



The Millennials have landed.



Session: 092908

Date: Thursday,

September 29, 2016



Bringing Efficiencies to the Industry – Millennial Style

Presented by:

- Luke Voiland, *Principal*, Shepley Bulfinch
- Terry



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LUKE VOILAND

Principal
Shepley Bulfinch

Luke Voiland, AIA, LEED AP is a leading designer in Shepley Bulfinch's healthcare and higher education practices. In addition to his current work with institutional clients, he has international experience with tall buildings and commercial design, leading the winning design effort for a 2009 Unbuilt Architecture Award from the Boston Society of Architects.



JAMES WOFFORD

Executive Director
Facilities Planning and Construction
University of Houston

With 35 years of experience managing projects in the commercial environment, James has been involved with over 2.5 million square feet of project management services and several hundreds of millions of dollars spent on data centers, labs, call centers, corporate office interiors and ground-up construction in the USA and Canada as well as developing markets in Costa Rica and Panama.



TERRY HARGUS

Project Executive
**Tellepsen
Builders**

Terry has over 13 years of construction management experience specializing in higher education facilities. As Project Executive, Terry is responsible for ensuring project success from capture to preconstruction through construction to the occupancy of the building. He has successfully completed multiple projects at each of the major institutions in the greater Houston area.



Millennial or not?



Have you seen Kimye's latest Instagram post? SO cute.

Omg I can't even.

Millennial or not?



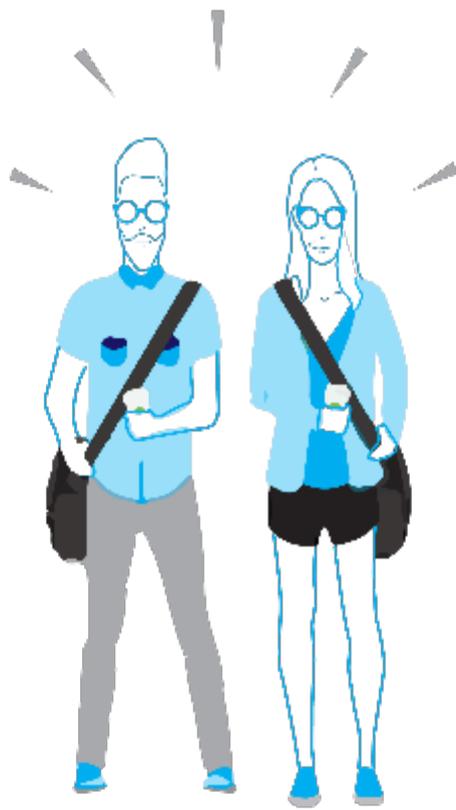
Have you seen Kimye's latest Instagram post? So cute.

Omg
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NOT

Millennial or not?

MILLENNIALS



MISCONCEPTIONS

MILLENNIALS



MILLENNIALS

MISCONCEPTIONS

THEY'RE ALL
BROKE

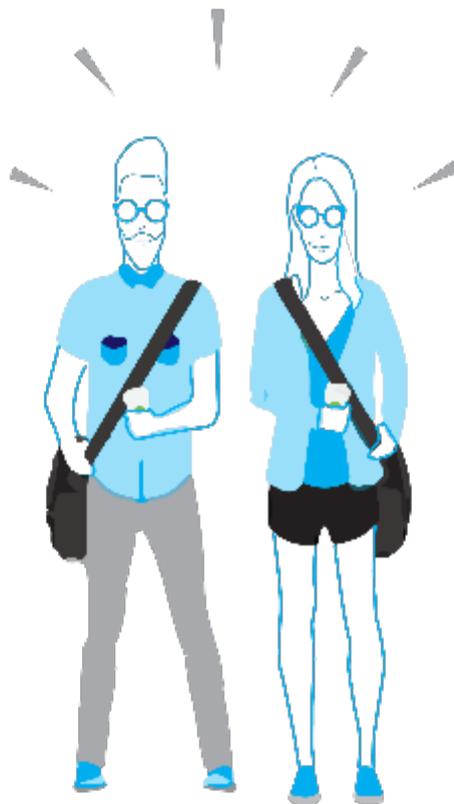


SPOILED
& **LAZY**

THEY HAVE
OVERINFLATED,
UNREALISTIC
EXPECTATIONS

WE
WE
WE
WE

THEY DON'T
CARE



MILLENNIALS

MISCONCEPTIONS

REALITY

THEY'RE ALL
BROKE

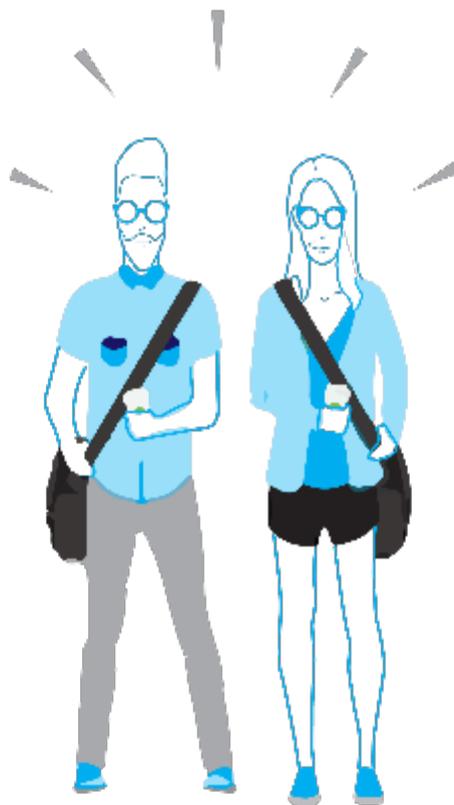


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REALITY

80
MILLION
MILLENNIALS
IN THE
U.S.

SPEND ROUGHLY



ANNUALLY

DEMAND AN **INTEGRATED,**
SEAMLESS EXPERIENCE
REGARDLESS OF CHANNEL



FROM SMARTPHONE



TO COMPUTER



TO PHYSICAL STORE

84%
OF MILLENNIALS

WOULD RATHER
WORK FOR A GOOD
CAUSE
THAN FOR MORE
MONEY

82%

OF MILLENNIALS SAY THEY'D STAY
LOYAL TO
THEIR EMPLOYERS

Shepley Bulfinch

WHO ARE MILLENNIALS?



"GEN Y"

80 MILLION IN THE U.S.



2.5 BILLION WORLDWIDE

MOST ETHNICALLY & RACIALLY DIVERSE

LARGEST GENERATION YET



DO THEY MATTER?

Image from Why Millennials Matter (www.whymillennialsmatter.com)

% OF WORKFORCE

50% BY 2020 → 75% BY 2030

IN THE COMING YEARS

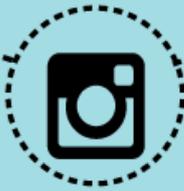


ASPIRE TO

MAKE A DIFFERENCE W/ THEIR WORK



- CONFIDENT
- HAVE HIGH EXPECTATIONS
- ACHIEVEMENT ORIENTED



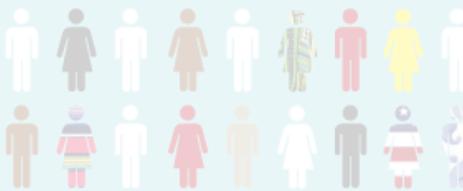
DOMINANCE OF SOCIAL NETWORKS

WHO ARE MILLENNIALS?



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DO THEY MATTER?

% OF WORKFORCE



IN THE COMING YEARS



MAKE A DIFFERENCE W/ THEIR WORK



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Image from Why Millennials Matter (www.whymillennialsmatter.com)

#HowToConfuseAMillennial



Jason Royle

@JERoyle

 Follow

#HowToConfuseAMillennial

Talk to them.

8:02 AM - 4 Sep 2016



Jeff Dwoskin 

@bigmacher

 Follow

Explain how we used to be social, before
media#HowToConfuseAMillennial

8:07 AM - 4 Sep 2016



Andrew

@1andrewfenton

 Follow

#HowToConfuseAMillennial

Hand them a job application form

8:17 AM - 4 Sep 2016



Nathan Walters

@waltersn512

 Follow

#HowToConfuseAMillennial start a hashtag slamming millennials
on a platform controlled by millennials; get offended when
millennials fight back

2:05 PM - 4 Sep 2016

“ Millennials **work more closely together**, leverage **right- and left-brain skills**, ask the right questions, **learn faster** and **take risks** previous generations resisted ”

“ They truly want to **change the world** and will **use technology** to do so ”

“ They are **capable of super-productivity**. They manage academics, extra curriculars, sports and jobs—and still never miss a single text message. ”



ATTRIBUTES



ENTREPRENEURSHIP



COLLABORATION



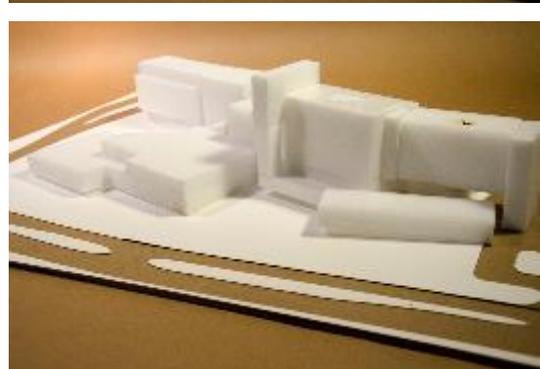
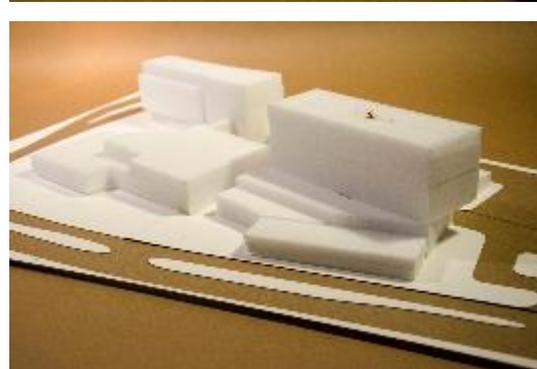
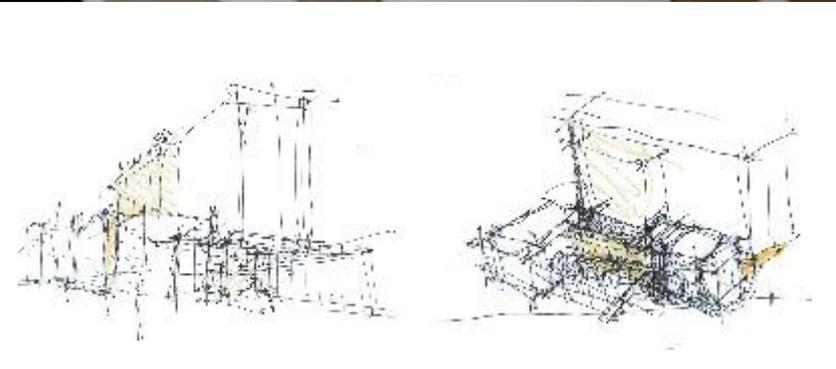
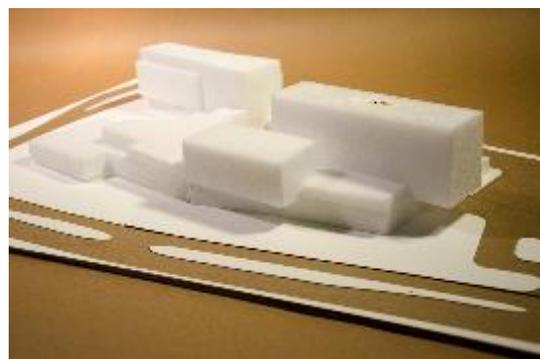
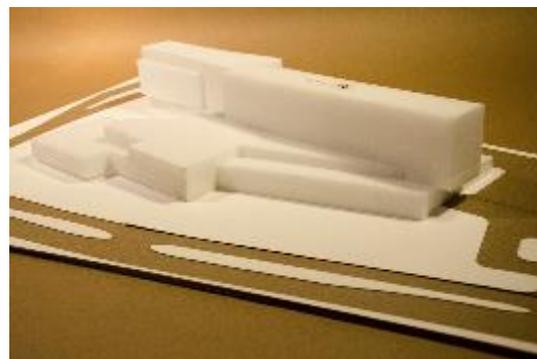
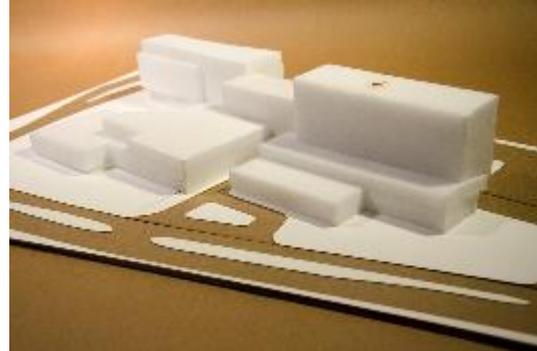
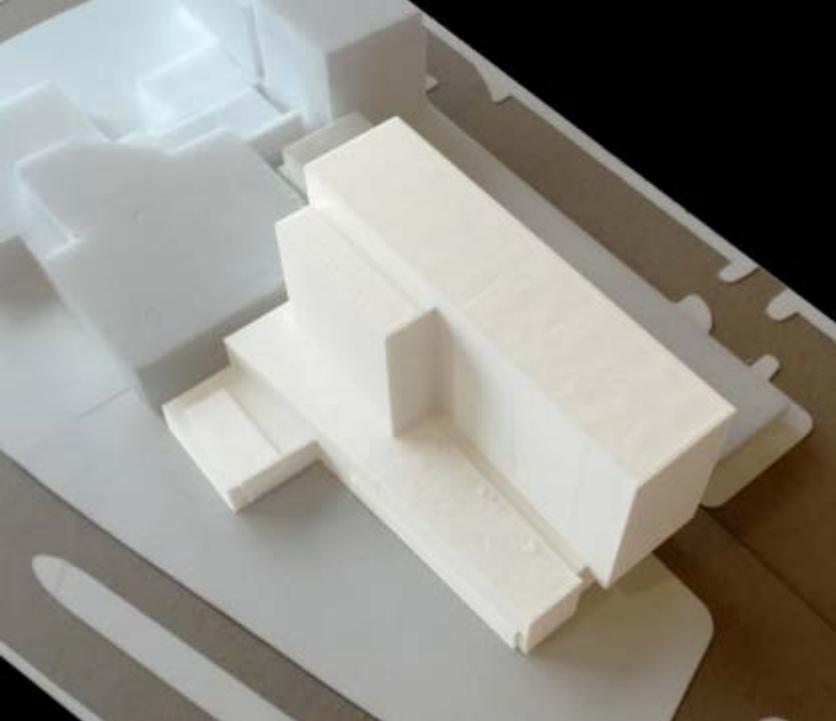
TECHNOLOGICAL
INNOVATION

Health and Biomedical Sciences Building II

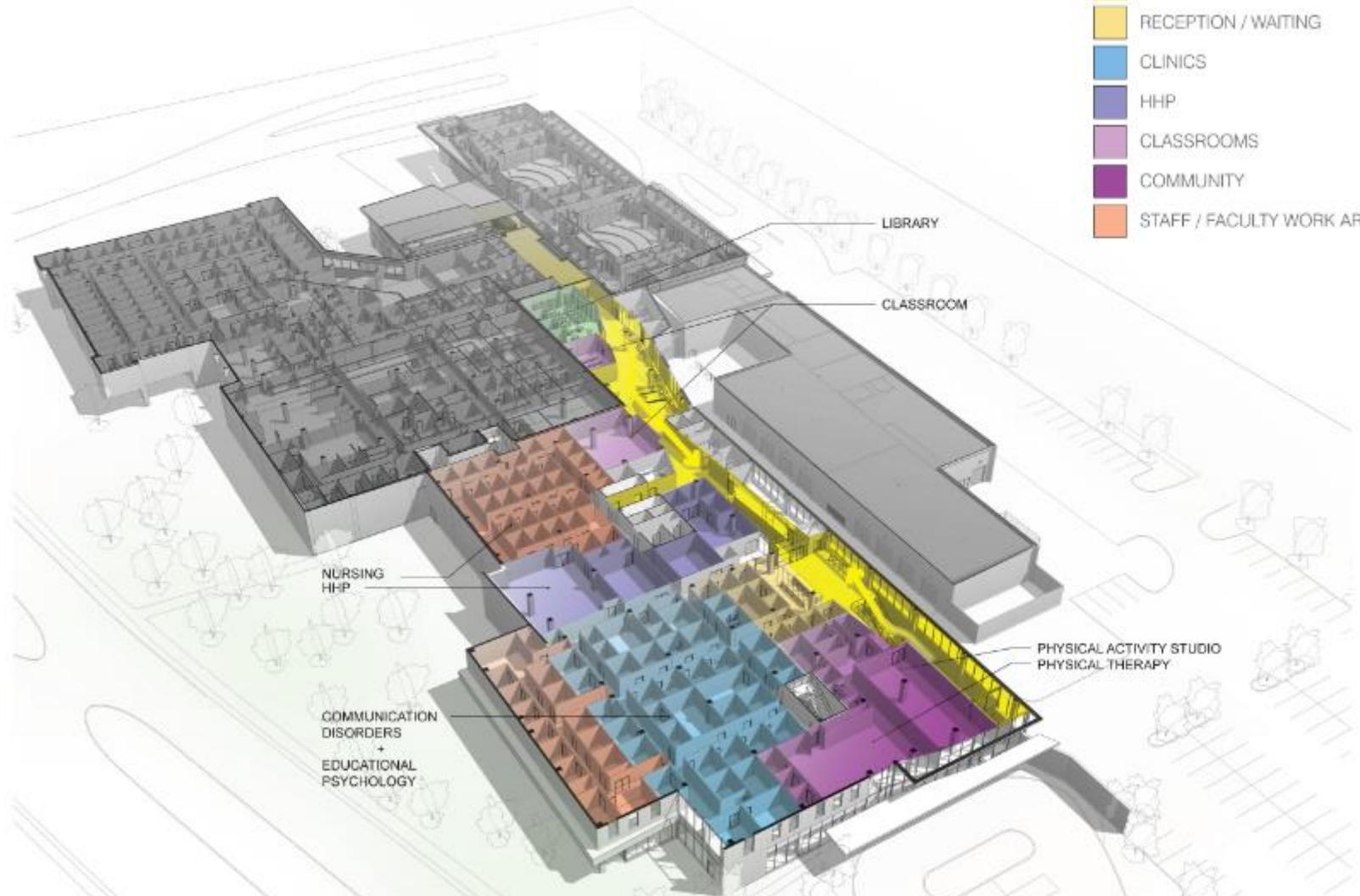
University of Houston

- 100,000 SF - Patient Clinics
- 150,000 SF - UH College of Pharmacy
- 50,000 SF - Department of Research









- PUBLIC CORRIDOR
- RECEPTION / WAITING
- CLINICS
- HHP
- CLASSROOMS
- COMMUNITY
- STAFF / FACULTY WORK AREAS

LIBRARY

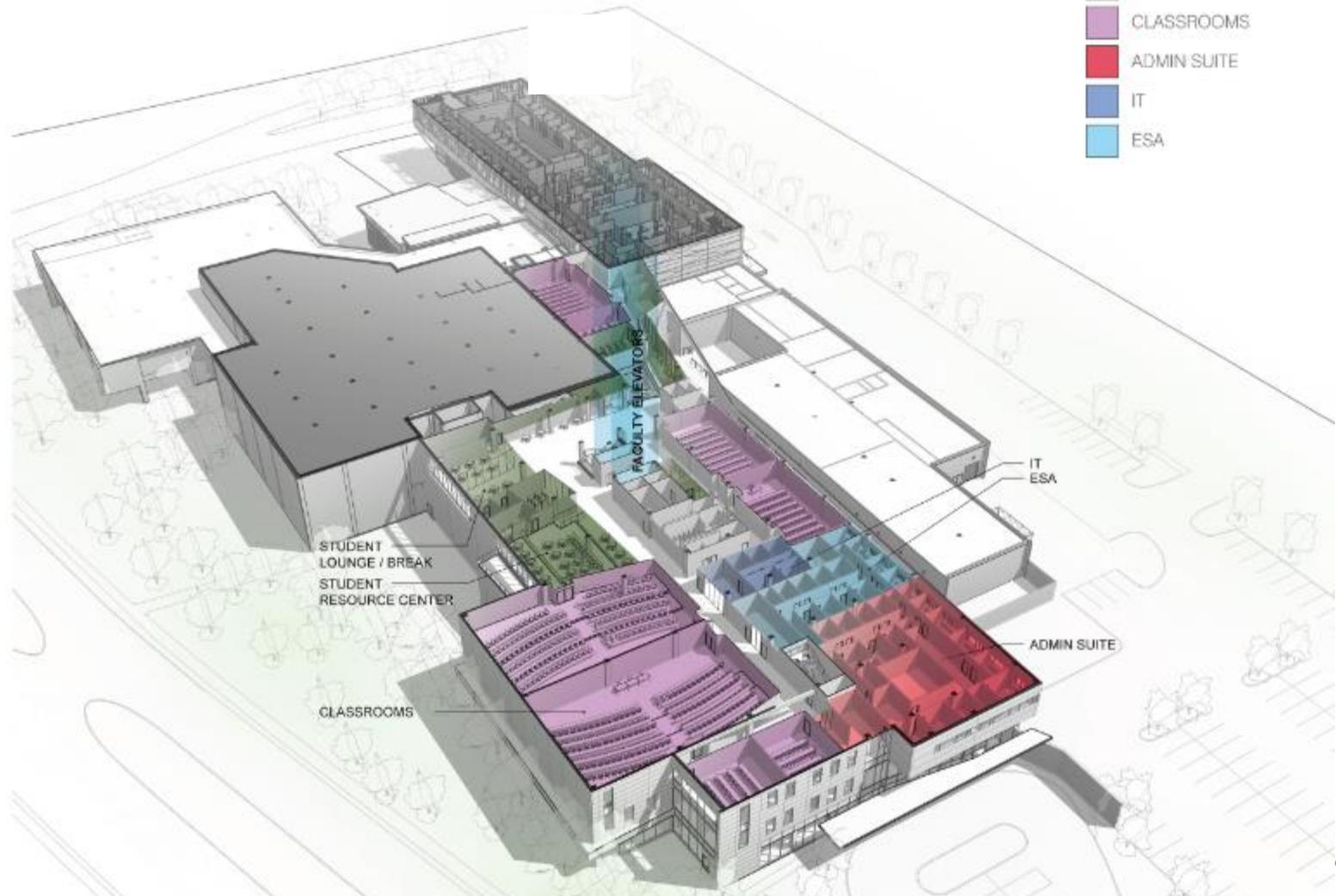
CLASSROOM

NURSING
HHP

COMMUNICATION
DISORDERS
+
EDUCATIONAL
PSYCHOLOGY

PHYSICAL ACTIVITY STUDIO
PHYSICAL THERAPY

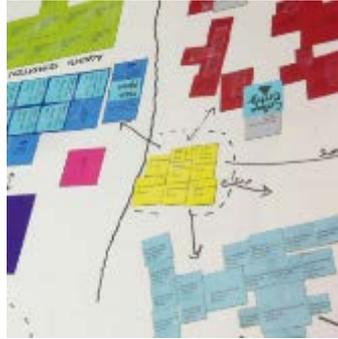
- SHARED SPACE
- CLASSROOMS
- ADMIN SUITE
- IT
- ESA



CASE STUDIES



**PRECAST
CONCRETE
OPTIMIZATION**



**PROGRAM “CHIPS
EXERCISE”**



**HEALTH SCIENCE
LIBRARY DESIGN**



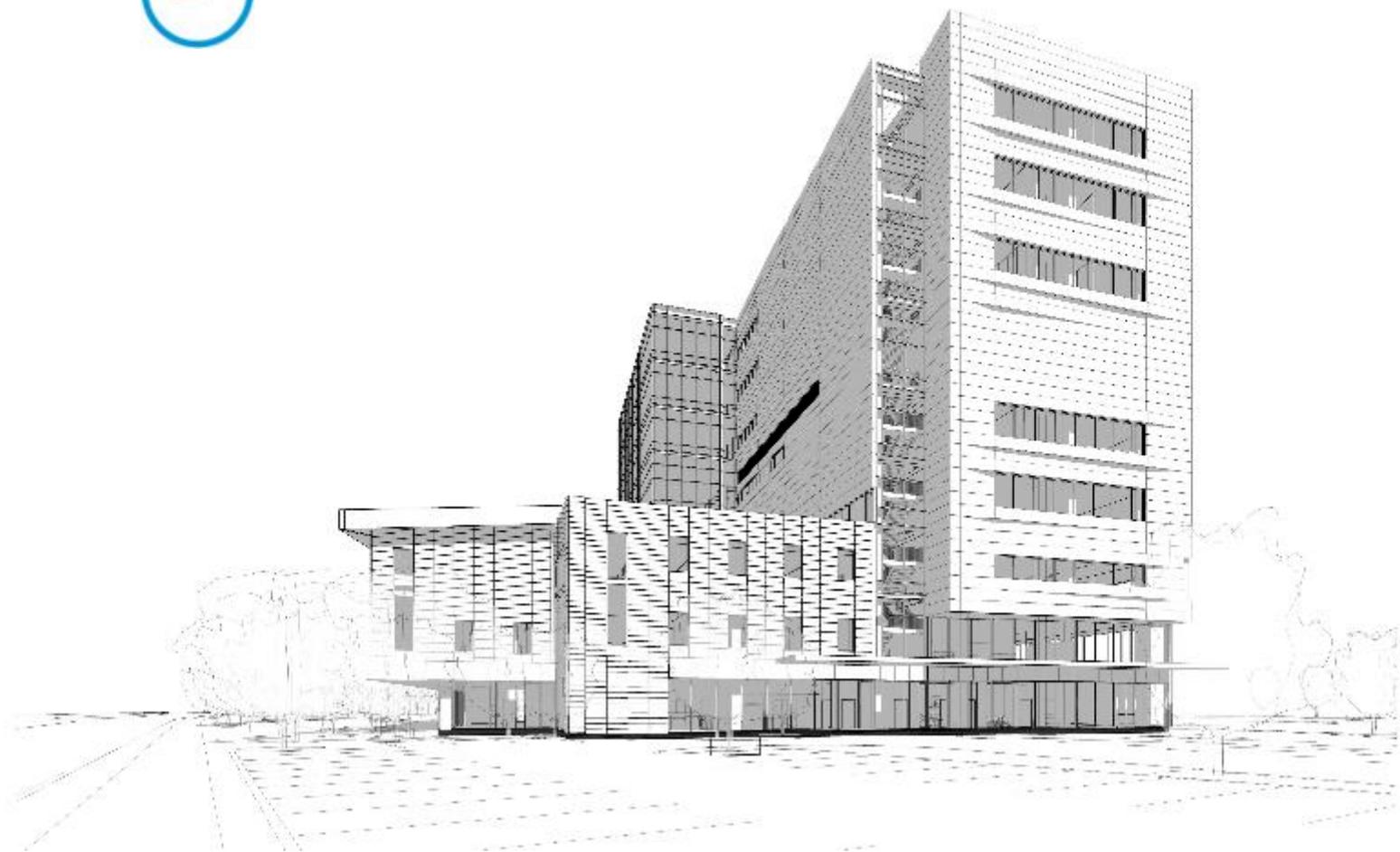
**PREFABRICATED
MEP SYSTEMS**



PRECAST OPTIMIZATION

**HBSB 1
2013**





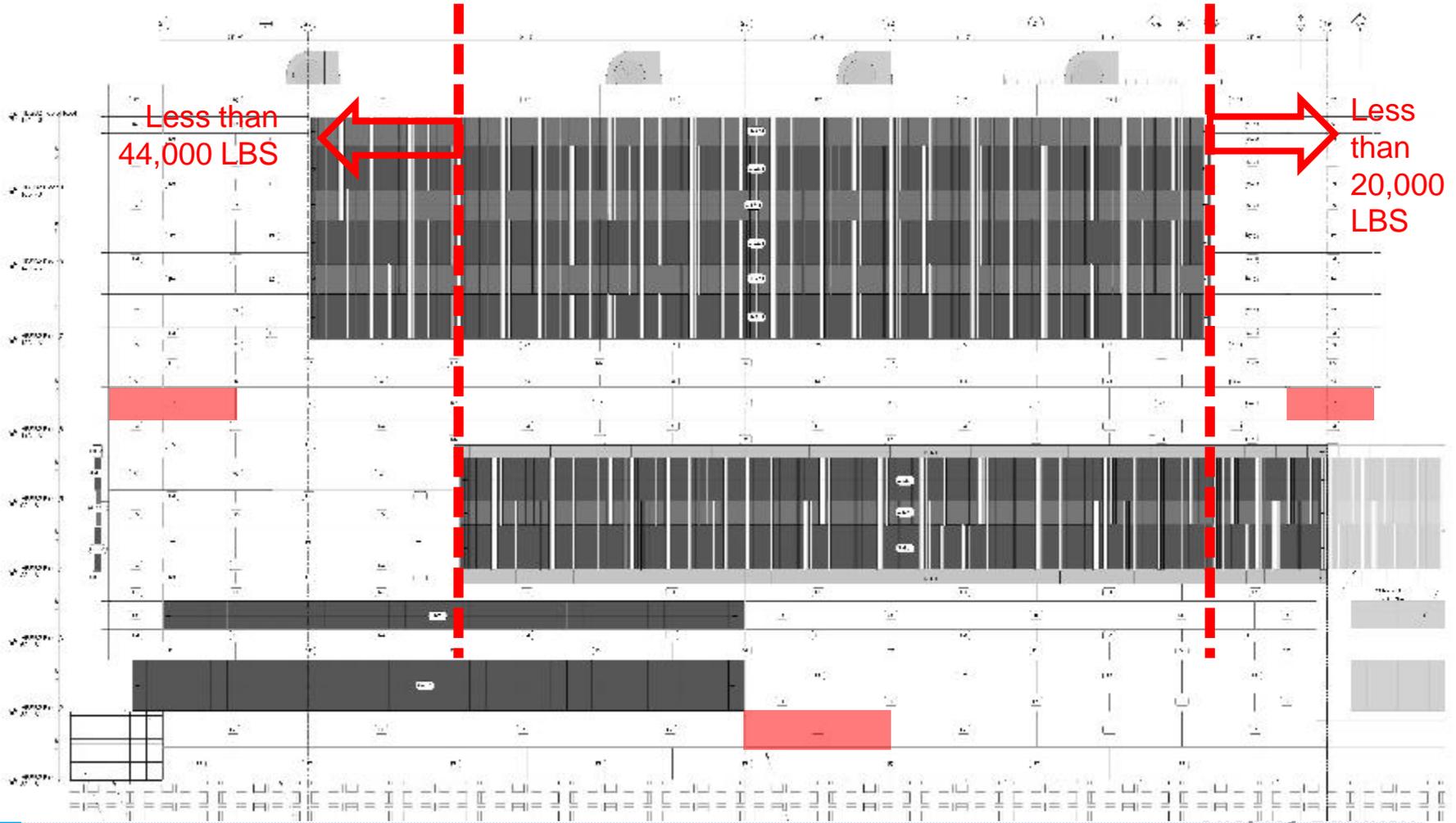












Less than
44,000 LBS

Less than
20,000
LBS

ENTREPRENEURSHIP



COLLABORATION



TECHNOLOGICAL
INNOVATION



ENTREPRENEURSHIP



COLLABORATION



TECHNOLOGICAL
INNOVATION



ENTREPRENEURSHIP



- Desire by team to save
- Opportunity for millennial members to “show their stuff”

COLLABORATION



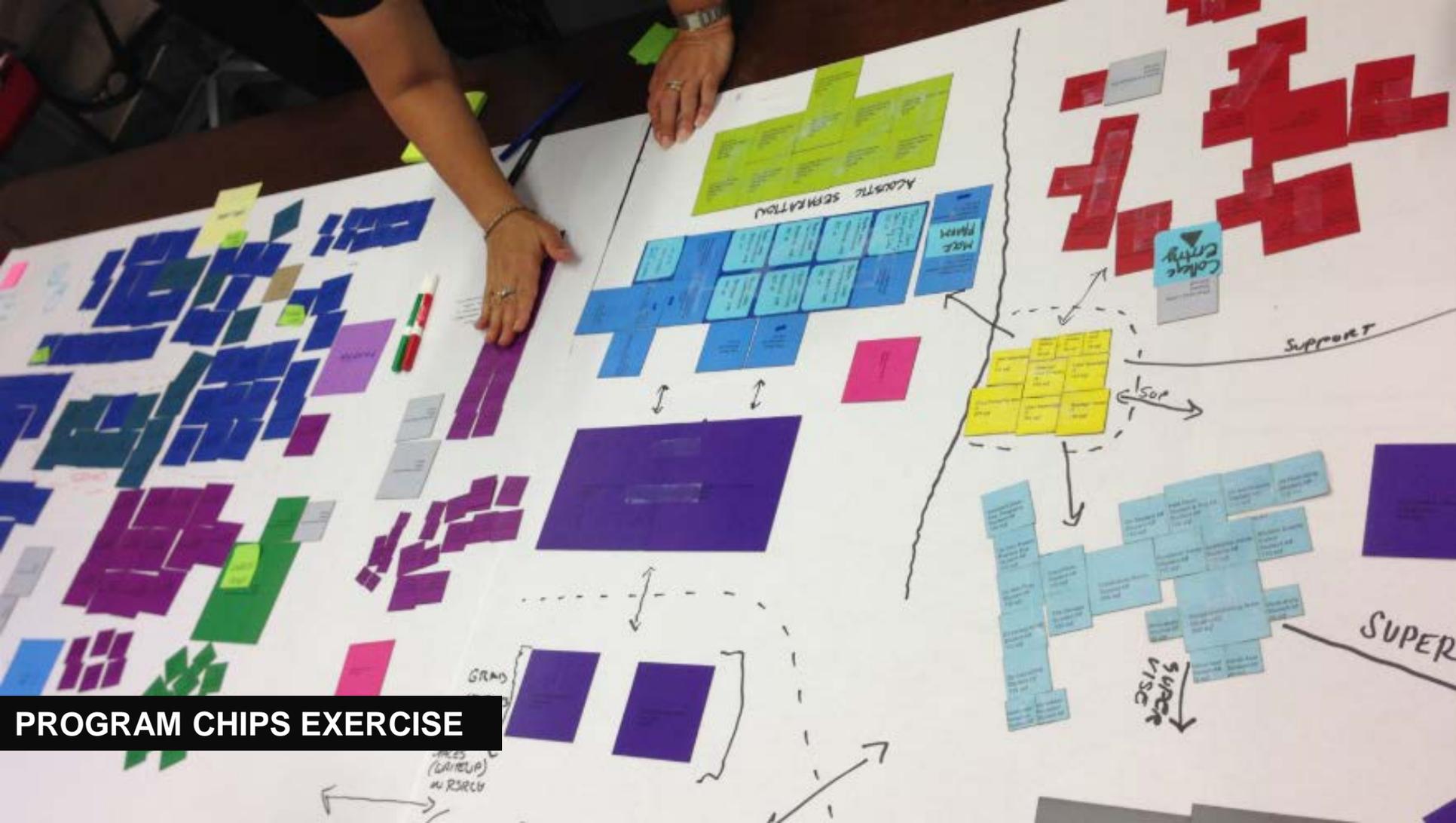
- TB/SB long working relationship
- Before documentation
- Connect SB with crane experts

TECHNOLOGICAL INNOVATION

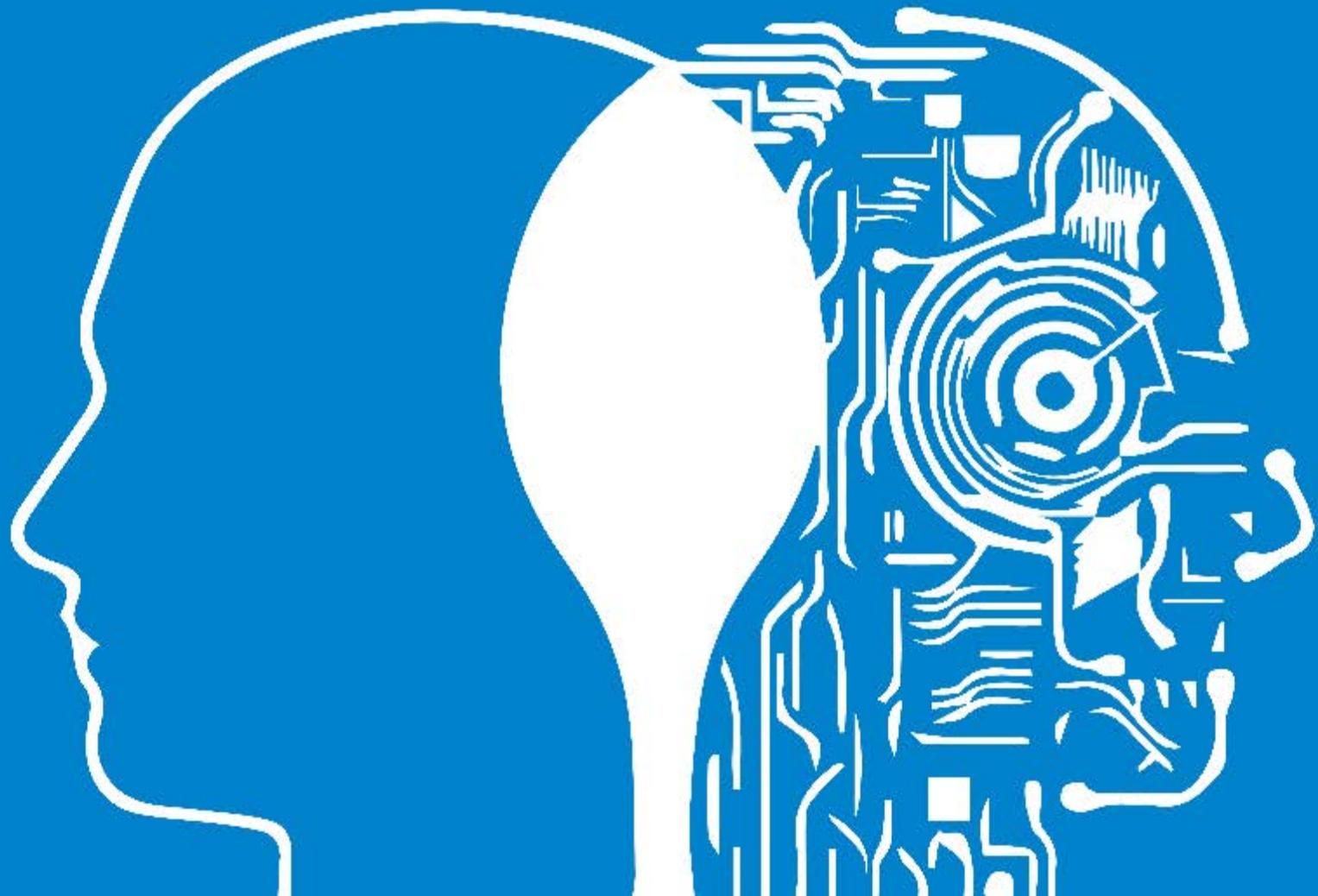


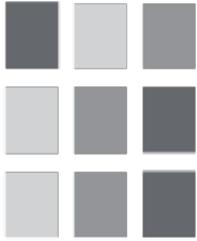
- BIM integration
- Real time model feedback
- Virtual communication

PROGRAM CHIPS EXERCISE

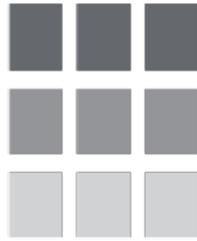




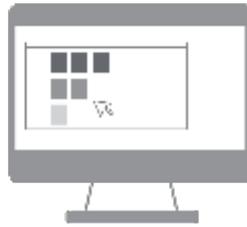




Programs by Dept.
0 HRS



Organize Rooms by Dept.
12 HRS



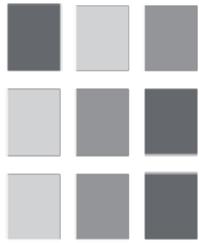
Draw Rooms Manually
20 HRS



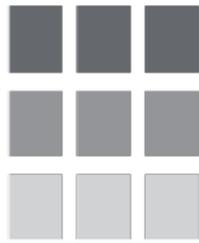
Print to Scale
1 HR



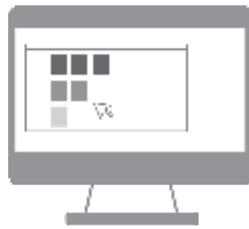
Manually Cut
3 HRS



Programs by Dept.
0 HRS



Organize Rooms by Dept.
12 HRS



Draw Rooms Manually
20 HRS



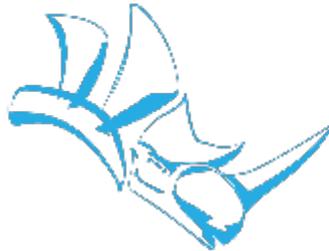
Print to Scale
1 HR



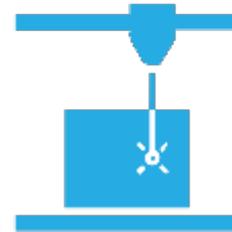
Manually Cut
3 HRS



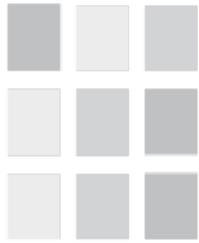
Program Database (Excel)
1 HR



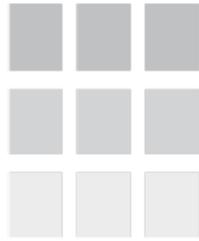
Automated Draw to Scale (Rhino)
2 HRS



Automated Cut (Laser)
2 HRS



Programs by Dept.
0 HRS



Organize Rooms by Dept.
12 HRS



Draw Rooms Manually
20 HRS



Print to Scale
1 HR

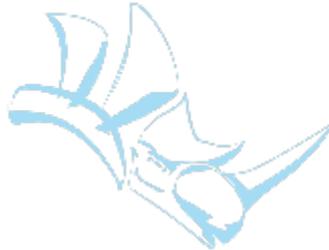


Manually Cut
3 HRS

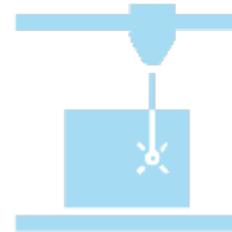
(36 HRS)



Program Database (Excel)
1 HR



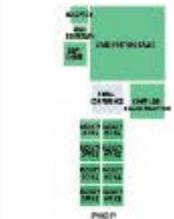
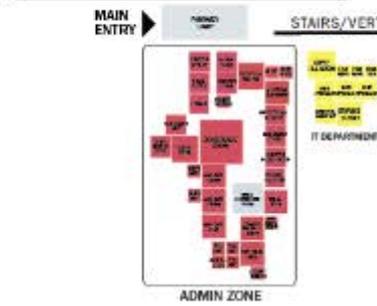
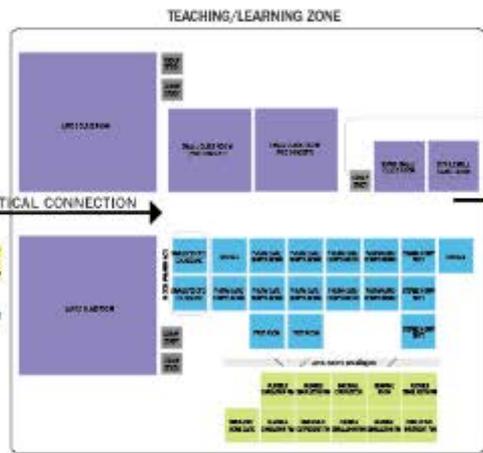
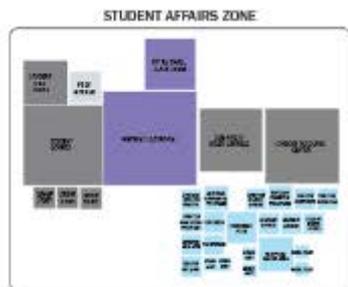
Automated Draw to Scale (Rhino)
2 HRS



Automated Cut (Laser)
2 HRS

(5 HRS)





1/2 1/2

ENTREPRENEURSHIP



COLLABORATION



TECHNOLOGICAL
INNOVATION



ENTREPRENEURSHIP



COLLABORATION



TECHNOLOGICAL
INNOVATION



ENTREPRENEURSHIP



- Idea came from Summer RISD intern
- Workflow and skills required Millennial talent

COLLABORATION



- High collaboration within Arch. office
- Made it easier to collaborate with users

TECHNOLOGICAL INNOVATION

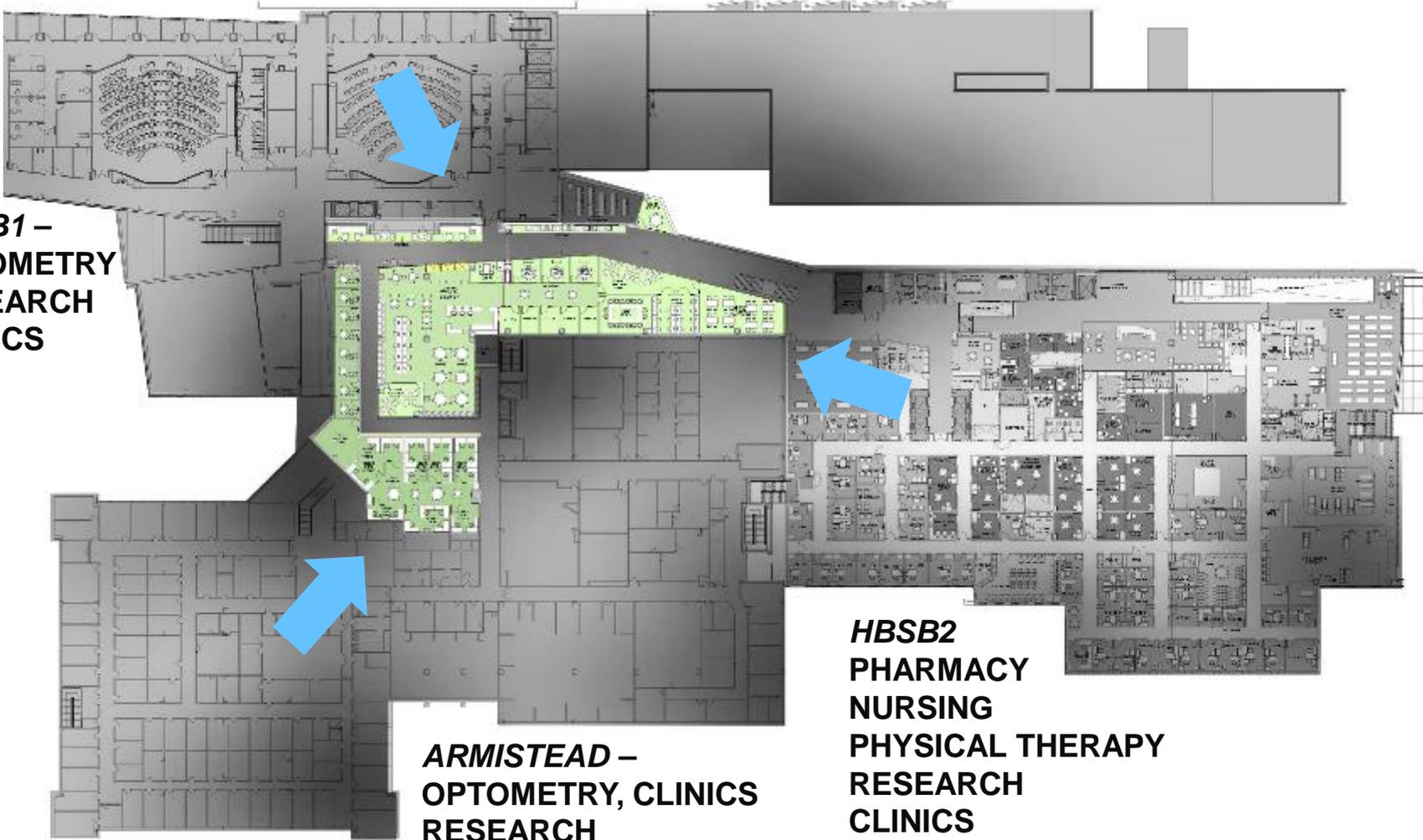


- Implemented new tech (Grasshopper Script)
- Interoperable with other software

A photograph of a modern library lounge area. Five young women are seated on red upholstered furniture, including a long sofa and several armchairs. They are all focused on reading papers or documents. The room features large windows on the right side, providing a view of an outdoor area with trees and a building. A central grey table holds various items like a water bottle, a coffee cup, and some papers. Several bags, including a brown leather satchel, a pink tote bag, and a black backpack, are placed on the light-colored tiled floor. The overall atmosphere is quiet and studious.

HEALTH SCIENCE LIBRARY

***HBSB1 –
OPTOMETRY
RESEARCH
CLINICS***

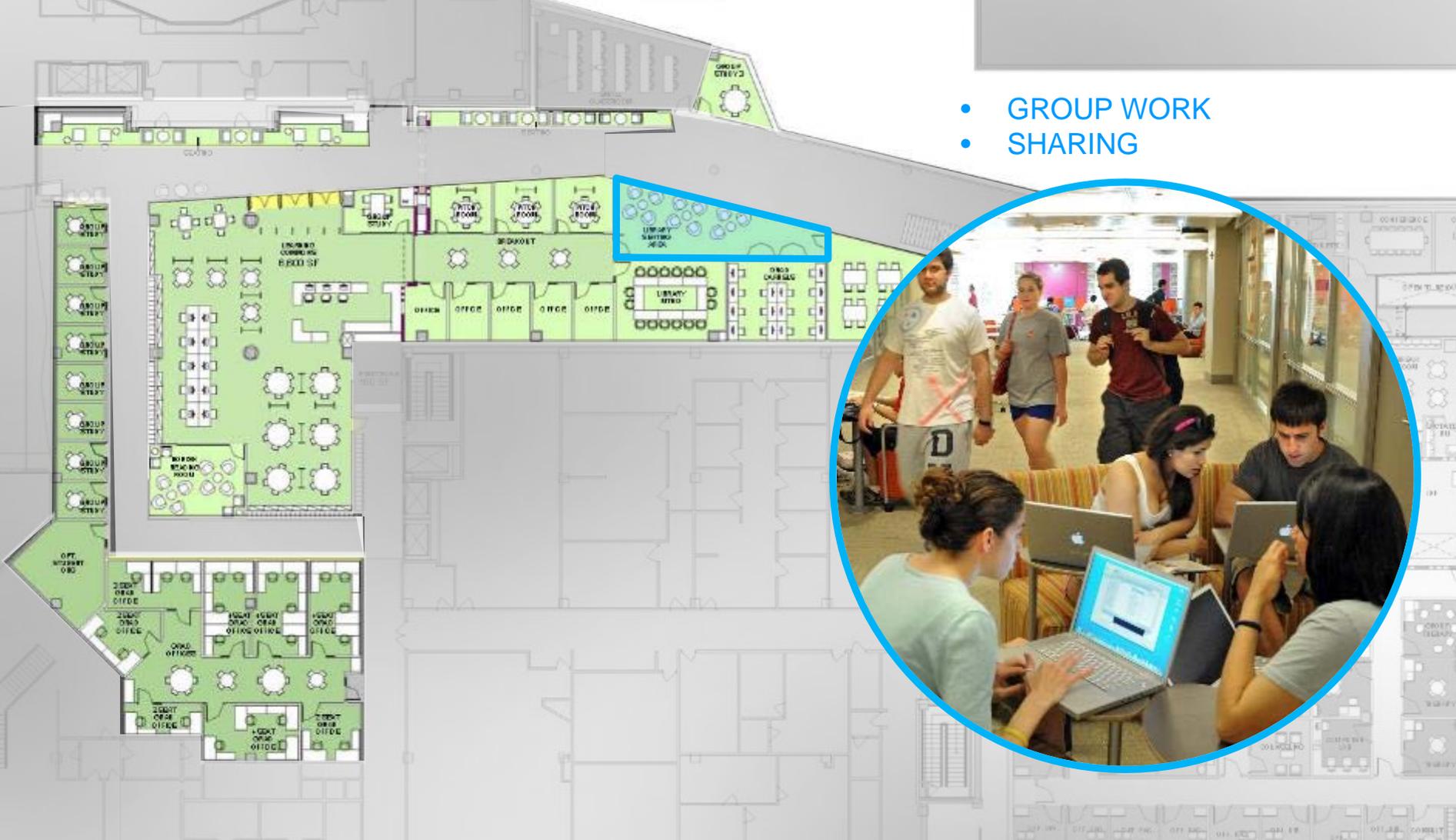


***ARMISTEAD –
OPTOMETRY, CLINICS
RESEARCH***

***HBSB2
PHARMACY
NURSING
PHYSICAL THERAPY
RESEARCH
CLINICS***



- GROUP WORK
- SHARING



- “PITCH” ROOMS
- PRACTICE AND PRESENT



- VARIETY OF GROUP STUDY ROOMS\
- OPEN AND CLOSED



- TECHNOLOGY WORK SPACE
- FLEXIBLE WHITEBOARDS AND DISPLAY



ENTREPRENEURSHIP



COLLABORATION



TECHNOLOGICAL
INNOVATION



ENTREPRENEURSHIP



COLLABORATION



TECHNOLOGICAL
INNOVATION



ENTREPRENEURSHIP



- Supports student research into business ideas

COLLABORATION

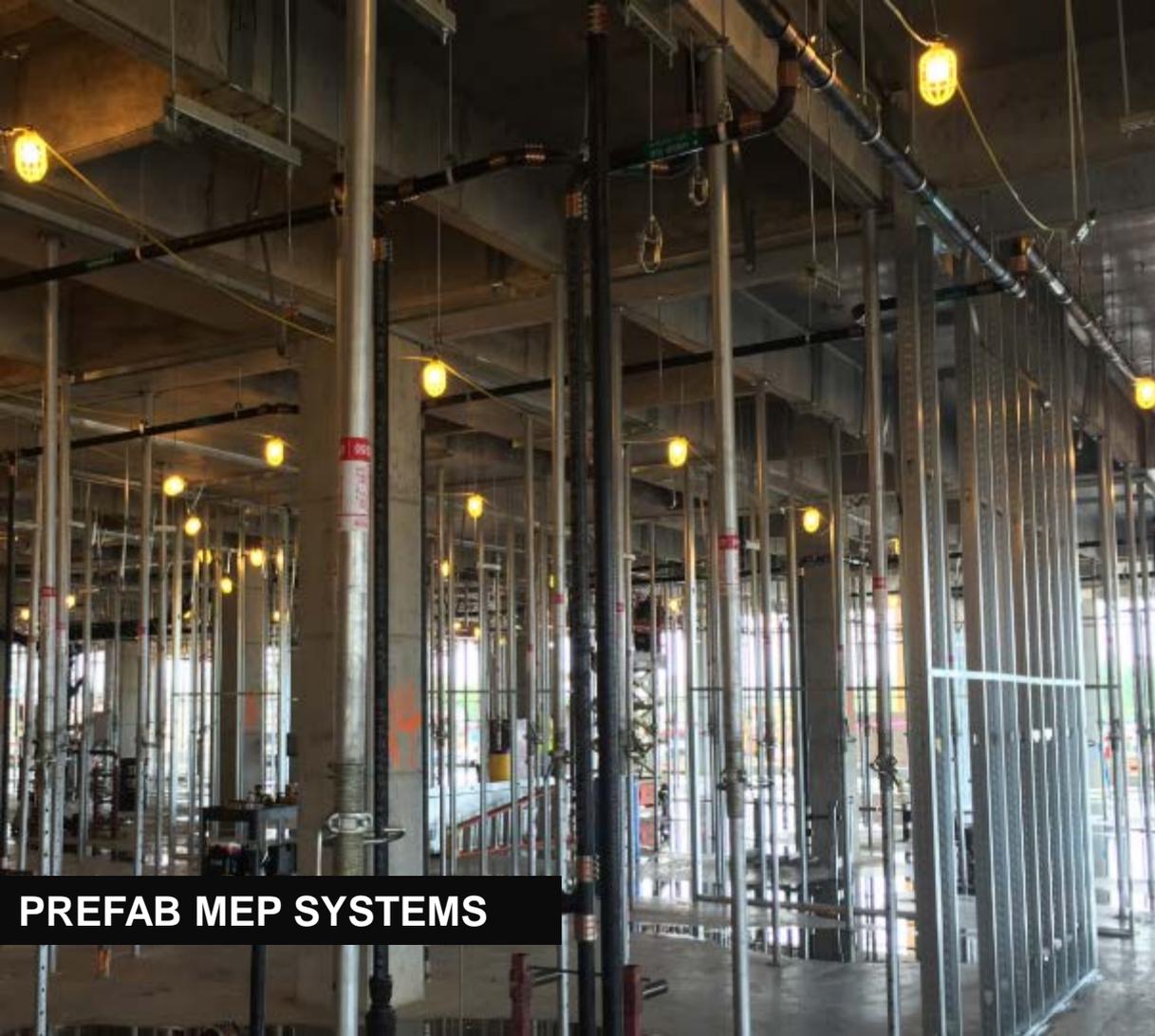


- Supports collaborative study habits of Millennials
- Study/Pitch/Practice

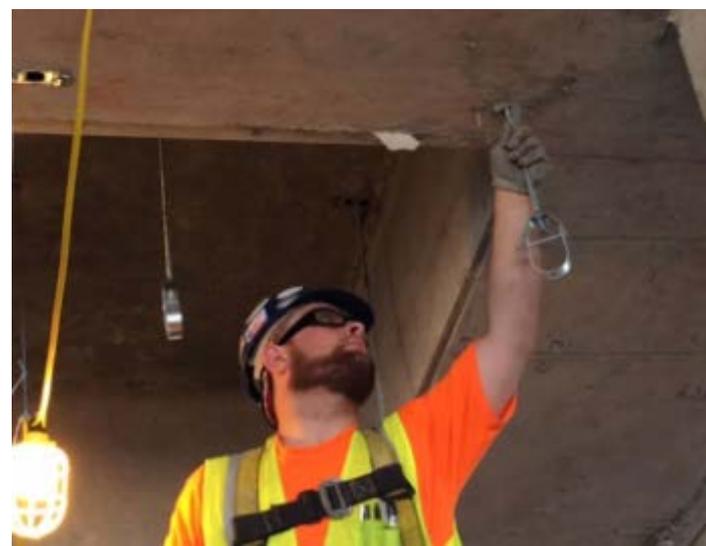
TECHNOLOGICAL INNOVATION



- Lots of power!
- More about people using tech together



PREFAB MEP SYSTEMS





vs

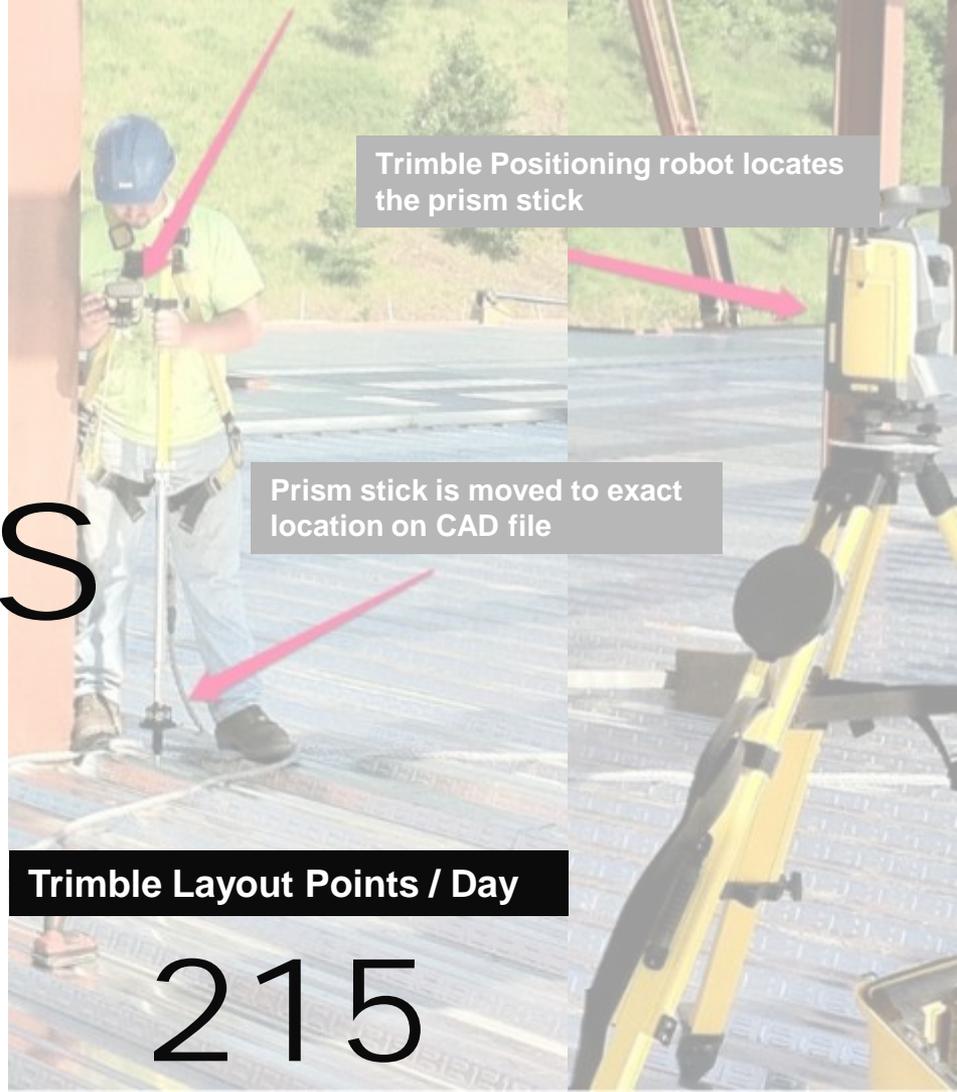




Hand Layout Points / Day

70

vs



Trimble Positioning robot locates the prism stick

Prism stick is moved to exact location on CAD file

Trimble Layout Points / Day

215

Benefits of Hanger Fabrication



Minimize loose pieces



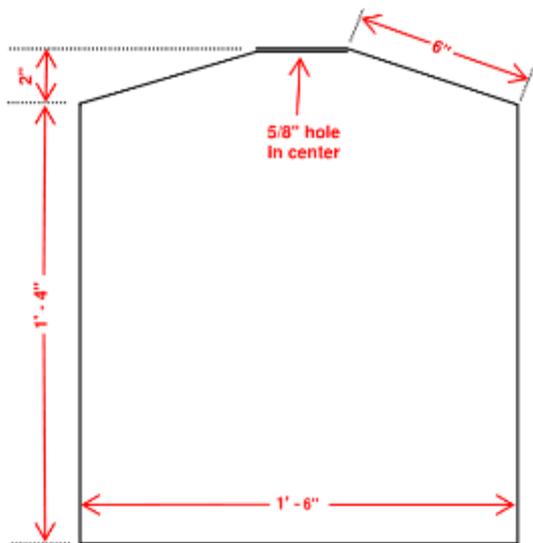
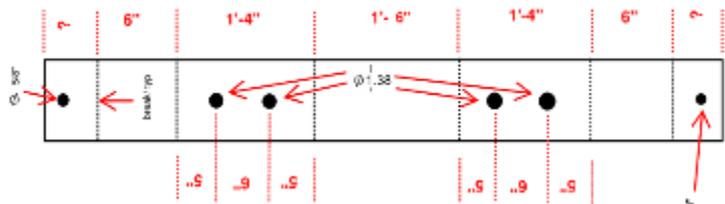
Streamline material handling



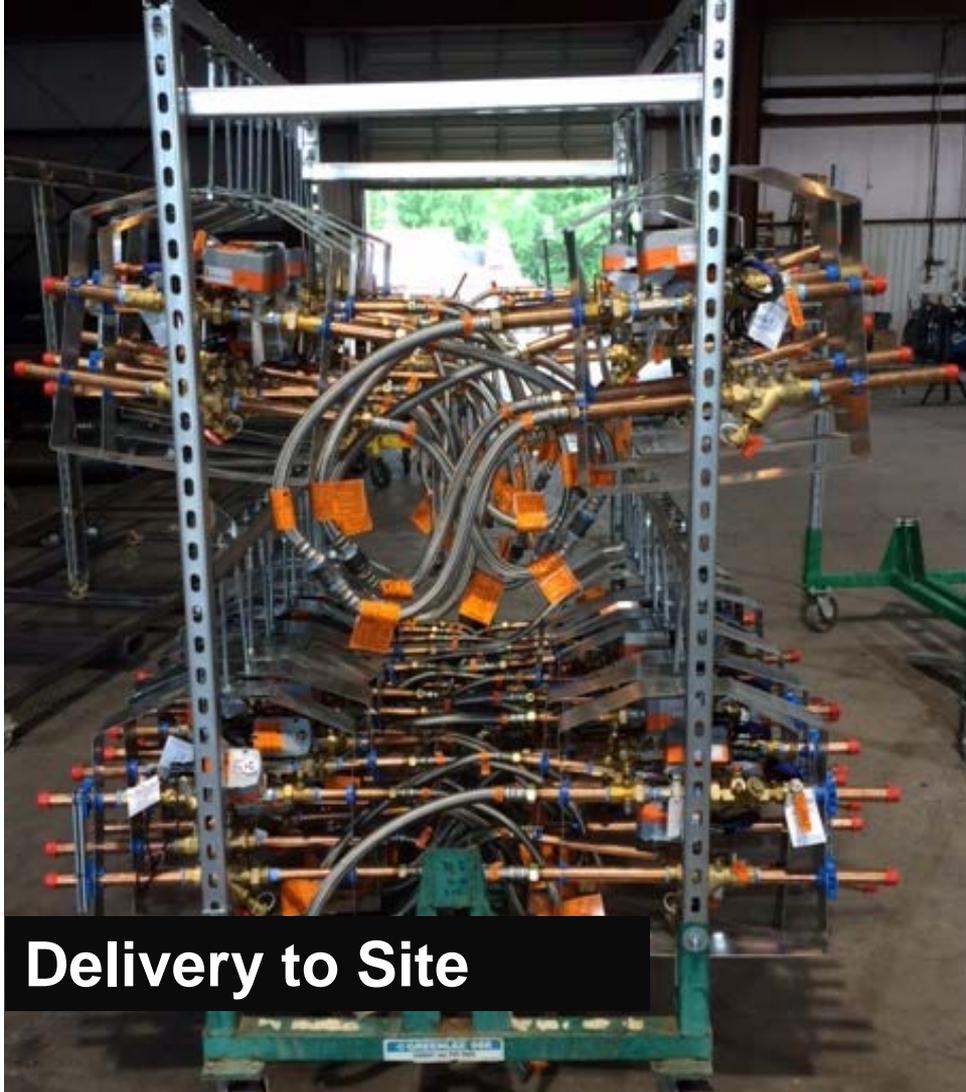
Less scrap at jobsite



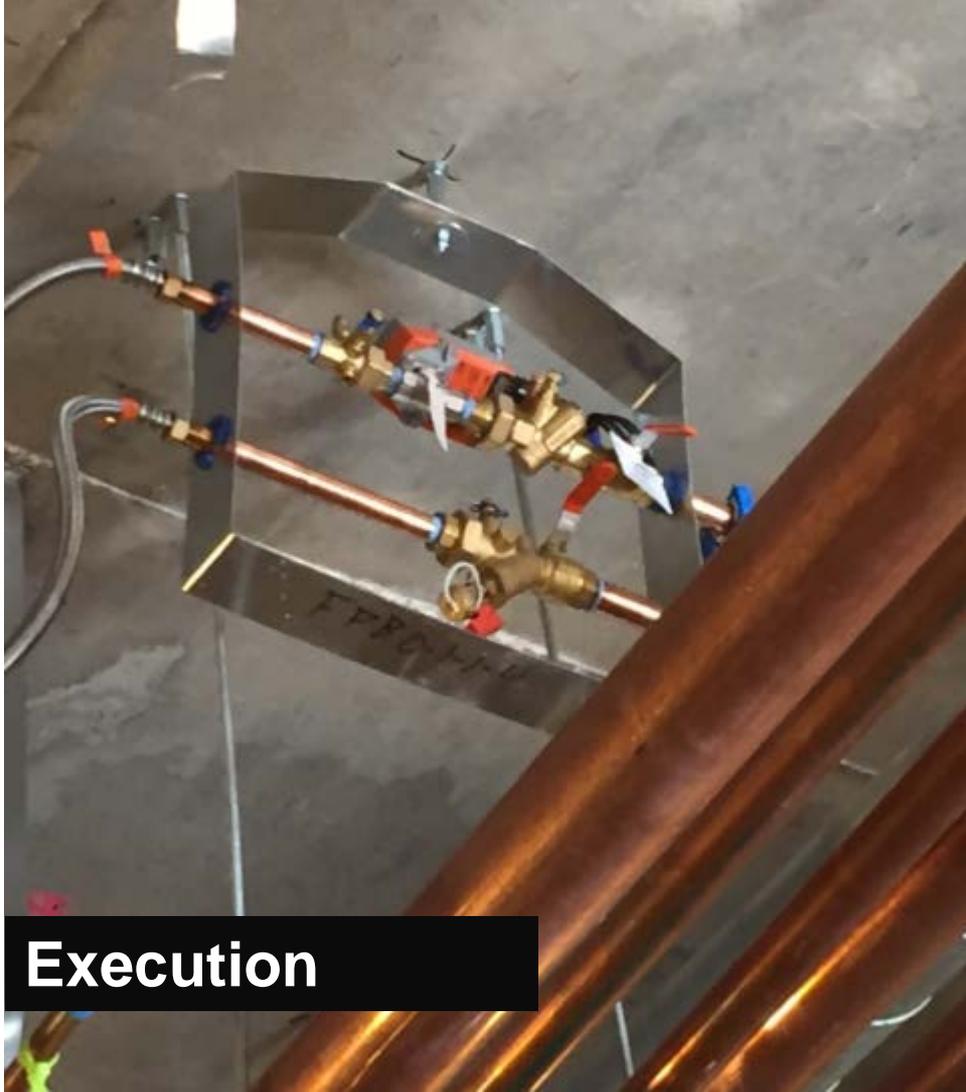
Efficient execution



Concept to Reality



Delivery to Site



Execution

ENTREPRENEURSHIP



COLLABORATION



TECHNOLOGICAL
INNOVATION



ENTREPRENEURSHIP



COLLABORATION



TECHNOLOGICAL
INNOVATION



ENTREPRENEURSHIP



- Initiative to try a new thing
- Set up new business process

COLLABORATION



- Coordination between services (Water, Gases, etc)
- Mostly improvement for MEP trades

TECHNOLOGICAL INNOVATION



- Requires BIM integration
- Tech savvy field/office and trailer laborers



ENTREPRENEURSHIP



COLLABORATION



TECHNOLOGICAL
INNOVATION



ENTREPRENEURSHIP



COLLABORATION



TECHNOLOGICAL
INNOVATION



Seminar Evaluation

We hope you enjoyed this session...

Please take a moment to complete the evaluation form.

Thank you!

