

# Portfolio 1



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IDSN 3102  
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## Healthy Building Systems

Healthy building refers to an emerging area of interest that supports the physical, psychological, and social health and well-being of people in buildings and the built environment. Buildings can be key promoters of health and well-being since most people spend a majority of their time indoors.

### Healthy building systems provide

- Natural light and views of the outdoors
- Thermal comfort
- Sufficient fresh air quality
- Acquire ENERGY STAR labeled products
- Occupant engagement
- Personal control
- Indoor environmental quality
- Biophilic design
- Healthy dining options
- Exercise in workplace
- Smoking restrictions

Healthy building can be seen as the next generation of green building that not only includes environmentally responsible and resource-efficient building concepts, but also integrates “health, wellness, and human experience in buildings.

Benefits include:

- Reducing absenteeism and presenteeism
- Lowering health care costs
- Improving individual and organizational performance



## LEED Building Credits (Leadership in Energy and Environmental Design)

LEED certification means healthier, more productive places for us to live, learn, work and play, as well as less stress on the environment, by encouraging energy- and resource-efficient buildings. While project managers can pick and choose the credits they want to pursue, prerequisites set the minimum requirements that all buildings need to meet in order to achieve LEED certification.

### Goals of a LEED certified building

- Enhance community, social equity, environmental justice and quality of life
- Reverse contribution to climate change
- Enhance human health and well being
- Protect and restore water resources
- Protect biodiversity and ecosystem services
- Promote sustainable and regenerative resource cycles
- Build a greener economy

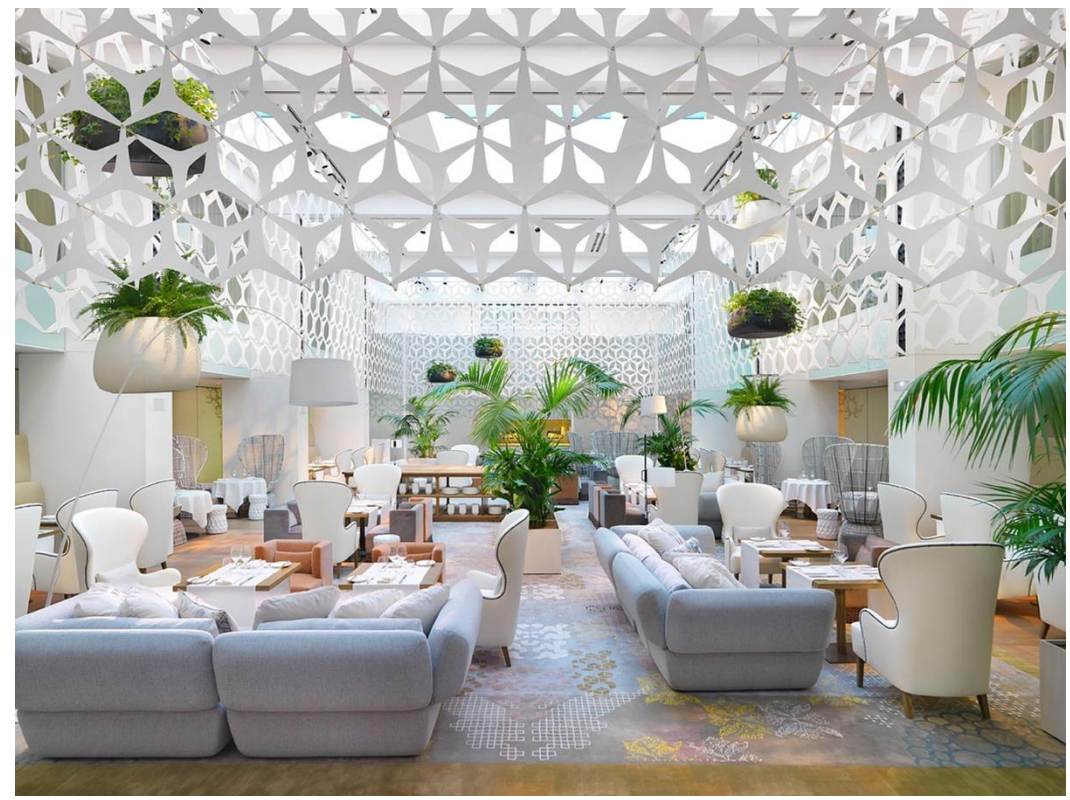
### Rating systems to choose from

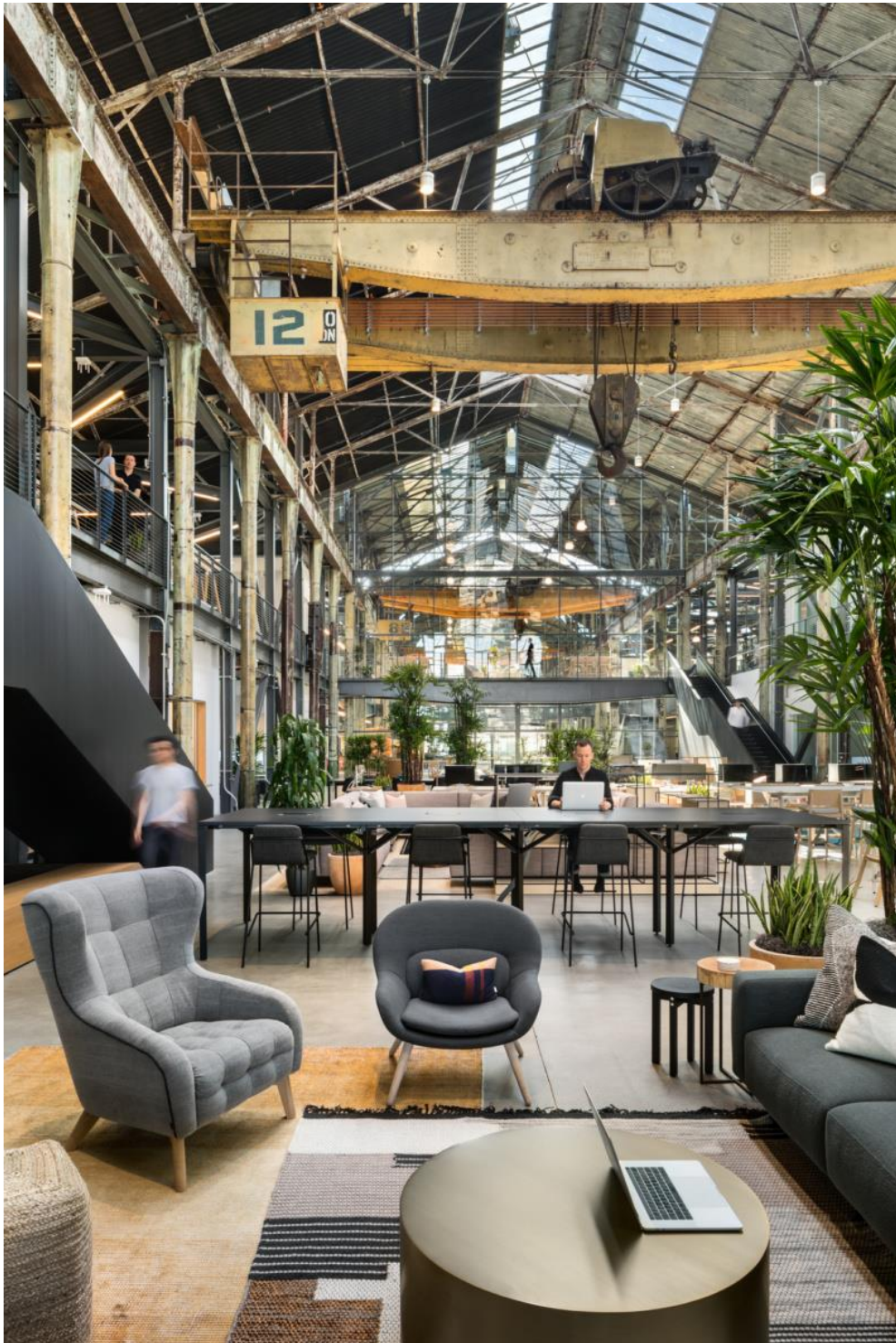
- Interior Design and Construction (ID+C)
- Building Design and Construction (BD+C)
- Operations and Maintenance (O+M)
- LEED for Homes
- LEED for Neighborhood Development

### Points

The more points, the higher the reward. With LEED, there are many rewards, ranging from healthier spaces to buildings that save money and resources. The number of points a project earns determines the level of LEED certification it receives. There are four levels of certification:

- Certified (40–49 points)
- Silver (50–59 points)
- Gold (60–79 points)
- Platinum (80+ points)





## Embodied Energy

Embodied energy is the energy consumed by all of the processes associated with the production of a building, from the mining and processing of natural resources to manufacturing, transport and product delivery.

### Assessing embodied energy

- How much energy was used to transport the materials to the building site
- Materials used during construction
- the upstream energy input in making the materials (such as factory/office lighting, the energy used in making and maintaining the machines that make the materials)
- the embodied energy of urban infrastructure (roads, drains, water and energy supply).

**Gross energy requirement-** a measure of the true embodied energy of a material, which would ideally include all of the above and more.

**Process energy requirement-** a measure of the energy directly related to the manufacture of the material.

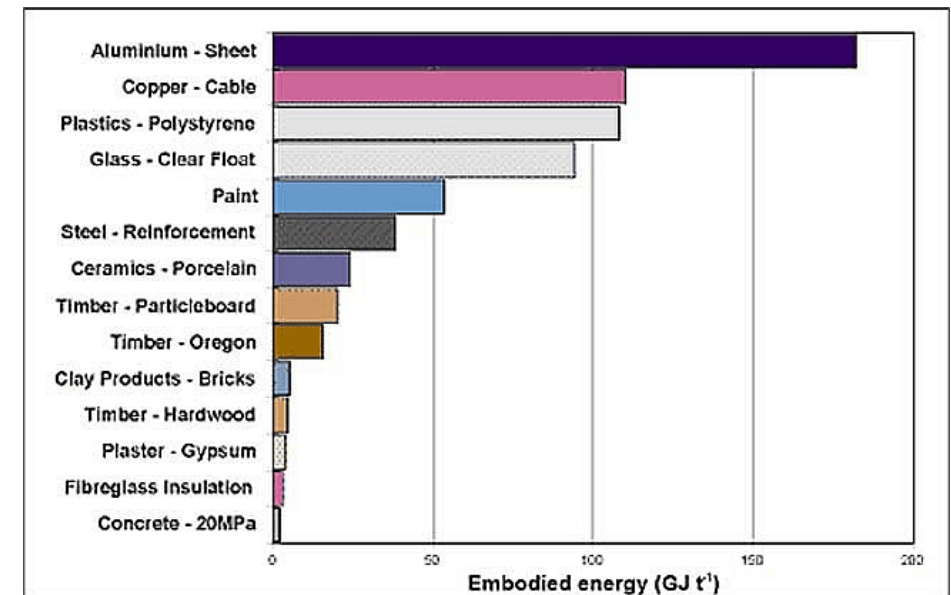
- efficiency of the individual manufacturing process
- the fuels used in the manufacture of the materials
- the distances materials are transported
- the amount of recycled product used.

### Materials with low embodied energy

- concrete
- brick
- timber

### Materials with high embodied energy

- Stainless steel
- Aluminum
- Glass products



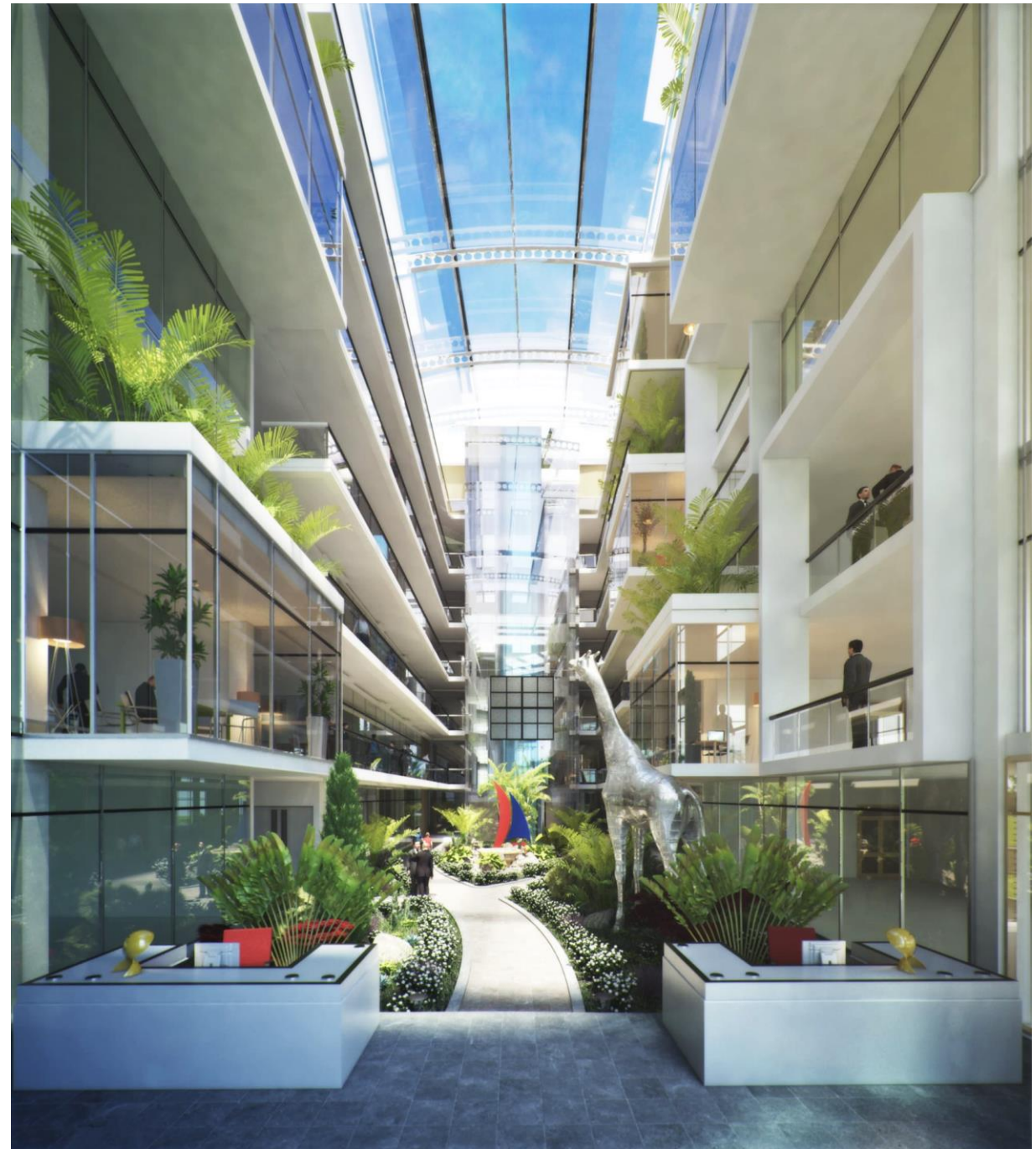
**Owner of space:** Real estate developer

**Client:** Teknion Furniture

**Customers:** Teknion Furniture current, potential and future customers

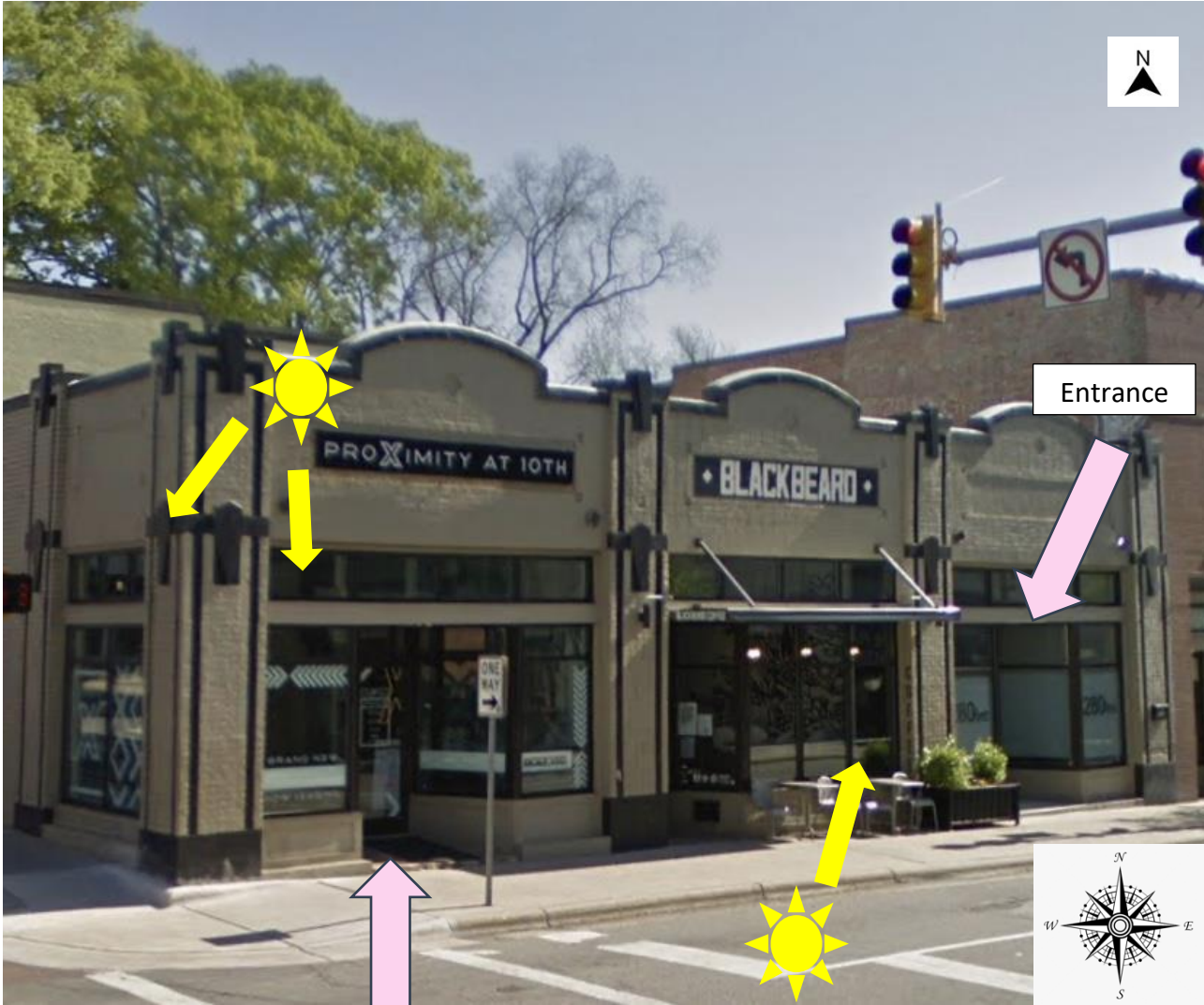
**Design Problem Statement**

- Lack of natural light on sides and back of building to be substituted by an abundance of light fixtures and greenery that can create the feeling of natural light and an outdoor environment
- Sporadic bathroom locations moved to one central area
- Platform added to slanted back alley way
- Middle entrance will be turned into large window exhibit that showcases pieces that Teknion Furniture sells (the most unique ones)
- Wall molding with built in led lights and unique ceiling design will guide customers through the space
- Divided spaces to encourage social distancing
- Grid design that allows for easy walkthrough



# Site Analysis

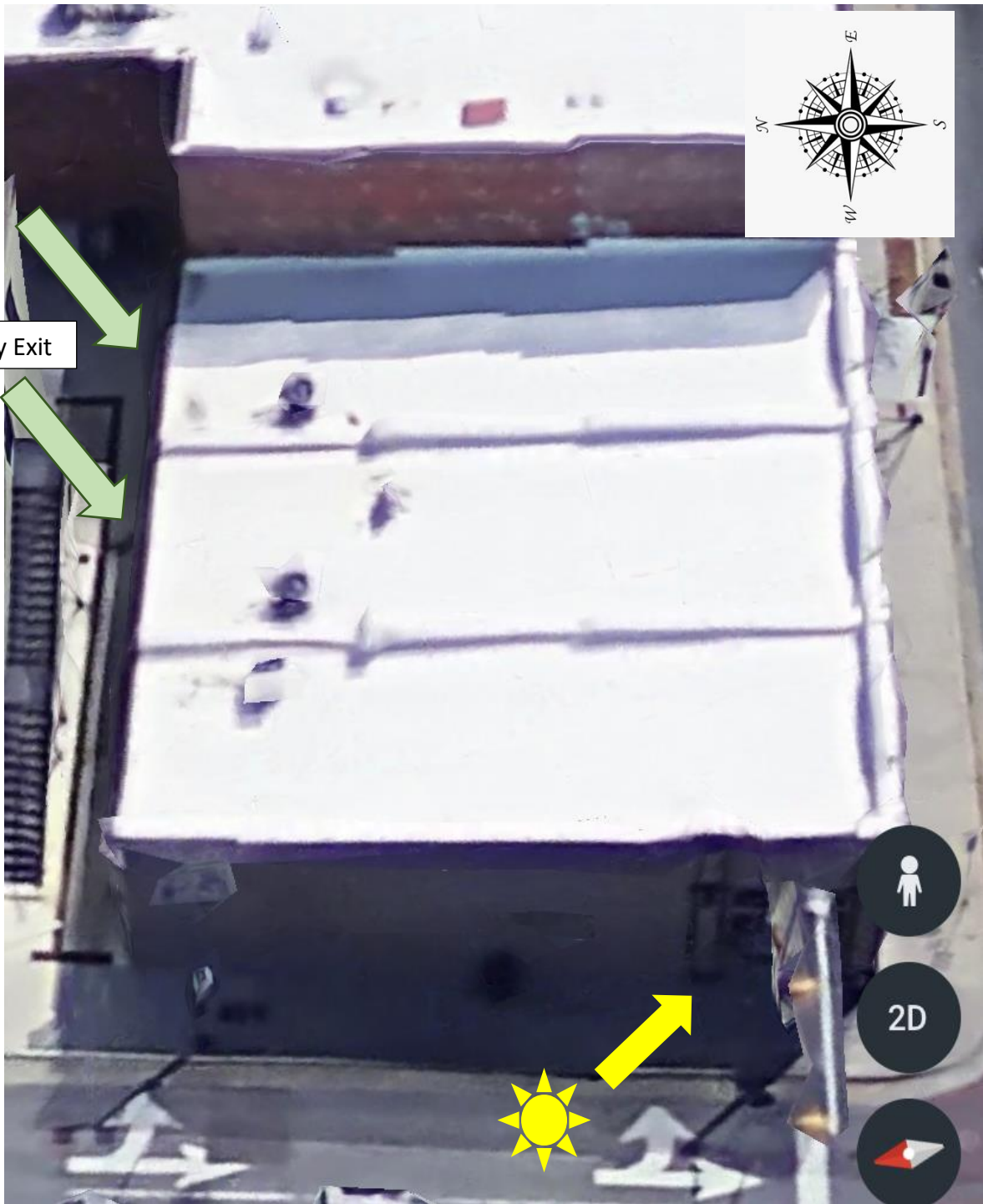
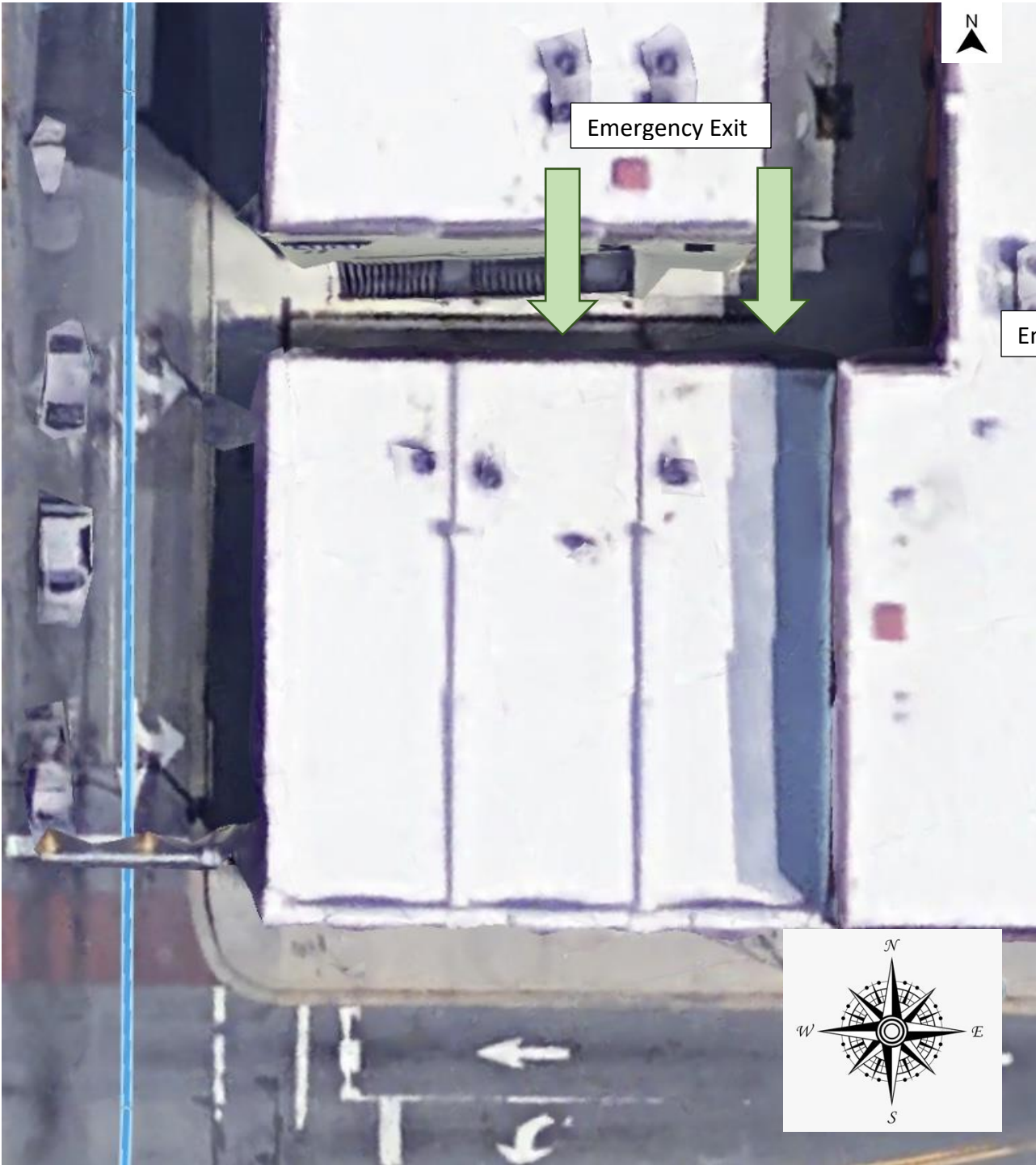
201-205 East 5<sup>th</sup> Street  
Corner of 5<sup>th</sup> and Cotanche



Entrance



# Site Profile



## Works Cited

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