REF-A09 STEEL BASEPLATE CONNECTION TO CONCRETE FOR RENOVATION OF OLD STRUCTURE

PROJECT	UOB Renovation Renovation of old structure
LOCATION	Thailand
CLIENT	United Overseas Bank
DESIGNER	
INSTALLATION	2023

Application **Baseplate at beam-column joints**

Design std. **ACI 318-19, EIT011008-21**

Hardware **HSL-4, HSA with AT module, Tracefast**

Software **PROFIS Engineering (anchor to concrete)**

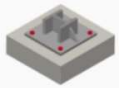
Services **Demonstration, training at jobsite**

CHALLENGES

- High tension and shear
- Fire approval
- Limitation in embedment depth
- Inaccessibility for proper cleaning
- Easier. Faster and more controlled installation

HILTI TOTAL SOLUTION

- ✓ Premium product
- ✓ Post-installed mechanical anchors
- ✓ AT module to control the torque
- ✓ Design and approval for fire loading



LOAD/ CONDITIONS **Static, fire /Torque controlled**

PROJECT HIGHLIGHT **Approved and premium product, controlled installation**

APPLICATION AND REQUIREMENT

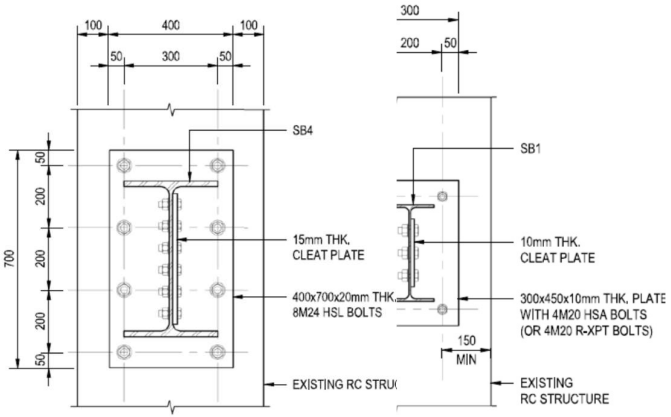
Application Details: Baseplate-beam-column joint

The baseplate application was required at beam-column joints for connection. Some connections were subjected very high shear load and, in some cases, tension was the dominating action. Designer wanted post-installed anchor systems with appropriate approval against fire loading. At the baseplate locations, there was limitation in depth of anchors.

Approval for fire loading

Designer wanted post-installed anchor systems with appropriate approval against fire loading. There was possibility of fire loading during service of the bank. Since it was a renovation project, the criteria was to ensure fire approval from the manufacturer.

APPROACH TOWARDS SOLUTION



Easier, faster, and controlled installation

Due to the limitation in depth and inaccessibility, it was not possible to ensure the required drilling depth as well as proper cleaning. Hence, post-installed chemical anchor was not a preferable choice. Also, designed demanded more controlled installation. Post-installed mechanical anchor was the right choice for easier, faster installation where torque can be controlled using special AT module.

Post-installed anchors and other tools

- Post-installed mechanical anchors- **Hilti HSL4** of **M20 to M24** and **HSA** of **M16 to M20** were used.
- **Adaptive Torque** (AT) module was used to ensure correct installation.
- **Tracefast** was used to ensure proper traceability of anchors

THE FINAL OUTCOME

Finished baseplate connection and demonstration at site