

# THE FIVE RULES FOR DESIGNING TRANSFORMATIVE LEARNING ENVIRONMENTS

**Sylvia Kowalk, LEED AP ID+C**

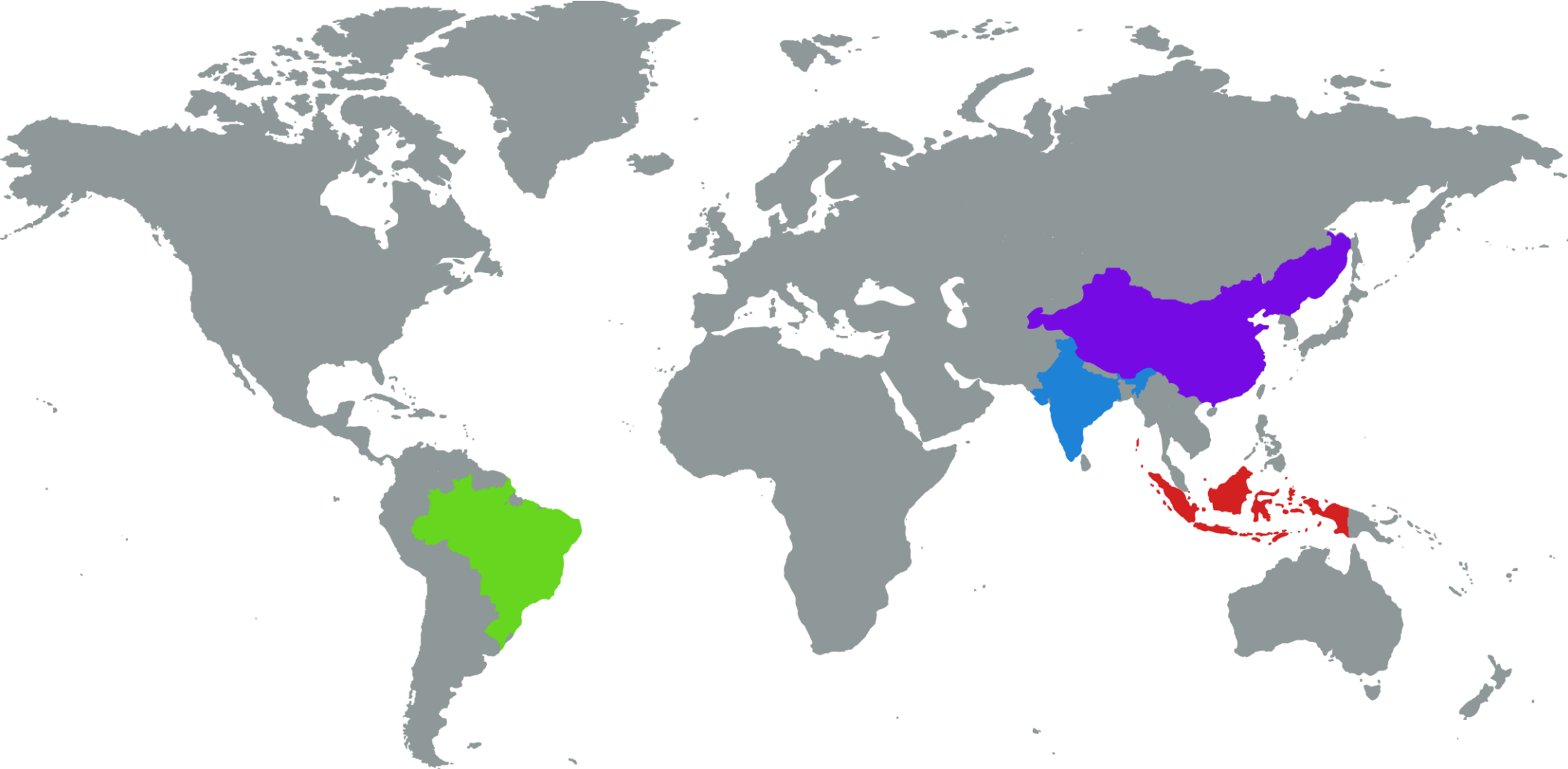
*Director of Interior Design, Legat Architects*

**Vuk Vujovic, Associate AIA, LEED AP BD+C, WELL AP**

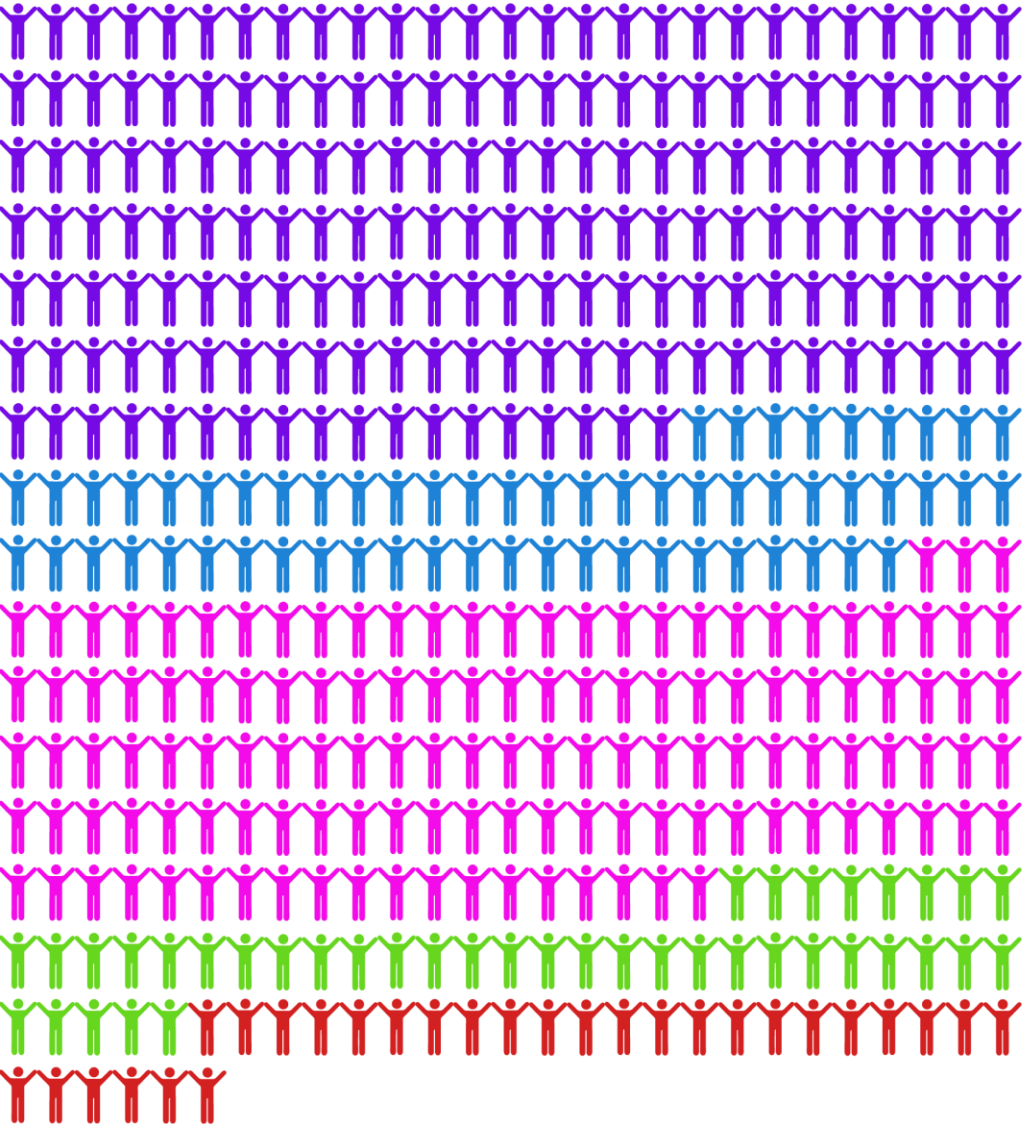
*Vice President, Director of Sustainability & Energy, Legat Architects*

***the only thing that is constant is .....***?

# World's Top Economies Circa 2050e



# Population in 2050e



WHITE: 180 MILLION



AFRICAN AMERICAN: 60 MILLION



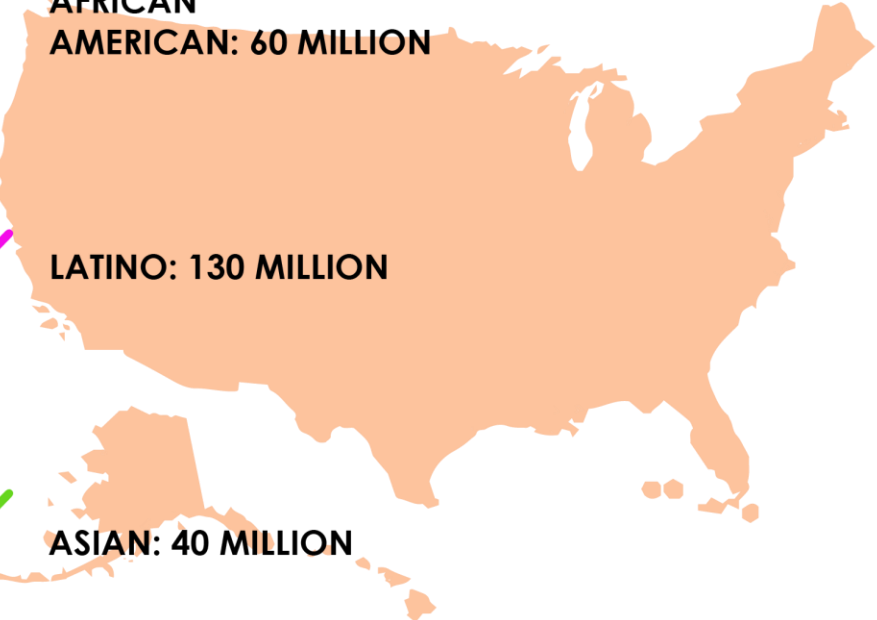
LATINO: 130 MILLION



ASIAN: 40 MILLION

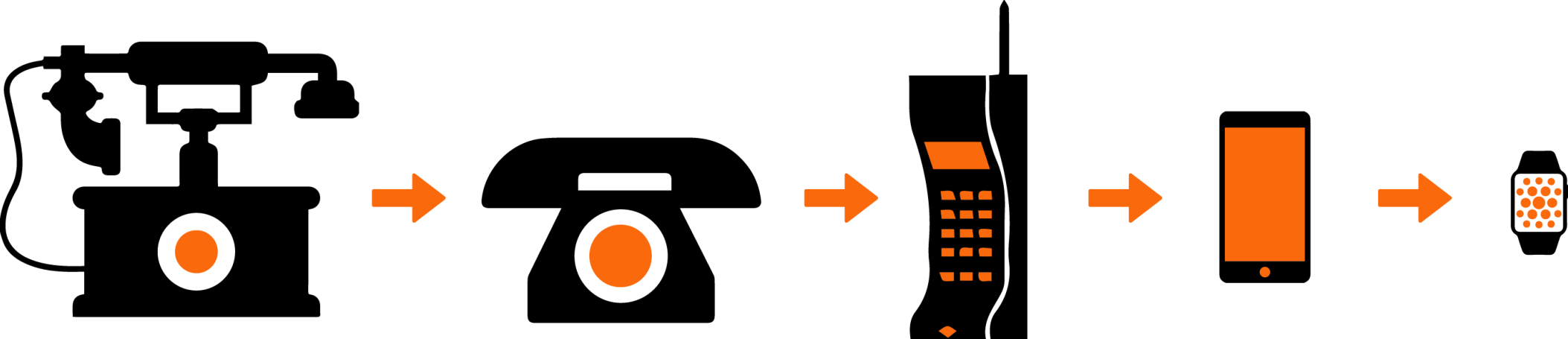


OTHER: 28 MILLION



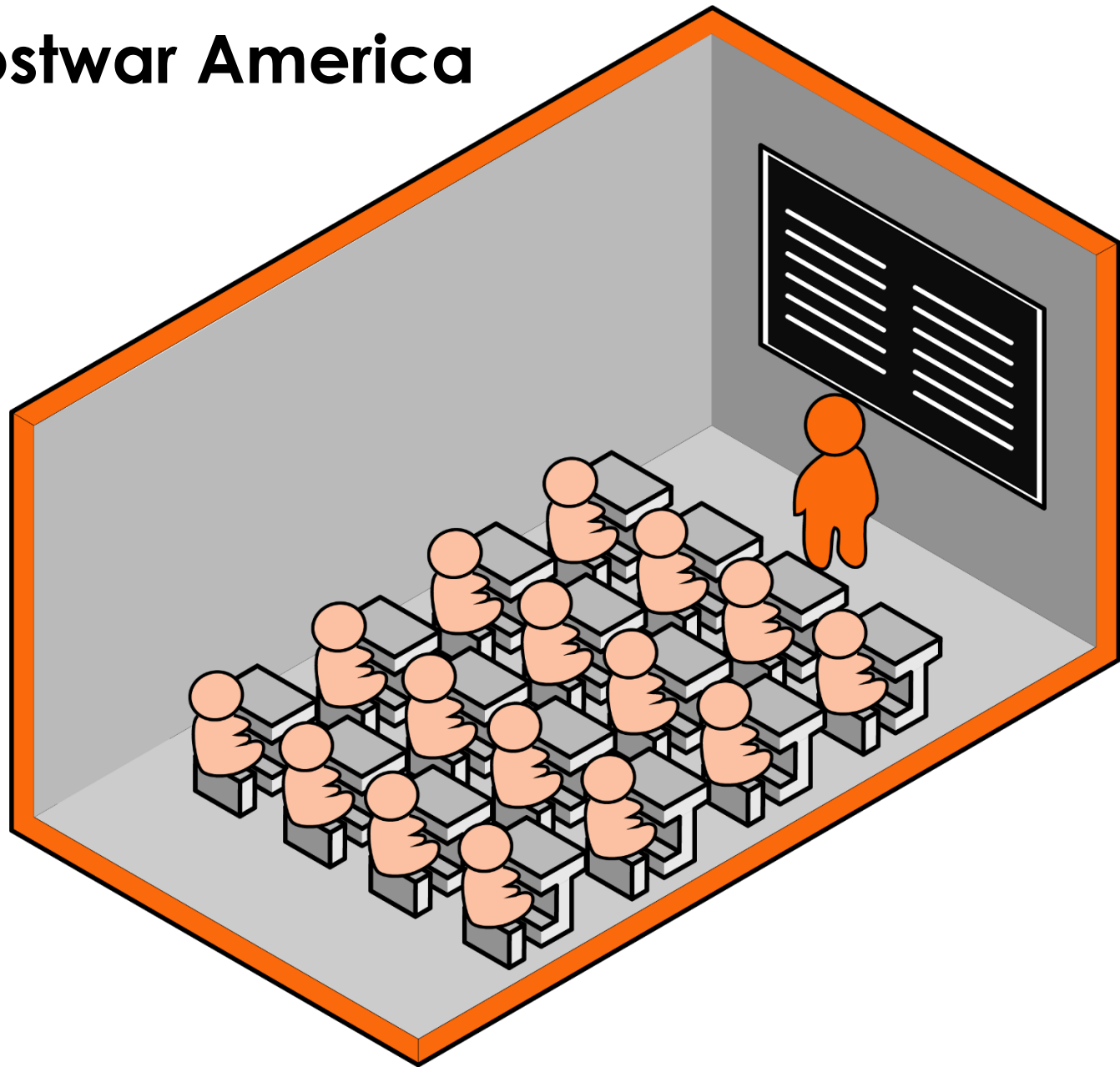
 = 1 MILLION

# Evolution of Technology



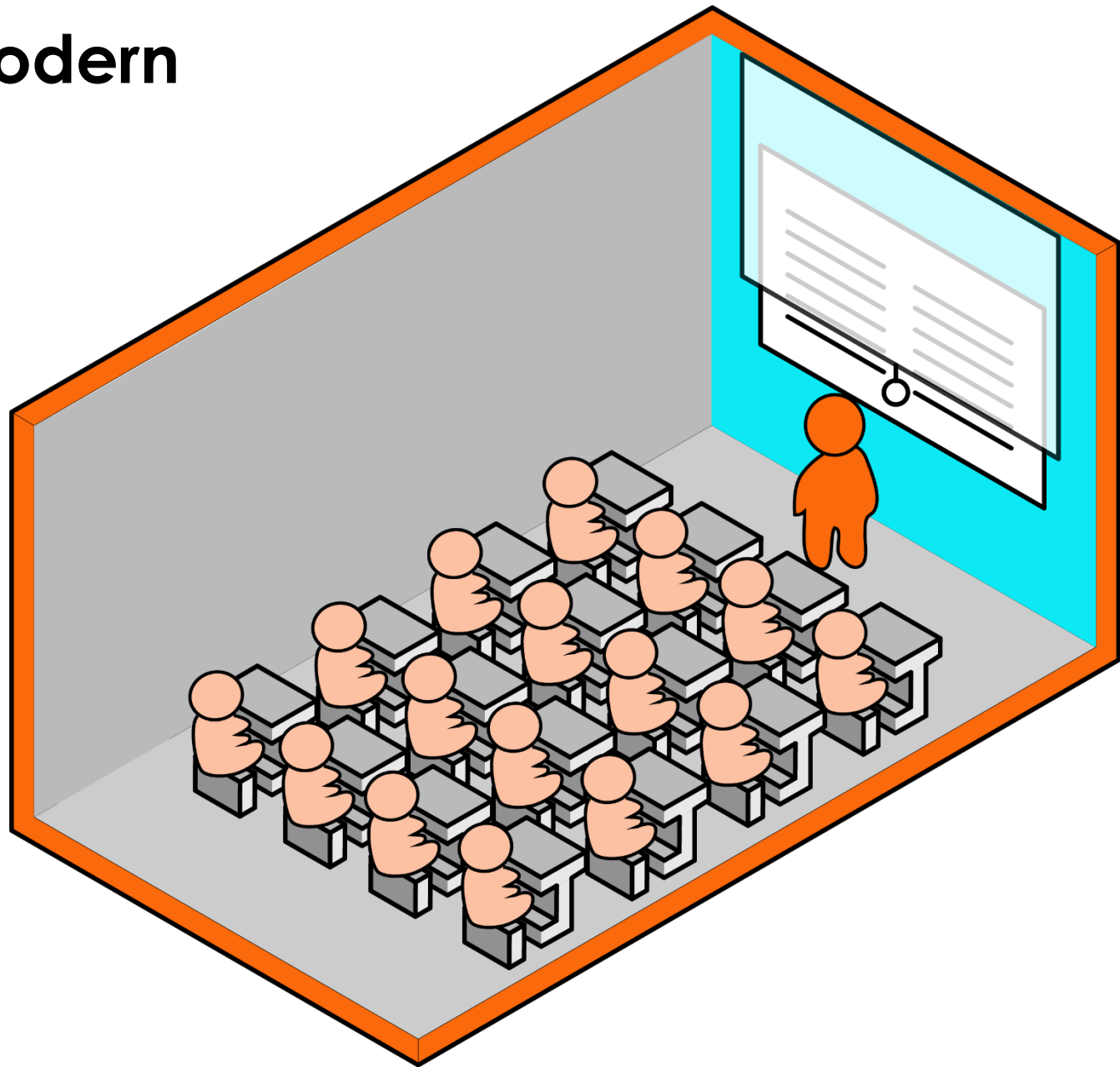
# Pedagogy Models: Postwar America

~1930 CE to 1970 CE



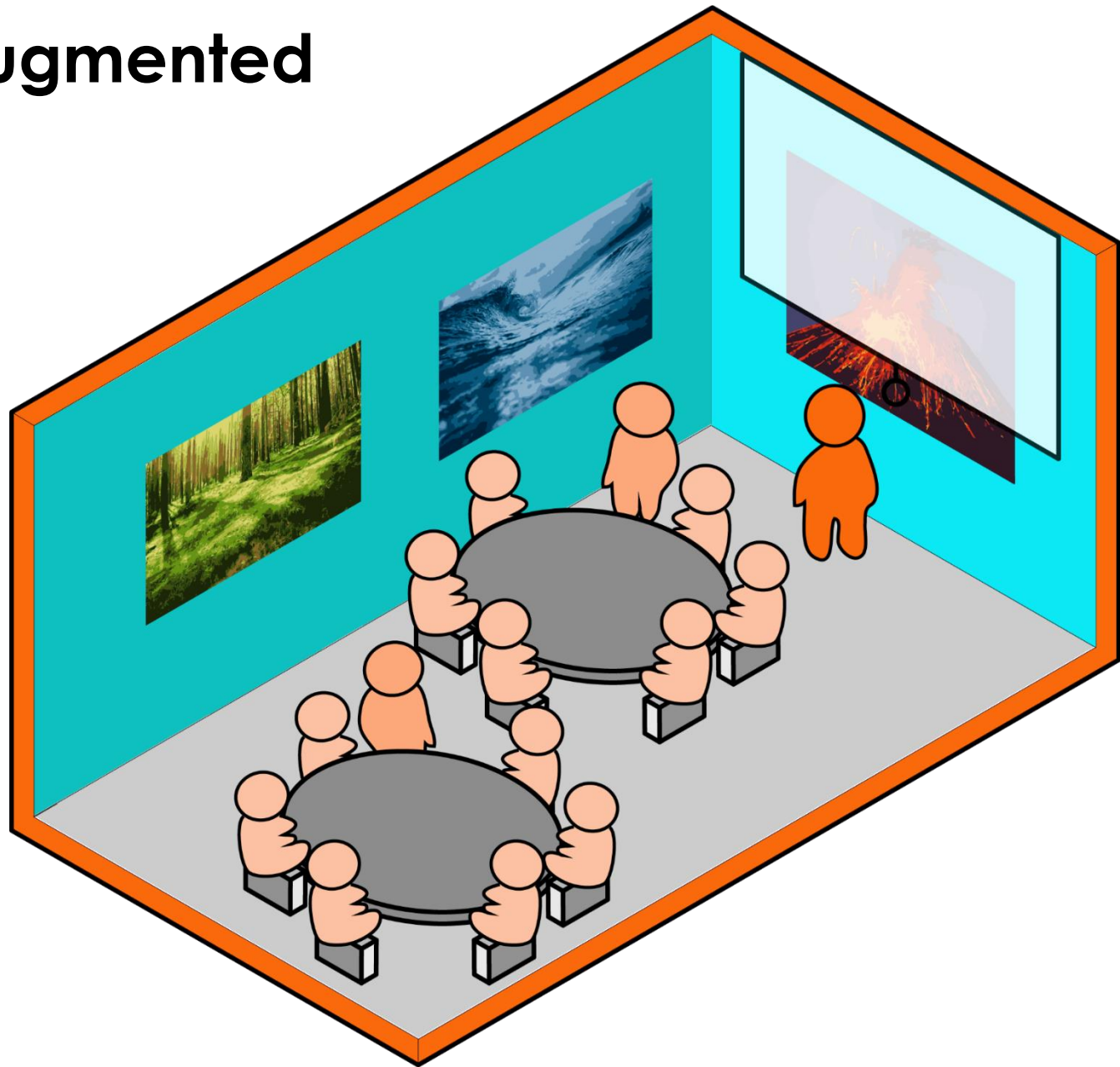
# Pedagogy Models: Modern

~1990 CE to 2000 CE



# Pedagogy Models: Augmented

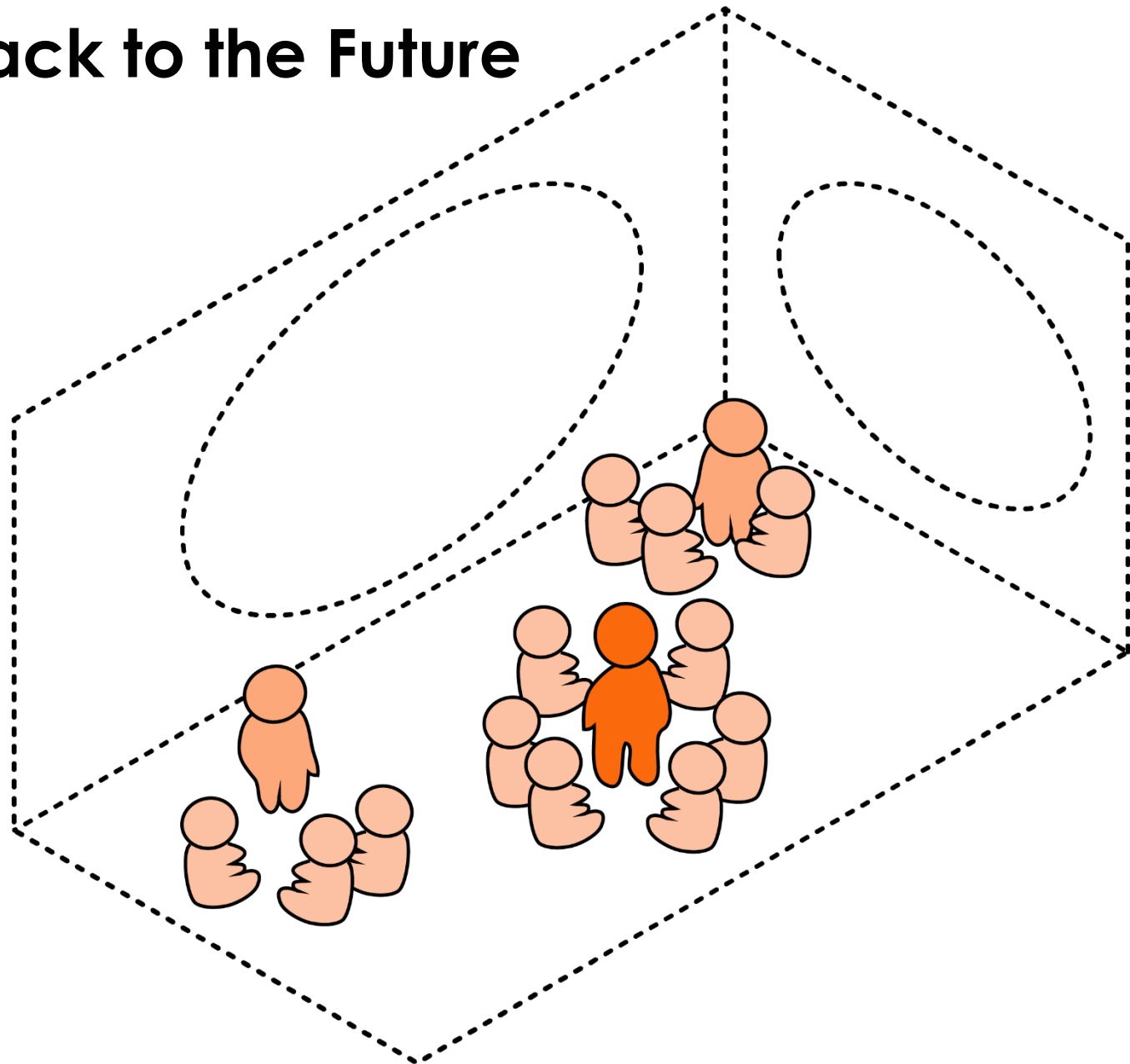
~1990 CE to 2017 CE



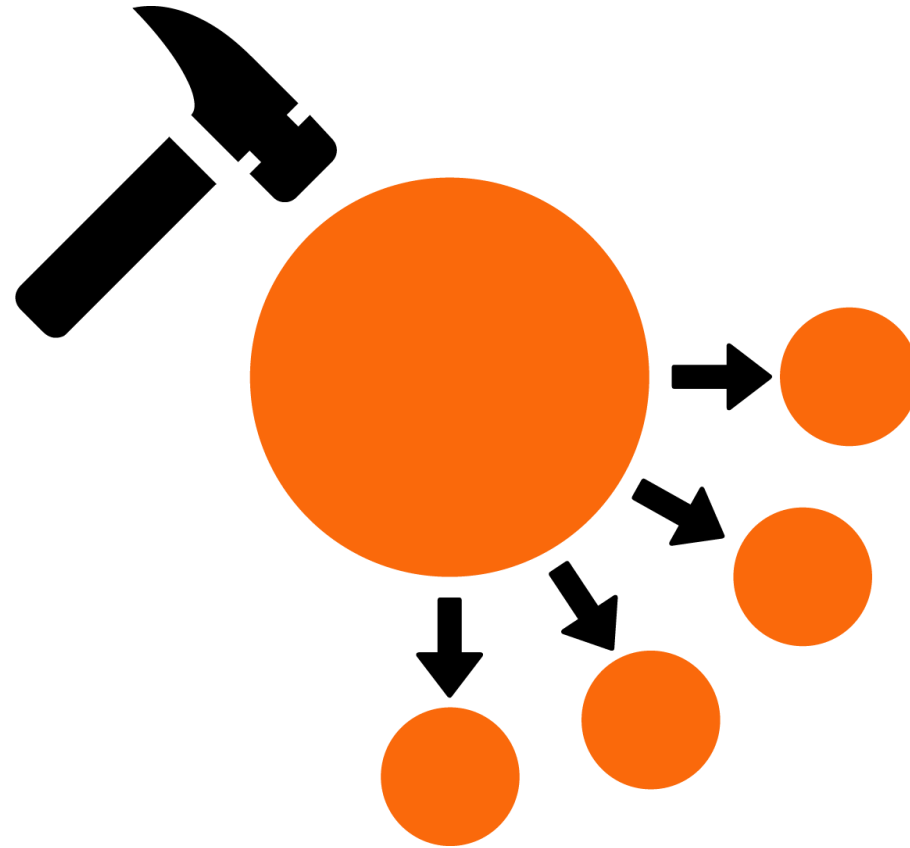


# Pedagogy Models: Back to the Future

~ 2017 CE to....



# No 1. Program Deconstruction



# ROOM DATA SHEET

Self-serve Kiosk

Advising & Counseling

Generalist

Room Name

Department

Category

**Room Area:** 15

**Quantity of Rooms:** 3

**Number of Occupants:** 1

**Furniture:**

<input type="checkbox"/>	Desk	Qty: _____
<input type="checkbox"/>	Desk Return	Qty: _____
<input type="checkbox"/>	Credenza	Qty: _____
<input type="checkbox"/>	Large Meeting Table	Qty: _____
<input type="checkbox"/>	Small Meeting Table	Qty: _____
<input type="checkbox"/>	Café Table	Qty: _____
<input type="checkbox"/>	Coffee Table	Qty: _____
<input type="checkbox"/>	Side Table	Qty: _____

**Equipment:**

<input type="checkbox"/>	Heavy-Duty Shelving	Qty: _____
<input type="checkbox"/>	High-Density Storage	Qty: _____
<input type="checkbox"/>	Mail Cart	Qty: _____
<input type="checkbox"/>	Stacking Chair Cart	Qty: _____
<input type="checkbox"/>	Rolling Cart/Dolly	Qty: _____
<input type="checkbox"/>	Mail Slots	Qty: _____
<input type="checkbox"/>	Pamphlet Holder	Qty: _____
<input type="checkbox"/>	Coat Rack	Qty: _____
<input type="checkbox"/>	Podium	Qty: _____
<input type="checkbox"/>	Marker Board	Qty: _____
<input type="checkbox"/>	Tack Board	Qty: _____

**Electronic Equipment:**

<input checked="" type="checkbox"/>	Computer Monitor	Qty: 1
<input checked="" type="checkbox"/>	Computer CPU	Qty: 1
<input checked="" type="checkbox"/>	Telephone	Qty: 1
<input type="checkbox"/>	Conference Phone	Qty: _____
<input type="checkbox"/>	Printer	Qty: _____
<input type="checkbox"/>	Scanner	Qty: _____
<input type="checkbox"/>	Copier	Qty: _____
<input type="checkbox"/>	Fax	Qty: _____
<input type="checkbox"/>	Microfiche	Qty: _____
<input type="checkbox"/>	Projector	Qty: _____
<input type="checkbox"/>	Projection Screen	Qty: _____

**Power, Telephone, and Data:**

<input checked="" type="checkbox"/>	120V Power Outlets	Qty: 1
<input type="checkbox"/>	240V Power Outlets	Qty: _____
<input checked="" type="checkbox"/>	Telephone Outlets	Qty: 1
<input checked="" type="checkbox"/>	Data Outlets	Qty: 1

**Storage Components:**

<input type="checkbox"/>	Overhead Storage	Qty: _____
<input type="checkbox"/>	Box/Box/File Cabinet	Qty: _____
<input type="checkbox"/>	File/File Cabinet	Qty: _____
<input type="checkbox"/>	Tall Lateral File	Qty: _____
<input type="checkbox"/>	Low Lateral File	Qty: _____
<input type="checkbox"/>	Tall Bookcase	Qty: _____
<input type="checkbox"/>	Low Bookcase	Qty: _____

**Seating:**

<input type="checkbox"/>	Task Chair	Qty: _____
<input type="checkbox"/>	Guest Chair	Qty: _____
<input type="checkbox"/>	3-Seat Sofa	Qty: _____
<input type="checkbox"/>	2-Seat Sofa	Qty: _____
<input type="checkbox"/>	Stacking Chair	Qty: _____
<input type="checkbox"/>	Bench	Qty: _____
<input type="checkbox"/>	Stool	Qty: _____

**Lighting:**

<input type="checkbox"/>	Overhead Light	Qty: _____
<input type="checkbox"/>	Task Light	Qty: _____
<input type="checkbox"/>	Under-cabinet Light	Qty: _____
<input type="checkbox"/>	Window Shades	Qty: _____

**Sensitivities:**

<input type="checkbox"/>	Light
<input type="checkbox"/>	Sound
<input type="checkbox"/>	Privacy
<input type="checkbox"/>	ADA
<input type="checkbox"/>	Speical Needs
<input type="checkbox"/>	Security

**Functional Relationships:** (adjacencies)

**Public-private Threshold:**

**Other Equipment:**

**Remarks:**



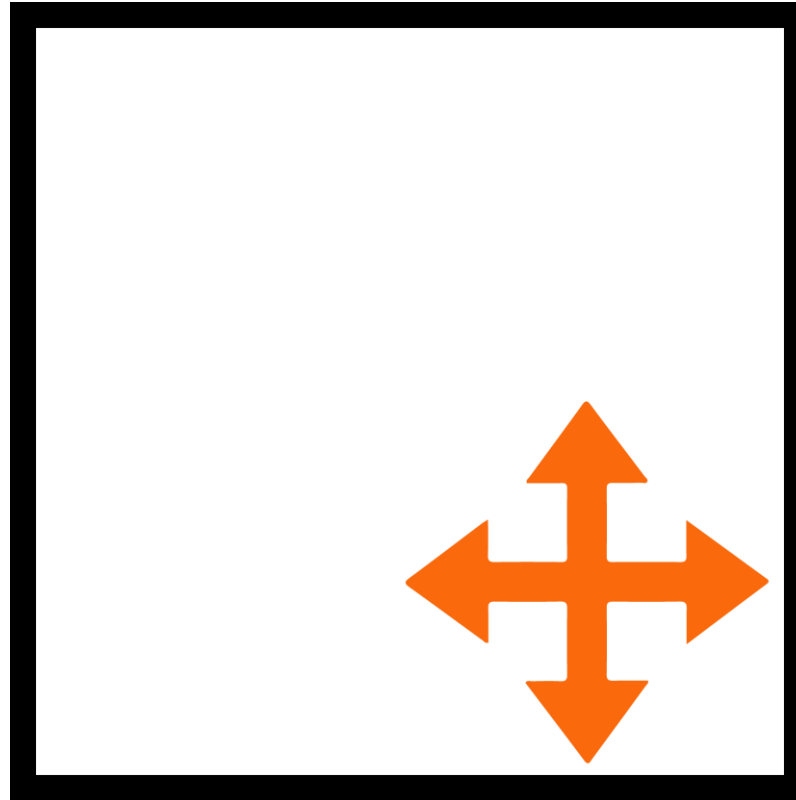


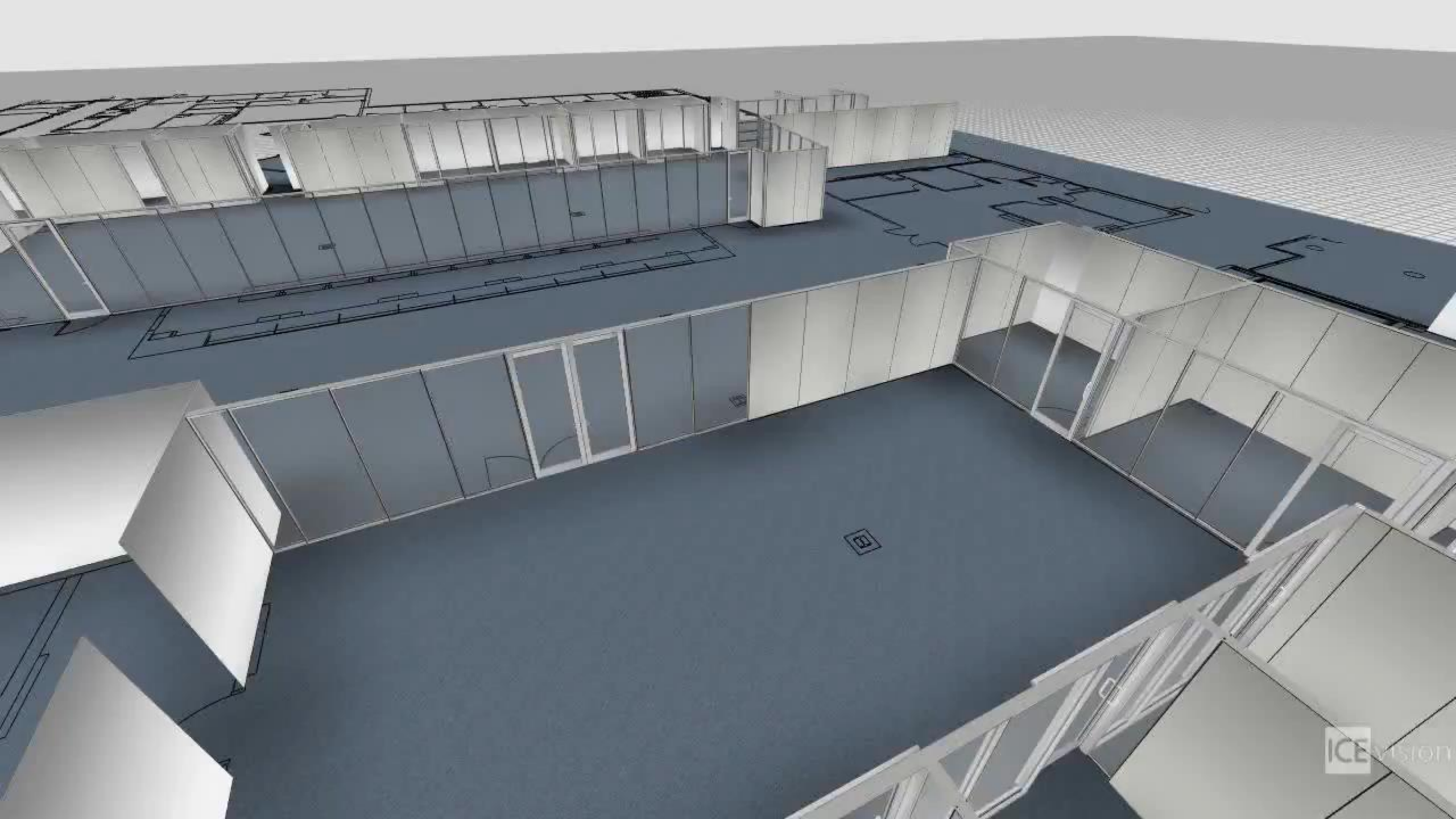
ICCCFO 20171019

**LEGAT**ARCHITECTS  
SUSTAINABILITY | PERFORMANCE | DESIGN



# No 2. Open Space and Function



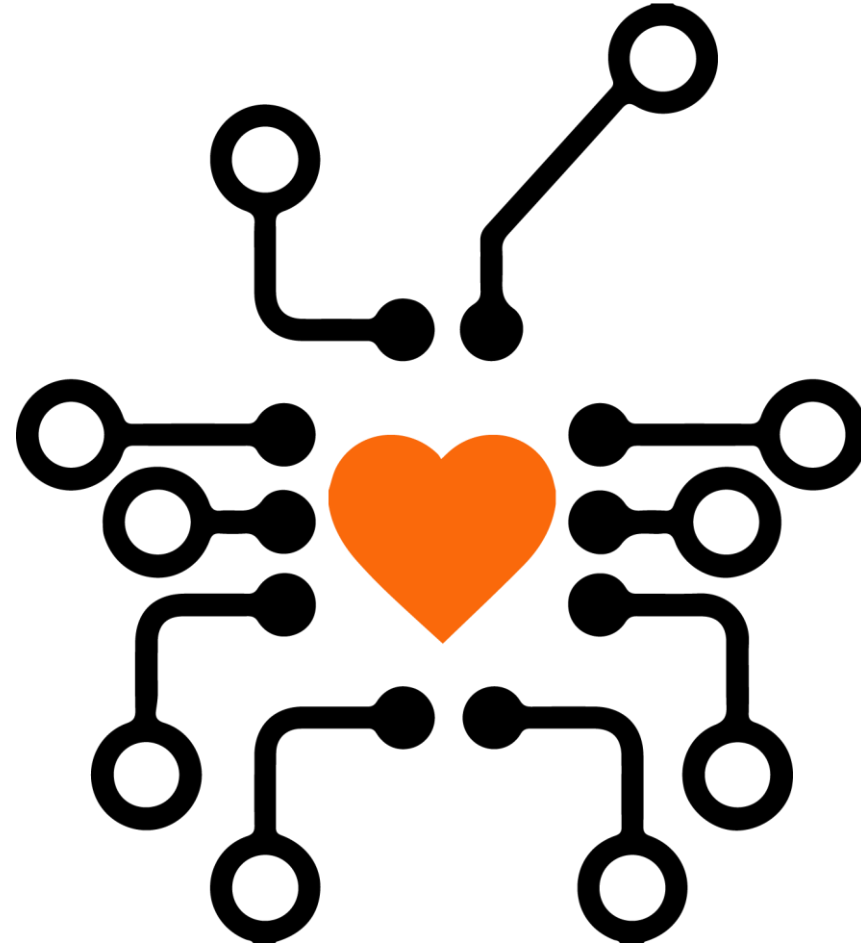




# Sample Project *Cost Analysis*

	FLEXIBLE	STATIC	DELTA
1st	\$462	\$225	-\$237
2nd	\$601	\$450	-\$151
3rd	\$739	\$675	-\$64
4th	\$878	\$900	\$22
5th	\$1,017	\$1,125	\$108

# No 3. Embrace Technology







ICCCFO 20171019

**LEGAT**ARCHITECTS  
SUSTAINABILITY | PERFORMANCE | DESIGN



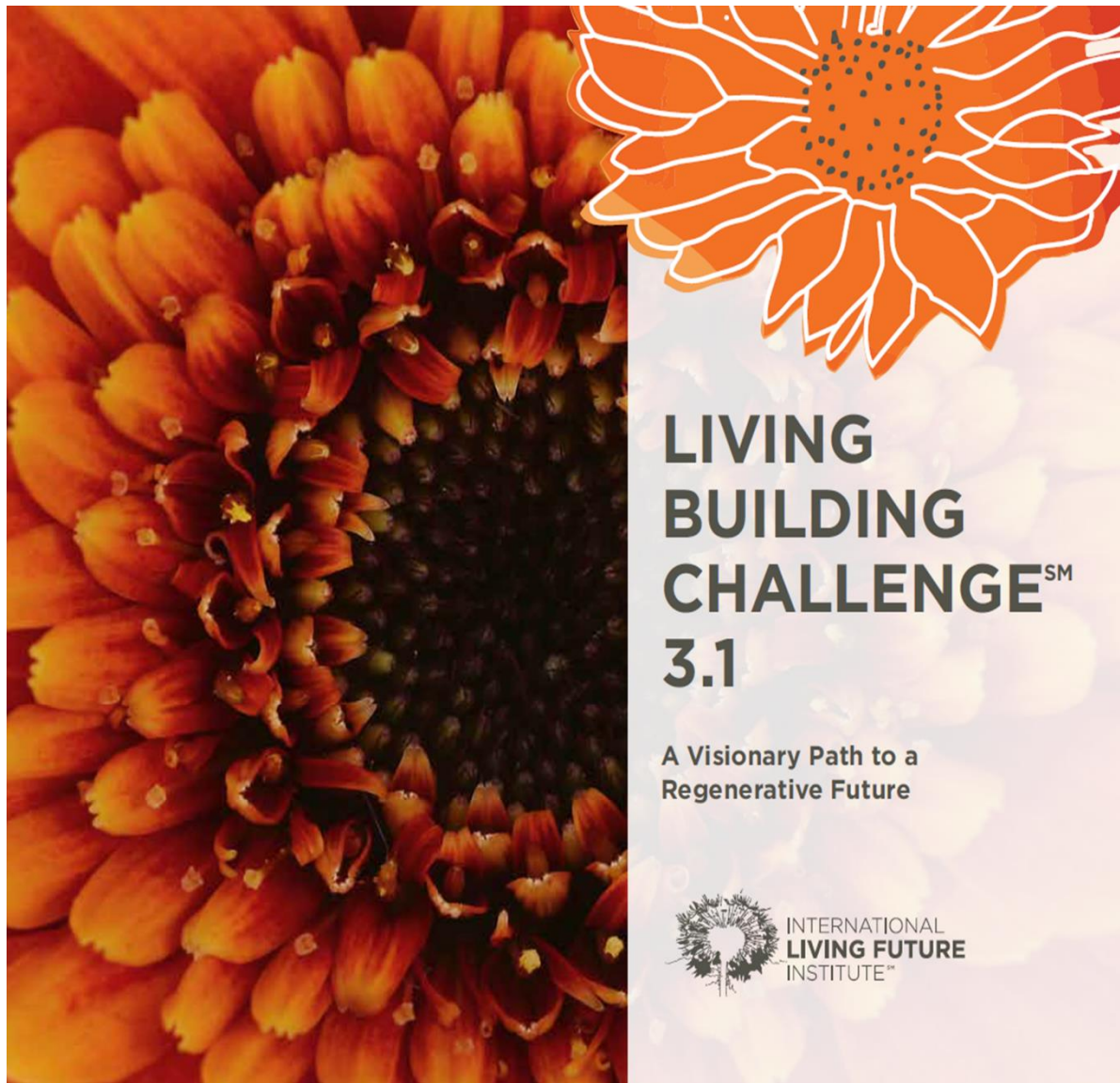




# No 4. Design for Humans







# THE WELL BUILDING STANDARD®

v1 with May 2016 addenda



## WELL BUILDING STANDARD® FEATURES MATRIX

This table shows which features are Preconditions and Optimizations for the different typologies of the standard for commercial and institutional offices. Refer to the tables in the beginning of each concept for details about the applicability of specific parts.

	Core and Shell	New and Existing Interiors	New and Existing Buildings
<b>A.1</b>			
01	P	P	F
02	P	P	F
03	P	P	F
04	P	P	F
05	P	P	F
06	P	P	F
07	P	P	F
08	P	O	P
09		P	P
10	P	P	P
11	P	P	P
12	P		F
13		O	C
14	O	O	C
15	O	O	C
16		O	C
17	O	O	C
18		O	C
19	O	O	C
20	O	O	C
21		O	C
22		O	C
23	O	O	C
24	O	O	C
25		O	C
26		O	C
27		O	C
28		O	C
29		O	C
<b>Water</b>			
30	P	P	F
31	P	P	F
32	P	P	F
33	P	P	F
34	P	P	F
35		O	C
36	O	O	C
37	O	O	C

## ARDS

lead to a variety of symptoms and compounds (VOCs), combustion products, and particulate matter are known to trigger respiratory irritation and allergies. While natural ventilation methods, general building envelope quality, and general building envelope quality if external air quality



Cardiovascular  
Endocrine  
Immune  
Nervous  
Respiratory

to complete a performance test after means of verifying that the building, ventilated, is meeting critical air

Core and Shell	New and Existing Interiors	New and Existing Buildings
P	P	P

## ATILE SUBSTANCES

less than 27 ppb.  
inorganic compounds less than 500 µg/m³.

P	P	P
---	---	---

## TRICULATE MATTER AND

less than 9 ppm:  
µg/m³.  
µg/m³.  
ppb.

P	P	P
---	---	---

in projects with regularly occupied spaces at or below grade:  
µCi/L in the lowest occupied level of the project.



light



nourishment



water



mind

# nourishment



**THE WELL**  
COMMERCIAL KITCHEN PILOT ADDENDUM

VERSION A | JUNE 2015  
CONFIDENTIAL PILOT ADDENDUM

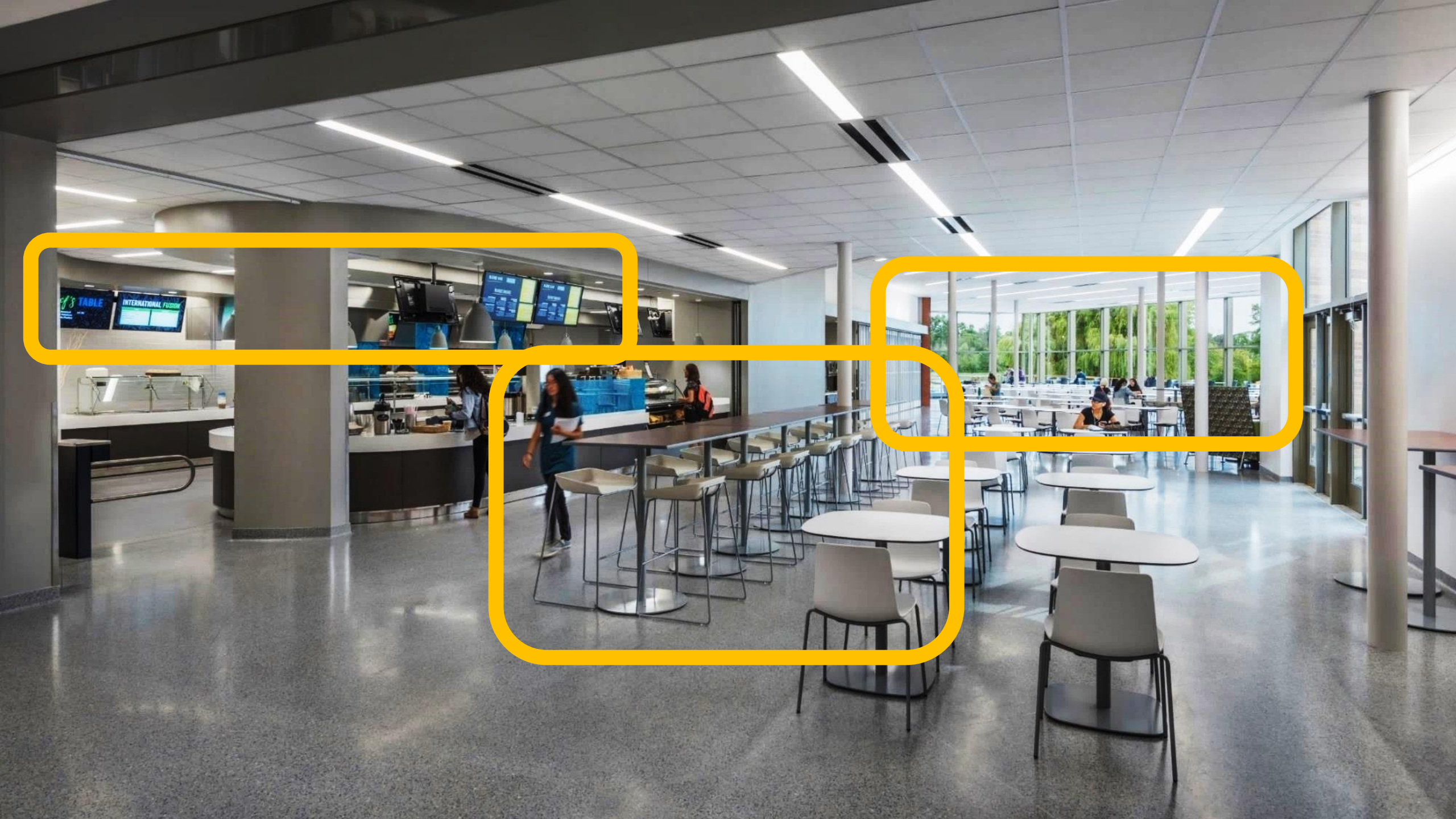


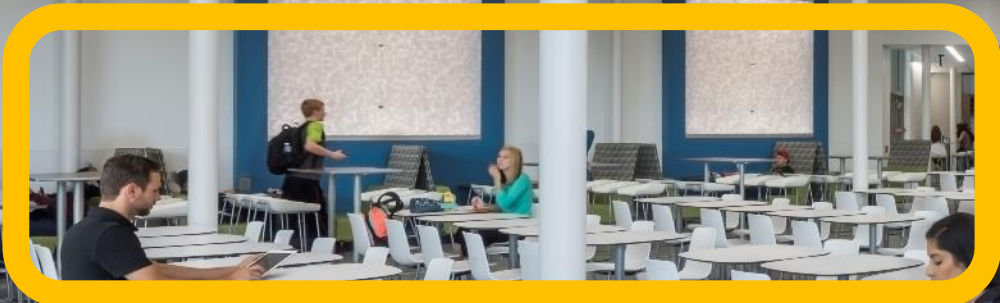

**THE WELL**  
RESTAURANT PILOT ADDENDUM

VERSION A | JUNE 2015 with MAY 2016 ADDENDA  
CONFIDENTIAL PILOT ADDENDUM

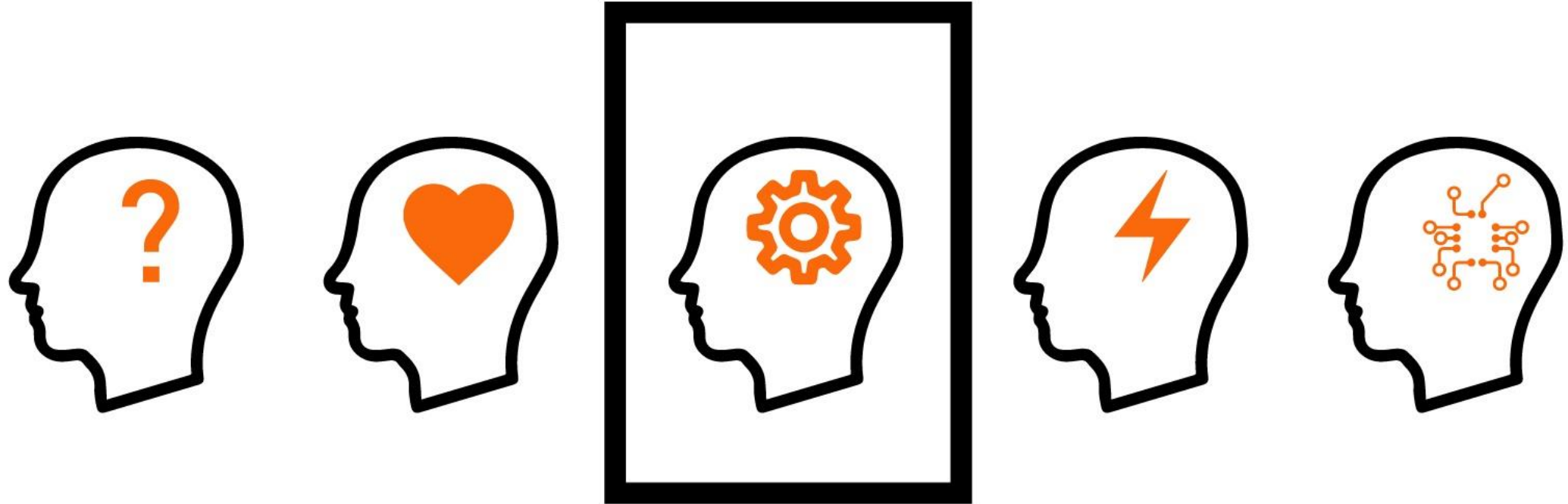


ADDITIONAL PARTS			
	Letter of Assurance	Annotated Documents	On-Site Checks
<b>NOURISHMENT</b>			
Some Features are modified in some way from how they are defined or required in the published WELL Building Standard. These differences take the form of changes in certification level, or the addition or removal of specific parts to take the feature for this pilot application. This section of the document details any new parts within existing features which apply to this pilot. Any changes in Feature level of all parts (see here for "Occupational Optimization," are shown in the previous table. Because of simultaneous pilot programs in multiple building sectors, the numbering system may not be sequential.			
<b>41 HAND WASHING</b>			<input type="checkbox"/>
Part 4: Hand Washing Station Location			
a. Where applicable, a handwashing station is also in proximity to the nearest showering station, a bathroom, or a change room intended for food consumption.			
<b>44 NUTRITIONAL INFORMATION</b>			<input type="checkbox"/>
Part 2: Healthy Cooking Guidelines			
The following on-site available information is added to the minimum requirements for this feature:			
a. A library of at least 100 recipes, magazines, or other literature related to healthy cooking or gardening for every 100 seats is provided on-site in the food preparation area.			
b. Information on suggested calorie intake based on age, gender, weight, and activity level according to USDA recommendations and displayed prominently in the main dining spaces.			
<b>45 FOOD ADVERTISING</b>			<input type="checkbox"/>
Part 4: Healthy Menu Design			
Menus and menu boards designed to meet all of the following requirements:			
a. Healthy menu items are listed using appealing descriptions.			
b. Healthy menu items are visually highlighted, such as through icons, different colors or boxing.			
c. Healthy menu items are listed as full menu sections.			
d. Healthy menu items call for the preparation of the menu, for example, the use of natural preservatives or fresh ingredients.			
<b>LIGHT</b>			
Part 6: Visual Acuity for Dining			
The available lighting system for general dining areas must meet the following requirements:			
a. Uniformity: Able to maintain an average of 10 lux (14 ft-c) or more measured on the horizontal plane at the height of the dining surface. The light may be dimmed in the presence of daylight, but the average lux level must be maintained.			
b. Glare: Dining area well-lit. Able to maintain an average of 100 fL (2 ft-c) or more measured on the horizontal plane at the height of the dining surface. The lighting system in the presence of daylight, but the glare level must be maintained below these levels.			
c. Illuminance: Able to maintain an average of 30 or 2 ft-c or more measured on the horizontal plane at the height of the dining surface. The light may be dimmed in the presence of daylight, but the average lux level must be maintained above these levels.			
CONFIDENTIAL PILOT ADDENDUM			





# No 5. Personalize





ICCCFO 20171019

**LEGAT**ARCHITECTS  
SUSTAINABILITY | PERFORMANCE | DESIGN





ICCCFO 20171019

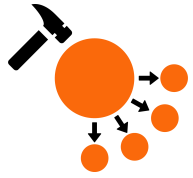
**LEGAT**ARCHITECTS  
SUSTAINABILITY | PERFORMANCE | DESIGN



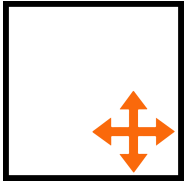




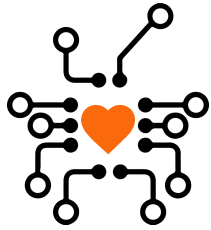
**air  
water  
nourishment  
light  
fitness  
comfort  
mind**



# 1. Program Deconstruction



# 2. Open Space and Function



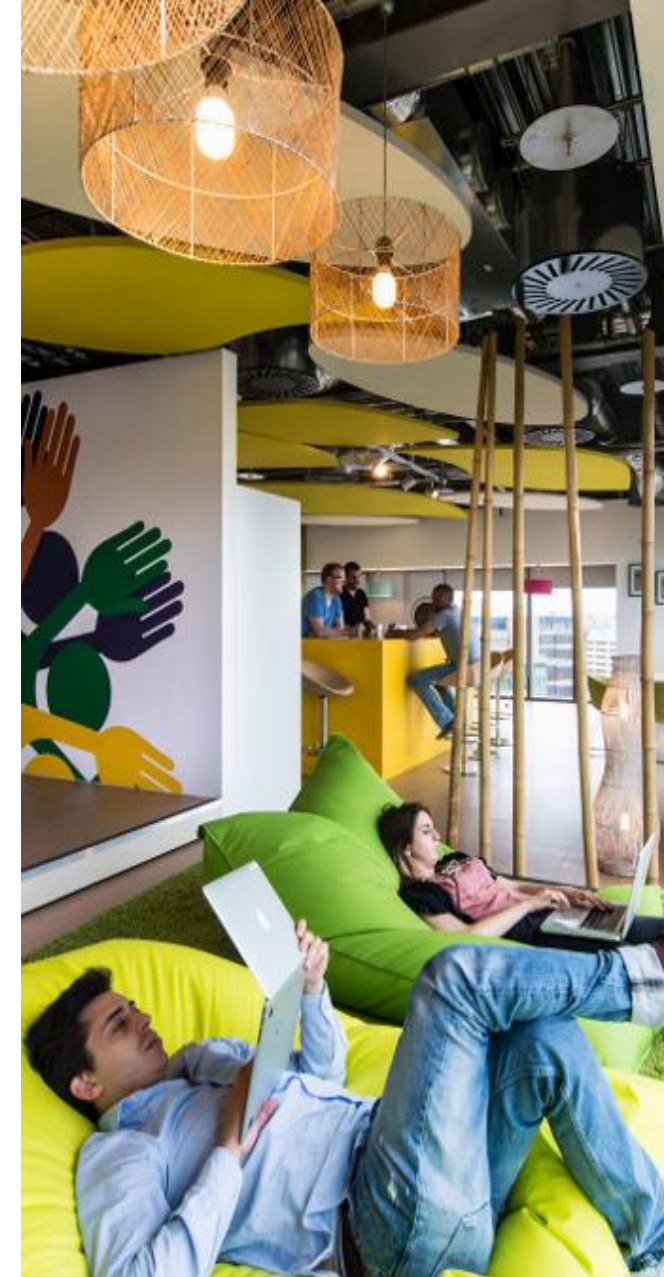
# 3. Embrace Technology



# 4. Design for Humans



# 5. Personalize



# thank you!

**Sylvia Kowalk, LEED AP ID+C**

*Director of Interior Design*

312-756-1271 / skowalk@legat.com

**Vuk Vujovic, Associate AIA, LEED AP BD+C, WELL AP**

*Vice President, Director of Sustainability & Energy*

312-756-1266 / vvujovic@legat.com