guidelines

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Classrooms and class labs

Research labs

Office and administrative spaces

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Research labs

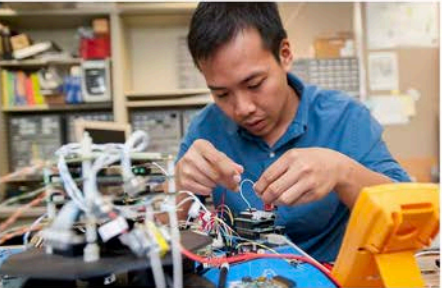
These research lab space guidelines describe how to strategically allocate campus space and support decision-making that maximizes the availability and efficiency of research labs. Research lab design guidelines shall serve as a resource for faculty, staff, and designers during the planning and design phases of a project.

Special-purpose equipment and room configuration characterize typical laboratory facilities and connect research activities to a particular discipline or a closely related group of disciplines. These activities may support individual or group work with or without supervision.

The university will review research space allocation at least every three years and, if indicated by metrics, adjust assigned lab space to ensure adequate and efficient use on an ongoing basis. Space can be reassigned at the discretion of the Vice President for Administration (VPA), in consultation with the UHM Space Recommendation Committee.

The move toward large shared laboratory space is one we support and encourage for all scientific research at UH Mānoa. Infrastructure, space flexibility, and the waxing and waning of grant activity, etc., influence efficiency and therefore allocation.

These research lab design guidelines aim to complement the designer's knowledge in the field; they do not cover all regulatory issues nor all design situations. It is the designer's responsibility to understand criteria essential to the development of the specific lab type for each project. These guidelines and recommendations aim to support the design process on a case-by-case basis and provide sustainable and energy-efficient laboratory facilities.




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Office and administrative spaces

The guidelines help estimate the actual size of space needed for accommodating and assessing efficiency whenever concerns arise about the adequacy of existing space or dedicated areas in future buildings.

Flexibility is a key factor in the design of gathering spaces, likewise the guiding principle in the configuration of spaces and furniture layouts; whenever possible, design configurations that can change as the work environment evolves. A modular planning approach preserves office space flexibility to accommodate use and/or relocation over time.

The following administrative and academic office layouts show recommended assignable space based on position type, and define the recommended range of assignable square feet (ASF) for persons in specific roles.



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