HUMAN INTERNALIZATION AND EXPRESSION OF ARCHITECTURE

CASE STUDIES

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CASE STUDY:
2000 TOWER OAKS BLVD
THE INTELLIGENT NATURE OF ARCHITECTURE

“2000 Tower Oaks is a nine-story, commercial office building, located just 12 miles northwest of the U.S. Capitol in Washington, D.C. Recognized as one of the world’s greenest buildings, it was designed under the highest principles of sustainable and Vastu architecture in order to promote harmony and corporate success and was the first LEED Platinum® office building in the Mid-Atlantic Region. Far exceeding industry standards in the built environment, the building uses cutting-edge design and operational best practices to optimize health and productivity in the workplace, while minimizing impact on the environment.”1
AWARDS

• 2009 Award of Excellence Best Green Building, NAIOP DC/MD
• 2009 “Green” Design and Construction, Peerless Rockville Honors
• 2008 Commendable Achievement in Lighting Design, Illumination Awards

PUBLICATIONS

“Vedic architecture is the world’s most ancient system of architecture. It is the knowledge of how to construct and design buildings in accord with natural law, in perfect harmony with all the laws of nature. Laws of nature are the universal principles of intelligence with nature that administer, with perfect order, everything from our human physiology to the whole galactic universe.”

Design Creates Fortune: 2000 Tower Oaks Boulevard

John D. Macomber
Griffin H. James
ORIENTATION
The building is oriented perfectly to the cardinal directions, true north, south, east, and west, with the building entrance facing east toward the rising sun.

PROPORTIONS
Nature often mimics the same proportions at different scales, as characterized by fractal geometry.

CENTERPOINT
The building has a center of silence or core called a Brahmasthan, a structure replicated in solar systems, cells, and atoms. The activity of the building is arranged around this central core.

VASTU FENCE
The building is placed within a Vastu, or a fenced terrace surrounding the building, following defined proportions. The fenced terrace extends the coherence of the building into its site.
ORIENTATION

“East-facing buildings are associated with good fortune, creativity, and alertness. North-facing, with financial success.”

“There is increasing evidence that exposure to light, during the day - particularly in the morning -- is beneficial to your health via its effects on mood, alertness and metabolism.”
VASTU FENCE

“The building should be encapsulated or surrounded with a fence, or a wall, or a garden. This is the classic use of the word, “Vastu,” a defined fence surrounding the building. The building is placed within the Vastu, following defined proportions. The Vastu fence creates a sphere of coherence around a system.” 5
“Human beings need to experience the full range of daylight to create biological chemicals that keep us balanced and focused.”
PROPORTIONS

• Nature often mimics the same proportions at different scales, as characterized by fractal geometry.

• Height, width, length all matter.
CENTERPOINT

The nucleus is the architecture of nature. The sun is the center of the solar system, and the nucleus is the center of a cell. The nucleus of a cell contains the intelligence—it contains the purpose. In this building, the Brahmasthan stone in the main elevator lobby is the representation of the center.
HEALTH + PRODUCTIVITY

- **Green Cleaning**: Best practices are used throughout the building.
- **Increase in Productivity**: Achieved with better lighting, air quality, and thermal control.
- **Three-stage Outside Air Filtration System**: Removes 95% of airborne pollutants and maintains a steady comfortable temperature.
- **Vedic Architecture design**: With special consideration for orientation, proportions, a center of silence, and Vastu.
FRESH AIR + PRODUCTIVITY

• Fresh air in the building completely exchanges every 51 minutes.

• Fresh air, combined with mindful design, creates an environment for elevated levels of occupant recovery/productivity.
CASE STUDY:
TRANSURBAN
This parking lot was rotated away from the building and aligned with the edge of the site to bring the open space closer to the building and to create a better procession upon arrival.
“Workers without windows reported poorer scores than their counterparts on quality of life measures related to physical problems and vitality, as well as poorer outcomes on measures of overall sleep quality and sleep disturbances.”

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NATURAL LIGHT

As diurnal creatures, we humans are programmed to be outdoors while the sun is shining and home in bed at night. This is why melatonin is produced during the dark hours and stops upon optic exposure to daylight. This pineal hormone is a key pacesetter for many of the body’s circadian rhythms. 7
LIGHTING AFFECTS PRODUCTIVITY

- Light has an enormous effect on our physical and mental well-being.
- Cooler light makes workers more productive.
- Natural light has been found to decrease depression and improve memory, energy, alertness and productivity.
- Cooler light should be kept in brainstorming rooms where you want people to feel invigorated and excited to share their ideas.
- Warmer light should be used in more intimate settings where you want workers to feel calm and relaxed such as a meeting room where you want to emit trust.

How Lighting Affects Productivity

One of the most striking factors influencing how we work is the color temperature — measured in Kelvin (K) — of the light sources we’re exposed to on a regular basis.

2,000 K 4,000 K 5,000 K 7,000 K
FIRE WARM SUNSET MID DAYLIGHT COLD OVERCAST WINTER DAY

Use in: Intimate settings, break rooms
- Creates a sense of comfort and relaxation.

Use in: Conference rooms
- Welcoming but still cool enough to promote alertness.

Use in: Brainstorming rooms
- Improves alertness, mood and productivity. Lowers melatonin, which reduces fatigue.

Sources:
https://www.joecad.blogspot.com/2014/03/180-359-15-z/
BENEFITS OF SUNLIGHT

• Each day, Apollo’s fiery chariot makes its way across the sky, bringing life-giving light to the planet. For the ancient Greeks and Romans, Apollo was the god of medicine and healing as well as of sun and light—but Apollo could bring sickness as well as cure. Today's scientists have come to a similarly dichotomous recognition that exposure to the ultraviolet radiation (UVR) in sunlight has both beneficial and deleterious effects on human health.  

• Excessive UVR exposure accounts for only 0.1% of the total global burden of disease in disability-adjusted life years (DALYs)  

• In contrast, the same WHO report noted that a markedly larger annual disease burden of 3.3 billion DALYs worldwide might result from very low levels of UVR exposure.  

• Although most of the health-promoting benefits of sun exposure are thought to occur through vitamin D photosynthesis, there may be other health benefits that have gone largely overlooked in the debate over how much sun is needed for good health.
CASE STUDY:
3100 CLARENDON
BUILDING PERFORMANCE = OCCUPANT WELL-BEING

HUMAN HEALTH + WELL BEING

“Actigraphy is a single device worn on the wrist that gives measures of light exposure as well as activity and sleep. This is an ambulatory physiological data logger that records motion and light illuminance. The motion was used to determine activity levels during waking time and to calculate sleep time. The light luminance was used for measures of light exposure during the workday period.” ⁴
KISHIMOTO.GORDON.DALAYA

Manoj Dalaya, AIA
REFERENCES