

# WELL students:

standards supporting the whole child, mind, body

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An architectural rendering of a modern building interior. The space is bright and open, featuring a large, multi-level atrium. A prominent feature is a tall, vertical climbing wall with a textured, rock-like surface. People are seen walking on various levels, including a mezzanine with a glass railing. The ceiling is high with a grid of skylights, and the overall atmosphere is clean and contemporary.

## **01 WELL building standard**

Introduce the WELL Building Standard Educational Facility Pilot Program and its focus of measuring and monitoring the performance of building features that impact health and wellbeing.

## **02 fitness + nourishment**

Identify ways the physical environment can reinforce behavior change

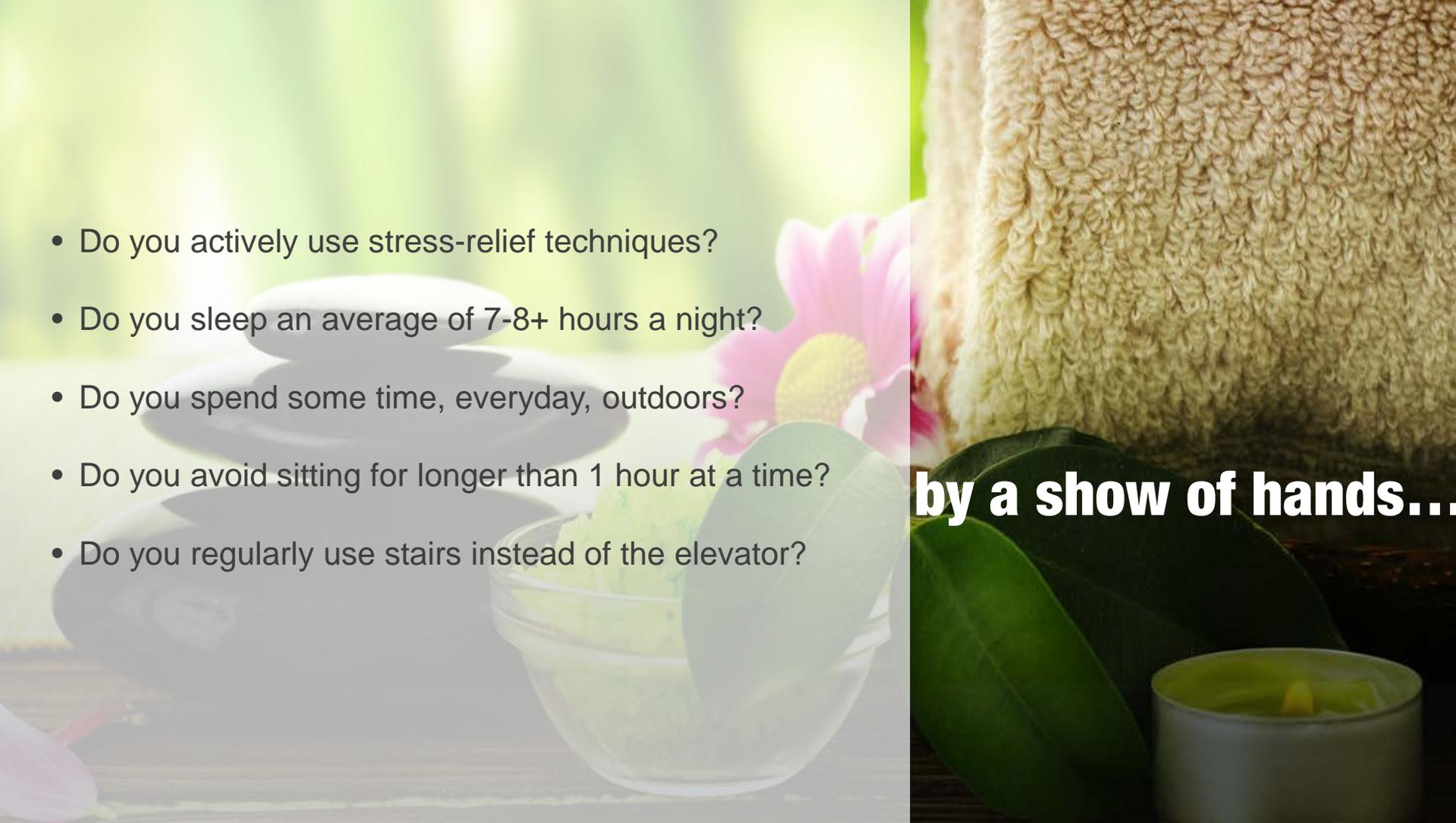
## **03 comfort + mind**

Understand the link between physical space and neuroscience and psychology

## **04 pk-12 education**

Discover how higher education wellness facilities are translating to PK-12 campuses

# student + wellness

- 
- A composite background image for a wellness presentation. The left side features a stack of smooth, light-colored spa stones on a wooden surface, with a pink flower and a glass bowl of green scrub nearby. The right side shows a close-up of a textured, light-colored towel and a lit candle in a white holder. The text is overlaid on the left side.
- Do you actively use stress-relief techniques?
  - Do you sleep an average of 7-8+ hours a night?
  - Do you spend some time, everyday, outdoors?
  - Do you avoid sitting for longer than 1 hour at a time?
  - Do you regularly use stairs instead of the elevator?

**by a show of hands...**

FEBRUARY 3, 2014

TIME

THE  
MINDFUL  
REVOLUTION

The science of finding focus in a  
stressed-out, multitasking culture

BY KATE PICKERT

time.com

**wellness evolution**

# challenges

## impact on offices

*cost driven*

- cost of healthcare vs preventative care
- productivity & engagement
- employee turnover & ROI

Sitting is the  
new smoking.



Inactivity is putting your bones at risk.





# current challenges

## impact on pk-12 schools

*healthy habits, learning retention*

- childhood obesity
- hunger in schools
- bullying



01

**WELL building standard**

BEHAVIOR

OPERATIONS

DESIGN

# WELL building standard



INTERNATIONAL  
**WELL**  
BUILDING  
INSTITUTE



COLLABORATIVE FOR  
HIGH PERFORMANCE  
**SCHOOLS.**



**LIVING  
BUILDING  
CHALLENGE™**



## wellness + body systems

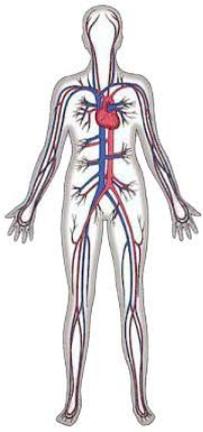
The components of the WELL Building Standard represent a comprehensive set of strategies organized by specific impacts on health and wellness. Many features of the WELL Building Standard are ascribed to one or more of the following body systems:



muscular system



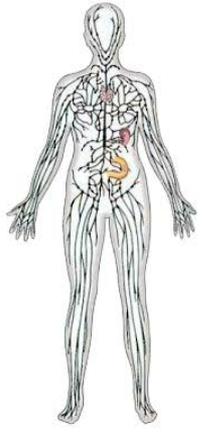
skeletal system



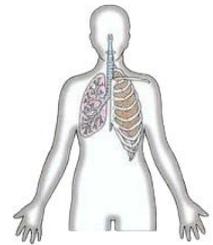
cardiovascular system



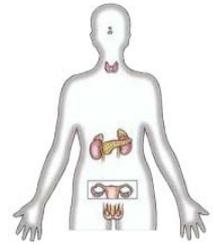
nervous system



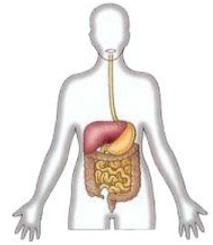
immune system



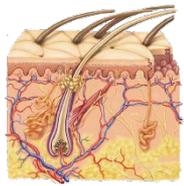
respiratory system



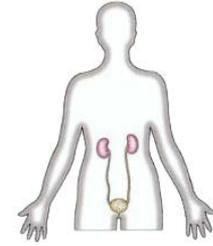
endocrine system



digestive system



integumentary system



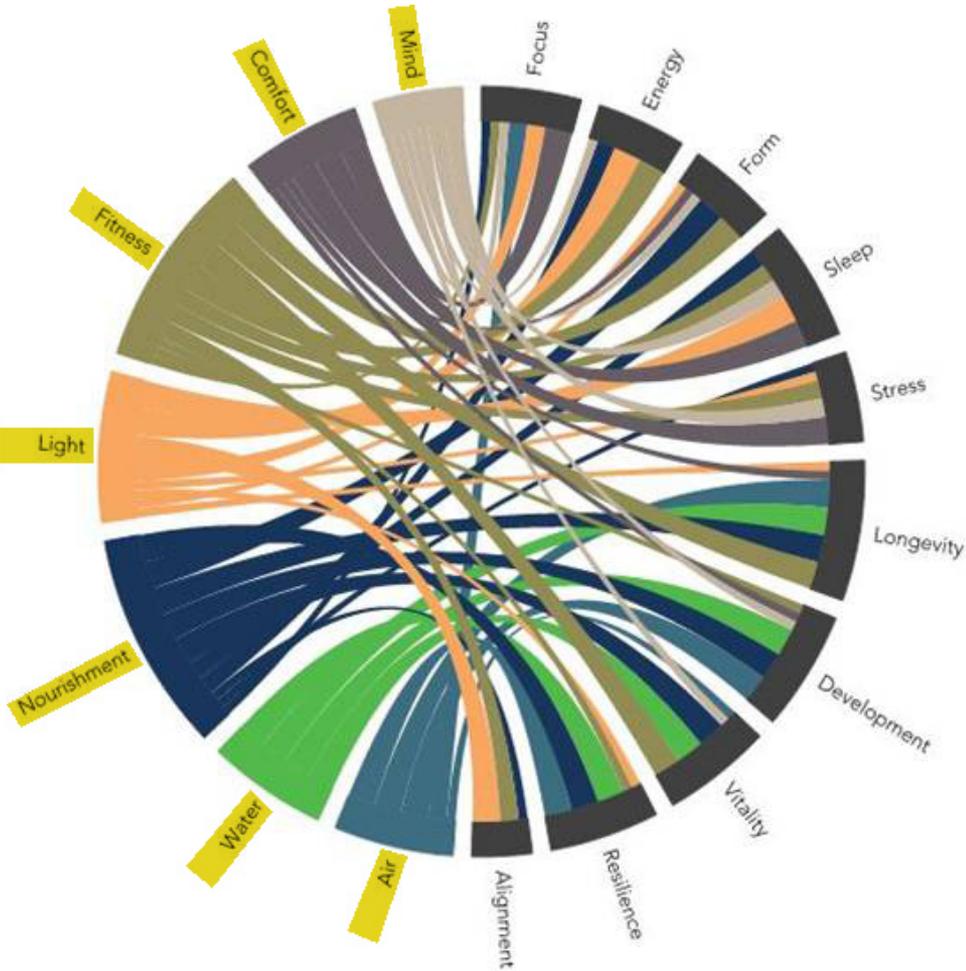
urinary system



reproductive system

# WELL building standard

## THE SEVEN CONCEPTS OF THE WELL BUILDING STANDARD



# WELL building standard

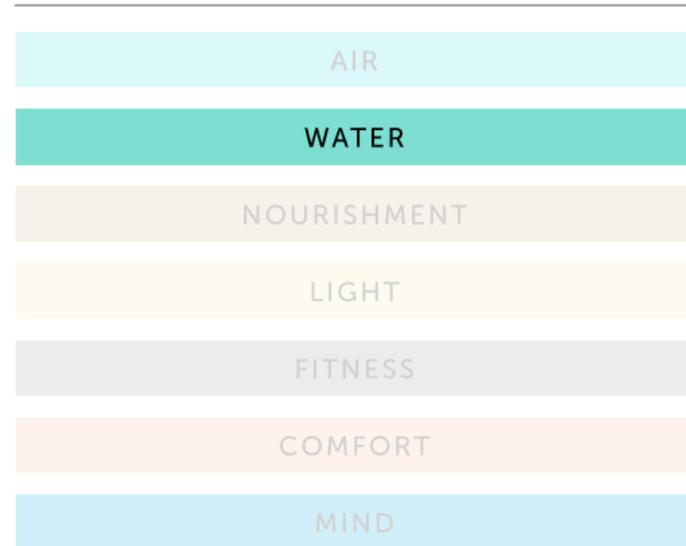
## THE SEVEN CONCEPTS OF THE WELL BUILDING STANDARD



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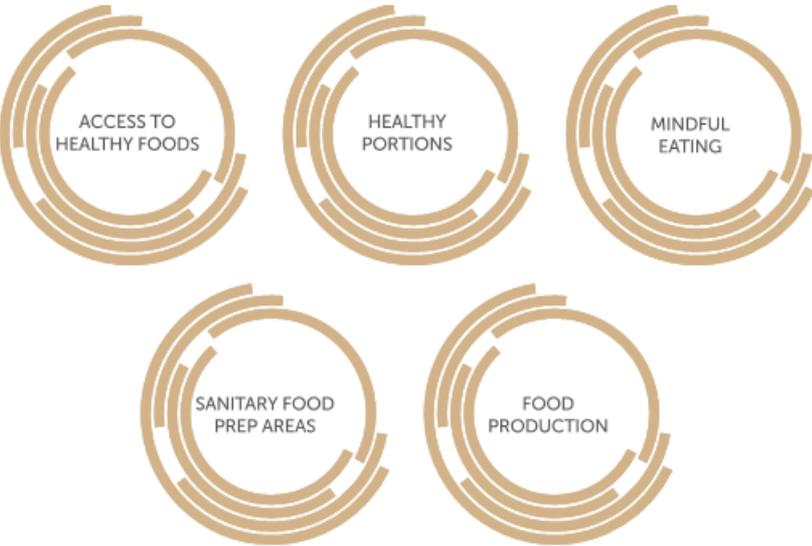


## THE SEVEN CONCEPTS OF THE WELL BUILDING STANDARD



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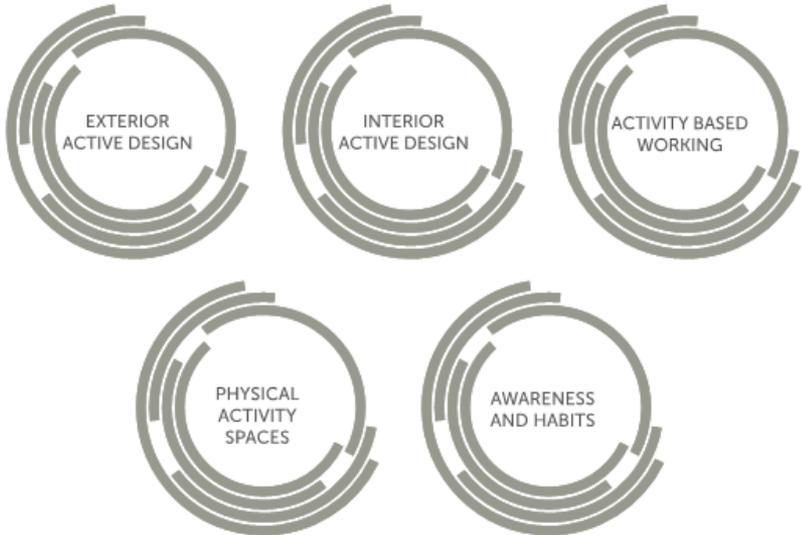
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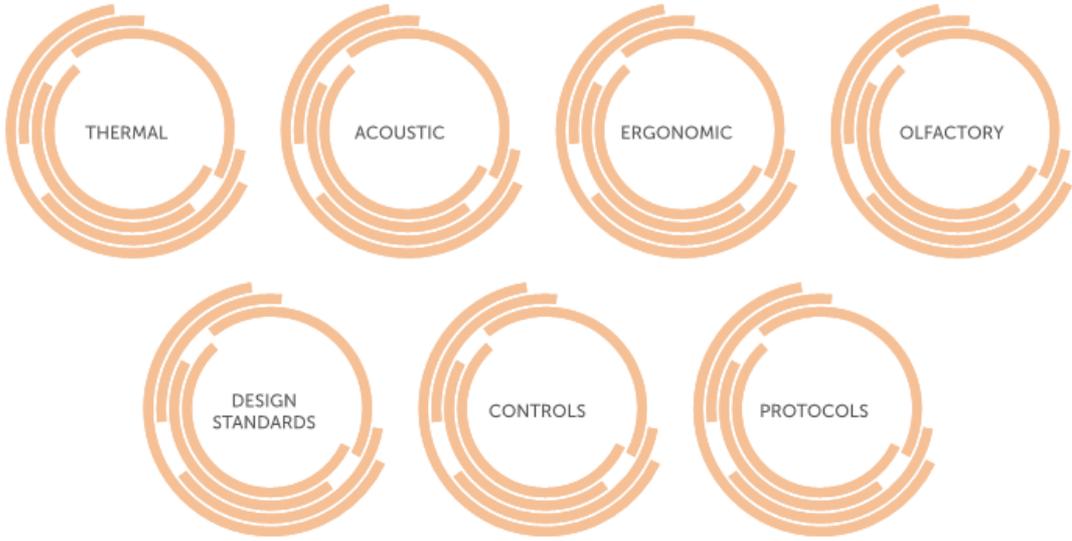


# WELL building standard

## THE SEVEN CONCEPTS OF THE WELL BUILDING STANDARD



# WELL building standard



## THE SEVEN CONCEPTS OF THE WELL BUILDING STANDARD



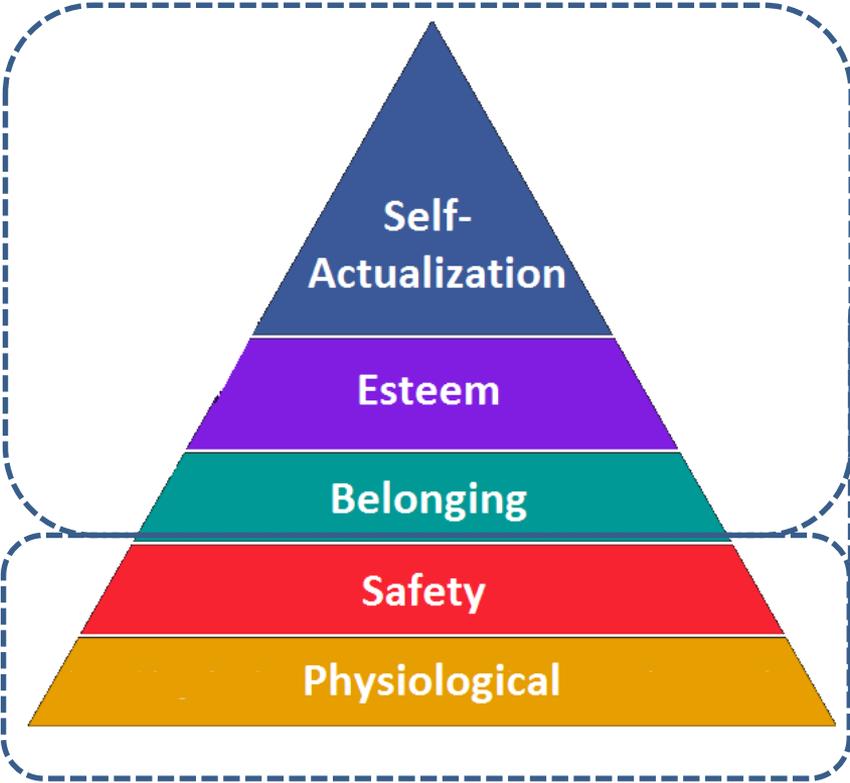
# WELL building standard



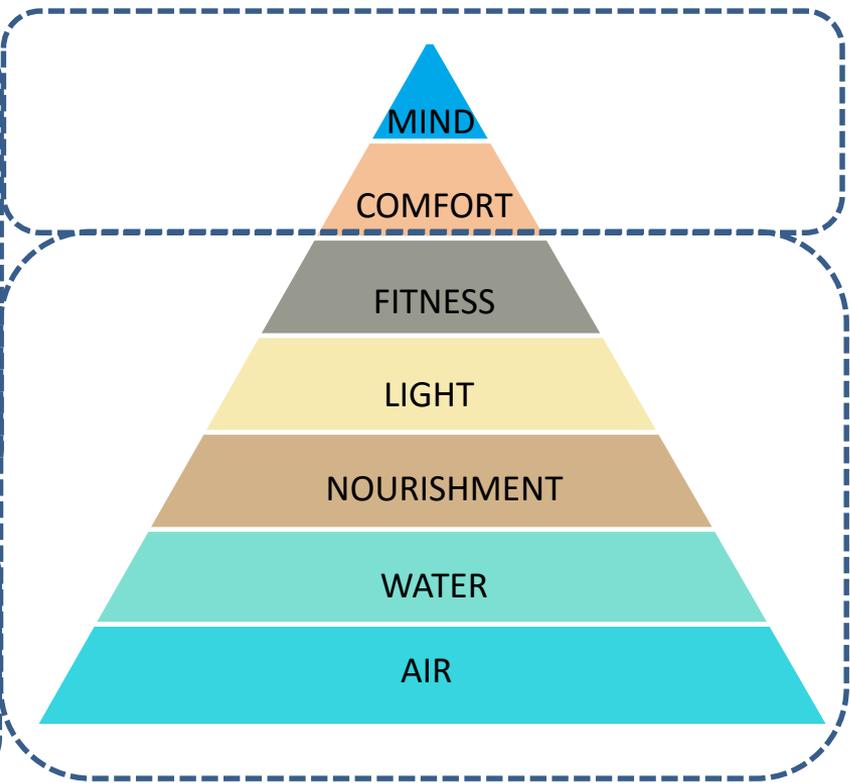
## THE SEVEN CONCEPTS OF THE WELL BUILDING STANDARD



# WELL building standard



**Maslow's Hierarchy of Needs**



**Well Building graphic pyramid**

# WELL building standard

building design factors: **the environment**

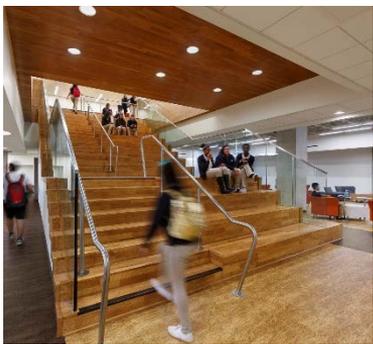


THE SEVEN CONCEPTS OF THE WELL BUILDING STANDARD

- AIR
- WATER
- NOURISHMENT
- LIGHT
- FITNESS
- COMFORT
- MIND

# WELL building standard

## building operations factors: **the body**



### THE SEVEN CONCEPTS OF THE WELL BUILDING STANDARD

- AIR
- WATER
- NOURISHMENT**
- LIGHT
- FITNESS
- COMFORT
- MIND

# WELL building standard

## program design factors: **the mind & behavior**



### THE SEVEN CONCEPTS OF THE WELL BUILDING STANDARD



002

**fitness + nourishment**



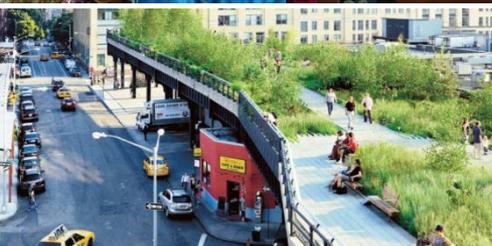


**Burn Calories, Not Electricity**



**Take the Stairs!**  
Walking up the stairs just 2 minutes a day helps prevent weight gain. It also helps the environment.

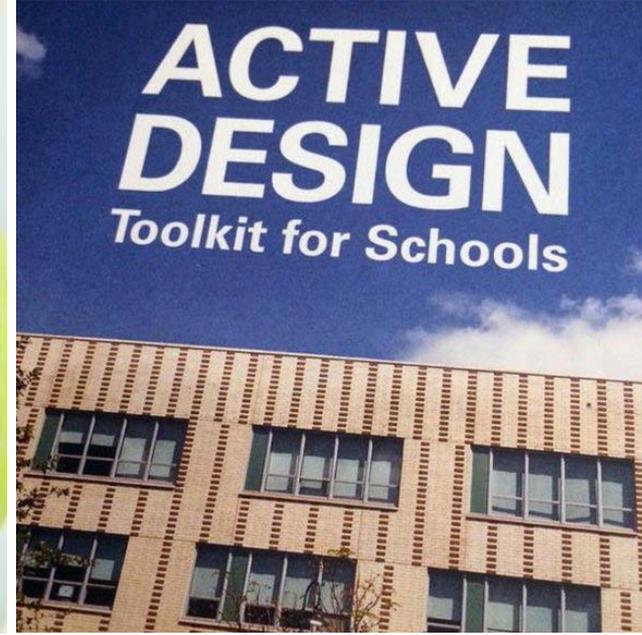
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fitness + nourishment

the current wellness focus...



...fitness and nutrition

fitness + nourishment



**LIVE WELL**  
SAN DIEGO

# encourage movement

## fitness + nourishment



“Stair prompts that encourage stair use for health benefits have been shown increased stair use by a median of 50%.”

**Physical Activity:** Any bodily movement that results in energy expenditure (e.g., walking, taking the stairs).

**Guide to Community Preventative Services**, Environmental and Policy Approaches to Physical Activity, Point-of-Decision Prompts to Encourage Use of Stairs



New Settlement Community Campus  
by Dattner Architects in association with Edelman Sultan Knox Wood/Architects



New Settlement Community Campus  
by Dattner Architects in association with Edelman Sultan Knox Wood/Architects

# exploration & play

# fitness + nourishment



“When using playgrounds that are painted with designs for games and imaginative play, kids engage in moderate to vigorous activity for more than 50% of their recess period.”

**Stratton G and Mullan E.** “The Effect of Multicolor Playground Markings on Children’s Physical Activity Level During Recess.” *Preventive Medicine*, 41(5–6): 828-833, 2005.



**express movement**

**fitness + nourishment**

As we move through our cities each day, we make dozens of small decisions, based on dozens of small reasons.



New Settlement Community Campus  
by Dattner Architects in association  
with Edelman Sultan Knox Wood/Architects

# programed outdoor learning

fitness + nourishment



“96% of all children participating in a related study, who were asked to draw their favorite place, drew illustrations of an outdoor location”



fitness + nourishment



access to healthy food

“Adolescents with poor health are less likely to graduate from high school on time or attend college or post-secondary education. In these ways, childhood obesity also has an impact on knowledge.”

“Tools for Schools Toolkit,”  
2015 Live Well San Diego



**make it a game or challenge**



**HOP ON UP!**

Get out of your chairs!  
Jump up! Jump down!  
And hop on up the stairs!

**Using the stairs burns twice as many calories as walking!**

**fitness + nourishment**

“Students’ attitudes towards health and physical education can have a significant effect on their achievement of the [curriculum] expectations.

To learn effectively and develop positive attitudes towards healthy active living, students should enjoy the skill-development and physical activities.”

THERE ARE 1,440  
MINUTES IN EVERY  
DAY... SCHEDULE 30  
OF THEM FOR  
PHYSICAL ACTIVITY.



## READY

### EQUIPMENT:

NONE

### SET-UP:

STUDENTS FORM A CIRCLE

NUMBER OF STUDENTS: 15+

TIME: 15 MINUTES +

## EXPLAIN

- 1 Form a circle. Listen for the commands.
- 2 When you hear:
  - 'Go' - walk in the direction you are facing
  - 'Stop' - freeze
  - 'Turn' - do a half turn (180 degrees) and freeze
  - 'Twizzle' - do a full jump (360 degrees) and freeze
- 3 If you make a mistake, do 5 jumping jacks, and rejoin the game.

### ✓ For Understanding:

- What do you do for a 'turn'?
- What do you do for 'twizzle'?

### GAME TIP:

- Practice the commands with students before starting the game.

### CONFLICT RESOLUTION TIP:

- If a student makes a mistake give them a high-five.

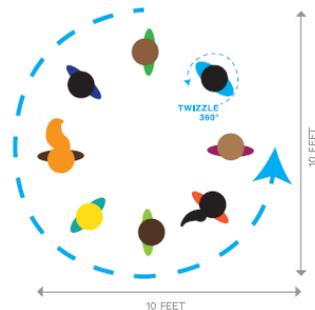
### INDOOR TIP:

- Have students jog slowly in a circle.

## PLAY → REP IT OUT!

- **EASY:** Walk in a circle
- **MEDIUM:** Side shuffle in a circle
- **HARD:** Hop on 1 foot in the circle

# TWIZZLE



### ENVIRONMENT:

CAFETERIA

### CATEGORY:

ENERGIZERS/  
ACTIVE LISTENING

### FITNESS FOCUS:



### BACK-UP GAMES:

ZIP-ZAP-ZOOM  
CAT AND MOUSE

ENERGIZERS / ACTIVE LISTENING

GRADES K - 5

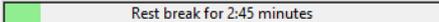
INDOOR

CAFETERIA

G-14

 **Rest break**

This is your rest break. Make sure you stand up and walk away from your computer on a regular basis. Just walk around for a few minutes, stretch, and relax.

 Rest break for 2:45 minutes

 Lock  Skip  Postpone



# healthy habits for body movement

## fitness + nourishment

On average, Americans sit 11hrs per day





03

**comfort + mind**

comfort + mind

A more holistic look...



...comfort and mind



**nature is our 1<sup>st</sup> classroom**

## comfort + mind

“When students are exposed to nature their sense are activated. And when the sense are engaged, the brain is more receptive to receiving new information”

Studies have shown that exposure to nature:

- increases attention span
- strengthens memory
- reduces stress
- improves mood
- enhances creativity

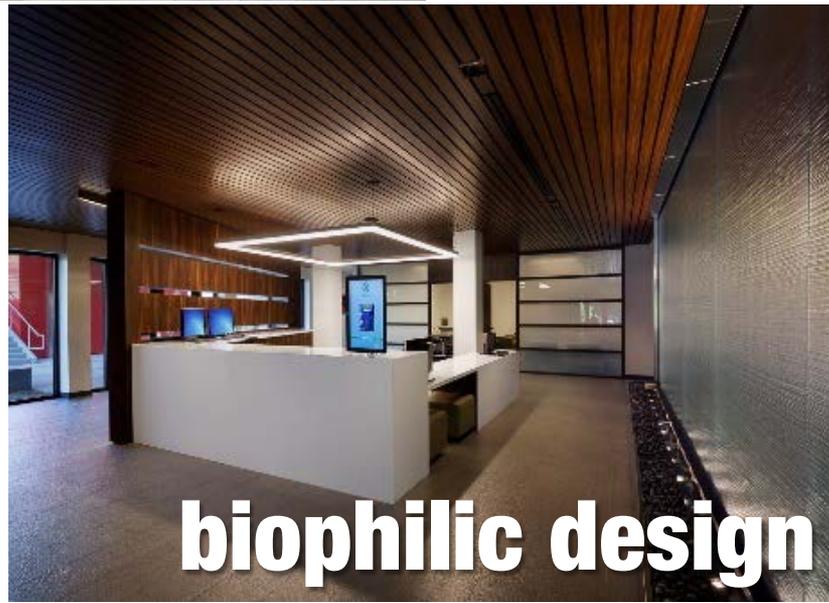


Buckingham County Primary and Elementary Schools by VMDO Architects

comfort + mind

“...Above all, biophilic design must nurture a love of place”

- connection with nature
- thermal & airflow variability
- presence of water
- dynamic & diffuse light
- biomorphic forms, patterns & materials
- complexity & order, refuge, mystery



**biophilic design**

“14 Patterns of Biophilic Design,”  
2012 Terrapin Bright Green LLC

# biophilic design

comfort + mind

14 PATTERNS		STRESS REDUCTION	COGNITIVE PERFORMANCE	EMOTION, MOOD & PREFERENCE
NATURE IN THE SPACE	Visual Connection with Nature	<ul style="list-style-type: none"> <li>Lowered blood pressure and heart rate (Brown, Barton &amp; Gladwell, 2013; van den Berg, Hartig, &amp; Staats, 2007; Tsunetsugu &amp; Miyazaki, 2005)</li> </ul>	Improved mental engagement/ attentiveness (Biederman & Vessel, 2006)	Positively impacted attitude and overall happiness (Barton & Pretty, 2010)
	Non-Visual Connection with Nature	<ul style="list-style-type: none"> <li>Reduced systolic blood pressure and stress hormones (Park, Tsunetsugu, Kasetani et al., 2009; Hartig, Evans, Jamner et al., 2003; Orsega-Smith, Mowen, Payne et al., 2004; Ulrich, Simons, Losia et al., 1991)</li> </ul>	Positively impacted cognitive performance (Mehta, Zhu & Cheema, 2012; Ljungberg, Neely, & Lundström, 2004)	Perceived improvements in mental health and tranquility (Li, Kobayashi, Inagaki et al., 2012; Jahneke et al., 2011; Tsunetsugu, Park, & Miyazaki, 2010; Kim, Ren, & Fielding, 2007; Stigsdottir & Grahn, 2003)
	Non-Rhythmic Sensory Stimuli	<ul style="list-style-type: none"> <li>Positively impacted heart rate,</li> <li>systolic blood pressure and sympathetic nervous system activity (Li, 2009; Park et al., 2008; Kahn et al., 2008; Beauchamp, et al., 2003; Ulrich et al., 1991)</li> </ul>	Observed and quantified behavioral measures of attention and exploration (Windhager et al., 2011)	
	Thermal & Airflow Variability	<ul style="list-style-type: none"> <li>Positively impacted comfort, well-being and productivity (Heerwagen, 2006; Tham &amp; Willem, 2005; Wigü, 2005)</li> </ul>	Positively impacted concentration (Hartig et al., 2003; Hartig et al., 1991; R. Kaplan & Kaplan, 1989)	Improved perception of temporal and spatial pleasure (alliesthesia) (Parkinson, de Dear & Candido, 2012; Zhang, Arens, Huizenga & Han, 2010; Arens, Zhang & Huizenga, 2006; Zhang, 2003; de Dear & Brager, 2002; Heschong, 1979)
	Presence of Water	<ul style="list-style-type: none"> <li>Reduced stress, increased feelings of tranquility, lower heart rate and blood pressure (Avarsson, Wens, &amp; Nilsson, 2010; Pheasant, Fisher, Watts et al., 2010; Biederman &amp; Vessel, 2006)</li> </ul>	Improved concentration and memory restoration (Avarsson et al., 2010; Biederman & Vessel, 2006) Enhanced perception and psychological responsiveness (Avarsson et al., 2010; Hunter et al., 2010)	Observed preferences and positive emotional responses (Windhager, 2011; Barton & Pretty, 2010; White, Smith, Humphries et al., 2010; Karmanov & Hamel, 2008; Biederman & Vessel, 2006; Heerwagen & Orians, 1993; Russo & Atzwanger, 2003; Ulrich, 1983)
	Dynamic & Diffuse Light	<ul style="list-style-type: none"> <li>Positively impacted circadian system functioning (Figuero, Bruns, Filinck et al., 2011; Backlett &amp; Boden, 2009)</li> <li>Increased visual comfort (Elyezadi, 2012; Kim &amp; Kim, 2007)</li> </ul>		
	Connection with Natural Systems			Enhanced positive health responses; Shifted perception of environment (Kellert et al., 2008)
NATURAL ANALOGUES	Biomorphic Forms & Patterns			Observed view preference (Vessel, 2012; Joye, 2007)
	Material Connection with Nature		Decreased diastolic blood pressure (Tsunetsugu, Miyazaki & Sato, 2007) Improved creative performance (Lichtenfeld et al., 2012)	Improved comfort (Tsunetsugu, Miyazaki & Sato 2007)
	Complexity & Order	<ul style="list-style-type: none"> <li>Positively impacted perceptual and physiological stress responses (Salinas, 2012; Joye, 2007; Taylor, 2006; S. Kaplan, 1988)</li> </ul>		Observed view preference (Salinas, 2012; Hägerhall, Lake, Taylor et al., 2008; Hägerhall, Purcella, & Taylor, 2004; Taylor, 2006)
NATURE OF THE SPACE	Prospect	<ul style="list-style-type: none"> <li>Reduced stress (Grahn &amp; Stigsdottir, 2010)</li> </ul>	Reduced boredom, irritation, fatigue (Clearwater & Coss, 1991)	Improved comfort and perceived safety (Herzog & Bryce, 2007; Wang & Taylor, 2006; Petherick, 2000)
	Refuge		Improved concentration, attention and perception of safety (Grahn & Stigsdottir, 2010; Wang & Taylor, 2006; Petherick, 2000; Ulrich et al., 1993)	
	Mystery			Induced strong pleasure response (Biederman, 2011; Salimpoor, Benovoy, Larcher et al., 2011; Keim, 2005; Blood & Zatorre, 2001)
	Risk/Peril			Resulted in strong dopamine or pleasure responses (Kobino et al., 2013; Wang & Tsien, 2011; Zaid et al., 2008)

## Biophilic Design Objectives:

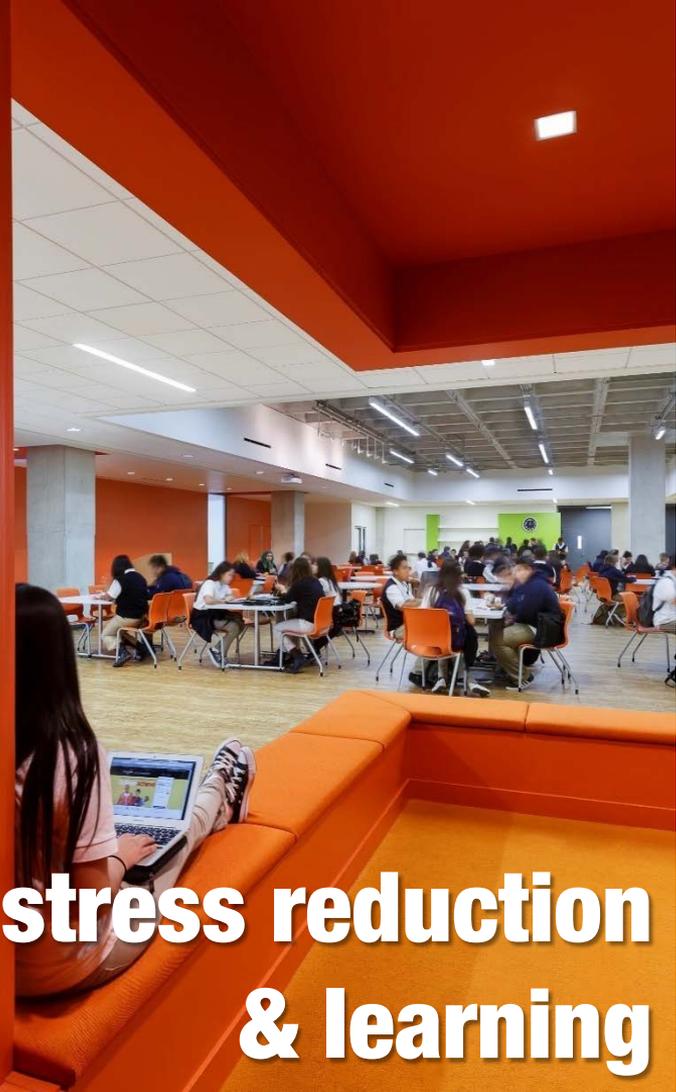
- stress reduction
- cognitive performance
- emotion, mood, & performance



Reading Net  
by Lay Office



Vitra Telefonplan  
by Rosan Boschin



**stress reduction  
& learning**

**comfort + mind**

“...Young people who are exposed to chronic stress early in life are prone to learning difficulties, anxiety, and other mood disorders.”

**Restorative Spaces** that are primarily used for time away from studies can enhance productivity.

“Chronic Stress can Hurt your Memory”  
2014 Serusha Govender & Sara Cheshire, Special to CNN



comfort + mind

**KEEP  
CALM  
AND  
TAKE A  
SENSORY BREAK**



# stress reduction & learning

comfort + mind

“You can’t punish a child who is acting out because of sensory overload.”

**Sensory Overload** occurs when one of the body’s senses experiences over-stimulation from the environment



# stress reduction & learning

comfort + mind

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**Sensory Overload** occurs when one of the body’s senses experiences over-stimulation from the environment



Riverview Elementary School  
by NAC Architecture



P.K. Yonge Elementary School  
by Fielding Nair International

comfort + mind



**ergonomics & user control**

"...Preliminary results show 12% greater on-task engagement in classrooms with standing desks which equates to an extra 7 minutes/hour engaged instruction time."

# movement & learning

comfort + mind



“Movement activates the neural wiring throughout the body, making the whole body the instrument of learning...”

Hannaford 1995 as cited in De Jager, 2012 “**The Impact of Sensory-Overstimulation,**” Elmarie Swanepoel 2013

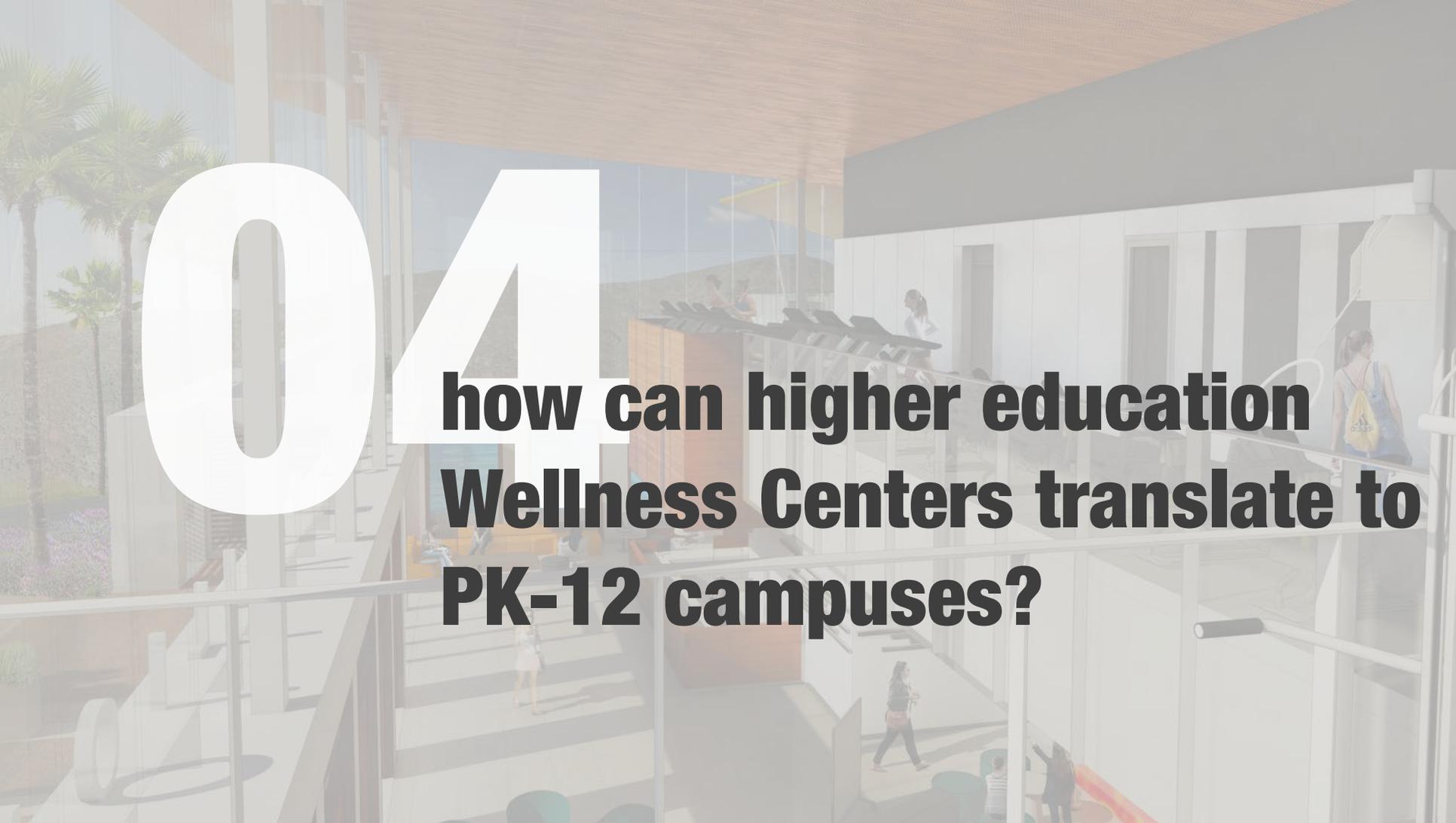


comfort + mind



**social connectivity**

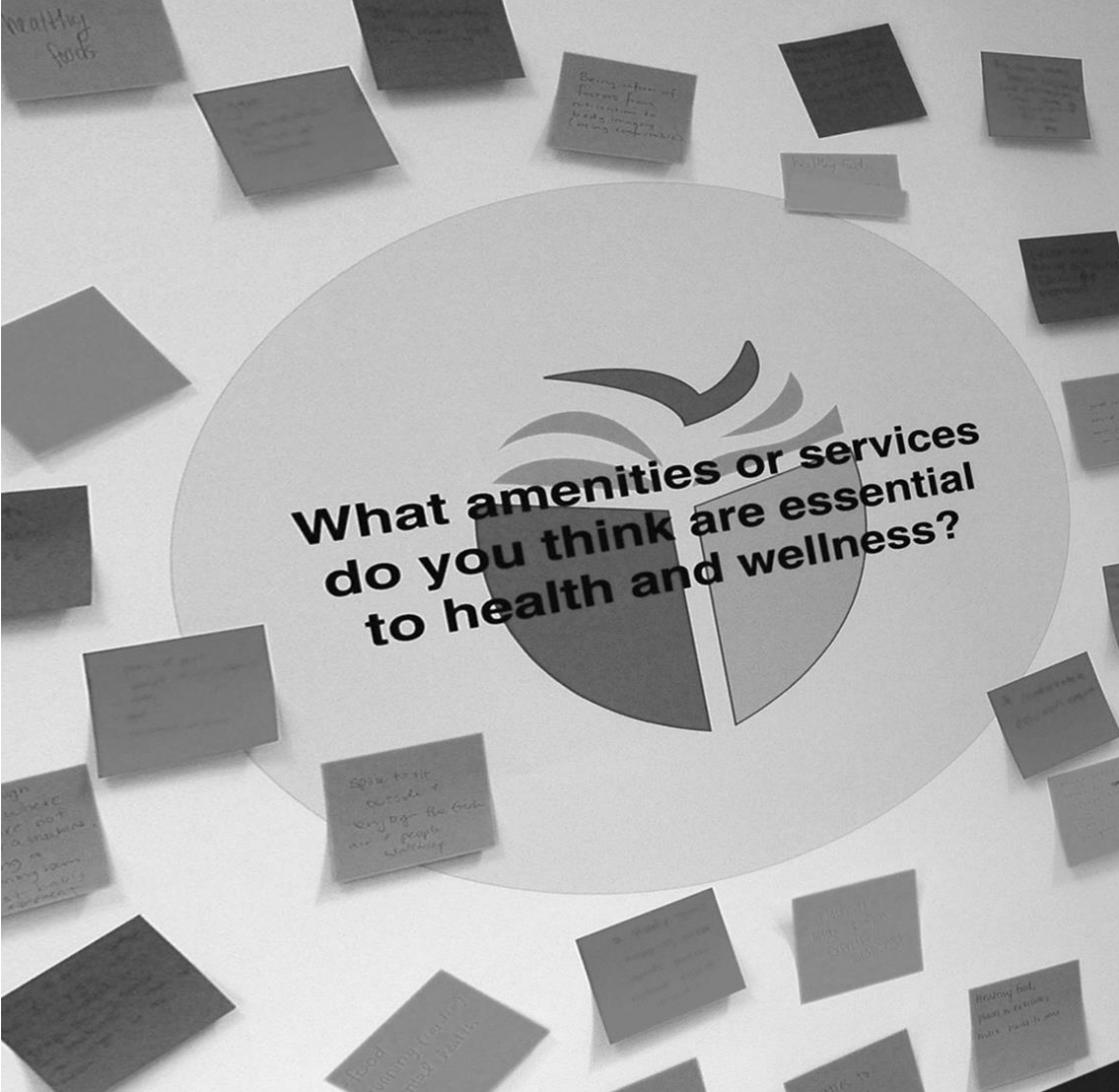
“Being socially connected is our brain’s lifelong passion... It’s been baked into our operating system for tens of millions of years”

An architectural rendering of a modern, multi-level wellness center. The space is bright and open, with large glass windows on the left side overlooking a landscape with palm trees. The interior features a mix of materials, including wood paneling on the ceiling and walls, and white walls. People are shown in various activities: some are walking on a ramp, others are using treadmills, and a few are sitting on benches. The overall atmosphere is clean, functional, and inviting.

# 04

**how can higher education  
Wellness Centers translate to  
PK-12 campuses?**

f + s | thought starters



## f + s | challenges



### **commuting**

not enough time with students

### **sitting all day**

### **traffic**

student crisis

people eat/take breaks at their desk:  
no place to lounge and relax

mornings

### **dealing with stress**

trying to relax

what's for dinner?

### **parking**

too many tasks

no windows

## f + s | relieve stress or relax



yoga

social activities

music

games

go to movies

quiet time

laughing

walking

pray

sing

meditation

exercise

watch TV

healthy eating/cooking

swim

hang out with friends

go out to dinner

sleep

knit

get massage

hike

pilates

run

spin

read

walk dog

## f + s | amenities + services



personal trainer

fun fitness instructors

**quiet meditation/prayer**

multi-purpose **classrooms**

study rooms

**fitness center**

field sports/games

on campus health center

**counseling/ps offices**

lockers

**nutrition consultant/staff**

electronic message boards

**healthy food options**

well maintained facilities

yoga

inclusive

mentors

employee health

**variety of fitness spaces**

state of the art facilities

**group activities**

welcoming

pool

**mindfulness spaces**



James Madison University

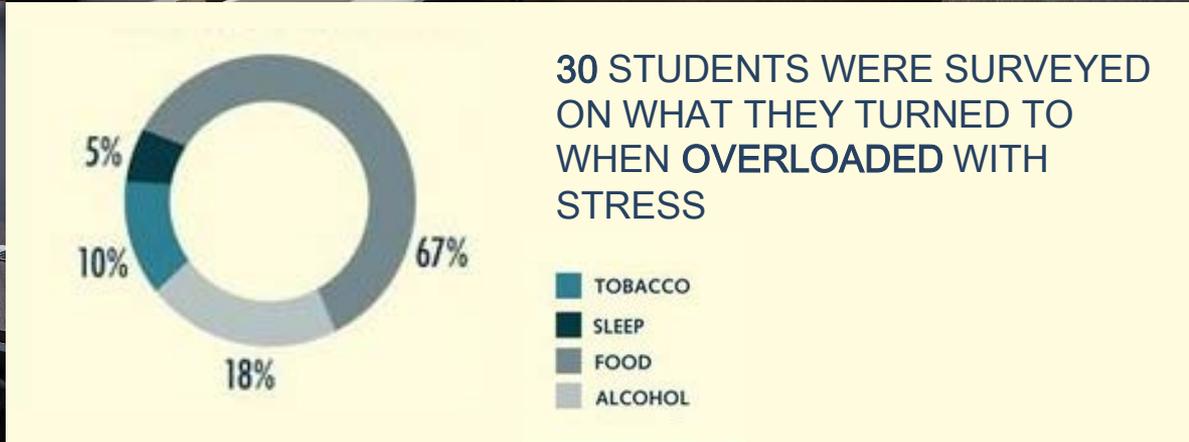


University of Florida

# sleep rooms & nap pods



"70% of college students receive less than 8 recommended hours of sleep every night"







**a place for reflection**



**outdoor social space**



**therapy dogs**



An aerial photograph of a park with winding paths, palm trees, and people walking and riding a bicycle. The image is overlaid with a semi-transparent white background and large white text.

# challenge

**health action plan**



# health action plan

“Health Action Plans use a systematic process to minimize health effects thru policy.”

A Design Guideline to enhance the health & wellness of students

- **scope:** which health effects to consider
- **participants:** who is affected
- **process:** develop recommendations
- **monitor & evaluate:** report findings
- **discuss:** excitement & perceived challenges



LPA



LPA  thank you!