Back on Campus: Lessons Learned from Penn State University

Planning for return to campus at a large, multi-campus institution





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Course Description

With 33 million square feet of space spread across 23 campuses, facility management is a complex process at Penn State University under normal circumstances. In the midst of a global pandemic, the team practiced innovation and leveraged technology to adjust to capacity reductions, create remote learning rooms, and keep everyone on the same page as they prepared for a safe return to campus. Learn how they planned, how the first few weeks have gone, and what they wish they would have done differently.





Learning Objectives

- 1. Learn ways to incorporate social distancing parameters across multiple space types and campuses
- 2. Learn how to leverage cloud-based technology to streamline processes and communication
- 3. Learn an innovative approach to layout drawings to help optimize the use of your space
- 4. Learn best practices for communicating parameters and enforcement expectations across a decentralized team





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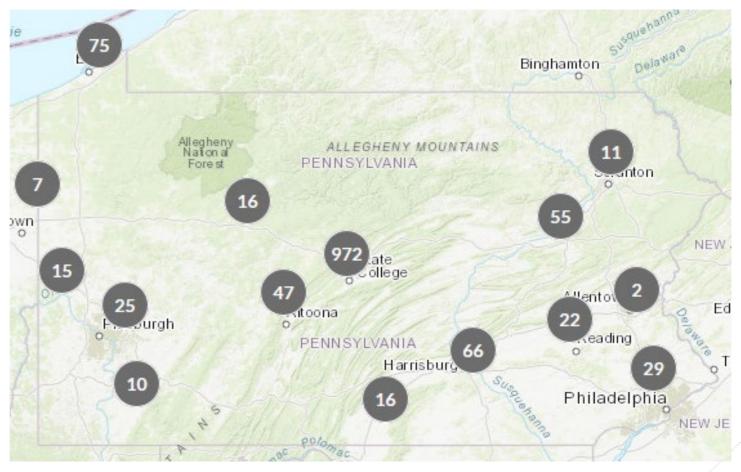
Pennsylvania State University













Space Management at PSU

- Office of Physical Plant
 - Planning Design & Properties
 - Space Management
- Facilities Coordinators
 - 70 +- Liaison for Physical Plant with all Colleges, Units, Campuses



Determining Social Distance Capacities for Instructional Spaces





THE PENNSYLVANIA STATE UNIVERSITY Planning | Design | Properties

UP - GPC UTILIZATION BY SEATING CAPACITY - FA19

ROOM CAPACITY(2)	Room Count	Time Util. %	Seat Util. %
0 - 19	13	27.8	62.3
20 - 24	39	52.7	66.9
25- 29	60	63.2	65.8
30 - 44	127	65.1	64.4
UP Average (1)	386	67.0	67
45 - 50	51	74.3	72.1
51 - 79	38	76.9	72.9
80 - 149	33	78.1	67.9
150 - 261	16	77.5	70.7
314 -726	9	82.1	75.2

Notes

- 1. Rooms above the shaded line are below UP averages, and additional rooms do not appear warranted.
- 2. Room capacity ranges are those requested and utilized by the Registrar for scheduling.
- 3. Utilization goals are 80% Time/75% Seat for UP and 67% Time/60% Seat for CWC.
- 4. FA 19 total room count represents a 16 room reduction from FA18.

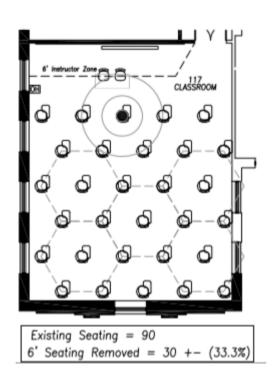


Utilization Questions

- 1. What's our current classroom utilization
- 2. Can we get more seats in or teach more classes during the day/week

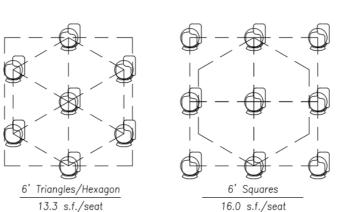
6' Space Seating = 16 +- (17.8%)

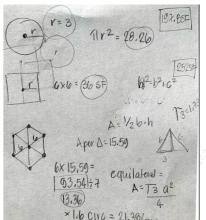
Existing Seating = 90



Maximizing Capacity

- 1. "Hexagonal Idea" zoom-doodle
- Test fits needed!
- 3. Furniture relocation/storage?







Effective Applied Percentages

Seats	%	Avg. s.f.,		
0-19	39	68		
20-24	44	71		
25-29	44	52		
30-44	35	65		
45-50	28	78		
51-79	31	63		
80-149	19	80		
150-261	19	75		
314-726	18	52		



Reduced seating capacity Registrar scheduling?

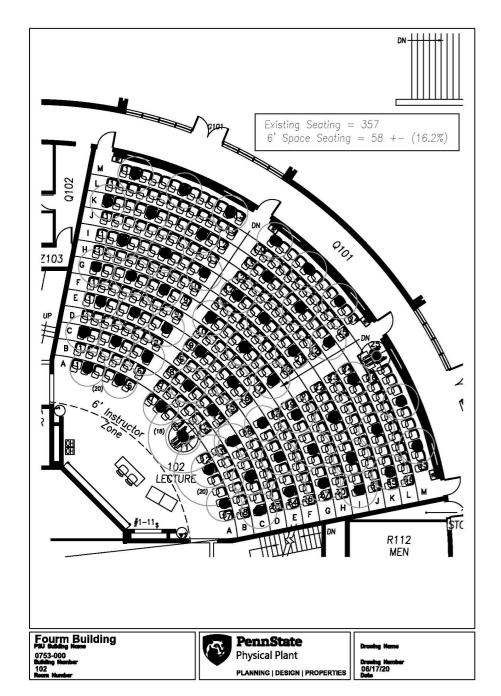
- 1. Registrar "Are you coming up with reduced capacities?!!"
- 2. Generated from most common range from 386 rooms
- 3. 50+ plans drawn from range to create an average
- 4. 20 CWC campuses / 500 +- also requesting assistance

1	Penn State Uni	versity - OP			5/14/202	0 (rev.)			
2	UP GPC Capacit	y at 6' Phys	ical Spacing						
3	·								
4	Location Name	Max Capac	Calculated Count	Rounded seat count	Room S.F.	S.F./seat			
5	013000215	12	4.68	4	296.47	74			
6	013000303	14	5.46	5	276.21	55	Effective A	Applied Per	centages
7	013000305	14	5.46	5	277.21	55			
8	116000105	14	5.46	5	297.7	59	Seats	%	Avg. s.f./
9	319000202	14	5.46	5	316.97	63	0-19	39	68
10	116000106	15	5.85	5	301.76	60	20-24	44	71
11	503000337	16	6.24	6	551.75	91	25-29	44	52
12	654000232	16	6.24	6	346.17	57	30-44	35	65
13	013000302	17	6.63	6	417.06	69	45-50	28	78
14	301000320	17	6.63	6	306.13	51	51-79	31	63
15	013000301	18	7.02	7	404.86	57	80-149	19	80
16	038001N205	18	7.02	7	738.02	105	150-261	19	75
17	601000025	18	7.02	7	597.8	85	314-726	18	52
18						68			
19	013000322	20	8.8	8	485.14	60			
20	013000323	20	8.8	8	492.06	61			
21	038000008	20	8.8	8	652.21	81			
22	121000401	20	8.8	8	1706	213			
23	403000123	20	8.8	8	480.33	60			
24	014000320	21	9.24	9	549.83	61			
25	108000003	21	9.24	9	524.35	58			
26	108000103	21	9.24	9	543.85	60			
27	601000026	21	9.24	9	413.52	45			
28	651000001	21	9.24	9	553	61			
29	757000143	21	9.24	9	686.1	76			
30	039000W219	22	9.68	9	749.23	83			
31	013000308	23	10.12	10	472.57	47			



Scheduling Information

- 1. Capacities of all rooms critical
- 2. Registrar needs ASAP to rerun schedule



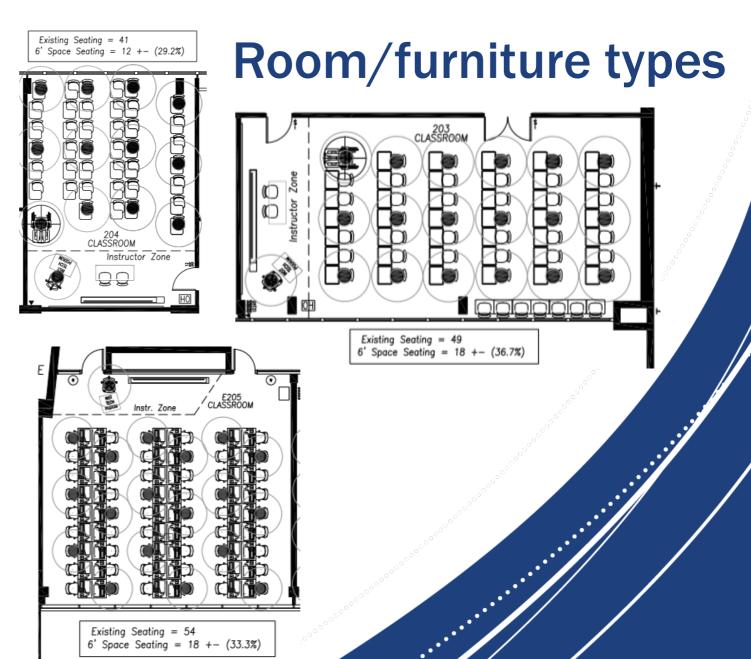
Creating Actual Plans

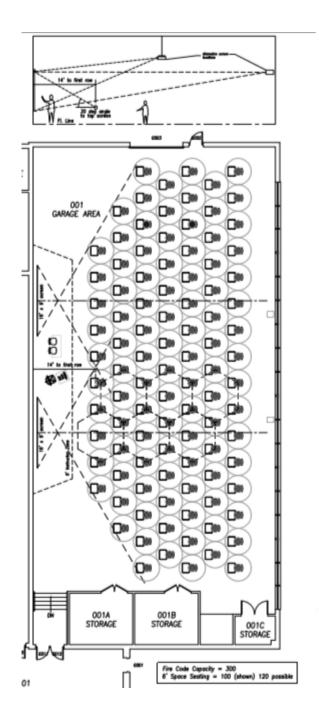
- 1. Drastically reduced capacity confirmed
- 2. Largest/fixed seating impacted most
- 3. Create "safe" instructor zone
- 4. Plans required for physical setup

6' Space Seating = 137 +- (18.8%) WOMEN

Existing Seating = 726







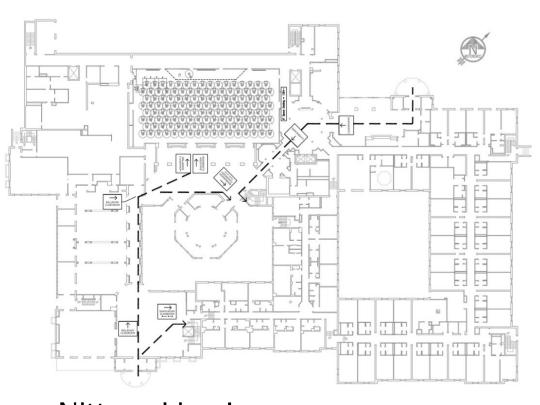
- 1. Need to create additional large capacity spaces
- 2. All non-classroom spaces considered
 - * Gymnasiums
 - * Auditoriums
 - * ROTC Drill Deck
- 3. Things to be considered:
 - * Technology (AV, sound, wifi)
 - * Access/lock-unlock
 - * Temperature/HVAC
 - * Owner furnishings
 - * Relocate desks

Finding Alternative Classrooms

- 1. Directional signage at unfamiliar buildings
- 2. Coordinate w/ Student Schedule labeling







Nittany Lion Inn



Lessons Learned - Determining Social Distance Capacities for Instructional Spaces

- Preparation takes time
- Teamwork Required to get this all accomplished
- Flexibility Required decisions by administration
- Communication is Important 16 committees
- Be prepared to explain your process







- Implemented 2018
- Available to all PSU Users
- 150+ Active users that edit space information
- COVID Planning Applications





200 - Office Facilities

PennState Physical Plant LionSpaceFIS

- COVID 19 Planning Application
 - Setup
 - 60 Square ft per person
 - All room types where people may gather (Except GPC's, Dept Classrooms & Labs)

220 Open Laboratory 221 Music Practice Room 222 Student Project Room 223 Student Shop 230 Student Studio 240 Department Computing Laboratory 242 CAC Computing Laboratory

250 Research Laboratory

200 - Laboratory Facilities

251 Faculty Studio254 Student Research Laboratory257 Research Laboratory - Shared

300 - Office racilities
310 Faculty Office
311 Staff Office
312 Waiting/Reception Area
313 Adjunct Faculty Office
314 Grad or Teaching Assistant Office
317 Part-Time Staff Office
318 Emeritus Faculty Office
319 Technical Service Office
320 Lounge/Lunch Area
322 Work Room
324 Post-Doc Office
325 Visiting Faculty Office
327 Kitchen

350 Conference Room

360 Other Office

356 Video Conferencing Room

365 Student Organization Office

358 Library/Reference Room

400 - Library, Study & Academic Assist Facilities 410 Study Room 416 Tutorial Room 420 Stack 430 Open-Stack Study Room 450 Academic Assistance/Learning Center
451 Academic Testing
460 Interview Room
500 - Special Use Facilities
510 Military Training
520 Health and Physical Education
521 Intercollegiate Athletic Sports
522 Intramural and Club Sports
523 Athletic Facilities Spectator Seating
524 Open Fitness & Physical Activity Areas

526 Intercollegiate Athletic Sports Service528 Intercollegiate Athletic Locker Rooms

590 Other (All Purpose)

595 Student Performance

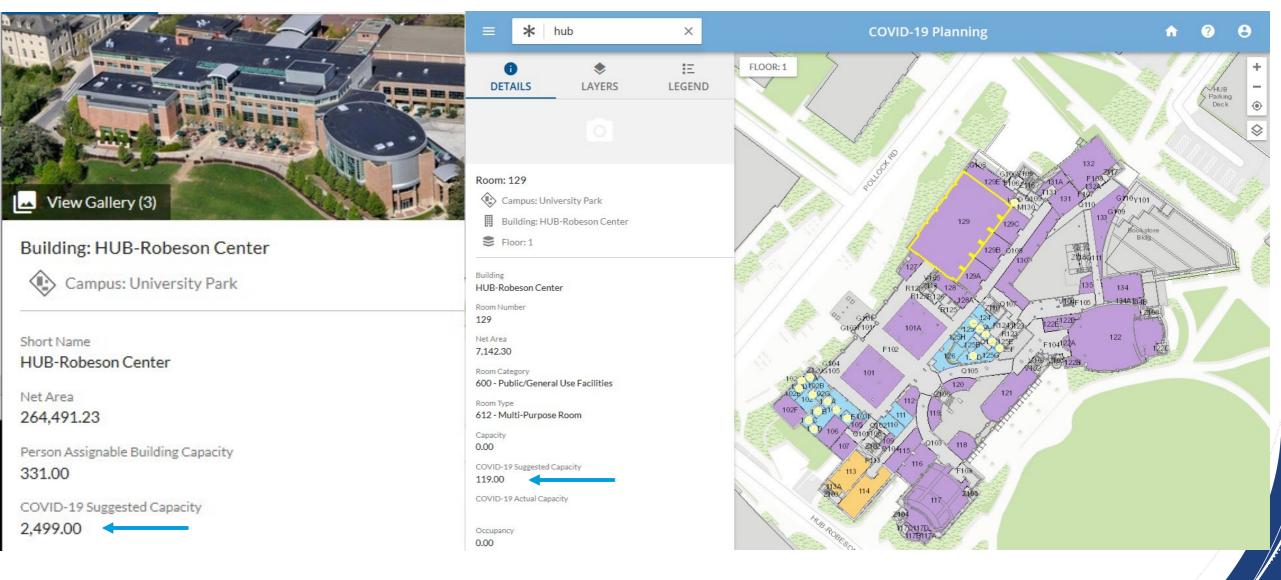
600 - Public/General Use Facilities 610 Public Performance 611 Public Auditorium 612 Multi-Purpose Room 613 Dressing Room 614 Performance Seating 620 Gallery 621 Museum 630 Dining Facility 640 Child Care 641 Lactation Room 650 Public Lounge 651 Student Lounge 670 Recreation 680 Meeting Room 682 Video Meeting Room



- Setup (cont.)
 - Two separate applications -
 - One for the Facilities Coordinator network additional users granted access for fall planning
 - One for Space Management to update department chosen 'actual COVID capacity'.
 - Space stewards got final say on capacity
- Roll Out
 - Communications
 - Training Webinar
 - Training Video
 - Support





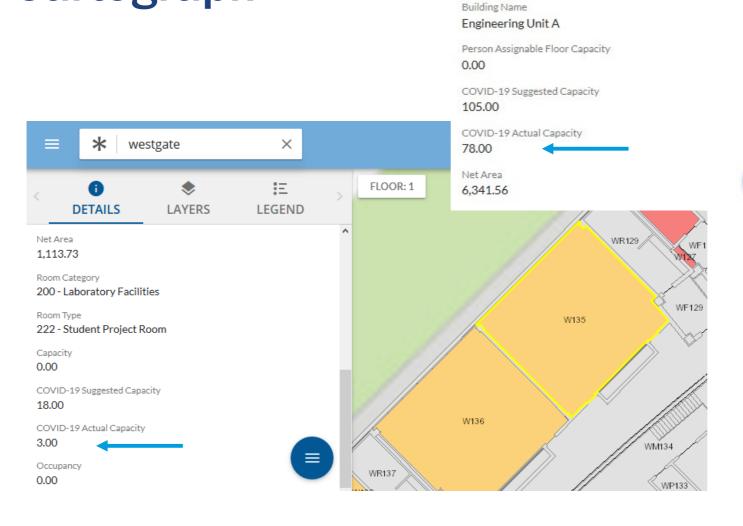




	Α	В	F	S	Υ
1	Building ID 🔻	Building Label	Campus	Room Type Label	COVID-19 Suggeste(▼
2	0001000	Old Main	University Park	311 - Staff Office	4
3	0001000	Old Main	University Park	311 - Staff Office	5
4	0001000	Old Main	University Park	312 - Waiting/Reception Area	3
5	0001000	Old Main	University Park	311 - Staff Office	3
6	0001000	Old Main	University Park	311 - Staff Office	7
7	0001000	Old Main	University Park	365 - Student Organization Office	9
10	0002000	Schwab Auditorium	University Park	610 - Public Performance	90
11	0002000	Schwab Auditorium	University Park	610 - Public Performance	20
12	0002000	Schwab Auditorium	University Park	613 - Dressing Room	2
13	0002000	Schwab Auditorium	University Park	613 - Dressing Room	1
14	0002000	Schwab Auditorium	University Park	613 - Dressing Room	2
15	0002000	Schwab Auditorium	University Park	613 - Dressing Room	1
17	0002000	Schwab Auditorium	University Park	311 - Staff Office	2
19	0002000	Schwab Auditorium	University Park	311 - Staff Office	3
23	0002000	Schwab Auditorium	University Park	350 - Conference Room	3
27	0002000	Schwab Auditorium	University Park	610 - Public Performance	47
34	0002000	Schwab Auditorium	University Park	365 - Student Organization Office	8
35	0002000	Schwab Auditorium	University Park	322 - Work Room	13
36	0002000	Schwab Auditorium	University Park	322 - Work Room	5
37	0002000	Schwab Auditorium	University Park	365 - Student Organization Office	16
40	0002000	Schwab Auditorium	University Park	613 - Dressing Room	3
41	0002000	Schwab Auditorium	University Park	613 - Dressing Room	4
42	0005000	HUB-Robeson Center	University Park	650 - Public Lounge	44
43	0005000	HUB-Robeson Center	University Park	650 - Public Lounge	44
44	0005000	HUB-Robeson Center	University Park	312 - Waiting/Reception Area	12
45	0005000	HUB-Robeson Center	University Park	311 - Staff Office	1
46	0005000	HUB-Robeson Center	University Park	322 - Work Room	1
50	0005000	HUB-Robeson Center	University Park	680 - Meeting Room	12
52	0005000	HUB-Robeson Center	University Park	311 - Staff Office	14







westgate

LAYERS

DETAILS

Campus: University Park

Building: Engineering Unit A

X

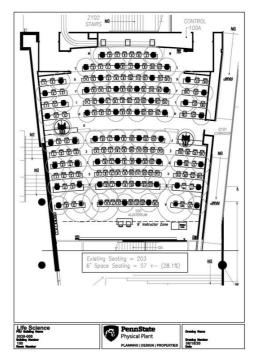
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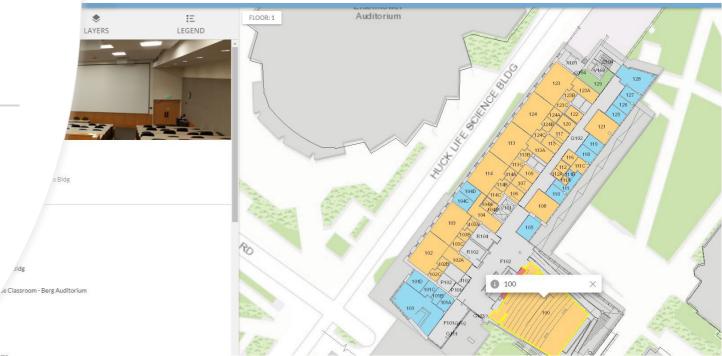
LEGEND



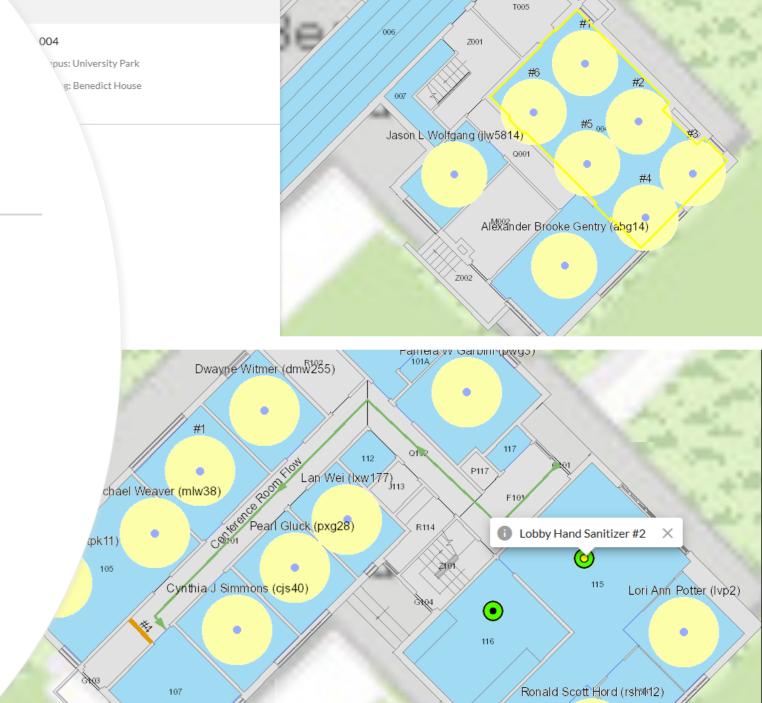


Drawn layouts added to LionspaceFIS.





- Additional Functionality
 - Occupant Placement
 - Circulation Flow
 - Partitions
 - Sanitizer Stations



Lessons Learned – LionSpaceFIS



End User Bandwidththe struggle is real



Projects drain resources



If you expect people to enforce it, allow them ownership





Class and Event Scheduling





Keeping the Registrar's Office in the know

Scheduling

Clarity on space shortages with a deep dive on the raw class scheduling data.

Initial capacity reduction by calculated percentages. SIS and Classroom Scheduling systems updated as drawn.

Schedulers requesting 400 + classes be placed.

Registrar was able to place all but 60 classes... We need more space



X25 Modeling – Are things as bad as we think it is?

 Weighted average applied across the board for baseline semester.

%64 reduction in capacity for rooms:



%0 reduction in capacity for rooms:





Calculated / Drawn Capacities

	Penn State Un											5/14/202	20 (rev.)		
	UP GPC Capac		386					385	Plans Drawn						
Location Name	Location Name	Building Name	Max Capac	Calculated Coul -	Rounded seat cou =	Room S	S.F./se	▼ Plan Dra ▼	Actual Capacity] [-	Drawn Gain/Loss	₩ .		•	· •
	013000215	Boucke	12	4.68	4	296.47	74	x	4		0				
	116000105	Ag Sci & Industries	14	5.46	5	297.7	59	X	5	room eliminated	0		Effective Ap	pplied Percentages	
	013000303	Boucke	14	5.46	5	276.21	55	x	5		0				
	013000305	Boucke	14	5.46	5	277.21	55	x	5		0				
	319000202	Leonhard	14	5.46	5	316.97	63	x	6		1				
	116000106	Ag Sci & Industries	15	5.85	5	301.76	60	x	11	rev. 8-13-20	6		Seats	%	Avg. s.f./
	654000232	BBH	16	6.24	6	346.17	57	x	6		0		20-24	44	71
	503000337	Deike Bldg	16	6.24	6	551.75	91	x	12		6		0-19	39	68
	013000302	Boucke	17	6.63	6	417.06	69	x	6		0		25-29	44	52
	301000320	Sackett	17	6.63	6	306.13	51	X	6		0		30-44	35	65
	013000301	Boucke	18	7.02	7	404.86	57	x	6		-1		45-50	28	78
	601000025	Burrowes	18	7.02	7	597.8	85	X	7		0		80-149	19	80
	038001N205	MSC	18	7.02	7	738.02	105	x	8		1		51-79	31	63
	013000322	Boucke	20	8.8	8	485.14	60	x	8		0		314-726	18	52
	013000323	Boucke	20	8.8	8	492.06	61	x	7		-1				
	038000008	Life Sci	20	8.8	8	652.21	81	x	6		-2				
	121000401	Patterson	20	8.8	8	1706	213	x	12		4			1 Seat(s) Gained	
	403000123	Pond	20	8.8	8	480.33	60	x	8		0				
	601000026	Burrowes	21	9.24	9	413.52	45	x	7		-2				
	100000000	F	21	0.24		E24.2E	50	440							



Bryce Jordan Center

Concert and Sports Venue

- Capacity Pre-Covid – 15,000 +/-
- Social Distanced Classroom

Capacity 235



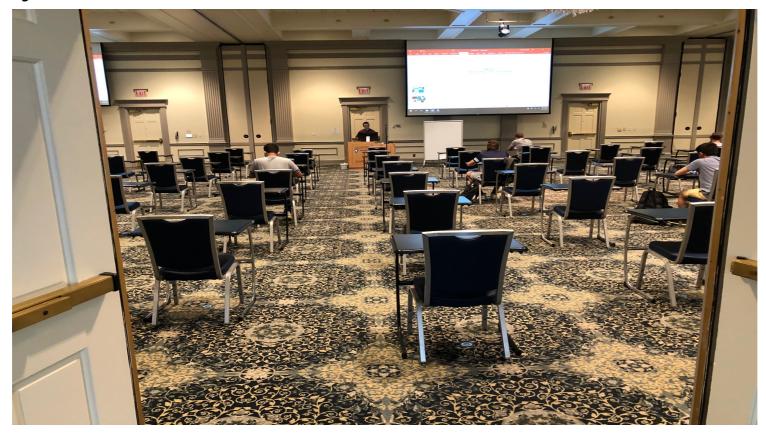
• Hintz Alumni Center







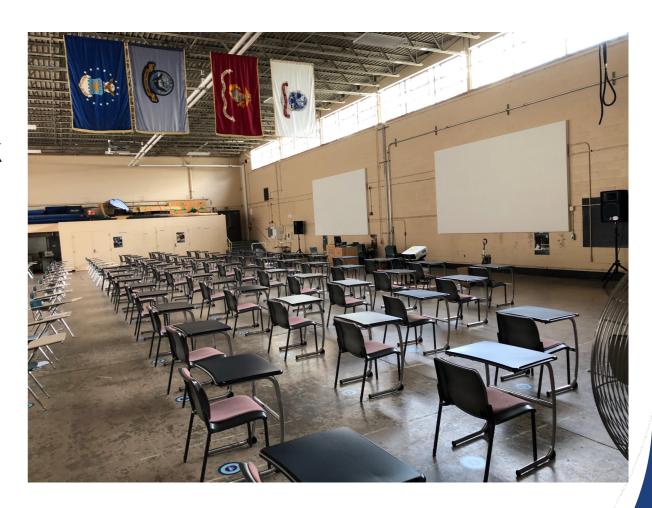
Nittany Lion Inn





Wagner Building ROTC Drill Deck







Wagner Challenges

Lacked Cooling







Wagner Challenges

Required on the fly technology installation





Remote Learning Rooms

So many rooms so little capacity.

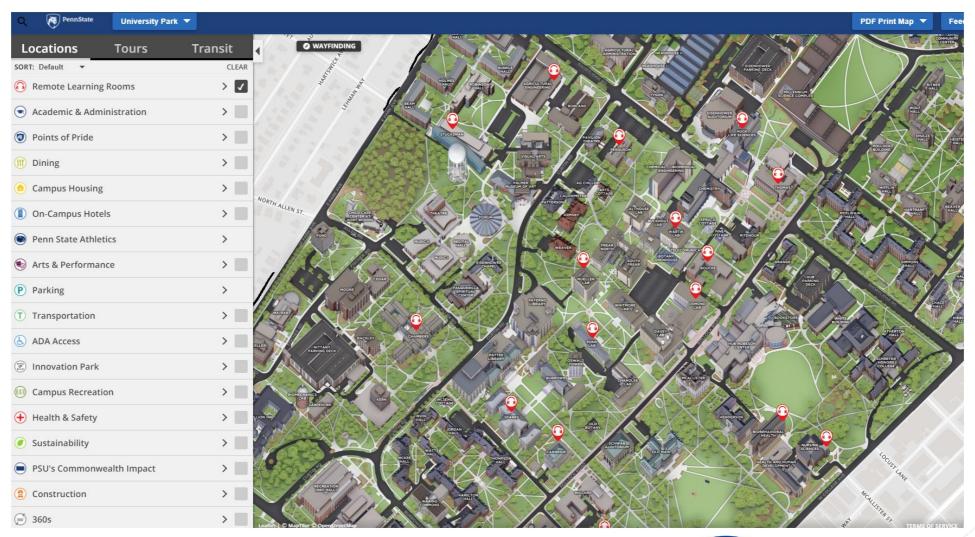
- Concern from Return to Campus committees about Students ability to attend online classes while being on campus
 - 47 General Purpose Classrooms "Donated" for remote study.
 - Call for help across the community.
 - Getting the word out to Students.







Penn State Go App





Penn State Go App



Remote Learning Rooms - Boucke

Room 215 Social Distancing Capacity: 4 people

Room 216 Social Distancing Capacity: 8 people

Room 303 Social Distancing Capacity: 4 people

Room 305 Social Distancing Capacity: 5 people

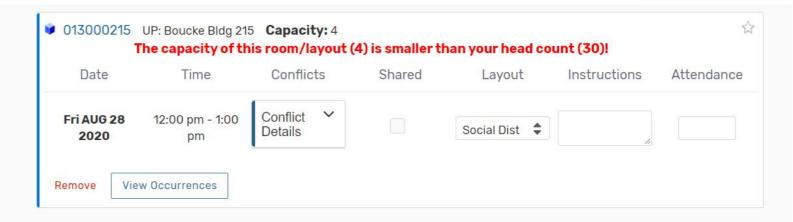
Room 308 Social Distancing Capacity: 8 people

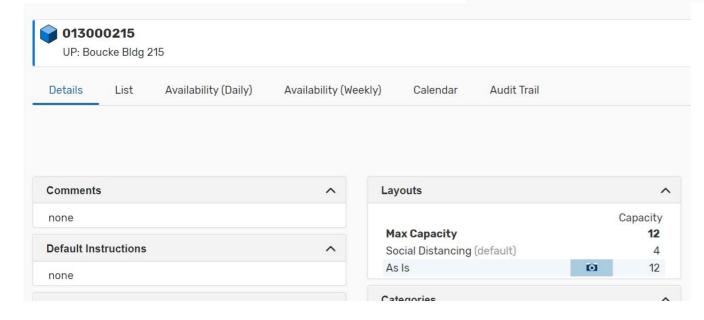
Room 317 Social Distancing Capacity: 9 people





Event Scheduling





 Social distanced capacities set to default.



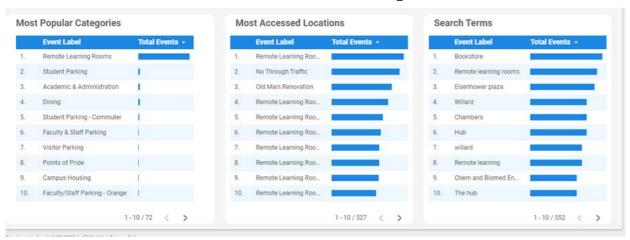
Tents – Alternate Classroom / Meeting Spaces

- Additional outdoor spaces added throughout campus.
- Intended for both class and meeting room locations.





Return to campus success?



Bryce Jordan Center @JordanCenter · Aug 24
Welcome back, @penn_state! For the first time ever, students will get the opportunity to "study like a rock star" with classes being taught in the @JordanCenter main arena.

#studylikearockstar #jordancenter #pennstate #classroom #maskuporpackup #arena #psu #fall2020

https://onwardstate.com/2020/08/26/your-remote-learning-room-etiquette-guide/





Lessons Learned - Class and Event Scheduling

- Not all spaces are created equal
- Departments are rightfully protective of 'their' space
- Engage as early as possible
- Tent installations are multi-faceted and need to be monitored
- Student advocates are a valuable commodity



Operational Implementation





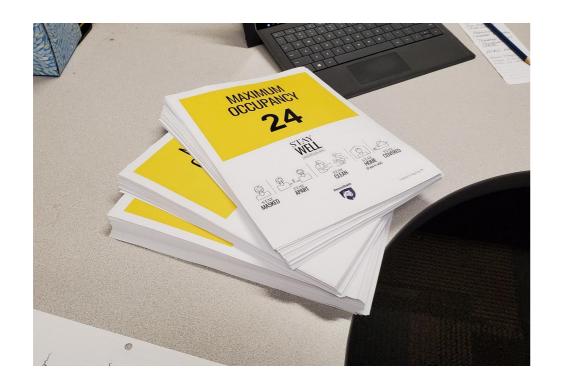
Signage/Seat Layouts

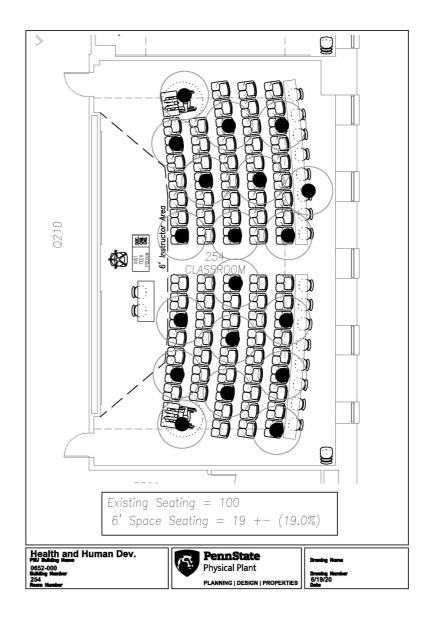
- 386 General Purpose Classrooms(GPC)
- 63 Classroom Buildings at Main Campus
- 9 Non-Traditional Classrooms

The Challenge...



- 1. Draw all seating layouts
- 2. Enter all COVID capacities
- 3. Print all signs and layouts







- 4. Organize sign with layout for each building/room.
- 5. Install both sign & layout in each room.







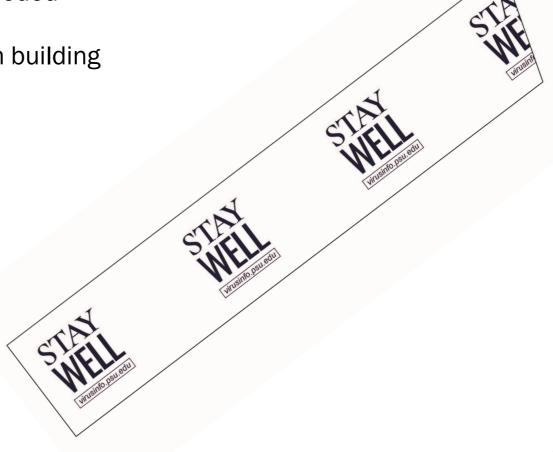
Stay Well Tape & 6' Social Distancing Dots

- 1. Calculate amount of tape and dots needed
- 2. Order quantities
- 3. Submit work order for each classroom building



DISTANCING MARKER - DESKTOP

3" diameter
Printed vinyl
Place at available seat
Remove excess chairs
Pack of 10





Janitorial Install

- 30 janitorial employees were used for this task
- Approx. 10 employees per evening shift
- Moved unused chairs to other parts of each room
- Installed tape/dots as per layouts







Lessons Learned – Operational Implementation

- Should have met in person when first tape/dots were installed
- Gone over how quantities were calculated with installers
- Printing company was not fully prepared for orders
- Long lead times for tape/dots
- Should have ordered more materials upfront

Communication between management/installers and planners



Back on Campus: Lessons Learned from Penn State University

Any Questions?

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- Tom Kase <u>tpk11@psu.edu</u>
- Jason Wolfgang <u>jlw5814@psu.edu</u>
- Mike Weaver <u>mlw38@psu.edu</u>



This concludes The American Institute of Architects Continuing Education Systems Course

