



**PROJECT DATA SHEET:**  
**Grand Central Air Terminal**

**SEISMIC ENHANCEMENT FOR A MONUMENT OF AVIATION**



***Masonry Solutions  
International, Inc.***

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## Grand Central Air Terminal (GCAT)

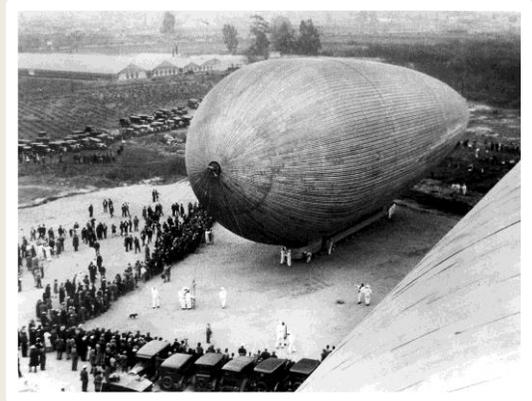
**Location:** Glendale, CA

**Age:** Built 1928

**Key Topics:** Seismic retrofit,  
historic stabilization, NDE, CIF  
injection, GS anchors

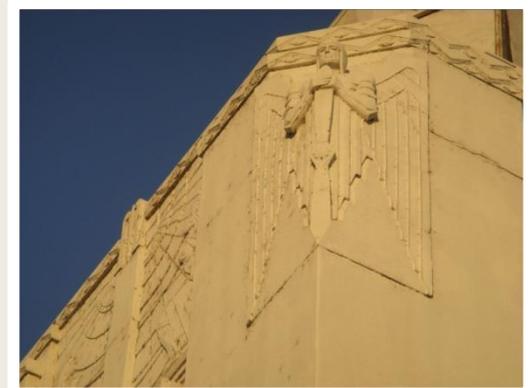
### Project Background:

- Grand Central Air Terminal (GCAT) or Grand Central Airport was the first official air terminal for Los Angeles
- Several famous aviation pioneers made their mark at GCAT, including Charles Lindbergh, Amelia Earhart, Howard Hughes, and William Boeing
- With its close proximity to Hollywood's studios of old as well as all manner of aircraft, GCAT was a magnet for big budget movies up to and including the 1940's
- Due to declining profitability, GCAT shuttered in 1959. It was later damaged in the 1994 Northridge earthquake
- The Walt Disney Company purchased GCAT in 1997 and subsequently launched a major seismic retrofit project



### Challenges Presented:

- Due to multiple building campaigns enlarging the original terminal, a complex web of structural elements existed
- Hidden, riveted steel leads coursed throughout the building and architectural flourishes adorned the exterior façade, necessitating an extremely cautious intervention
- The renovation needed to address seismic concerns while avoiding unwanted changes to aesthetics

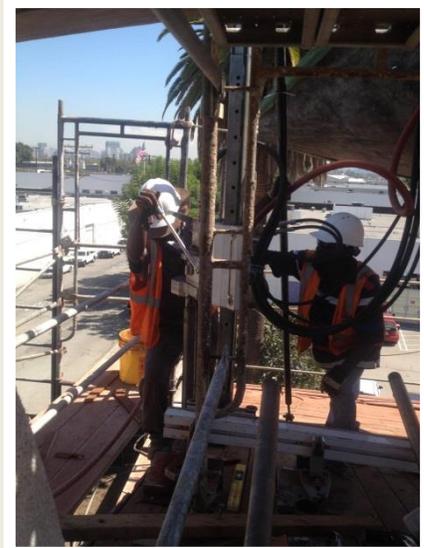
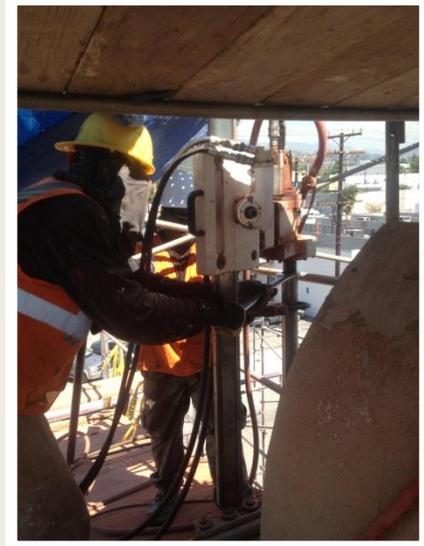




# Repair and enhance without changing the aesthetics.

## Services and Solutions:

- Masonry Solutions worked with the project team to develop a comprehensive approach that utilized non-ferrous internal reinforcement of GCAT's walls
- First Masonry Solutions' technicians drilled vertically through the exterior CMU and brick to allow for placement of the Gruenstark Masonry Fabric Anchor System
- Masonry Solutions applied advanced long-bore dry coring tools and techniques, including use of the proprietary Romeo I Coring Equipment
- Installation of Gruenstark fabric anchoring followed, with injection of Compatible Injected Fill, or CIF, to bond reinforcements to surrounding masonry units
- This allowed the team to strengthen key points of the structure without precipitating needless intervention
- Over 6800 linear ft. of Gruenstark fabric anchors were furnished and installed by MSI
- Additionally, due to voided and weakened masonry, MSI injected MSI Flowable Fill, a cost-effective fill for large open cavities, throughout the majority of the building, bonding individual units together and providing rigidity
- Masonry Solutions performed their work with caution to protect and enhance without negatively affecting any of the substantial architectural heritage present at GCAT
- This seismic retrofit project allowed Grand Central Air Terminal's historic visage to continue illuminating an era of aviation for future generations of visitors to come



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*Masonry Solutions International has worked in the field of masonry preservation and enhancement for over 20 years. It has pioneered a number of advanced techniques, including compatible masonry injection and undercut fabric anchorage.*