

## Architecture and the Senses: A Sensory Musing Park

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Our sensory organs are mediators between what happens in our brains, and what happens in the world around us. However, our brain doesn't directlyperceive anything. Diane Ackerman describes the paradox of our brain's dependency on the senses, as a silent and dark recipient, transmitting only electrical impulses.<sup>1</sup> This perspective uncovers the critical importance of our sensory abilities. If the brain is ineffective without information gathered by the senses, why aren't our environments tailored to clarify and illuminate our sensory experiences? If we can understand over time, as John Zeisel explains, how people's minds work in response to their physical environments, then those environments can be designed to support health, creativity, and life.<sup>2</sup>

### I. EXTENDED ABSTRACT

This thesis studies the relationship of architecture and the senses. The first part of the document explores sensory characteristics and how they work. It defines their importance in allowing humans to navigate complex environments. The second part looks directly at environmental stimuli. It seeks to qualify and associate physical variables with particular sensory responses. The third part of the document studies sense-stimuli relationships and the various outcomes.

Research draws from scientific, psychological, architectural, and philosophical contributions, including work by environmental psychologist, Harold Proshansky; architects, Steen Eiler Rasmussen and Charles Moore; and anthropologist, Edward Hall. The goal of the research is to create a set of principles by which architecture can design “for the senses”.

These principles are then applied to a series of architectural installations, located in the “Parco della Rimembranza”, in Rome, Italy. Each installation deconstructs a particular sensory experience, in order to isolate and examine the stimuli involved. The sensestimuli relationships that comprise each installation use natural and man-made variables to activate the visitor’s experience. Each installation is part of a larger constellation that can be sequenced in a variety of ways, experienced uniquely each time, and even added to by visitors and artists.

This thesis provides a framework for clarifying and enhancing the built environment. It employs the human senses as a common denominator, through which practitioners from all ends of the occupational spectrum can contribute. By cataloging and analyzing the interplay between architecture and the senses, it evaluates human experience and offers a set of standards by which architecture can contribute to the benefit and welfare of humankind

### 2. REFERENCES

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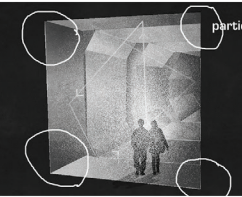
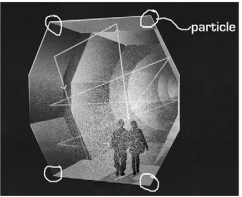
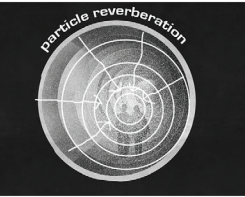
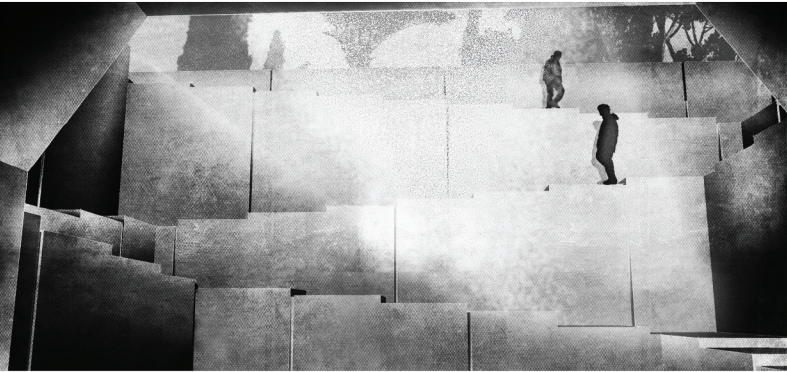
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FROM LEF TO RIGHT, TOP TO BOTTOM: CENTERING PLAZA SECTION PERSPECTIVE. ILLUSTRATION BY SARAH STEIN;  
CAVE ENTRY - WELL. ILLUSTRATION BY SARAH STEIN;  
SOUND DIAGRAM - CIRCLE, OCTAGON, SQUARE. ILLUSTRATION BY SARAH STEIN;  
SENSE-STIMULI CHART- TOUCH. DIAGRAM BY SARAH STEIN.

## TOUCH

### Development

**Immediate Receptor**  
Touch is relative to movement, temperature, and tactile qualities. Touch is an immediate receptor, unlike any other sense, requiring direct contact to convey information.

### Types

**3 Types**  
Diverse sense that can be understood in three different ways: kinesthetics, thermal, and tactile perceptions. Each of the three "touch" perceptions deal with direct contact between ourselves and the environment and, perhaps, offer the most intimate form of experiencing an environment.

### How It Works

**Muscular, Pulmonary & Nervous** Proprioceptors and exteroceptors, located within and on the surface of the skin, record muscular, thermal, and tactile information and transfer it through nerve impulses to the brain.

### Benefits

**Time & Place**  
Recognizing and understanding movement within a space can expand design opportunities. Furthermore, engaging natural qualities like sun and wind can connect people to a specific place at a specific time.

### Issues

**Understimulation**  
Channeling experiences, by limiting the number of distractions and regulating elements that separate us from the environment, might serve to heighten those experiences.

### Phenomenology

**Cognitive to Corporeal**  
Touch is particularly important for connecting us to time and place. We refer to "tangible" things as "real" things, things we can physically confirm. The validation of an environment is particularly important in linking us with our existence and connecting us to the "here and now". Emotion, a cognitive process, is translated into a bodily experience via thermal perception. Conversely, touch perception can take bodily experiences - like tactile feeling, movement, and temperature perception - and turn it into a cognitive process.

### Architectural Applications

**Juxtaposition**  
Hierarchy of intensity or simple alternation of contrasting terms juxtaposes responses to bring out particularities.

### Shape

**Kinesthetics**  
Round spaces are inward focusing  
St. Benedict's Chapel, Sumgri, creates a forward thrusting inertia through the oblong shape of its structure.

### Color

**Thermal**  
Color, through the form of light waves send nerve impulses to the hypothalamic region of the brain. In short, color temperatures are as follows:  
Red - hot and arousing; Orange - warm and stimulating; Yellow - warm and exciting;  
Green - cool and calming; Blue - cool and restful; Violet - cool and soothing.

### Light

**Emotion**  
When light enters the eye, it activates energy pathways to the brain. Though emotions are based in our conscious, they are influenced by the corporeal. This burst of energy is often the cause of lifting a mood and scotching depression.

### Acoustics

**Vibration**  
Sound is actually experienced through touch. The resonance of sound waves against our eardrums creates sound. The feeling of a sound, its vibrations through a medium, are amplified or dampened by the shape and materiality of space.

### Material

**Tactile**  
Materials convey information to us through touch. Textural quality enriches the haptic experience by stimulating proprioceptors and exteroceptors, located within and on top of our skin.