

Site & Building Concepts

SOUTH CAROLINA AERONAUTICAL TRAINING CENTER





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ACKNOWLEDGEMENTS



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WHY

*the MISSION of the
SOUTH CAROLINA AERONAUTICAL TRAINING CENTER
is to...*

INSPIRE
*a new generation of
students & leaders*

...through
Example

PREPARE
*a highly skilled
workforce*

...through
Synergy

LEAD
*and advocate for
our state*

...through
Stewardship

PROMOTE
best practices

...through
Collaboration

create a
**WORLD
CLASS**
environment



I. VISIONING

& Steering Committee Workshops







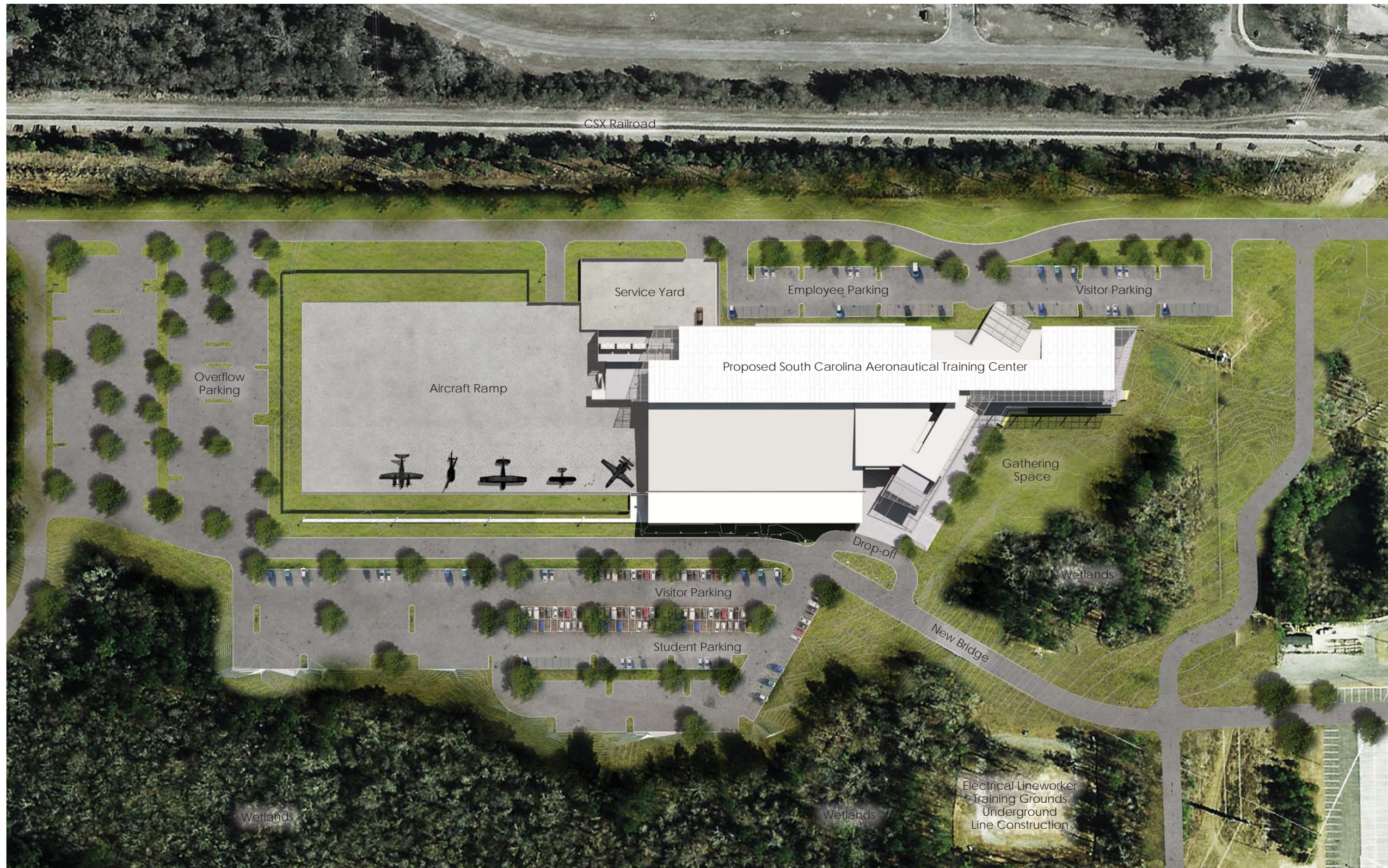
II. TRIDENT TECHNICAL COLLEGE MAIN CAMPUS

& Expanded Campus Vision



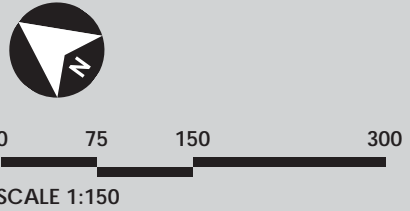
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SCALE 1:300





III. SOUTH CAROLINA
AERONAUTICAL TRAINING CENTER
Proposed Main Site Plan



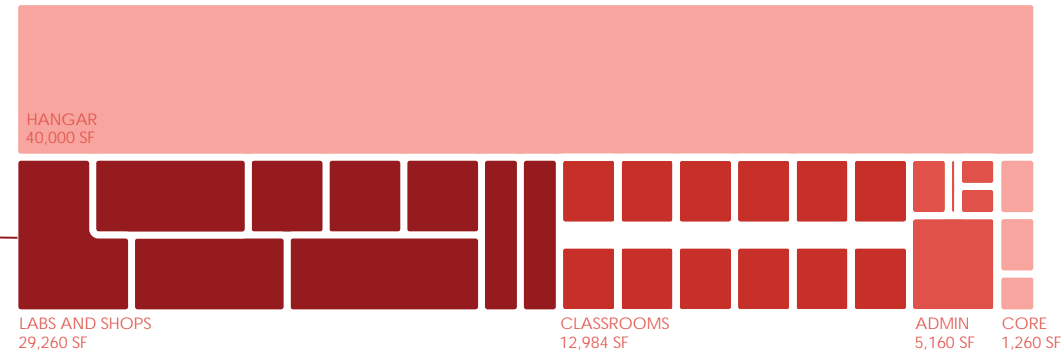
TOTAL GROSS¹
225,346 sf
100%

TOTAL NET
204,860 sf
90%

AERONAUTICAL STUDIES
88,664 sf
39%

WORKFORCE DEVELOPMENT
29,744 sf
13%

A
AERONAUTICAL STUDIES
88,664 sf



HANGAR
40,000 SF

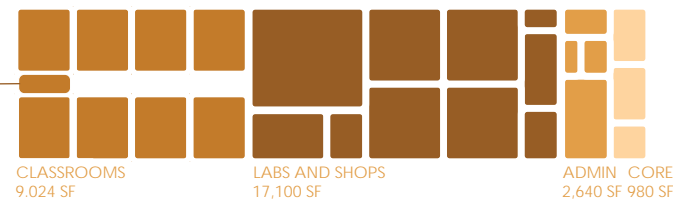
LABS AND SHOPS
29,260 SF

CLASSROOMS
12,984 SF

ADMIN
5,160 SF

CORE
1,260 SF

W
WORKFORCE DEVELOPMENT
29,744 sf



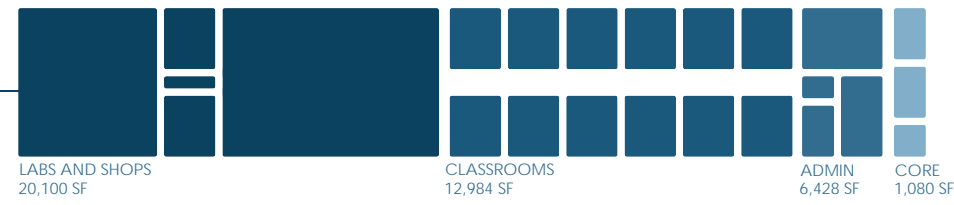
CLASSROOMS
9,024 SF

LABS AND SHOPS
17,100 SF

ADMIN
2,640 SF

CORE
980 SF

B
readySC TRAINING
40,592 sf



LABS AND SHOPS
20,100 SF

CLASSROOMS
12,984 SF

ADMIN
6,428 SF

CORE
1,080 SF

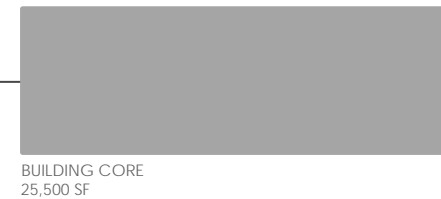
E
EDUCATIONAL ACTIVITIES
20,360 sf



GATHERING SPACES
17,000 SF

CORE
3,360 SF

C
CORE FUNCTIONS & SUPPORT
25,500 sf



BUILDING CORE
25,500 SF

HANGAR	# SPACES	SF/SPACE	NET SF
Hangar	1	40,000	40,000
Hangar Catwalks	2	2,500	0
			40,000

LABS & SHOPS	# SPACES	SF/SPACE	NET SF
Airframe Lab (ACM)	1	4,000	4,000
Powerplant Lab (ACM)	1	2,400	2,400
Avionics Lab (AVT)	1	2,400	2,400
Avionics Bench Lab (AVT)	1	2,400	2,400
Composites Lab - Clean (AMF)	1	1,600	1,600
Composites Shop - Dirty (AMF)	1	1,600	1,600
Sealant Lab (ACM/AMF)	1	1,600	1,600
Aeronautical Basics & Hydraulic Lab (ACM/AMF/AVT)	1	1,600	1,600
Sheet Metal Shop (ACM/AMF/AVT)	1	1,600	1,600
Welding Shop (ACM)	1	1,200	1,200
Welding Shop (AMF & Con-Ed)	0	800	0
Paint Shop (ACM)	1	1,600	1,600
Tool Room	1	1,600	1,600
Aircraft Parts Storage Room	1	1,600	1,600
General Storage	1	800	800
HazMat Storage/Waste	4	200	800
Loading/Crane Area	1	800	800
Electrical Room	1	80	80
IT/Com Room	1	80	80
Men's Restroom	0	600	0
Women's Restroom	0	600	0
Corridors	1	1,500	1,500
			29,260

CLASSROOMS	# SPACES	SF/SPACE	NET SF
Master Academic Classroom	12	960	11,520
Collaboration Room	2	192	384
Corridors	1	1,080	1,080
			12,984

OFFICES	# SPACES	SF/SPACE	NET SF
Reception & Waiting	1	300	300
Office, Dean or Dept Head	3	160	480
Office, Professor	12	140	1,680
Office, Adjunct Shared	1	1,000	1,000
Student Advisement Lab	1	800	800
Admin Records	1	300	300
Conference Room	1	600	600
Mail/Copy Room	1	300	300
Mechanical Room	1	200	200
Electrical Room	1	80	80
IT/Com Room	1	80	80
Men's Restroom	0	800	0
Women's Restroom	0	800	0
Faculty/Unisex	1	60	60
FP Riser/ Janitor Room	1	60	60
Department Corridors	1	480	480
			6,420

AERONAUTICAL STUDIES Subtotal 88,664

LABS & SHOPS	# SPACES	SF/SPACE	NET SF
Future Lab: Tier 1 Partner	1	2,400	2,400
Mechatronics & Industrial Automation Lab	1	1,800	1,800
Quality/NDI Lab	1	1,200	1,200
Industrial Maintenance Lab	1	1,200	1,200
Composites Lab - Clean	1	1,600	1,600
Composites Shop - Dirty	1	800	800
Structures/Assembly Lab	1	1,800	1,800
Sealant Lab	1	1,600	1,600
Electrical Lab	1	1,200	1,200
Sheet Metal Shop	1	800	800
Welding Shop	0	800	0
Paint Shop	0	1,600	0
Trainee Breakroom	1	600	600
Tool Room	1	600	600
General Storage	2	500	1,000
HazMat Storage/Waste	1	200	200
Loading/Crane Area	1	300	300
			17,100

CLASSROOMS	# SPACES	SF/SPACE	NET SF
Master Academic Classroom	4	960	3,840
Subdividable Classroom	4	1,200	4,800
Collaboration Rooms	2	192	384
			9,024

OFFICES	# SPACES	SF/SPACE	NET SF
Reception & Waiting	1	300	300
Office, Director	1	180	180
Office, Professor	3	140	420
Office, Facility Resource Mgr	1	140	140
Office, Adjunct Shared	1	800	800
Conference Room	1	600	600
Mail/Copy Room	1	200	200
Mechanical Room	1	200	200
Electrical Room	1	80	80
IT/Com Room	1	80	80
Men's Restroom	0	800	0
Women's Restroom	0	800	0
Faculty/Unisex	1	60	60
FP Riser/ Janitor Room	1	80	80
Department Corridors	1	480	480
			3,620

TTC CON-ED Subtotal 29,744

¹ Total gross area includes 10% or 20,486 sf area factor for exterior and interior wall thickness and interstitial core spaces.

² Site Elements are not included in the building area

readySC TRAINING

40,592 sf

18%

LABS & SHOPS	# SPACES	SF/SPACE	NET SF
Composites Lab - Clean	1	1,000	1,000
Composites Shop - Dirty	1	2,000	2,000
Systems Electrical Lab	1	2,500	2,500
Bond & Ground Lab	1	2,000	2,000
Structures Lab	1	4,200	4,200
Sealant Lab	1	1,600	1,600
Instructors Open Office	1	1,000	1,000
Trainee Breakroom	1	600	600
Tool Issue & Storage	1	1,600	1,600
Repair Shop	1	400	400
Prep/Materials Storage	2	300	600
General Storage	2	1,000	2,000
HazMat Storage/Waste	1	300	300
Loading/Crane Area	1	300	300
			20,100
CLASSROOMS			
Master Academic Classroom	2	960	1,920
Subdividable Classroom	10	960	9,600
Collaboration Room	2	192	384
Corridors	1	1,080	1,080
			12,984
OFFICES			
Reception & Waiting	1	1,200	1,200
Office, Director	2	192	384
Office, Managers (Shared)	4	192	768
Office, Staff	4	144	576
Admin Area	1	600	600
Admin RIM Storage	1	300	300
Admin Ready-Use Storage	1	200	200
Staff Open Office	1	1,000	1,000
Conference/Team Room	1	600	600
Mail/Copy/Plot Room	1	200	200
Staff Breakroom	1	600	600
Mechanical Room	1	200	200
Electrical Room	1	80	80
IT/Boeing Switch Room	1	120	120
IT/Com Room	1	80	80
Men's Restroom	0	800	0
Women's Restroom	0	800	0
Faculty/Unisex	1	60	60
FP Riser/ Janitor Room	1	60	60
Department Corridors	1	480	480
			7,508
BOEING TRAINING Subtotal			40,592

EDUCATIONAL ACTIVITIES

20,360 sf

9%

GATHERING SPACES	# SPACES	SF/SPACE	NET SF
Visitor Entry Lobby	0	800	0
Lecture Hall	0	600	0
Lecture (Exhibit/Conference/Flex)	2	3,000	6,000
Lecture (Future Exhibit/Lab/Flex Shell)	1	6,000	6,000
Chair & Table Storage	2	600	1,200
Café	1	400	400
Café Lounge / Vending	1	2,400	2,400
Aeronautical Museum & Library	1	1,000	1,000
Men's Restroom	1	1,200	1,200
Women's Restroom	1	1,200	1,200
Department Corridors	2	480	960
ENTERPRISE & CONFERCING Subtotal			20,360

CORE FUNCTIONS

25,500 sf

11%

CORE	# SPACES	SF/SPACE	NET SF
Student Entry Lobby	0	900	0
Faculty/Visitor Entry Lobby	0	900	0
Concourse A	1	9,600	9,600
Concourse B	1	5,600	5,600
Communicating Stair	0	320	0
Stairwells	3	240	720
Public Elevator	3	80	240
Freight Elevator	3	140	420
Elevator Equipment Room	2	80	160
Main FP Riser/Pump Room	1	100	100
Main Mechanical Room	0	1,600	0
Mechanical Mezzanine	1	3,200	3,200
Main IT/Com Room	1	200	200
General Building Storage	0	250	0
Men's Restroom	2	1,000	2,000
Women's Restroom	2	1,000	2,000
Family/Unisex	1	60	60
CEP - Chillers	1	1,200	1,200
CEP - Water Treatment	1	300	300
CEP - Main Electrical & Switchgear	0	1,125	0
CEP - Pumps	1	1,215	1,215
Mech Mezzanine / Air Handlers	1	3,200	3,200
CORE FUNCTIONS & SUPPORT Subtotal			25,500

OUTDOOR BUILDING SPACES

3 acres

4% of 67 acre site

	# SPACES	SF/SPACE	NET SF
Ramp	1	100,000	100,000
CEP - Cooling Towers	1	3,840	3,840
Generator Yard	1	300	300
Compressor Yard	1	300	300
Box/Compactor Area	1	300	300
Thermal Ice Storage Yard	0	2,400	0
Loading Area/Service	1	600	600
Service Yard	1	6,000	6,000
Trash Dumpster Area	1	300	300
Main/Student Entry Porch	1	6,000	6,000
Faculty/Guest Entry Porch	1	6,000	6,000
Outdoor Café Plaza	1	2,000	20,000
OUTDOOR BUILDING Subtotal			143,640

• See footnote 2

SITE ELEMENTS

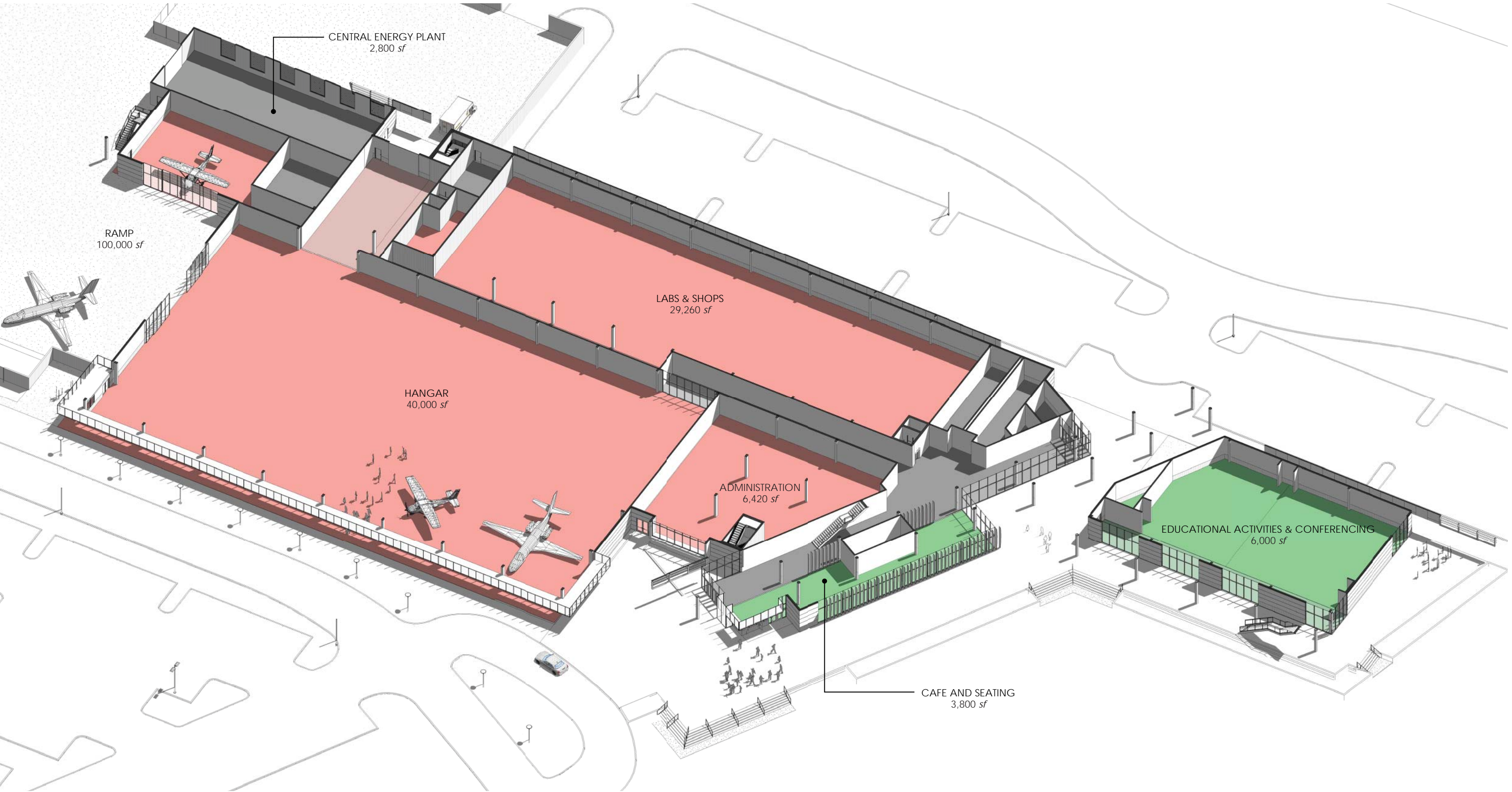
67 acres

100% of site (tracts A and A-2)

EASEMENTS	# SPACES	SF/SPACE	NET ACREAGE
AT&T Distribution Easements	1		3
CPW Water Tunnel Easement	1		6
SCE&G Transmission Easements	1		7
WETLANDS			
Wetlands	1		17
Wetlands Buffer	1		5
DEVELOPABLE HIGHLANDS ELEMENTS			
Building (assumes entire footprint on First Floor)			3
Outdoor Building (includes Ramp)			3
Visitor Parking	100	425	1
Student Parking	450	425	8
Employee Parking	100	425	1
Carpool/Van/Alt Fuel Parking	8	425	1
Ramp / Secured Parking	2	425	1
Stormwater Detention			3
Highlands Acres Remaining			7

IV. PROGRAMMING

& Allocation of Spaces and Uses



CENTRAL ENERGY PLANT
2,800 sf

RAMP
100,000 sf

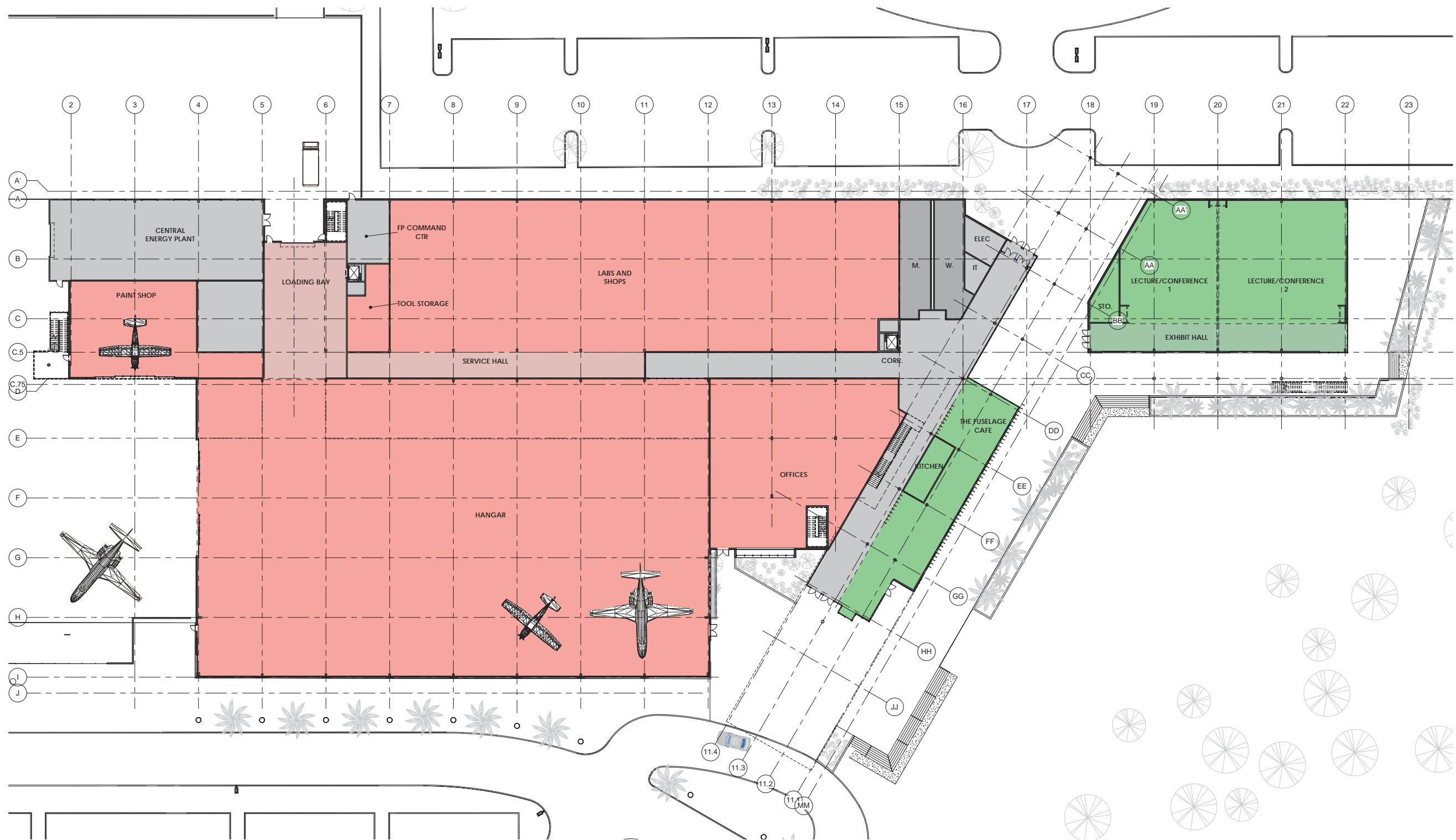
LABS & SHOPS
29,260 sf

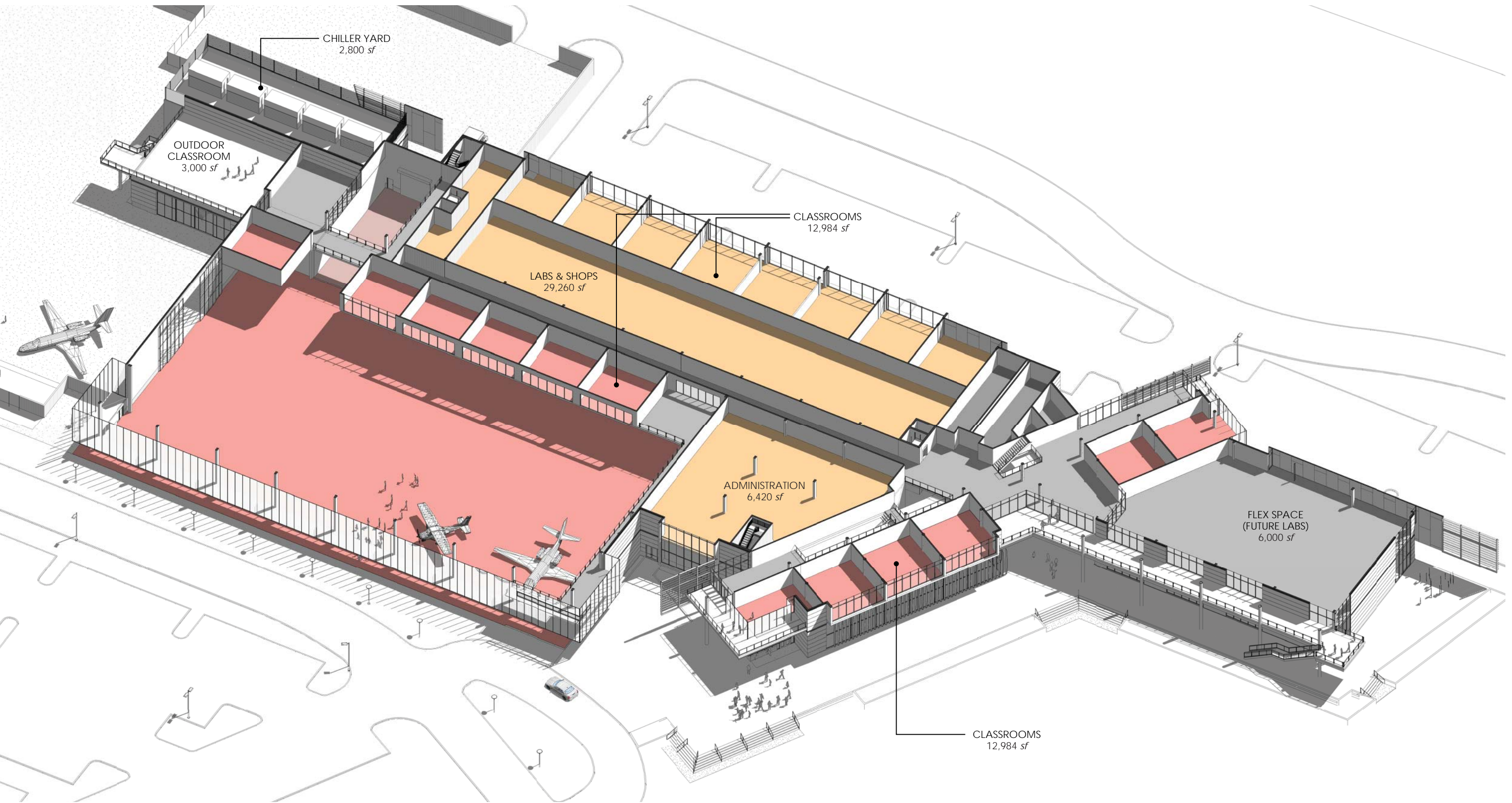
HANGAR
40,000 sf

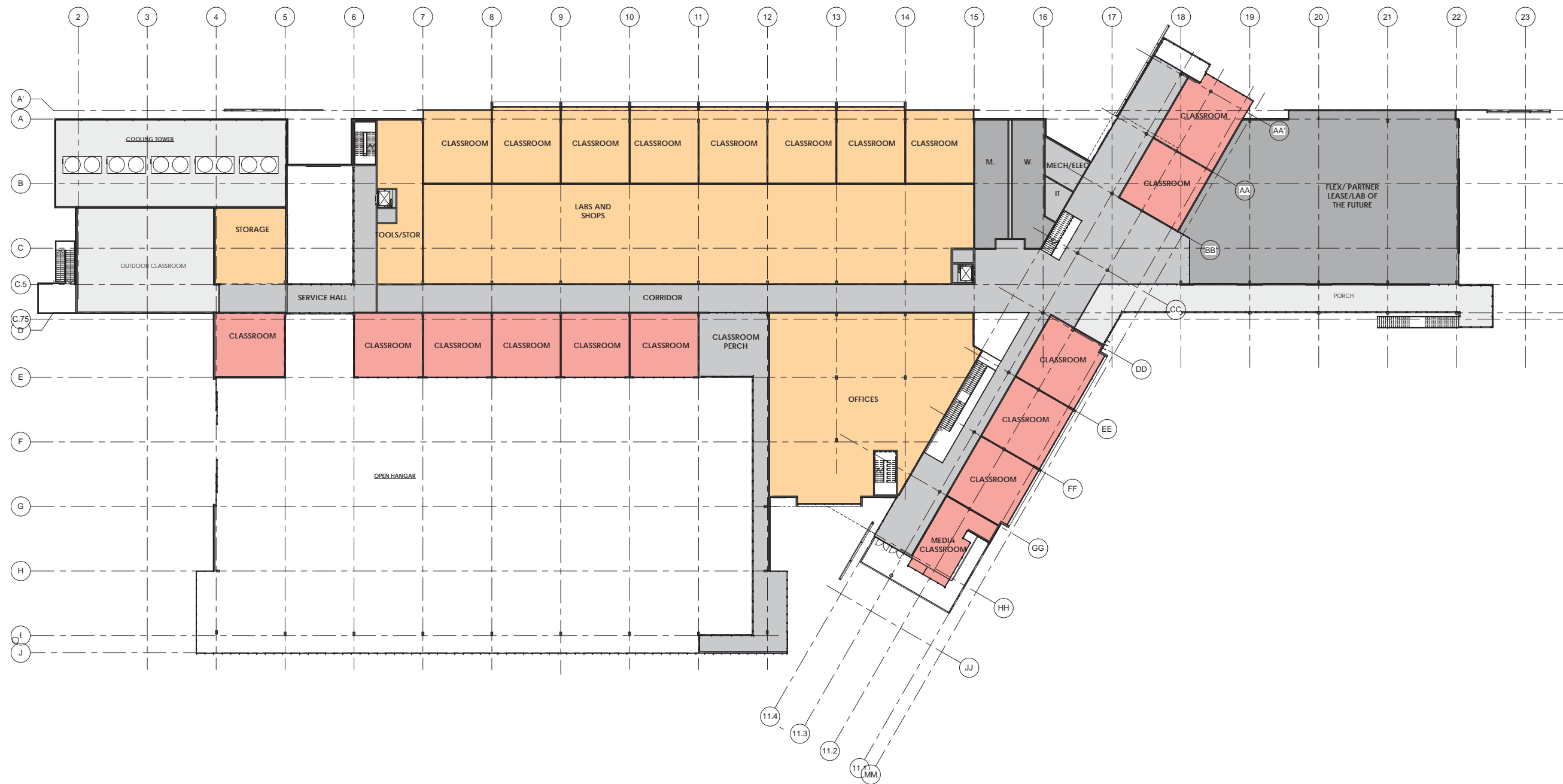
ADMINISTRATION
6,420 sf

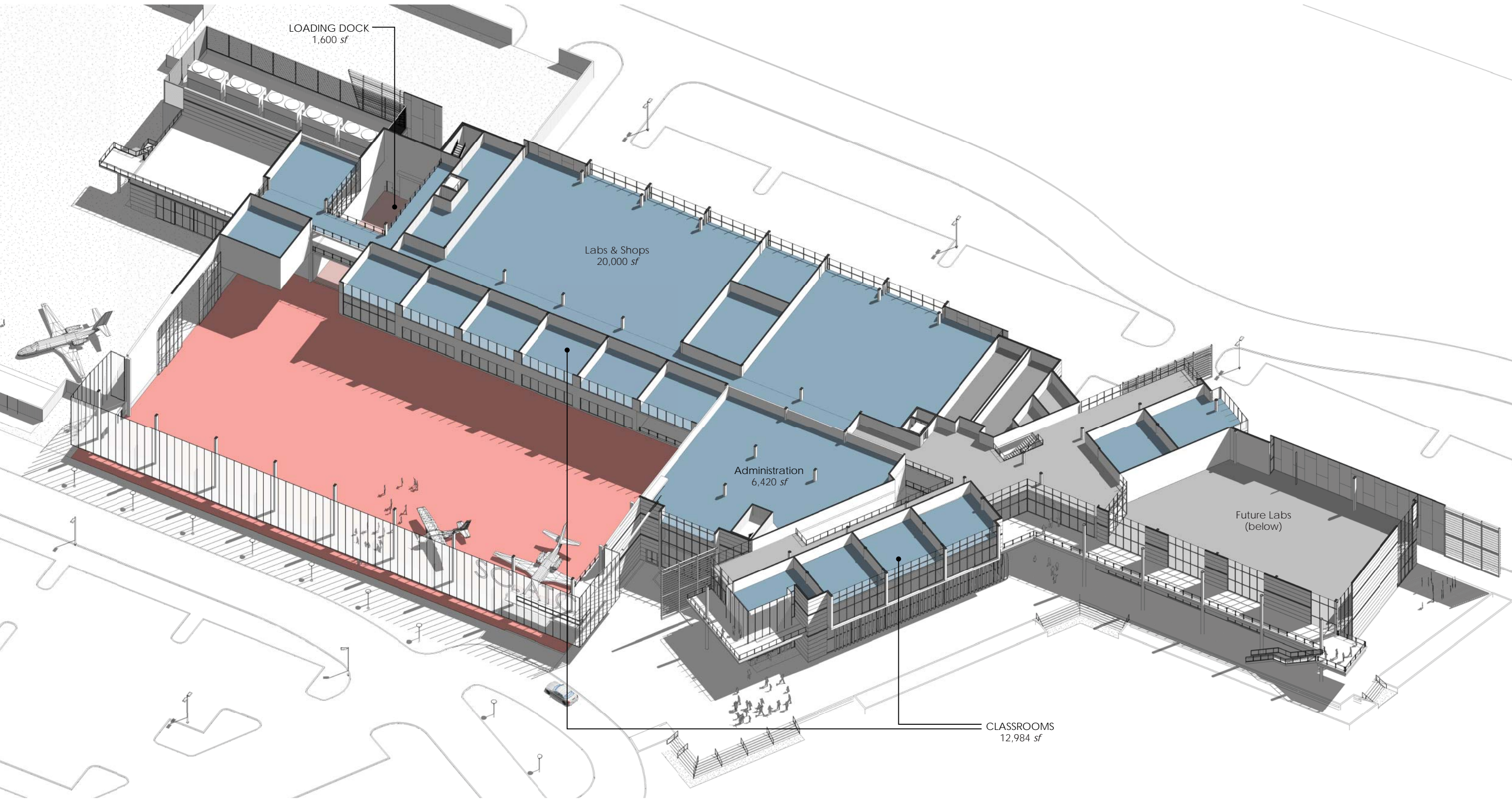
EDUCATIONAL ACTIVITIES & CONFERENCING
6,000 sf

CAFE AND SEATING
3,800 sf









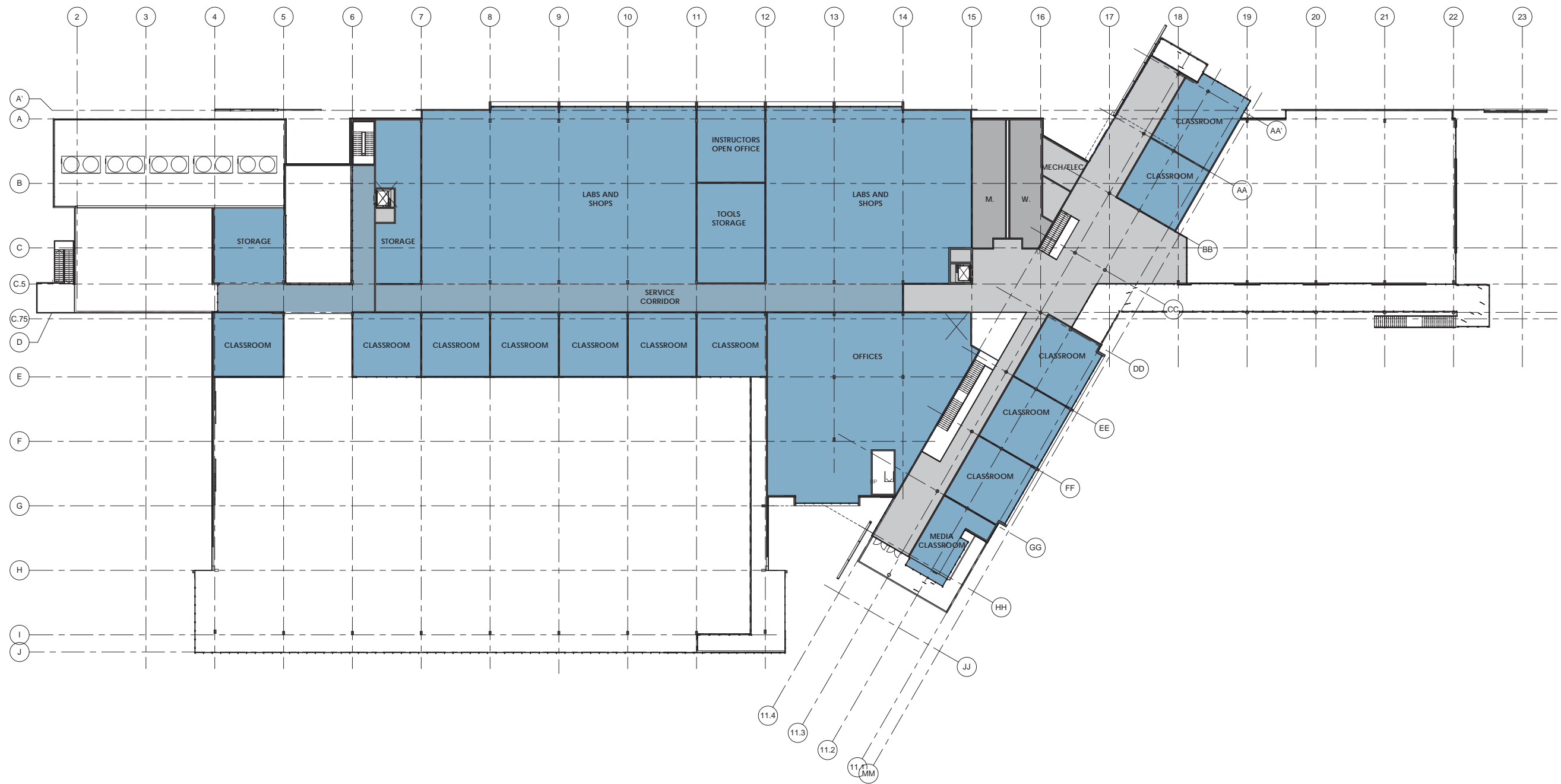
LOADING DOCK
1,600 sf

Labs & Shops
20,000 sf

Administration
6,420 sf

CLASSROOMS
12,984 sf

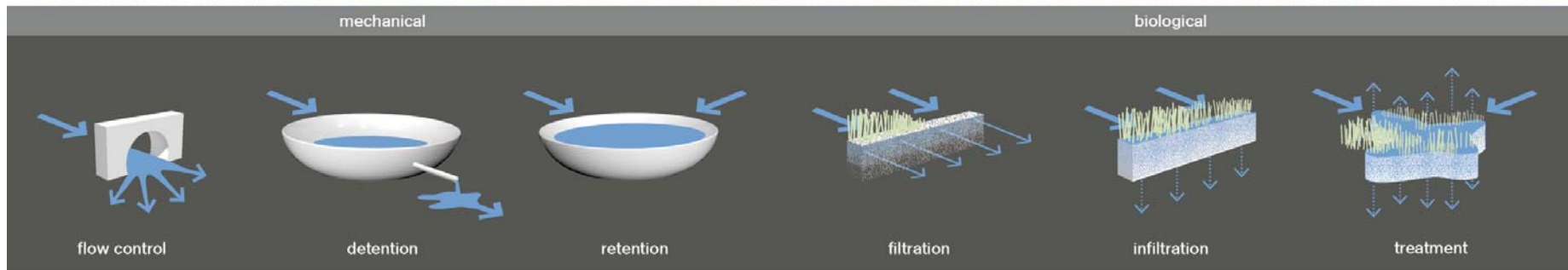
Future Labs
(below)





mechanical

biological



flow control

detention

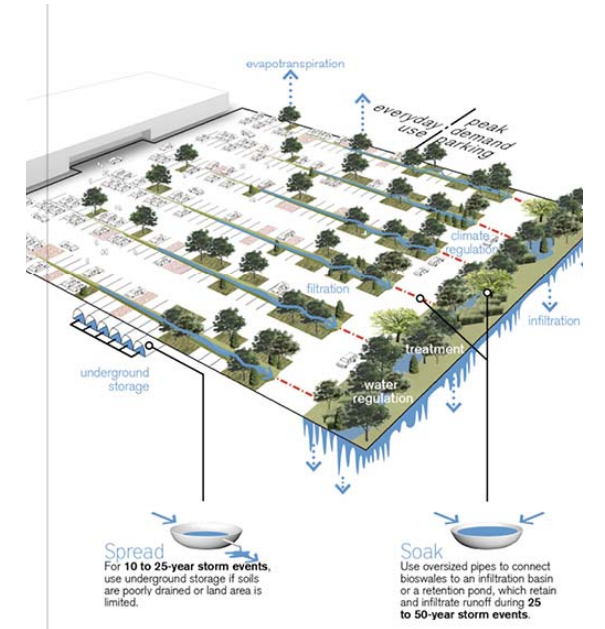
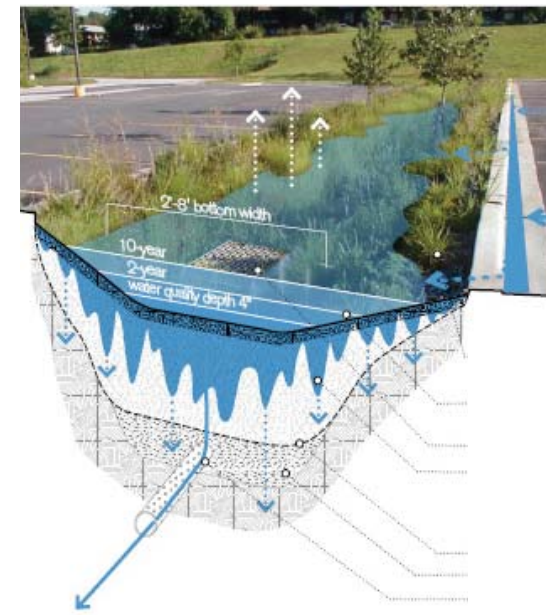
retention

filtration

infiltration

treatment

Low Impact Development: A Design Manual for Urban Areas



www.archdaily.com



www.wagnerhodgson.com



www.streetfilms.org



www.venturawatershed.com



www.bani.md



www.sctv.org



www.pinterest.com



www.magicblueproperty.com



LEED v4 for BD+C: New Construction and Major Renovation
SUMMARY OF POTENTIAL LEED CREDITS

Project Name: **South Carolina Aeronautical Training Center**
Date: **May 2015 - Concept Design**
Target: **SILVER**

Y ? N

1			Integrative Process	1
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2	3	11	Location and Transportation	16
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			LEED for Neighborhood Development Location	16
1			Sensitive Land Protection	1
	2		High Priority Site	2
	5		Surrounding Density and Diverse Uses	5
1	4		Access to Quality Transit	5
1			Bicycle Facilities	1
1			Reduced Parking Footprint	1
	1		Green Vehicles	1

2	5	3	Sustainable Sites	10
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Y			Construction Activity Pollution Prevention	Required
1			Site Assessment	1
	2		Site Development - Protect or Restore Habitat	2
	1		Open Space	1
2	1		Rainwater Management	3
2			Heat Island Reduction	2
1			Light Pollution Reduction	1

9	2	0	Water Efficiency	11
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2			Outdoor Water Use Reduction	2
6			Indoor Water Use Reduction	6
	2		Cooling Tower Water Use	2
1			Water Metering	1

16	8	9	Energy and Atmosphere	33
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4	2		Enhanced Commissioning	6
11	2	5	Optimize Energy Performance	18
1			Advanced Energy Metering	1
	2		Demand Response	2
	1	2	Renewable Energy Production	3
	1		Enhanced Refrigerant Management	1
		2	Green Power and Carbon Offsets	2

Tracking Credits during Site Design to Maximize Credits

5	6	2	Materials and Resources	13
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Y			Storage and Collection of Recyclables	Required
Y			Construction and Demolition Waste Management Planning	Required
	3	2	Building Life-Cycle Impact Reduction	5
1	1		Building Product Disclosure and Opt - Environmental Product	2
1	1		Building Product Disclosure and Opt - Sourcing of Raw Materials	2
1	1		Building Product Disclosure and Opt - Material Ingredients	2
2			Construction and Demolition Waste Management	2

8	2	6	Indoor Environmental Quality	16
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Y			Minimum Indoor Air Quality Performance	Required
Y			Environmental Tobacco Smoke Control	Required
	1	1	Enhanced Indoor Air Quality Strategies	2
3			Low-Emitting Materials	3
1			Construction Indoor Air Quality Management Plan	1
2			Indoor Air Quality Assessment	2
	1		Thermal Comfort	1
2			Interior Lighting	2
		3	Daylight	3
		1	Quality Views	1
		1	Acoustic Performance	1

6	0	0	Innovation	6
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5			Innovation	5
1			LEED Accredited Professional	1

2	2	0	Regional Priority	4
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1			Regional Priority: Specific Credit	1
1			Regional Priority: Specific Credit	1
	1		Regional Priority: Specific Credit	1
	1		Regional Priority: Specific Credit	1

21 28 31 TOTALS Tracking for: **SILVER** Possible Points: 110
Certified: 40 to 49 points, **Silver: 50 to 59 points**, Gold: 60 to 79 points, Platinum: 80 to 110

VI. LEED CHECKLIST
& Low Impact Development Case Studies

