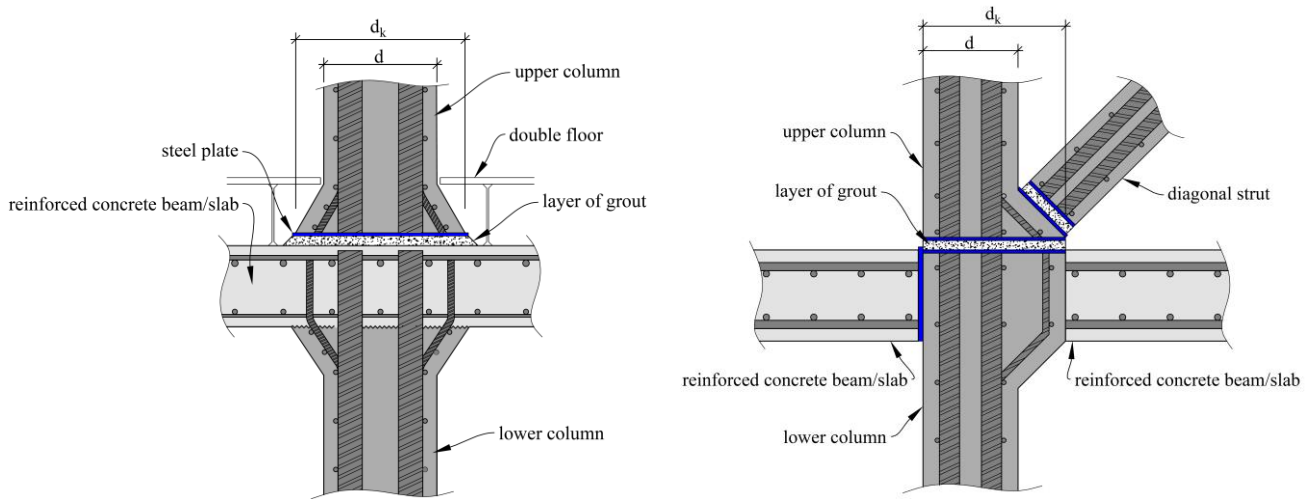


COLUMN-SLAB JOINT



▲ left: column-slab joint; right: joint with a diagonal strut

In high-rise construction, problems may occur due to the normal force transfer from column to column through a column-slab joint. For this reason, the TU Wien has developed a particularly favourable embodiment for a column-slab joint, in which an in situ concrete slab with regular concrete strength is located between two high-strength precast columns. In the precast columns, the cross-sectional dimensions of the column ends d_k are increased to transfer the normal force through the slab without a reduction of the load bearing capacity when compared to the column (figure left).

In addition to standard joint-design the integration and connection of diagonal struts is often needed, due to static requirements caused by fancy architectural designs. For this case, the TU Wien has developed an alternative joint design in which the cross-sectional dimensions of the column ends d_k are increased, as shown in the figure on the right.

ADVANTAGES

- Slender precast columns using high-strength materials
- Increase in usable/rentable floor space
- Reduction of the thickness of the slab
- Savings in material and weight
- Lower transport and crane costs
- Multi-storey precast columns

POTENTIAL APPLICATIONS

This technology is particularly suitable for the transfer of large normal forces due to the optimized cross-sectional design of the precast columns.

PATENT STATUS

Austria: granted (A 51072/2017)
International application EP 18826915 pending

COOPERATION POSSIBILITIES

- Project based cooperation
- License agreements

Kontakt

Prof. Dr.-Ing. Johann Kollegger
Technische Universität Wien
Institut für Tragkonstruktionen - Betonbau

Tel.: +43-1-58801-212-02
Email: betonbau@tuwien.ac.at
Homepage: www.betonbau.tuwien.ac.at