

The WELL Building Standard: Evolution of Next Generation Design



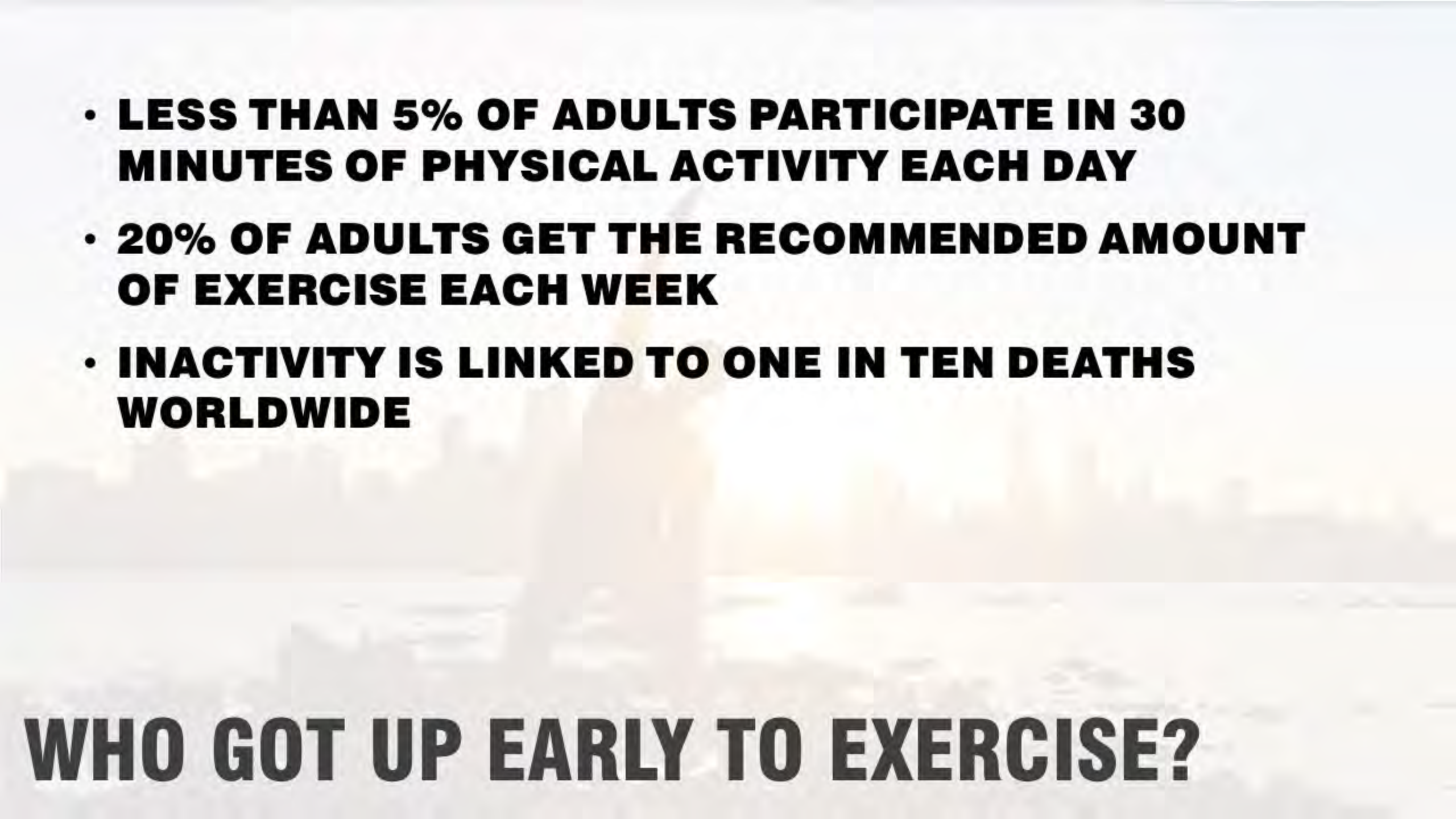
A close-up photograph of a black digital alarm clock with green LED displays. The clock shows the time 05:59. The digits are in a standard seven-segment font. The clock is sitting on a dark surface, and in the background, a window shows a blurred view of a tree and a bright sky, suggesting it is dawn.

05:59

ANY GIVEN WEEKDAY....



WHO GOT UP EARLY TO EXERCISE?

- 
- A person is running on a sandy beach at sunrise. The sun is low on the horizon, creating a warm, golden glow. The person is in the center of the frame, running towards the viewer. The background shows the ocean and a hazy sky.
- **LESS THAN 5% OF ADULTS PARTICIPATE IN 30 MINUTES OF PHYSICAL ACTIVITY EACH DAY**
 - **20% OF ADULTS GET THE RECOMMENDED AMOUNT OF EXERCISE EACH WEEK**
 - **INACTIVITY IS LINKED TO ONE IN TEN DEATHS WORLDWIDE**

WHO GOT UP EARLY TO EXERCISE?



HOW DID YOU GET TO WORK?

- **68% OF COMMUTER TRAVEL UP TO 15 MILES TO GET TO WORK**
- **75% OF ALL COMMUTERS DRIVE ALONE**
- **DAILY COMMUTES RAISE YOUR BLOOD SUGAR, CHOLESTEROL, ANXIETY, BLOOD PRESSURE, AND RISK OF DEPRESSION**



HOW DID YOU GET TO WORK?



DID YOU HAVE A CAFFEINE FIX?



IS THIS WHERE YOU WORK?

BRING YOUR LUNCH- \$2.00 +/-

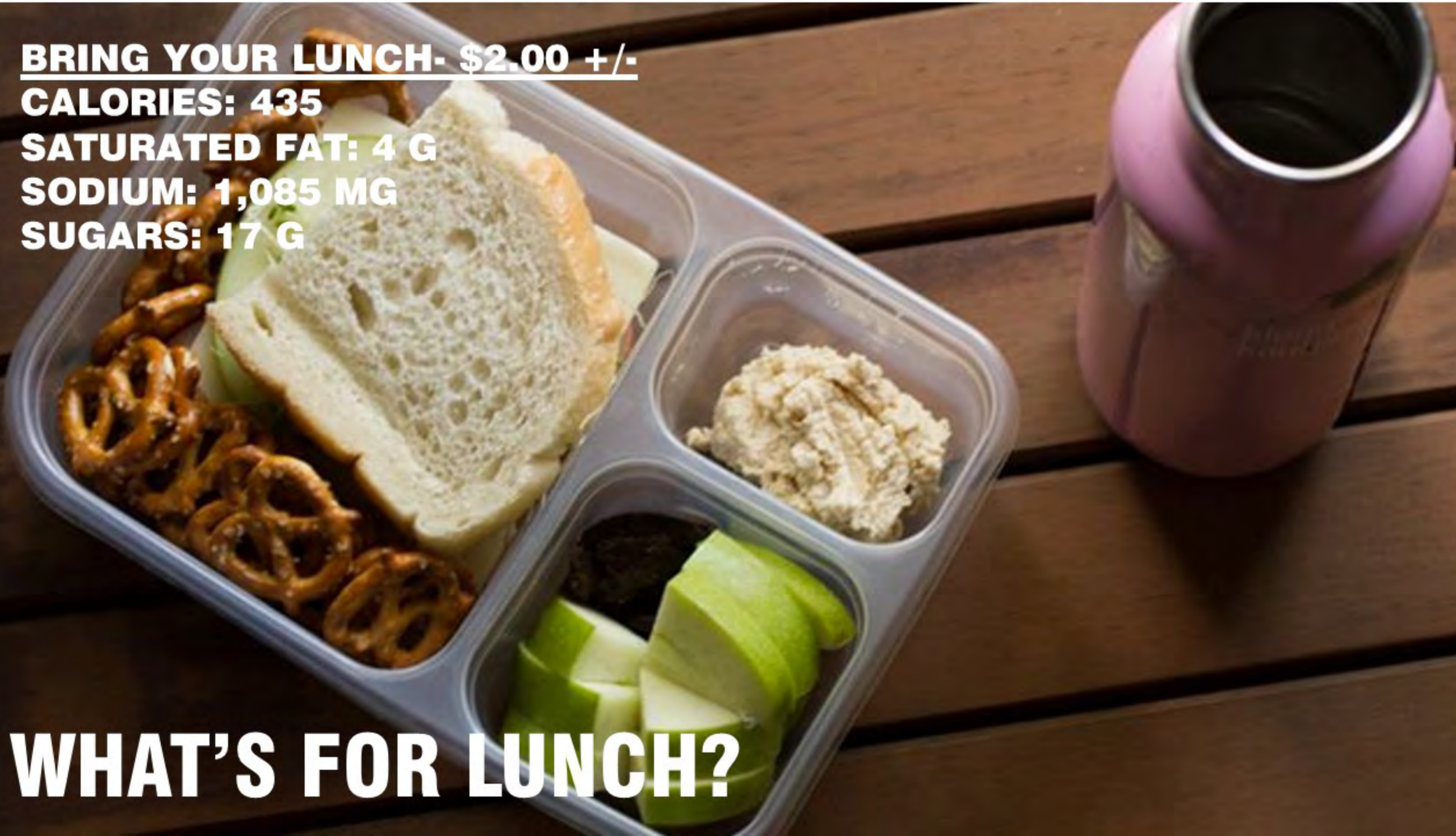
CALORIES: 435

SATURATED FAT: 4 G

SODIUM: 1,085 MG

SUGARS: 17 G

WHAT'S FOR LUNCH?



BIG MAC MEAL - \$6.17

CALORIES: 990

SATURATED FAT: 10G

SODIUM: 2,600 MG

SUGARS: 51 G



WHAT'S FOR LUNCH?

IT'S 2:00 PM...

SITTING IS **STILL**
THE NEW SMOKING



HOW LONG HAVE YOU BEEN SITTING?



IT'S 2:00 PM...

**WHEN WAS THE LAST TIME YOU LOOKED
OR WENT OUTSIDE?**

IT'S 2:00 PM...



WHO'S READY FOR NAP?

SYMPTONS

- **FREQUENT YAWNING**
- **CHANGES IN VISION**
- **MOODINESS**
- **FALLING ASLEEP AT YOUR DESK**
- **HEADACHE OR STOMACH ACHE**
- **CRAVING FOR CARBOHYDRATES**

CAUSES

- **GETTING TO LITTLE SLEEP**
- **POOR EATING HABITS**
- **HIGH LEVELS OF STRESS**
- **METABOLIC DISORDERS**

WHO'S READY FOR NAP?

IT'S 2:00 PM...



OR ANOTHER CAFFEINE FIX?



TIME TO HEAD HOME...



WHAT'S FOR DINNER?



WHAT'S FOR DINNER?

WHAT'S AFTER DINNER?





**No Child
LEFT BEHIND**



KHAN
ACADEMY



Texas
PLTW
PROJECT LEAD THE WAY

**NEXT
GEN**



PLAN YOUR PATH



MOOC





No Child
LEFT BEHIND



BLENDED LEARNING



KHAN
ACADEMY



Texas
PLTW
PROJECT LEAD THE WAY

NEXT
GEN



PLAN

WHO IS KEEPING UP?

HOUSE BILL 5 AND YOU



COLLABORATIVE
SCHOOLS
LIMITED



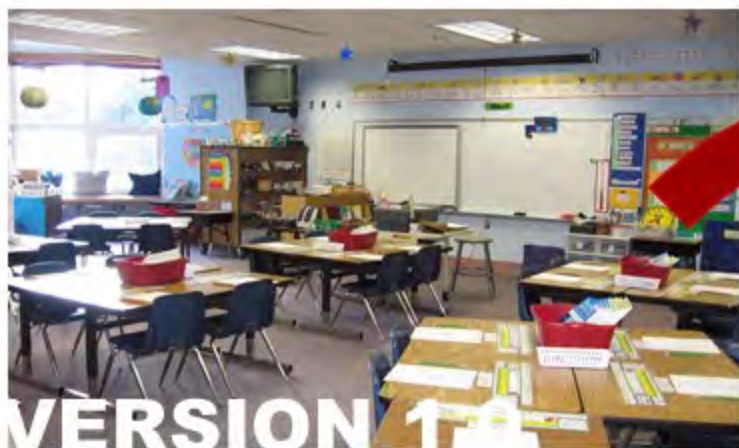
MOOC





INTERNATIONAL
LIVING FUTURE
INSTITUTE™

SUSTAINABILITY EVOLUTION



CLASSROOM EVOLUTION



TRANSPARENCY EVOLUTION



DAYLIGHT



PLAYGROUND



COURTYARD



ACCESS



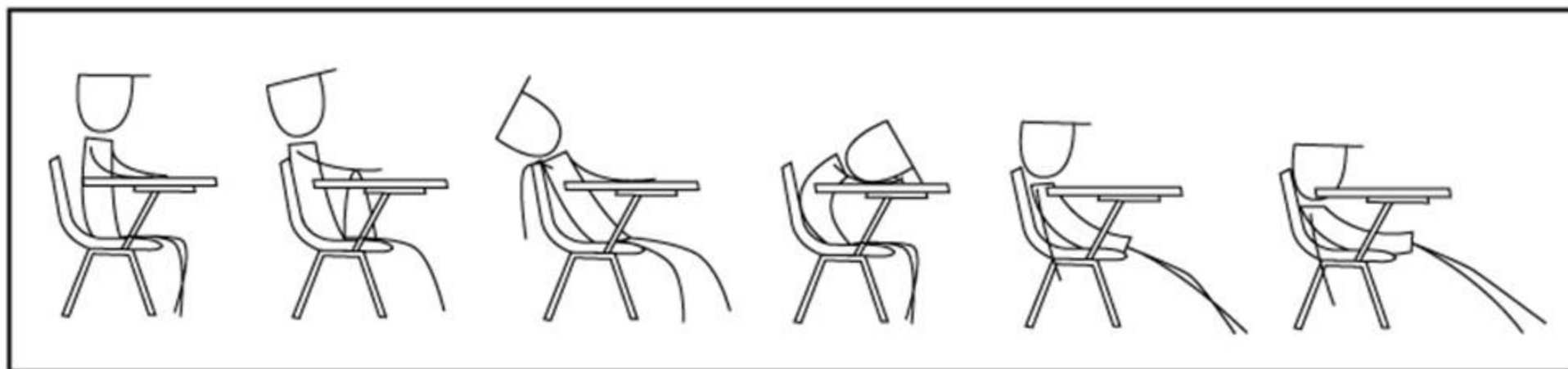
IMAGINATION



GARDEN

INDOOR/OUTDOOR EVOLUTION

The Evolution of Ergonomics in School Chairs



Doghouse Diaries "Where it's lunchtime, all the time."

FURNITURE EVOLUTION



FURNITURE EVOLUTION



TECHNOLOGY EVOLUTION



SECURITY EVOLUTION



SPACE EVOLUTION



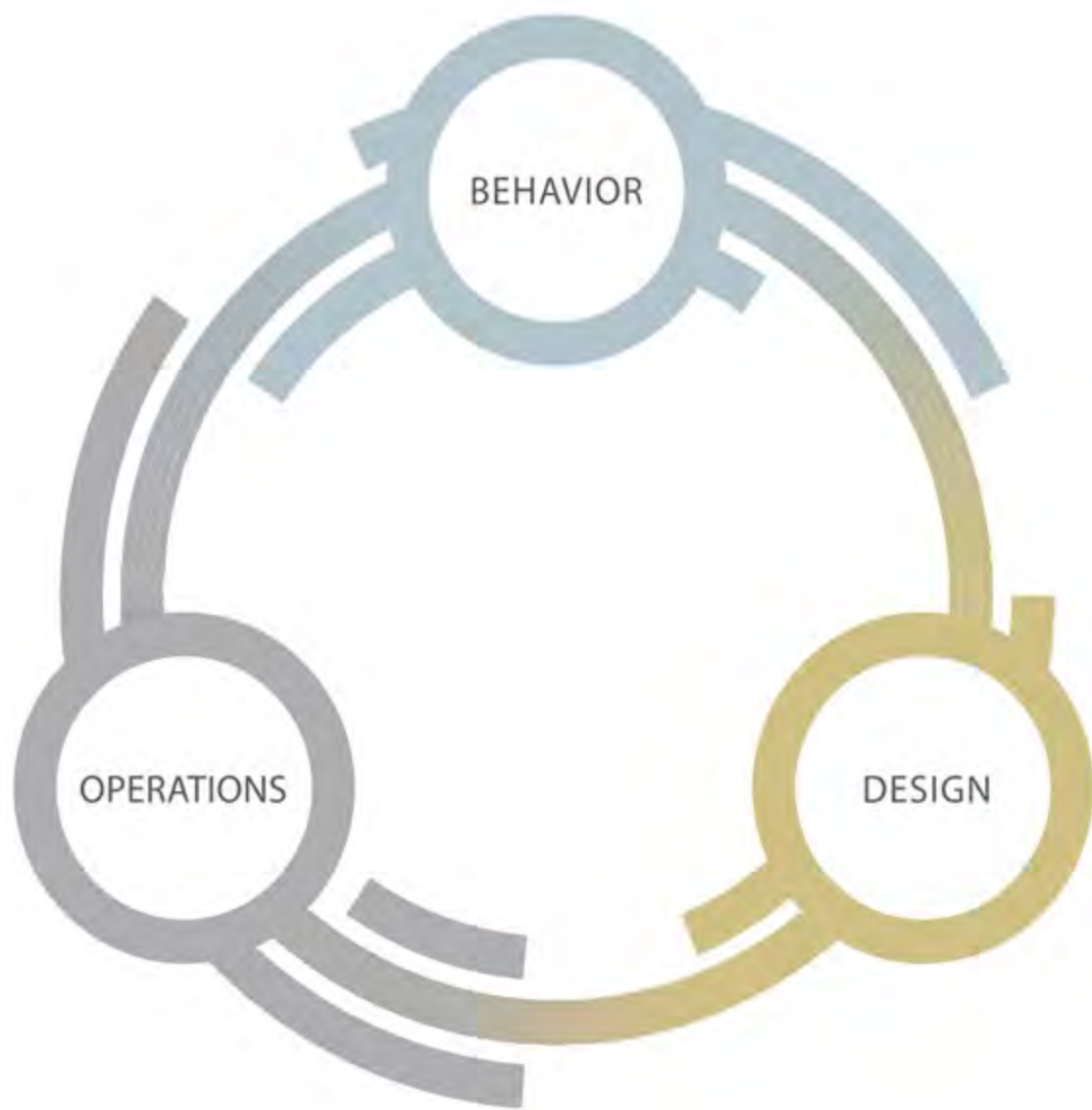
SPACE EVOLUTION



WHAT...

THE
WELL
BUILDING STANDARD®
v1
February 2016

Is the WELL building standard?



WELL is...

a **holistic approach** to address the built environment's impact on the **human body**.

Its mission is to **improve** human health and well-being through the built environment.



THREE levels of certification



Measures, certifies, and monitors building features that impact health and well-being.

Certification Process:

Registration

Documentation

Performance Verification

Certification

Recertification

Performance Verification Guidebook

provides a step-by-step guide to completing the on-site testing and assessments required for certification.

In evaluating adherence to the WELL Building Standard™ (WELL), a project's assessor will **grade each concept independently** on a numerical scale. The final WELL Score is calculated based on the total Preconditions and Optimizations achieved across the board. **Failure to achieve any Precondition** in any concept will preclude the award of WELL Certification.



Feature 1: Air Quality Standards, Part 2 Standards for Particulate Matter and Inorganic Gases

Parameters Measured

- Carbon monoxide (CO)
- PM_{2.5}
- PM₁₀
- Ozone (O₃)

Method of Measurement

- All parameters: direct reading instrument

Equipment and Materials

- Direct reading instruments must be used to measure the parameters listed above.
- For carbon monoxide and ozone, the direct reading instruments must function within the limits of the performance specifications in the table below when operated in accordance with the operation manual.

Table 4. Requirements for CO and O₃ Direct Reading Instruments*

PARAMETER	CARBON MONOXIDE	OZONE
Measurement range	0 to 50 ppm	0 to 0.5 ppm
Resolution	1 ppm	1 ppb
Range	0.5 ppm	0.005 ppm
Lower detectable limit	1.0 ppm	0.01 ppm
Interference equivalent		
- Each interferant	± 1.0 ppm	± 0.02 ppm
- Total interference	1.5 ppm	0.06 ppm
Zero drift: 14 and 24 hours	± 1.0 ppm	± 0.02 ppm
Span drift: 24 hours		
- 20% of upper range limit	± 10.0%	± 20%
- 80% of upper range limit	± 2.5%	± 5.0%
Lag Time	10 minutes	20 minutes
Rise Time	5 minutes	15 minutes
Fall Time	5 minutes	15 minutes
Precision		
- 80% of upper range limit	0.5 ppm	0.01 ppm
- 80% of upper range limit	0.5 ppm	0.015 ppm

Limits

specifications in the below table

RESOLUTION
0.1 dB

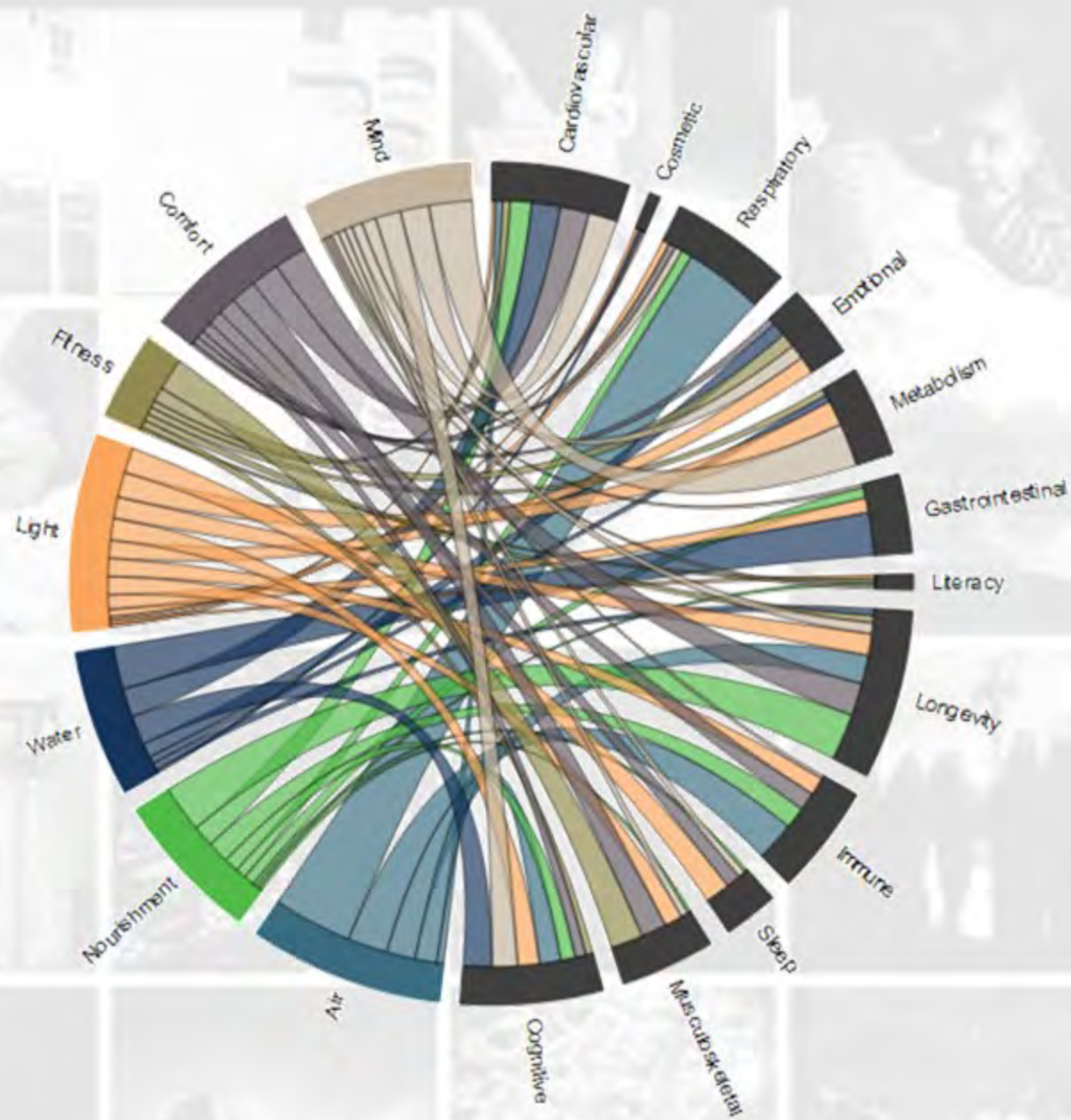
each of the following distinct
Hz, and 8 kHz.

le per sample point
e project, 1 sample per sample

e.g., prior to opening, lunch hour,

its.
be situated.
ve the finished floor.
the measurement must be halted.

he measurement period will be
ld.



“health is primarily **a measure** of each person’s ability **to do and become** what he wants to become”

-Rene Dubos

comfort, mind, light, water, air, nourishment, fitness, cosmetic, immune, sleep, literacy, metabolism, longevity, literacy, emotional, respiratory, cognitive, cardiovascular, gastrointestinal



We Spend almost 90% of our Time Indoors

Exposing us to pollutant levels 2 to 5 times higher occasionally up to 100 times higher than outside



MIND



COMFORT



FITNESS



LIGHT



NOURISHMENT



WATER



AIR



Seven Concepts of **WELL**



MIND



COMFORT



FITNESS



LIGHT



NOURISHMENT



WATER



AIR



mind

Optimize cognitive and emotional health through design, technology and treatment strategies.

MATERIAL
TRANSPERANCY

BIOPHILIA

BEAUTY +
DESIGN

ADAPTIVE
SPACES

INTEGRATIVE
DESIGN

HEALTH +
WELLNESS
AWARENESS



MIND



COMFORT



FITNESS



LIGHT



NOURISHMENT



WATER



AIR

comfort

Settle into a distraction-free, productive and comfortable indoor environment. WELL considers thermal, acoustic, ergonomic and olfactory comfort to optimize indoor working environments.

THERMAL
COMFORT

ACOUSTIC
CONTROL

ACCESSIBLE
DESIGN

ERGONOMICS

OLFACTORY
COMFORT



MIND



COMFORT



FITNESS



LIGHT



NOURISHMENT



WATER



AIR



fitness

Keep moving by integrating exercise and fitness into everyday life. Provide opportunities for an active lifestyle and discourage sedentary behaviors.

FITNESS
CIRCULATION

EXTERIOR
ACTIVE
DESIGN

STRUCTURED
OPPORTUNITIES

ACTIVE
FURNISHINGS

PHYSICAL
ACTIVITY
SPACES

INCENTIVE
PROGRAMS



MIND



COMFORT



FITNESS



LIGHT



NOURISHMENT



WATER



AIR

light

Benefit from daylight and lighting systems designed to increase alertness, enhance experience and promote sleep.

DAYLIGHTING

COLOR
QUALITY

GLARE
CONTROL

AUTOMATION

CIRCADIAN
LIGHTING



MIND



COMFORT



FITNESS



LIGHT



NOURISHMENT



WATER



AIR



nourishment

Limit the presence of unhealthy ingredients and encourage fresh and wholesome foods supporting mindful eating habits

MINDFUL
EATING

FOOD
PREPARATION

FOOD
STORAGE

ADVERTISING

ACCESS TO
HEALTHY
OPTIONS

NUTRITIONAL
INFORMATION



MIND



COMFORT



FITNESS



LIGHT



NOURISHMENT



WATER



AIR



water

Promote high quality water and improved accessibility through the implementation of proper filtration techniques and regular testing.

TREATMENT

WATER
TESTING

CONTAMINANTS

PROMOTION

QUALITY



MIND



COMFORT



FITNESS



LIGHT



NOURISHMENT



WATER



AIR

air

Breathe easy with optimal air quality and reduce or minimize the sources of indoor air pollution.

CLEANING
PROTOCOL

QUALITY +
MANAGEMENT

HEALTHY
ENTRANCE

MOISTURE
CONTROL

CONSTRUCTION
PROCESSES

AIR
FILTRATION +
TREATMENT

We are a **Function and Creation** of Our Built Environments



And **Our Environment** is Changing How We Live, Work, Play

Over **55 MILLION SQ. FEET** of Registered WELL Projects in All Sectors of Architecture

Retail

Government

Residential

Education

Commercial

Healthcare



HOW...



Can We Implement WELL into K12 Environments?

A photograph of the Phipps' Center For Sustainable Landscapes in Pittsburgh, Pennsylvania. The image shows a modern building with a curved glass facade and a wooden-clad section, situated on a hillside. In the foreground, there is a wooden deck, a small pond with two fountains, and a lush green landscape with various plants and trees. The sky is blue with scattered white clouds.

CASE STUDY

Phipps' Center For Sustainable
Landscapes

Pittsburgh, Pennsylvania



LIVING
BUILDING
CHALLENGESM



1st Project in the World to Simultaneously Achieve LEED Platinum, SITES Four-Star Certification, The Living Building Challenge, Designed to be Net-Zero Energy and Water and
is the First WELL Platinum Building



80% Daylight Autonomy and Passive Solar Controls

Operable windows controlled by a Building Automation System

Direct Access to Nature

Fitness Circulation through Movement of Space – Multi-Level

Individualized Thermal Control

Atrium is not Mechanically Heated nor Cooled

High Performance Insulation and Low-E Windows



Material Transparency – All Materials Were Vetted to Eliminate Material Components that Negatively Impact Environment or People

97% of Construction Waste was Diverted From Landfills

T-5 Fluorescent Lighting Equipped with Daylight Sensors, Controls, Dimming Ballasts are Engaged When Natural is Insufficient.

Lagoon Replicates Natural Water Treatment Process

Water is Processed to Tertiary Non-Potable Standards

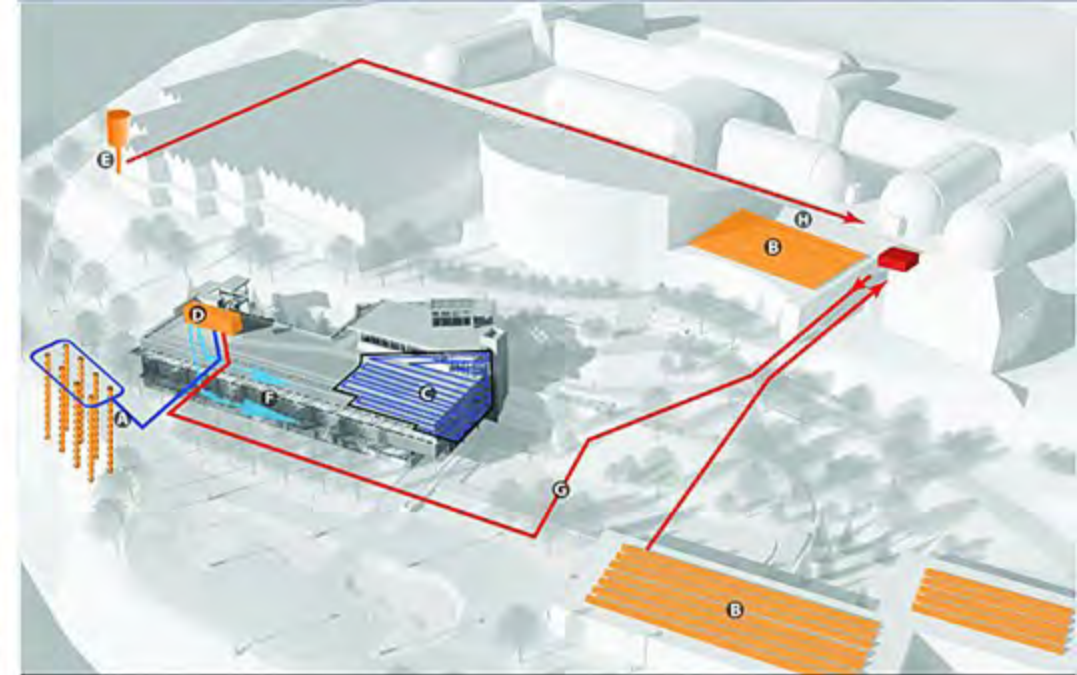


Green Roof With Variety of Plants Selected for Their Medicinal,
Culinary and Biofuel Uses

Clean Air Plants at All Workstations – Remove Pollutants

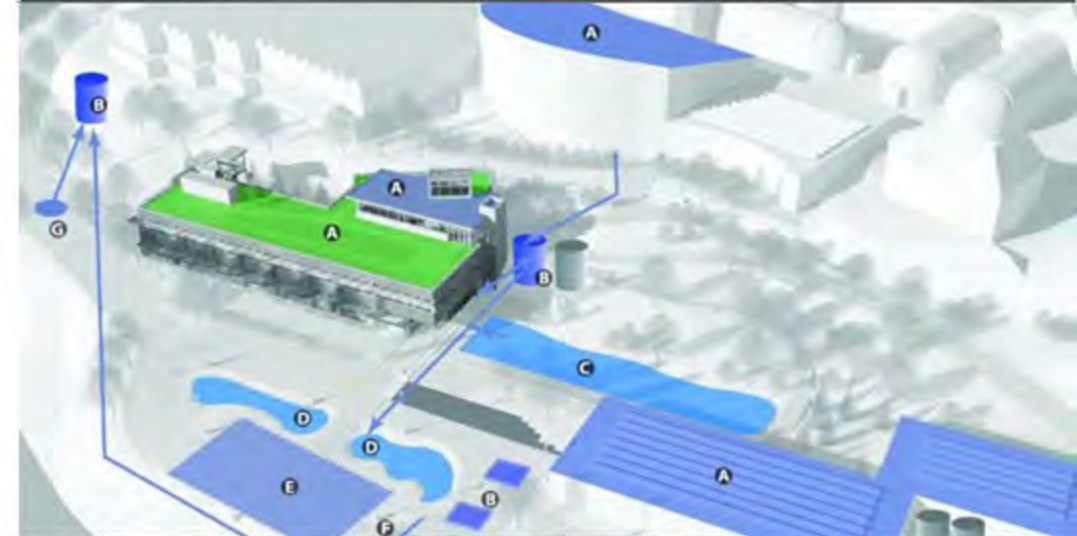
Olfactory Comfort – Separation of Strong Odors

Biophilic Art on Every Floor of Building



NET-ZERO ENERGY DIAGRAM

A. Geothermal Wells
B. Photovoltaic Array
C. Hot Water Radiant Floor
D. Tri-Coil Rooftop Mechanical Unit
E. Wind Turbine
F. Under Floor Air Distribution
G. 100% CSL Electric Supply
H. Excess Power to Campus



NET-ZERO WATER DIAGRAM

A. Rooftop Capture
B. Storage Tank
C. Lagoon
D. Rain Garden
E. Pervious Asphalt
F. Pump Station
G. Non-Potable Well
Storm Systems
Green Roof

Monitors at Each Workstation, Quarterly Comfort Surveys, Monthly Occupant Meetings Ensure Occupants are Comfortable

All Storm and Sanitary Water is Collected, Treated, and Reused On-Site

Rain Gardens, Pervious Asphalt and a Green Roof Prevent Run-Off

Building Produces More Energy Than it Consumes

3-Star Green Restaurant Certified Eating Establishment – Focus on Organic and Local Produce



Photovoltaic Solar Panels Generate Enough Electricity for Energy

Vertical Axis Wind Turbine

Geo-Thermal Wells Capture Heating and Cooling Energy

Demand Control Ventilation (DCV) - Indoor Air Quality is Monitors

Temperature, Humidity, CO₂, TVOC, Particulates and CO

Underfloor Air Distribution Allows Cool Air at Human Level Warm Air to

Rise



How do we **LEARN** and **APPLY** to a K12 Environment



A photograph of a modern library interior. The space is bright and airy, with large windows on the left and right sides. The ceiling is made of wood slats, and there are several long, white, cylindrical pendant lights hanging from it. In the foreground, there are white bookshelves filled with books. A person is standing near the bookshelves, looking at a book. In the background, there are more bookshelves and a long table where two people are sitting and reading. The overall atmosphere is quiet and studious.

**TIME FOR
IMPLEMENTATION
BY YOU!!!**



Instructions:

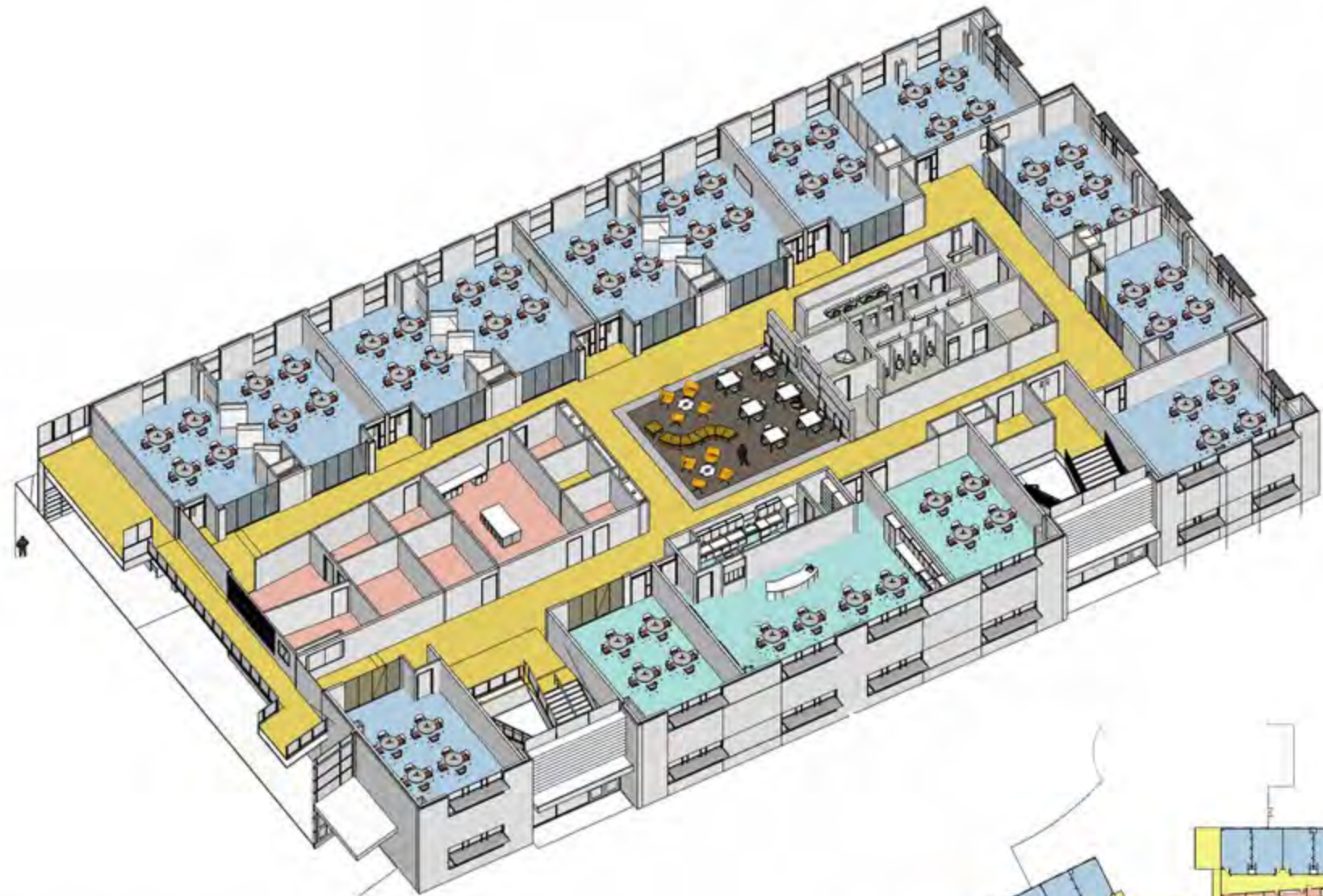
- Get Into 6 Small Groups
- 3 Minutes
- Write Ideas Under Each of the Seven Concepts
- Need Extra Space Write on Back of Paper

Goal: To write as Many Changes to This K12 Classroom Cluster You Can Think of to Make This Building **WELL**.

READY.....SET.....GO!



Seven Concepts of **WELL**



FLOOR PLAN

Typical K12 Building Wing

Everyone is a
Winner for
Thinking
WELL.....



STUDENTS and **STAFF** say **THANK YOU!!!**



WHY THIS MATTERS?



83%

**FEEL MORE
PRODUCTIVE**



92%

**SAID NEW SPACE HAS CREATED A
POSITIVE IMPACT ON THEIR
HEALTH AND WELL BEING**



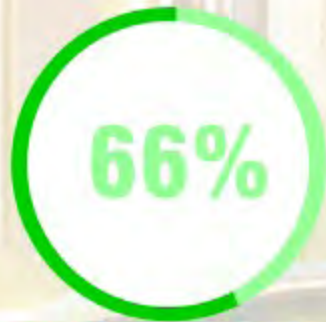
94%

**SAID THE NEW SPACE HAS A
POSITIVE IMPACT ON THEIR
BUSINESS PERFORMANCE**



93%

**SAID THAT THEY ARE ABLE TO
MORE EASILY COLLABORATE WITH
OTHERS**



66%

**APPROPRIATE COMFORT
LEVEL INCREASES
PRODUCTIVITY**



10%

**APPROPRIATE COMFORT LEVEL
INCREASES PRODUCTIVITY**



13%

**NATURAL ELEMENTS WITHIN THE
WORKPLACE INCREASE
WELL-BEING**



50%

**DECREASED RISK OF LOW
PRODUCTIVITY**

WHY THIS MATTERS?



INCREASED PRODUCTIVITY
INCREASED EMPLOYEE RETENTION
INCREASED MEMBER SATISFACTION
DECREASED OVERHEAD EXPENSES
DECREASED EMPLOYEE SICK LEAVE
DECREASED EMPLOYEE HEALTH CARE COSTS
MORE POSITIVE WORK ENVIRONMENT

WHY THIS MATTERS?

BEST EDUCATION SYSTEMS

1. **SOUTH KOREA**
2. **JAPAN**
3. **SINGAPORE**
4. **HONG KONG**
5. **FINLAND**
6. **UNITED KINGDOM**
7. **CANADA**
8. **NETHERLANDS**
9. **IRELAND**
10. **POLAND**
14. **UNITED STATES**

***According to UN's Social Progress
Imperative, March 7, 2017*

HEALTHIEST COUNTRIES

1. **ICELAND**
2. **SINGAPORE**
3. **SWEDEN**
4. **ANDORRA**
5. **UNITED KINGDOM**
6. **FINLAND**
7. **SPAIN**
8. **NETHERLANDS**
9. **CANADA**
10. **AUSTRALIA**
28. **UNITED STATES**

***According UN's Global Burden of Disease,
Sept 21, 2016*

GREENEST COUNTRIES

1. **FINLAND**
2. **ICELAND**
3. **SWEDEN**
4. **DENMARK**
5. **SLOVENIA**
6. **SPAIN**
7. **PORTUGAL**
8. **ESTONIA**
9. **MALTA**
10. **FRANCE**
26. **UNITED STATES**

***Yale Study, Jan. 25, 2016*

WHY THIS MATTERS?



THANK YOU.
for thinking WELL

