



PLASTARC



# Multisensory Design

A human approach to the workplace

October 19, 2017





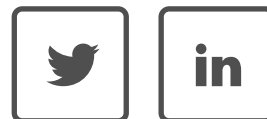


# Melissa Marsh

Founder & Executive Summary, PLASTARC

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@PLASTARC



# Learning Objectives

1. **Learning about touch** - Moving beyond ergonomics, the sense of touch may be engaged throughout a work environment. Humidity and temperatures combine to create a unique experience of our environments. Digital technology is now connecting occupants with their building's heating and cooling systems, enabling greater user- control.
2. **Learning about sound** - With increased frequency of open office environments, noise has been the focus of design. It is time to think proactively about the opportunities to bring more than just 'white noise' to the office. The next generation of spaces feature sound tracks and sound spaces, bringing music, sounds of nature and other acoustic sensations to the workplace.
3. **Learning about smell** - The use of HVAC systems that circulate fresh air into a space and materials that have pleasant or no smells, even when new, are just the beginning of leveraging scent in the workplace. Just as hospitality environments are known for their fragrance, new work environments offer branded scent aligned with the occupants mission, services and industry.
4. **Learning about taste** - Flavors of the contemporary office environment are quickly moving past the coffee point and water cooler. With increase focus on nutrition, well- being and healthful consumption in the work environment, taste is essential to the pallet of facilities management.

# Agenda

Architecture: from  
Vitruvius to Digital Era

Introduction



Culture &  
Engagement



Multisensory  
Design



Q&A





# HOW I GOT HERE...

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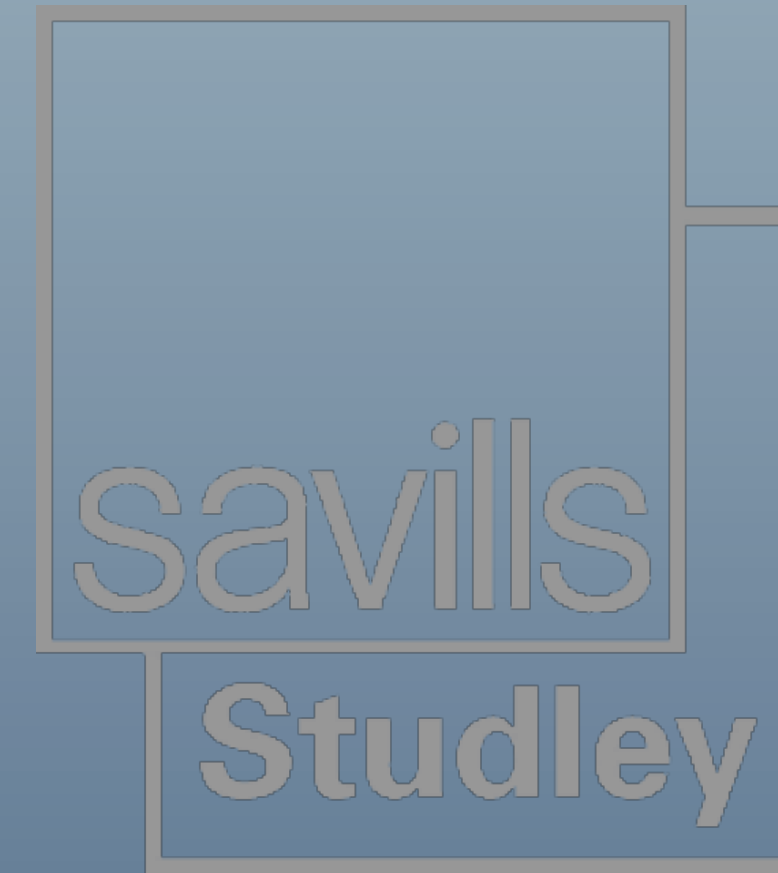


A bit  
about  
me....





PLASTARC



we are a  
**WORK**

**[ PEOPLE  
PROCESS  
PLACE ]**

innovation company



Organizations are increasingly recognizing that their  
*real estate* is a critical *tool*  
for *accelerating business*, driving speed to  
market, and attracting and engaging *top talent*.

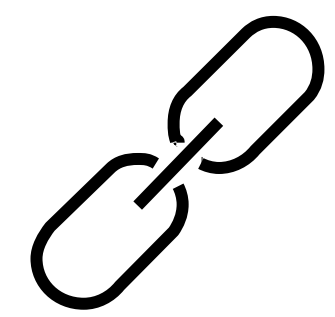


A wide-angle photograph of a modern, open-plan office space. The ceiling is white with exposed ductwork and several large, white, spherical pendant lights. In the foreground, there are several bright orange modular armchairs arranged in a cluster. In the middle ground, a woman is sitting on one of these chairs, looking at a laptop. To her right, a man is sitting on a black stool at a white table, also working on a laptop. In the background, there are more people working at desks, some with glass partitions. The overall atmosphere is bright and collaborative.

# FROM SPACE MANAGEMENT TO PEOPLE ENABLEMENT



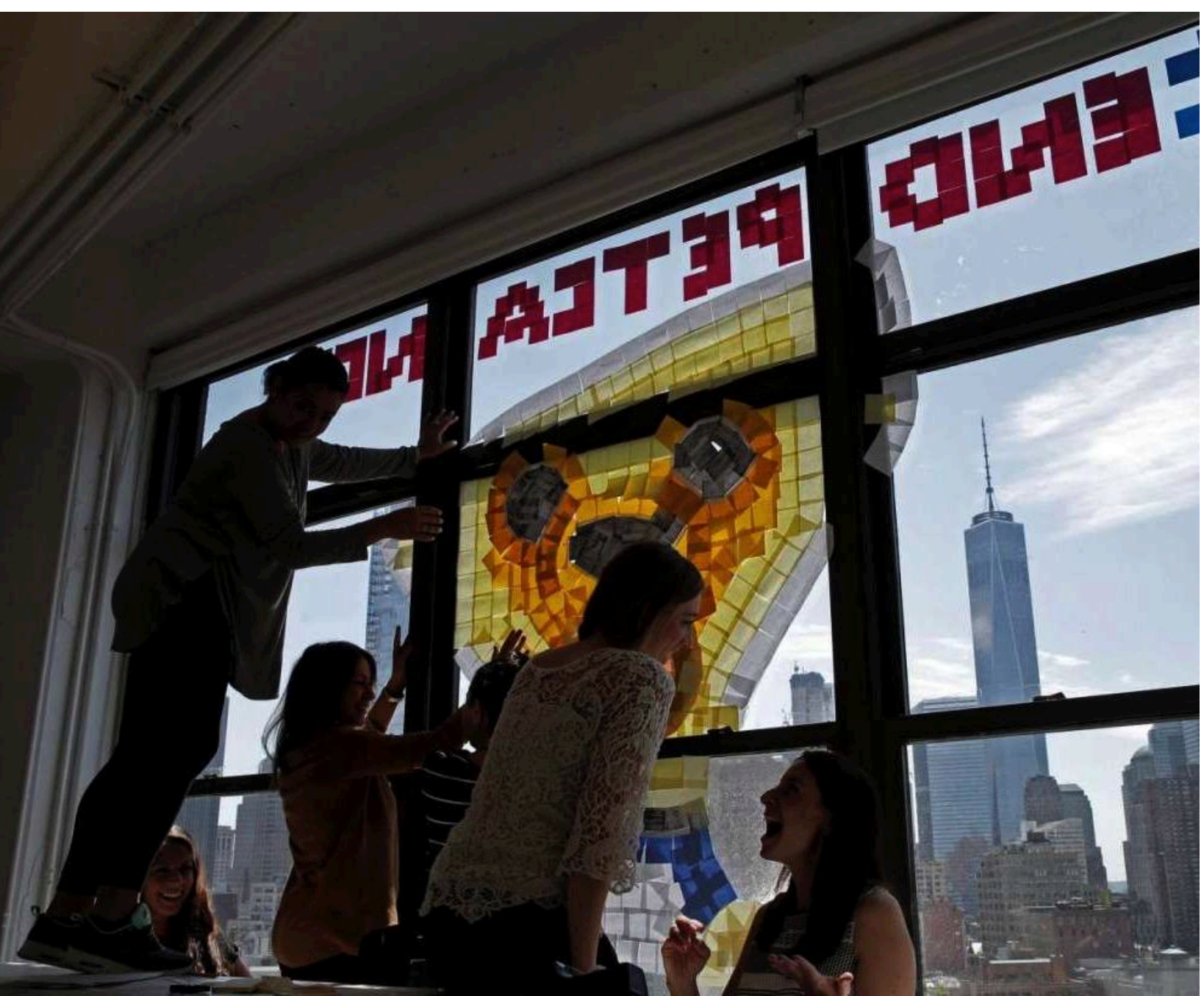
engage



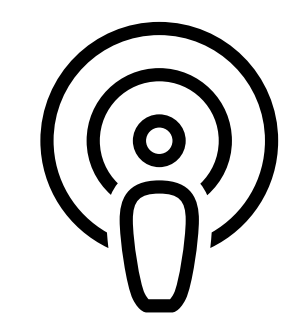
/in'gāj,en'gāj/

verb  
occupy, attract, or involve (someone's interest or attention).

participate or become involved in



experience



,ik'spirēəns/

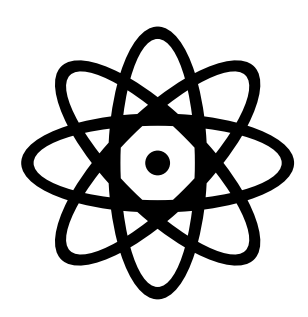
noun  
practical contact with and observation of facts or events.

the knowledge or skill acquired over time

verb  
encounter or undergo



culture

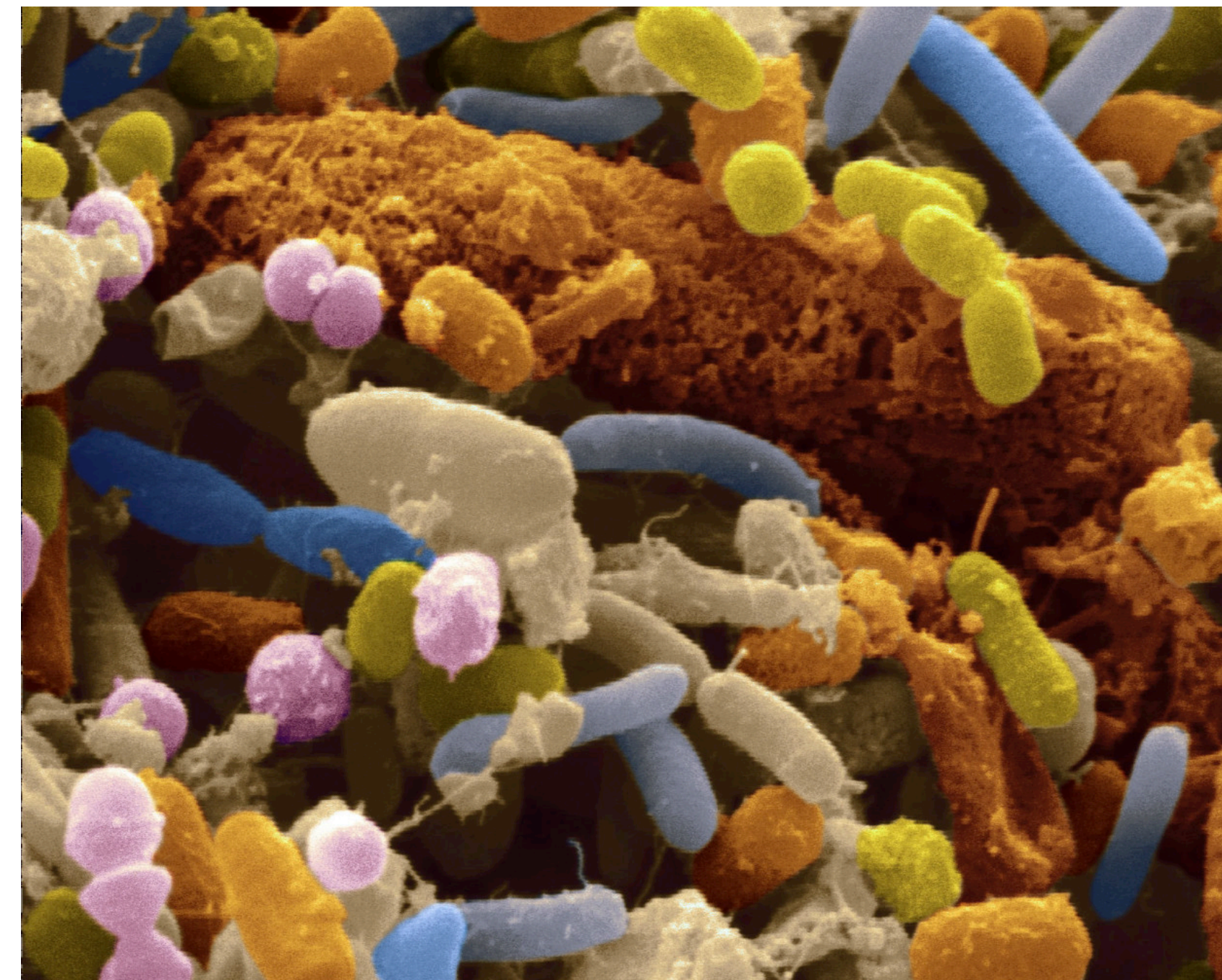


'kəlCHər/

noun  
the arts and other manifestations of human intellectual achievement regarded collectively

the attitudes and behavior characteristic of a particular social group

verb  
the cultivation of bacteria, tissue cells







## Vitruvius

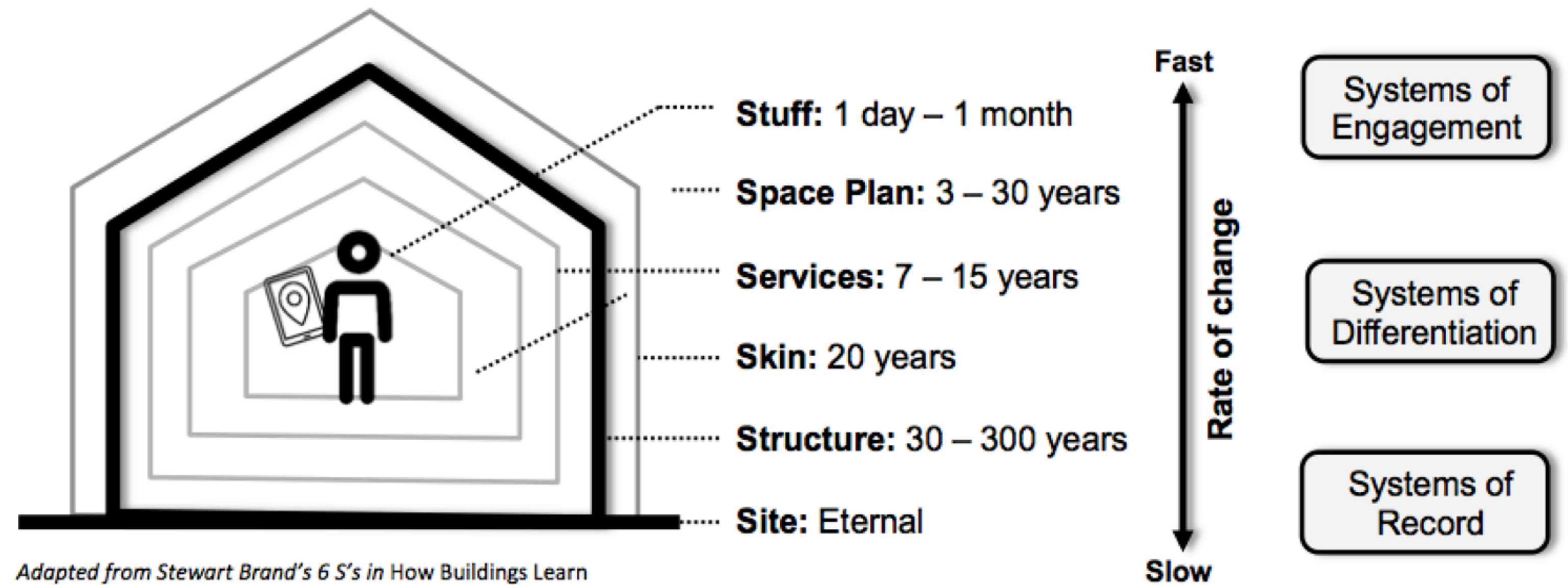
The Ancient Roman architect Vitruvius **named three essential elements of architecture that contribute to a successfully designed building**: firmitas (firmness), utilitas (utility or commodity), and venustas (delight, derived from the “aesthetic quality associated with the goddess Venus”).

-“Firmness, Commodity, and Delight: Architecture in Special Collections”

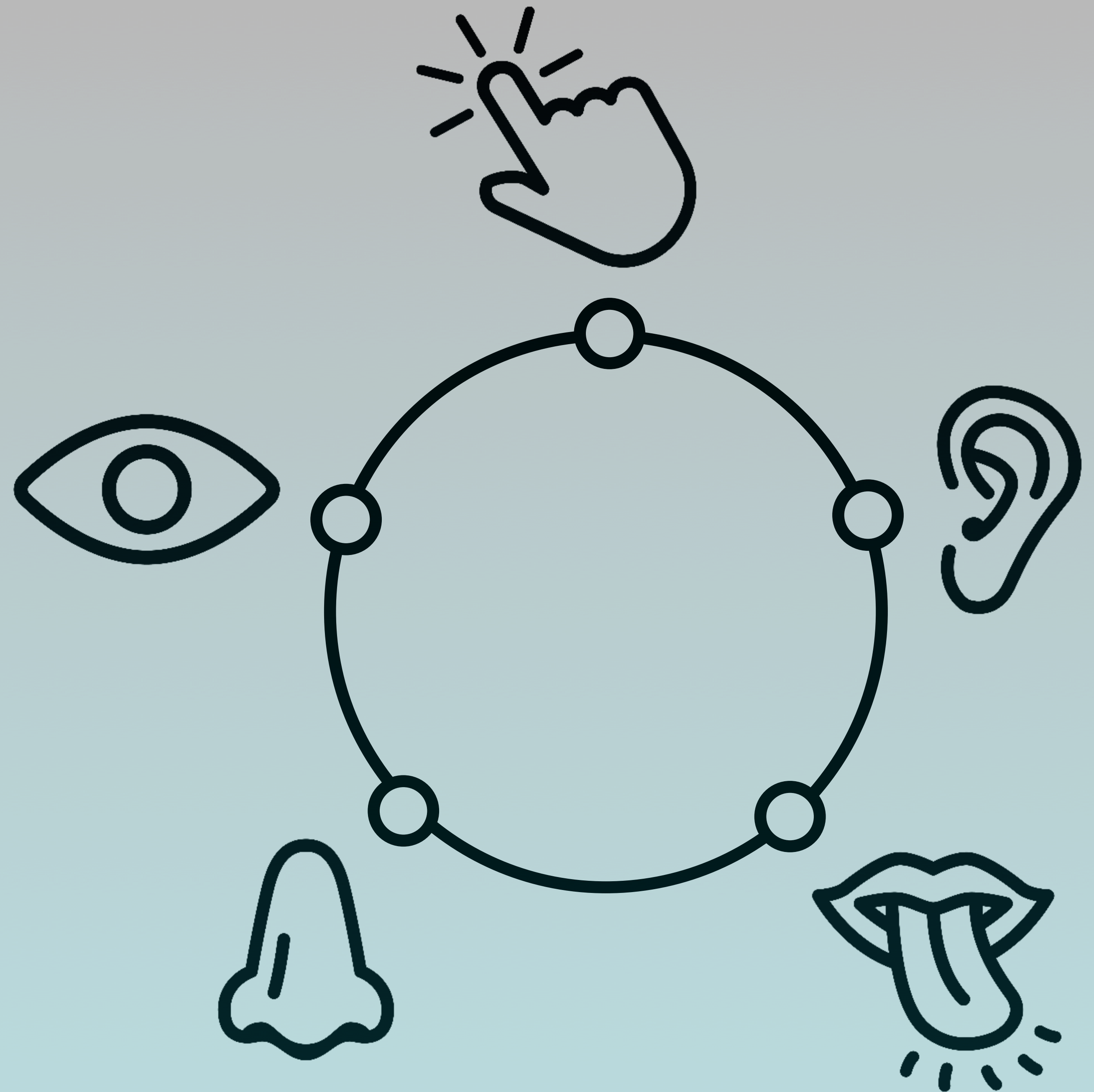


## contemporary moment

With smart phones, there is an  
unprecedented opportunity for  
buildings to learn from occupants.  
**SMART BUILDINGS ARE  
SOCIAL BUILDINGS**



How do we  
use senses  
to inform  
workplace  
design?





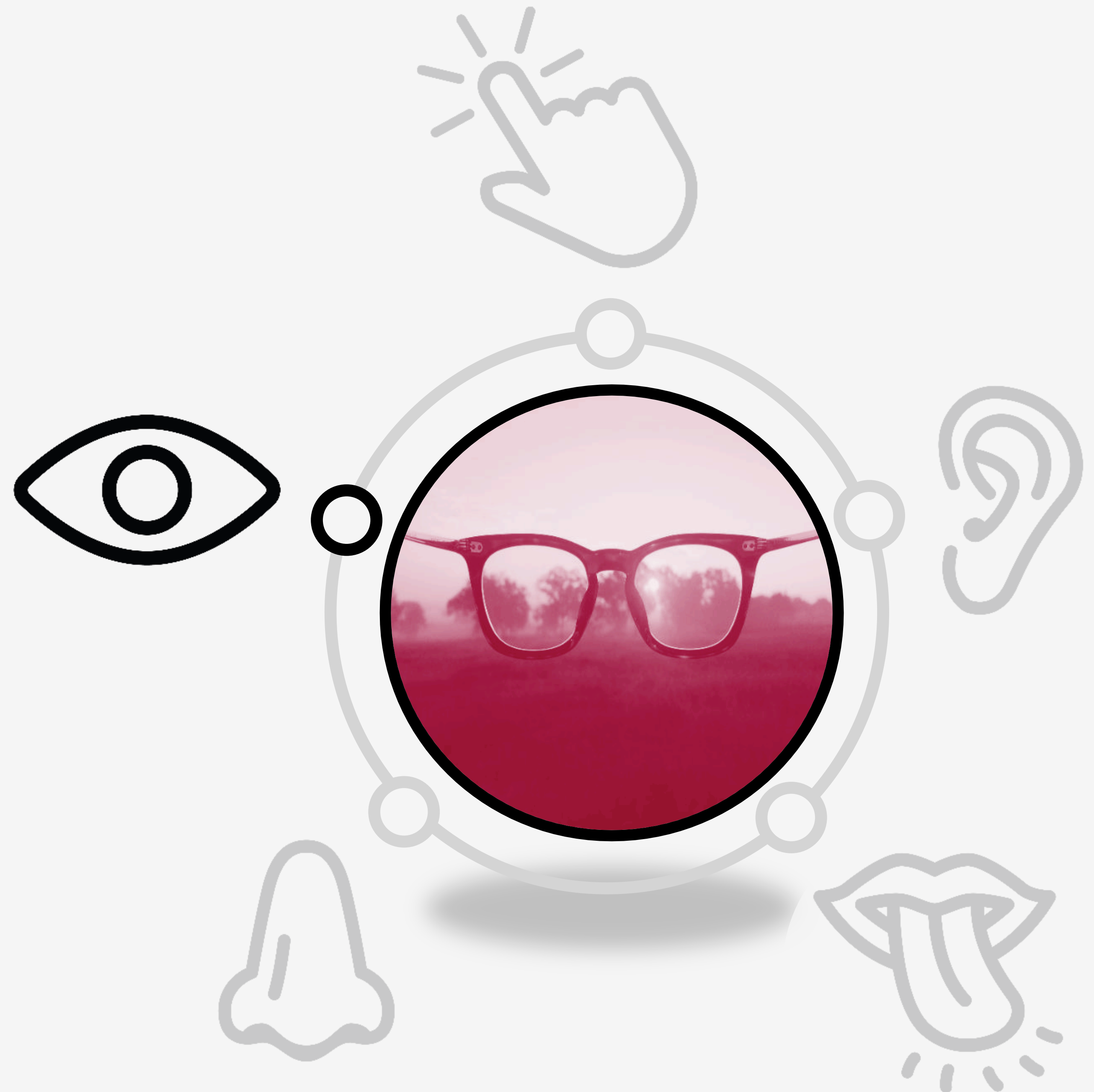


sight

Sight is often **the first sense that comes to mind** when we think about design

Goes far **beyond creating aesthetically pleasing spaces**

Incorporates both the color and the color temperature, as well as daylight





## what to measure

- **Units** - lux, color rendering index, unified glare rating, lumens
- **Circadian rhythms** - Relay information about the time of the day based on the level of light in an environment
- **Vitamin D** – Stimulates the production of hormones that regulate calcium levels
- **Combined impact** – Light exposure informs our bodies whether or not we are aligned with our circadian rhythms







## how to accomplish

- Consult environmental psychology to understand which colors influence productivity, calm, and focus
- Managing a sense of crowding, or providing sight lines to coworkers, contribute to productive, healthy environments
- Exposure to warm, natural materials like wood has positive biophilic effects
- Light exposure, through daylighting or bulbs that simulate natural sunlight, produces effects that linger long after the work day





smell

Scent is the sense **most strongly tied to memory.**

It helps create a **connection between space and occupants.**

Scent also contributes to a **brand experience** for both customers and employees







## what to measure

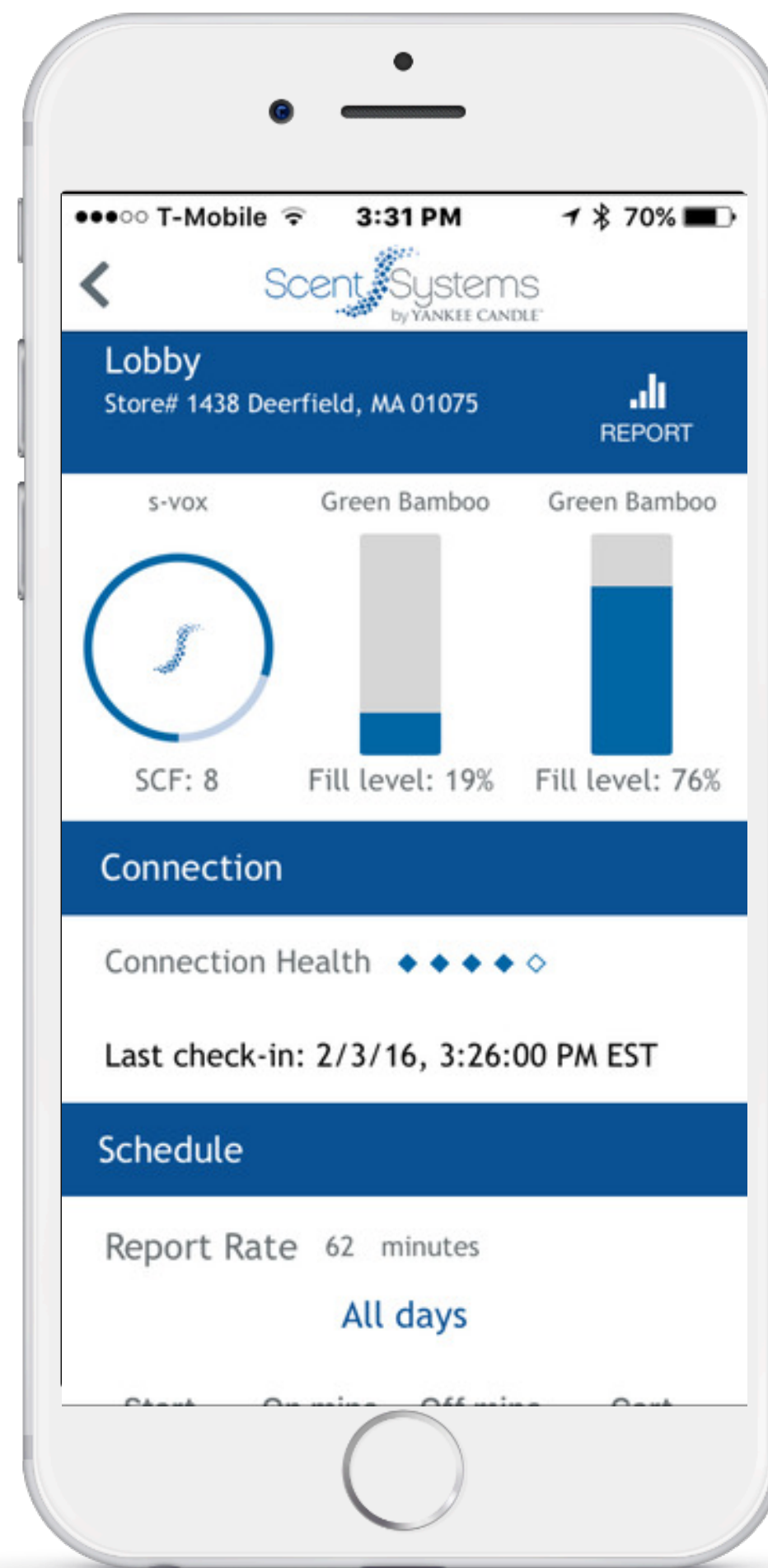
- **Units** - European Odour Unit, odor intensity, olf
- **Pheromones** - chemicals messengers that relay information between individuals of the same species.
- **Taste Information** - Taste is essentially the detection of chemicals in air and food





## how to accomplish

- Retail environments are tapping into fragrance to brand their environments and trigger emotional responses in customers
- Coworking operators creating olfactory experiences to improve occupant experience in space.
- Scent systems can also be built into a building's HVAC system
- Set mood and atmosphere using scent (coffee vs. beer)



Yankee Candle's mobile application for its intelligent SenseSystems



Envionscent, a fragrance machine manufacturer



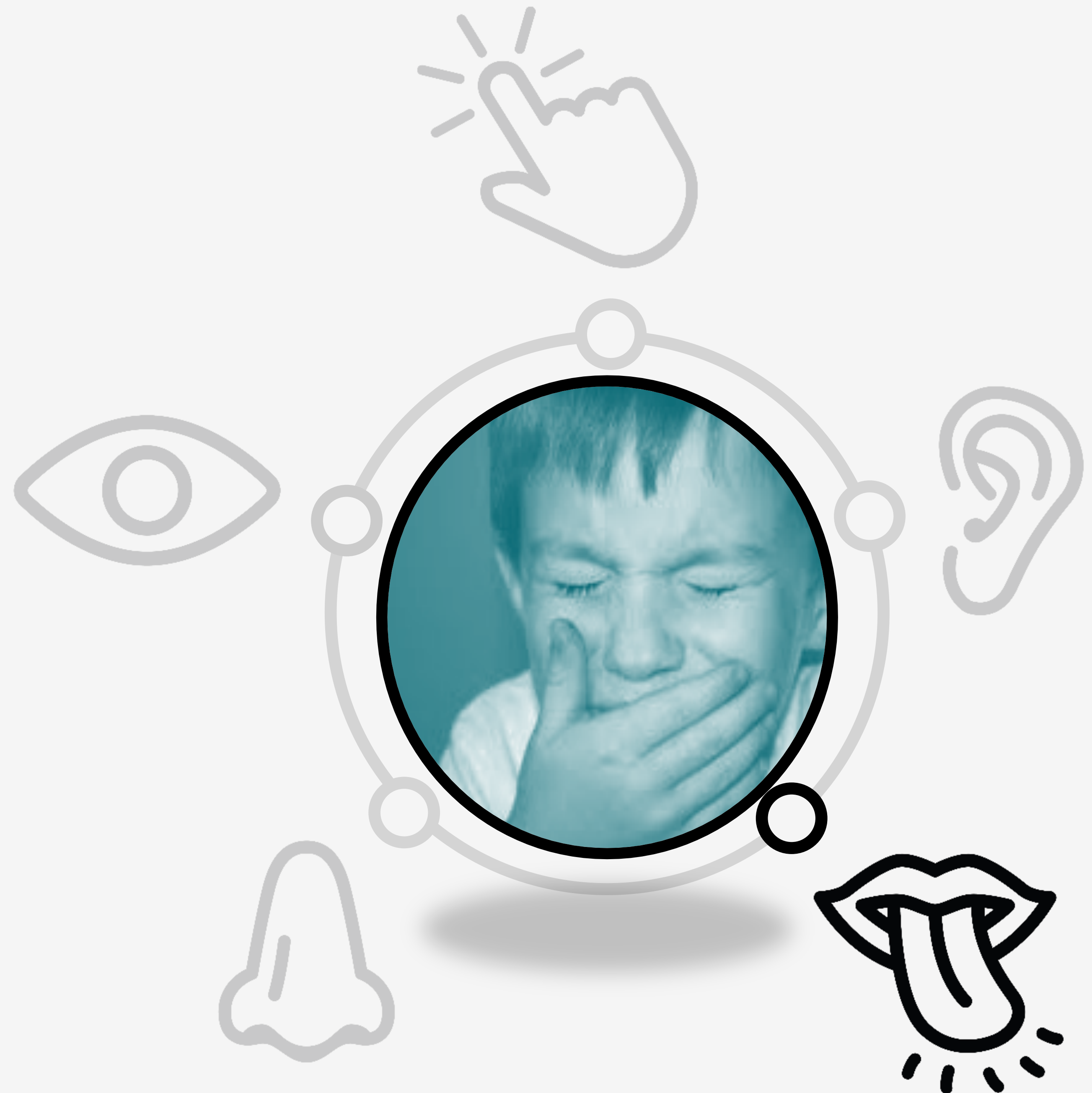


taste

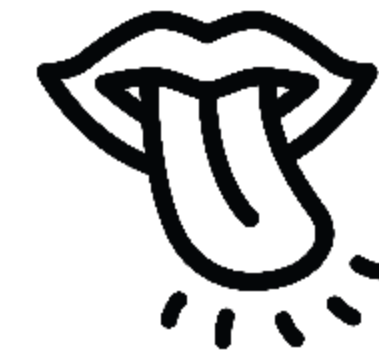
Food and drink play an important role in **creating community** in the workplace.

Coffee can be **more than a necessity**, and happy hours make the office a social place

Ensuring access to healthy food and drink is a key piece of **wellbeing in the workplace**







## what to measure

- **Units** - International Bitterness Unit (IBU), Scoville scale
- **Tastants** in foods are detected by our taste buds on the tongue, the back of the mouth and on the palate. Each person has somewhere between 5,000 - 10,000 taste buds that detect five different elements of taste perception: sweet, salty, sour, bitter, sweet and umami.





## how to accomplish

- Provide healthy, high taste foods at social events that will enable wellness and create a shared experience
- Great coffee and tea options start the morning off feeling special, and continues throughout the day
- As with scent, use taste to articulate values and culture, at different times of day (coffee vs. beer vs. infused water)
- Amenities like mouthwash add an extra dimension of taste!







sound

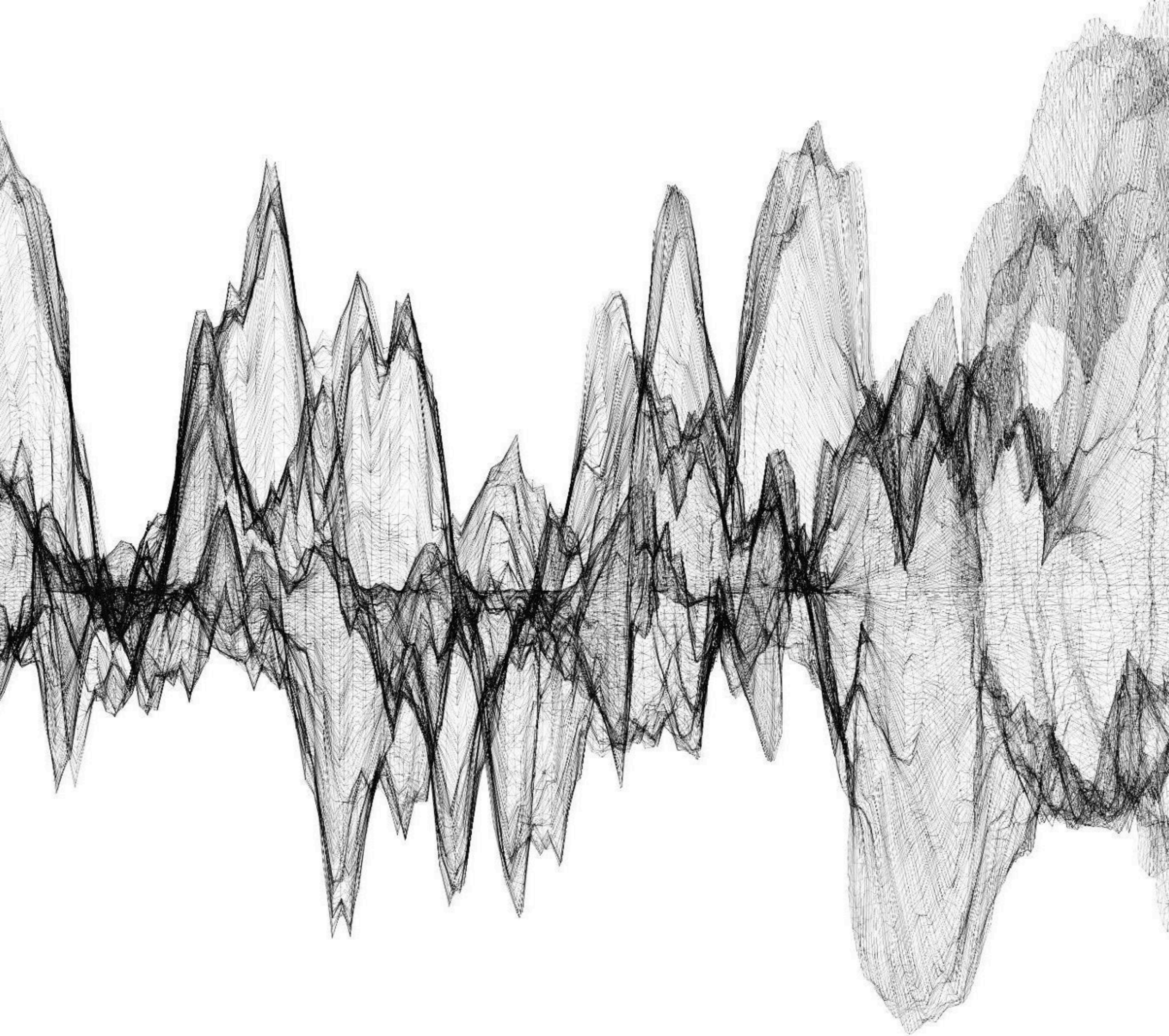
Sound is probably the **second most talked about sensory experience** in the workplace

One of the biggest **points of frustration** in the office, exacerbated by open plans and harder materials

Contributes to our sense of **personalization and customization**, especially with use of headphones







## what to measure

- **Units** - decibel, sone, phon, hertz
- **Vestibular system** – Our ear plays a role in our sense of balance
- **Vibrations** - Low frequency, what might be more perceived as vibration than sound, in our working environments  
These sounds come from equipment and may impact our health over time.





## how to accomplish

- Music in common spaces sets the atmosphere, and allowing occupants to customize music provides personal control
- Using sound masking facilitates increased concentration and confidentiality when needed.
- Different sonic environments can help differentiate spaces by function







touch

**Temperatures, textures, and tactility** all factor into the multisensory workplace

Includes things we touch, imagining how things feel, and our **full-body senses**







## what to measure

- **Units** - degrees (Fahrenheit, Celsius, Kelvin), Clo
- **Somatosensory system** - the system that responds to changes to the surface or internal state of the body. Includes the sense of touch
- **Touch and health** - certain types of touch stimulate the release of endorphins, and can reduce blood pressure and heart rate
- **Thermoreceptors** - nerve cells that are sensitive to variations in temperature





## how to accomplish

- Pay attention to ergonomics for a multigenerational workplace, and aim to accommodate a range of preferences
- Regulate temperature and humidity to avoid “sick building syndrome” and enable focus
- Digital platforms like Comfy connects occupants to building HVAC systems and other touch-related elements of the workplace





# Recap

- Greater demands from customers than ever before
  - Architecture is a resource & professional partner
- Multisensory is a bridge between UX demands and exceptional delivery
  - Everything is measurable

## Questions?

Or tweet @plastarc





# Thanks!

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