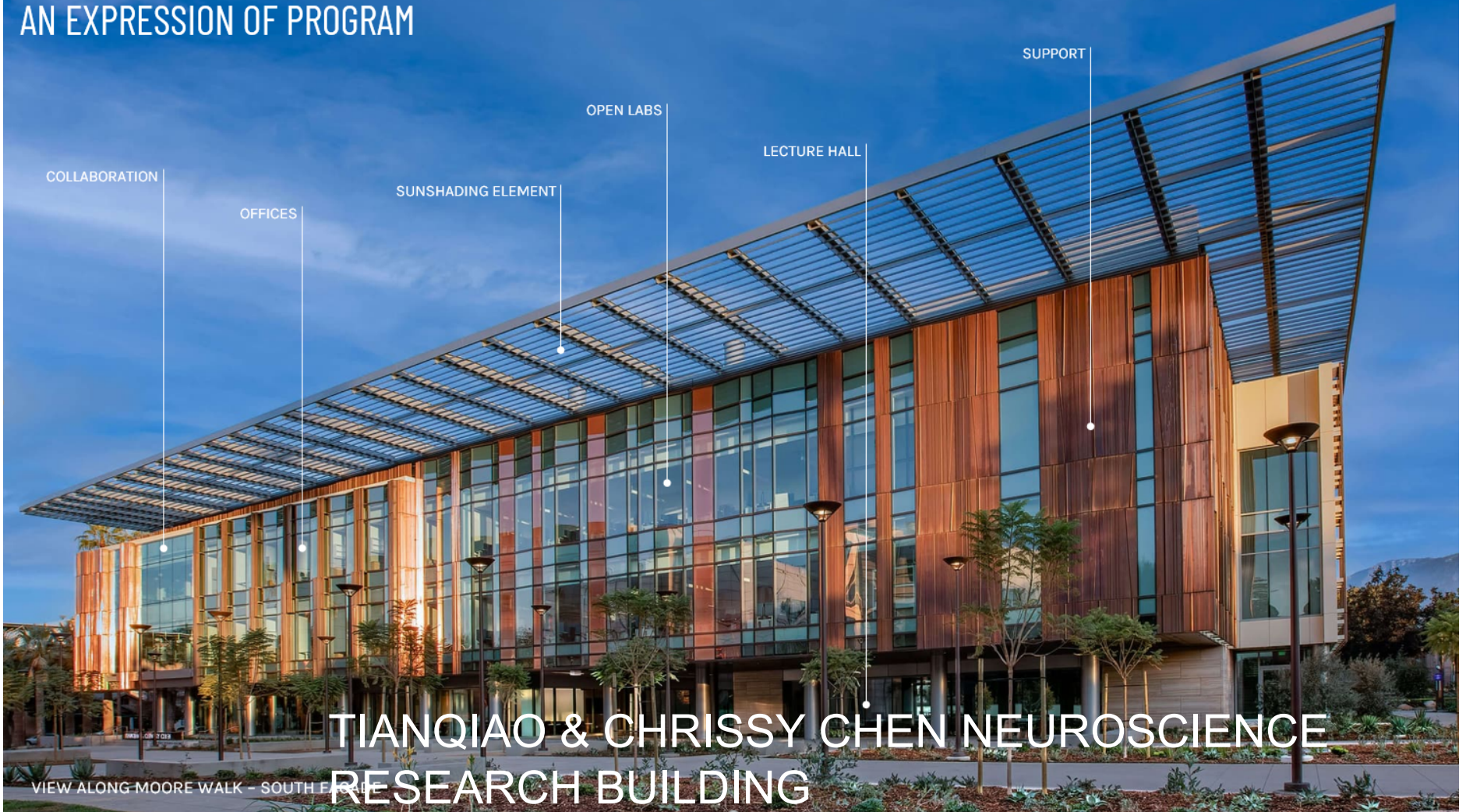
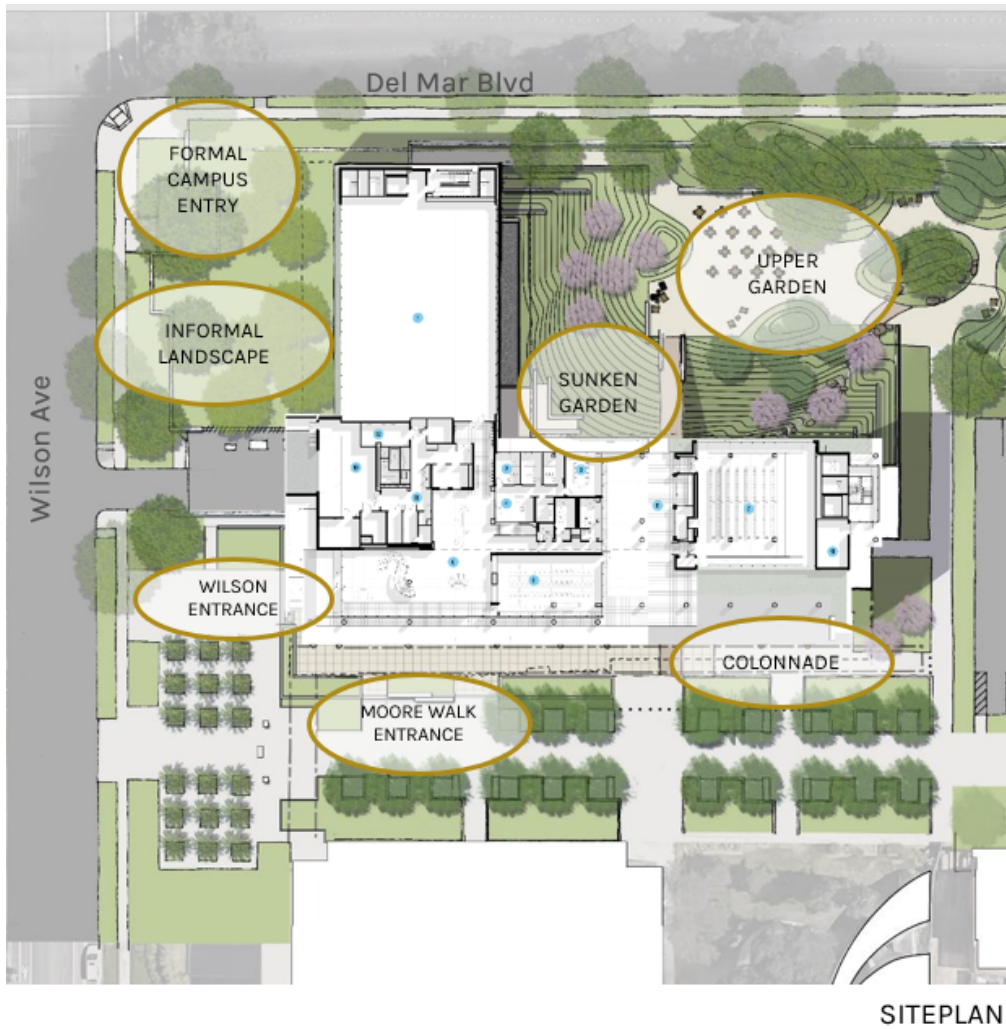


AN EXPRESSION OF PROGRAM



TIANQIAO & CHRISSEY CHEN NEUROSCIENCE RESEARCH BUILDING

VIEW ALONG MOORE WALK - SOUTH SIDE



Integration - beauty + function + delight, central design concept, integrated process
The design strengthens and integrates into the campus through the use of its massing, materials and landscape. The natural material palette is inspired from and an expression of nature giving the project a humanistic scale and texture.

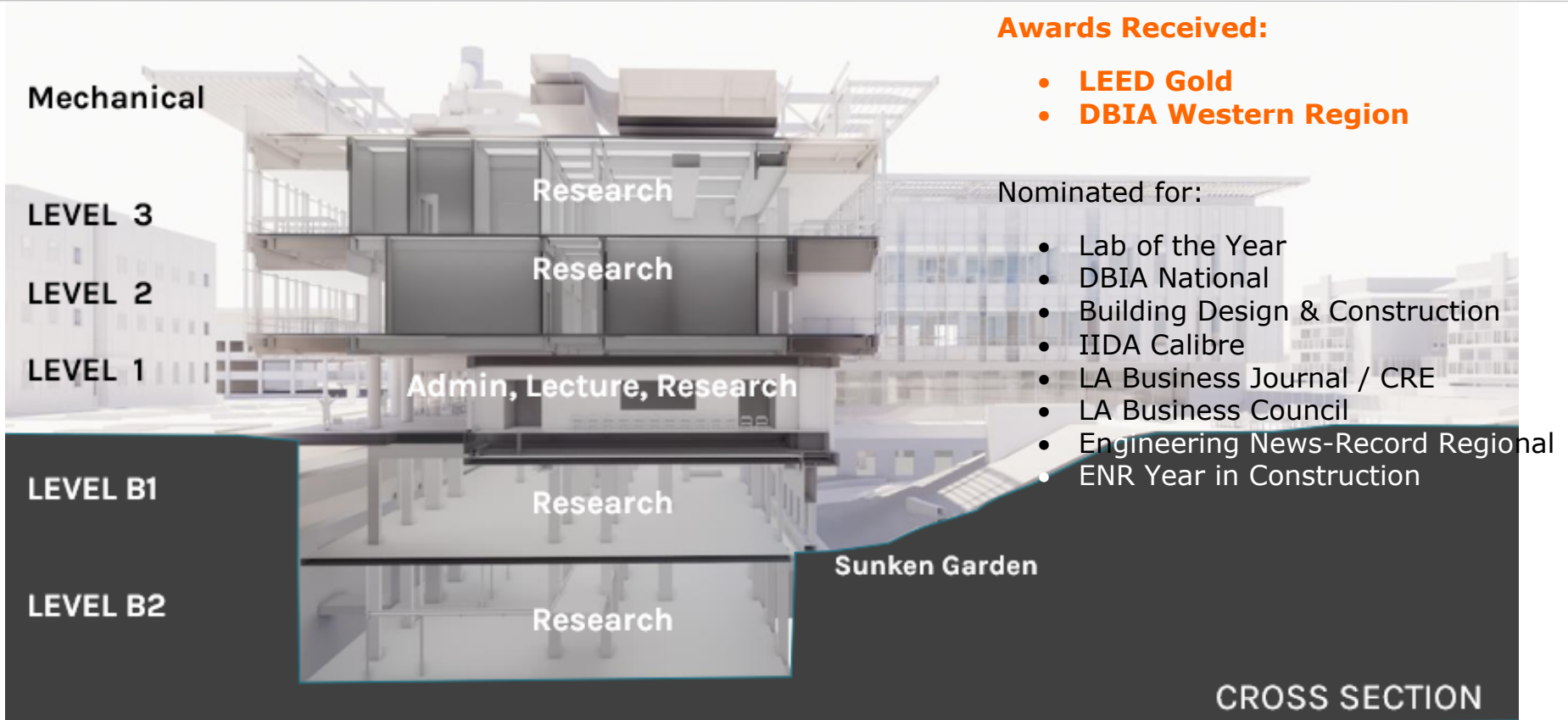
Design for Equitable Communities - positively impacts occupants and broader community, walkability/accessibility, community engagement, social equity
The ground floor & site provide shade and a campus amenities such as the event garden, seminar room and lecture hall. The massing is respectful of the adjacent residential buildings by placing the bulk of the mass along Moore Walk.

Design for Water - Conserves and improves quality of water
Drought tolerant landscape throughout, Cooling condensate is sent to the Central Utility Plant for reuse.

Design for Economy - Adds value for owners, occupants, communities, planet
Designed to last a min of 50 years the building is equipped with infrastructure and planning for significant future flexibility.

Design for Energy - reduces energy and fossil fuel use while providing function, comfort and enjoyment
Chilled beams utilize airflow induction to cool spaces, offering significant energy savings. The 2030 Challenge target EUI is 298.

Design for Well-Being - Supports mental and physical health for occupants and community
Both laboratory and collaboration workspaces are full of natural light with views to nature, the campus and the mountains beyond. Shaded outdoor terraces and gardens give a convenient and comfortable place to enjoy. The sunken garden provides natural light to labs at basement level 1.



Awards Received:

- LEED Gold
- DBIA Western Region

Nominated for:

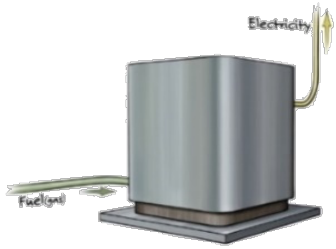
- Lab of the Year
- DBIA National
- Building Design & Construction
- IIDA Calibre
- LA Business Journal / CRE
- LA Business Council
- Engineering News-Record Regional
- ENR Year in Construction

CROSS SECTION

Tianqiao & Chrissy Chen Neuroscience Research Building Fact Sheet & Occupation Information

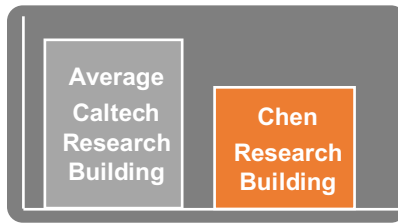
Powered by Fuel Cells

Chen's primary source of power is a 1MW natural gas fuel cell, sized to meet all of the buildings electrical demand. In case of disasters, the local utility (PWP) and onsite emergency generators provide two alternate power sources.



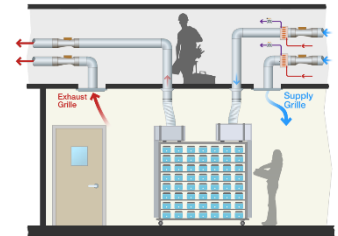
Energy Efficiency

Chen as a research and energy intensive building will consume approximately 295 kBtu/sf/year. This compares favorably to the Caltech average for research buildings of 411 kBtu/sf/year.



Avoiding Disruptions

Greater overhead clearance and overhead catwalks were installed over the B2 Level. This was done to allow necessary maintenance activities to occur overhead while avoiding the unacceptable disruption of research occurring in spaces below.

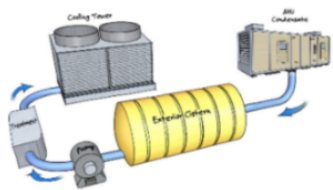


Sustainability

• Caltech is highly committed to sustainability. The following reflect that commitment:

> Water Reuse

Cooling Coil Condensate is sent to the Central Utility Plant for reuse.



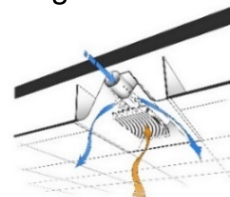
> High Efficiency Freezer

Enhanced operational design reduces energy consumed and heat rejected.



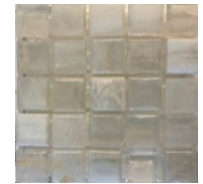
> Chilled Beams

Utilize airflow induction and chilled water to cool spaces, offering significant energy savings.



> Skylight

Features 545,326 mosaic tiles designed to bring natural light into the nucleus of the building.



Building Construction & Occupancy

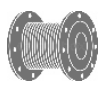
> Size of Facility

150,000+ sf



> Miles of Wire

205 miles



> Tons of Steel

1,230 tons



> Pounds of Sheet Metal in Ductwork

244,000+ lbs



> Copper Exterior

Fabricated in Rome, NY from a mixture of recycled and raw copper.



> Dirt

63,000 cubic yards of soil evacuated



> Concrete

10,500 cubic yards



> Number of Planned Occupants

500, including 100 visitors

> Duration of Design & Construction

3.5 years

> Number of Individuals Involved in Design & Construction

Approximately 2,700

> Ergonomics

Sit-stand desks are provided at write up stations and in offices, allowing researchers the flexibility to sit, stand, and move to help maintain better focus over long hours examining research data. Ergonomic seating can also help minimize injuries.

Quick Facts

Finishes/Furniture: The finishes selected were durable, bleach cleanable, and meets stringent chemical emission limits for various VOCs.

Art Installation: Artwork depicting the human brain is located in the lobby. This artwork was gifted from Tianqiao Chen and Chrissy Luo and is the work of Greg Dunn.

Innovative Lab Design: To meet the unknown research needs of tomorrow, the piped utilities/gasses in labs are set up in a flexible manner to allow for multiple configurations via mobile base cabinets, adjustable tables and ceiling service panels.

> Travertine Stone

Lower levels of the building are clad with 22,700 square feet of travertine stone. This featured stone can be found at elevator fronts, the lobby, bridge, breezeway, and sunken garden.

The featured stone was fabricated in Italy at the Marriotti family travertine quarry which has been in operation for over 800 years and is now operated by the fourth generation of family ownership. Each piece of stone weighs 250 lbs. The stone traveled 6,323 miles from Italy to its new home in the Chen Building.

6,323 mi

Distance from Pasadena to Marriotti Carlo S.p.A



> Connected by a Tunnel

B2 Level of the building is connected to the Broad Building via a pedestrian tunnel. To minimize the duration and associated disruption the tunnel was constructed with 10 pre-cast tunnel sections. Each precast section was 12'x12'x10' long and weighed approximately 40 tons.



> Lobby Artwork

The artwork in the photo was inspired by Santiago Ramon Y Cajal (1852-1934), a Spanish neuroscientist and pathologist, specializing in the neuroanatomy, particularly of the histology of the central nervous system. His original investigations of the microscopic structure of the brain made him a pioneer of modern neuroscience. Hundreds of his drawings illustrating the delicate arborizations ("tree growing") of brain cells are still in use for educational and training purposes. The artwork is a multi-story piece that spans the first, second and third levels of the lobby.

