

Influence from Building Information Modeling (BIM) on Bachelor- and Master Thesis

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... two ways to do a Bachelor- or
Master-Thesis ...

i). From the details to the design work

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- ständige und vorübergehende Bemessungssituation

$$E_d = E \left\{ \sum_{j \geq 1} \gamma_{G,j} \cdot G_{k,j} \oplus \gamma_P \cdot P_k \oplus \gamma_{Q,1} \cdot Q_{k,1} \oplus \sum_{i > 1} \gamma_{Q,i} \cdot \psi_{0,i} \cdot Q_{k,i} \right\}$$

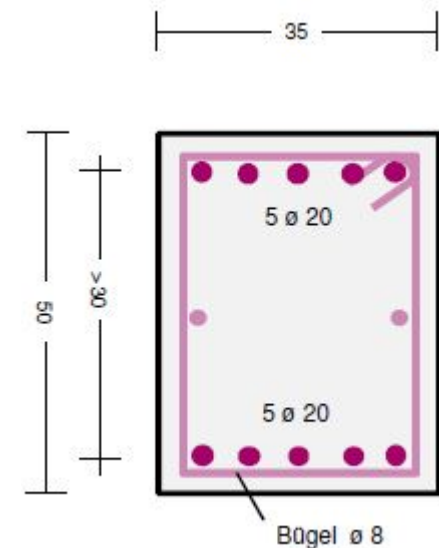
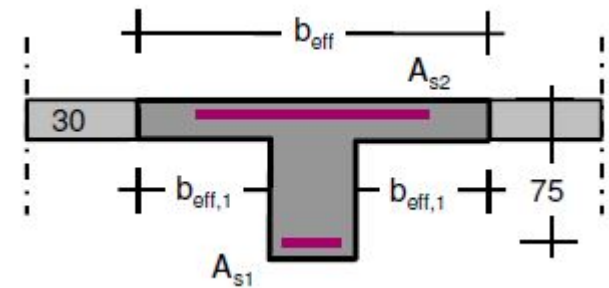
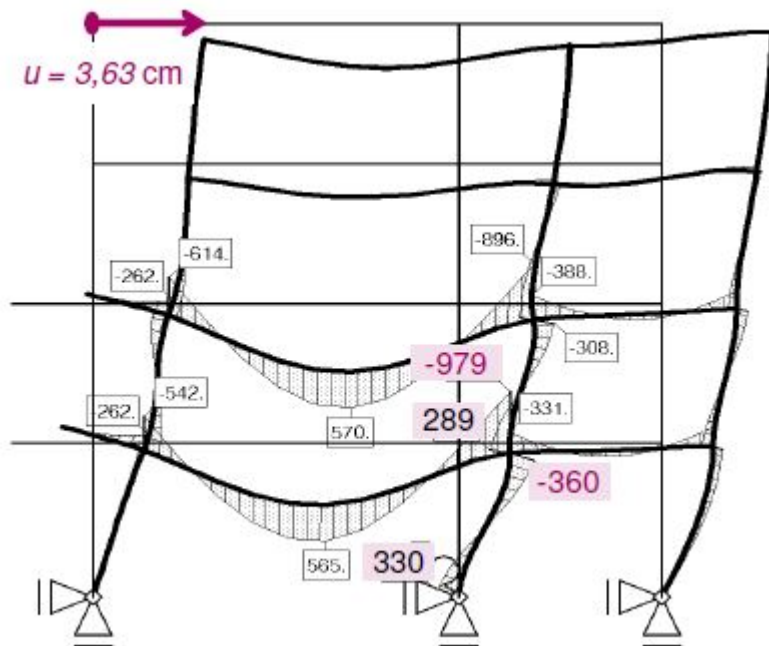
- außergewöhnliche Bemessungssituation:

$$E_{dA} = E \left\{ \sum_{j \geq 1} \gamma_{GA,j} \cdot G_{k,j} \oplus \gamma_{PA} \cdot P_k \oplus A_d \oplus \psi_{1,1} \cdot Q_{k,1} \oplus \sum_{i > 1} \psi_{2,i} \cdot Q_{k,i} \right\}$$

- Bemessungssituation bei Erdbeben:

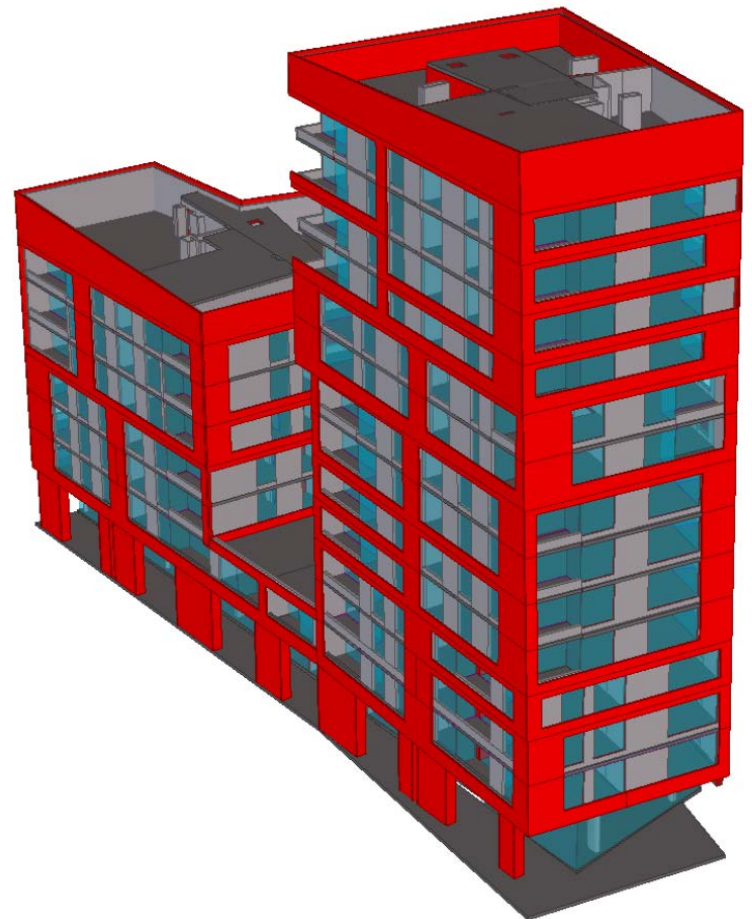
$$E_{dAE} = E \left\{ \sum_{j \geq 1} G_{k,j} \oplus P_k \oplus \gamma_1 \cdot A_{Ed} \oplus \sum_{i \geq 1} \psi_{2,i} \cdot Q_{k,i} \right\}$$

i). From the details to the design work



ii). From the model to the details

Andre Murra: Statisch/konstruktive
Bearbeitung des Gebäudes SPV 9
Thesis from 2008



Diplomarbeit SS 2008:

Herr Andre Murra

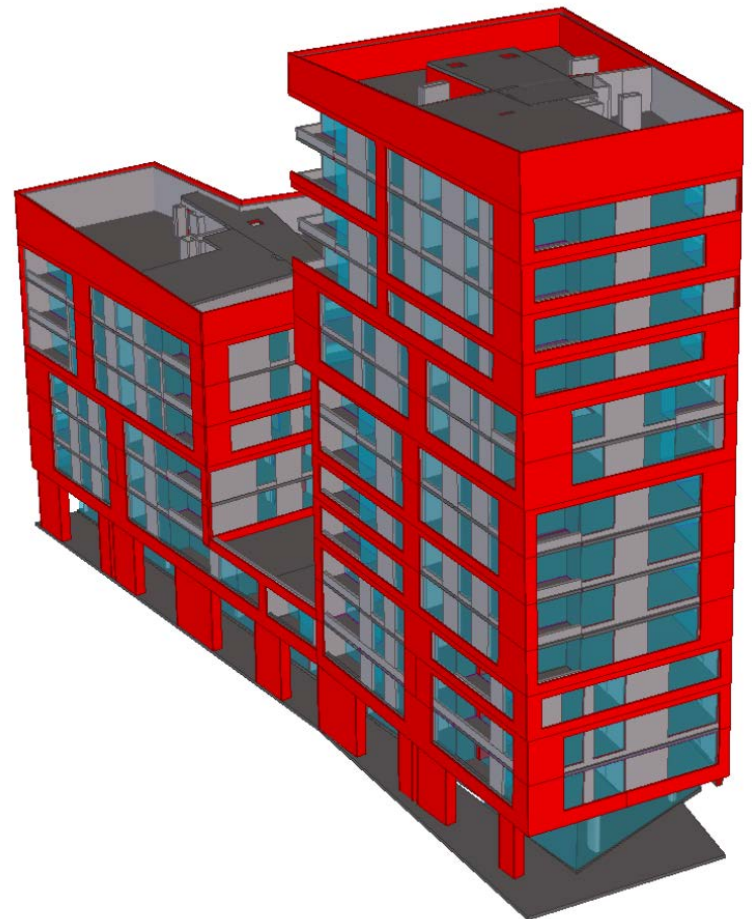


**Statisch/Konstruktive
Bearbeitung des Gebäudes SPV 9**

ii). From the model to the details

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- Place of Construction
- Looking from the Outside

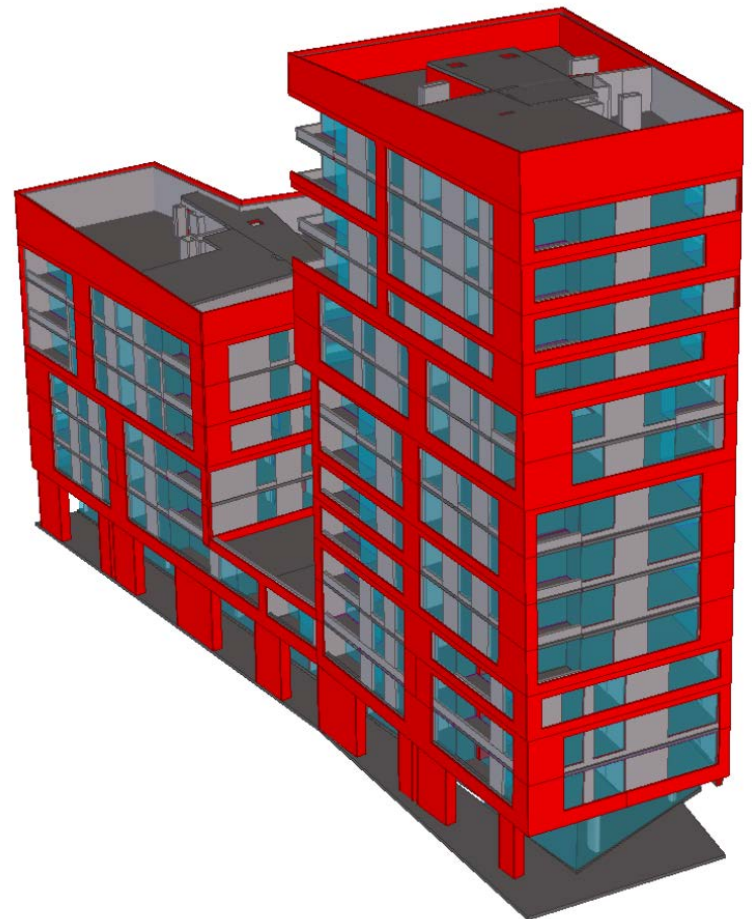




ii). From the model to the details

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- Place of Construction
- Looking from the outside
- CAD vs FEM Model

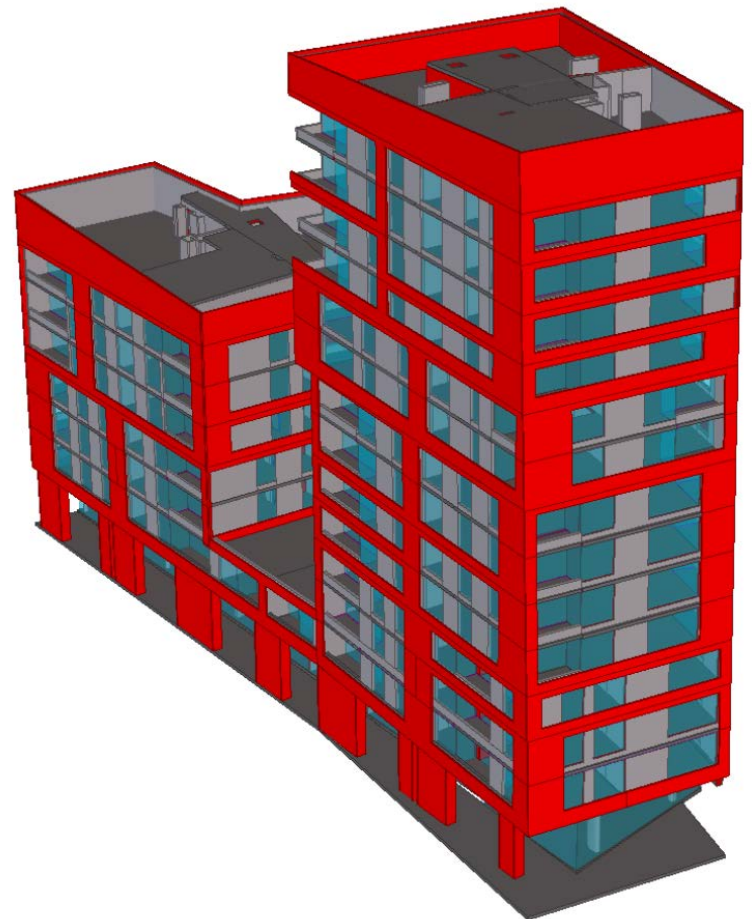


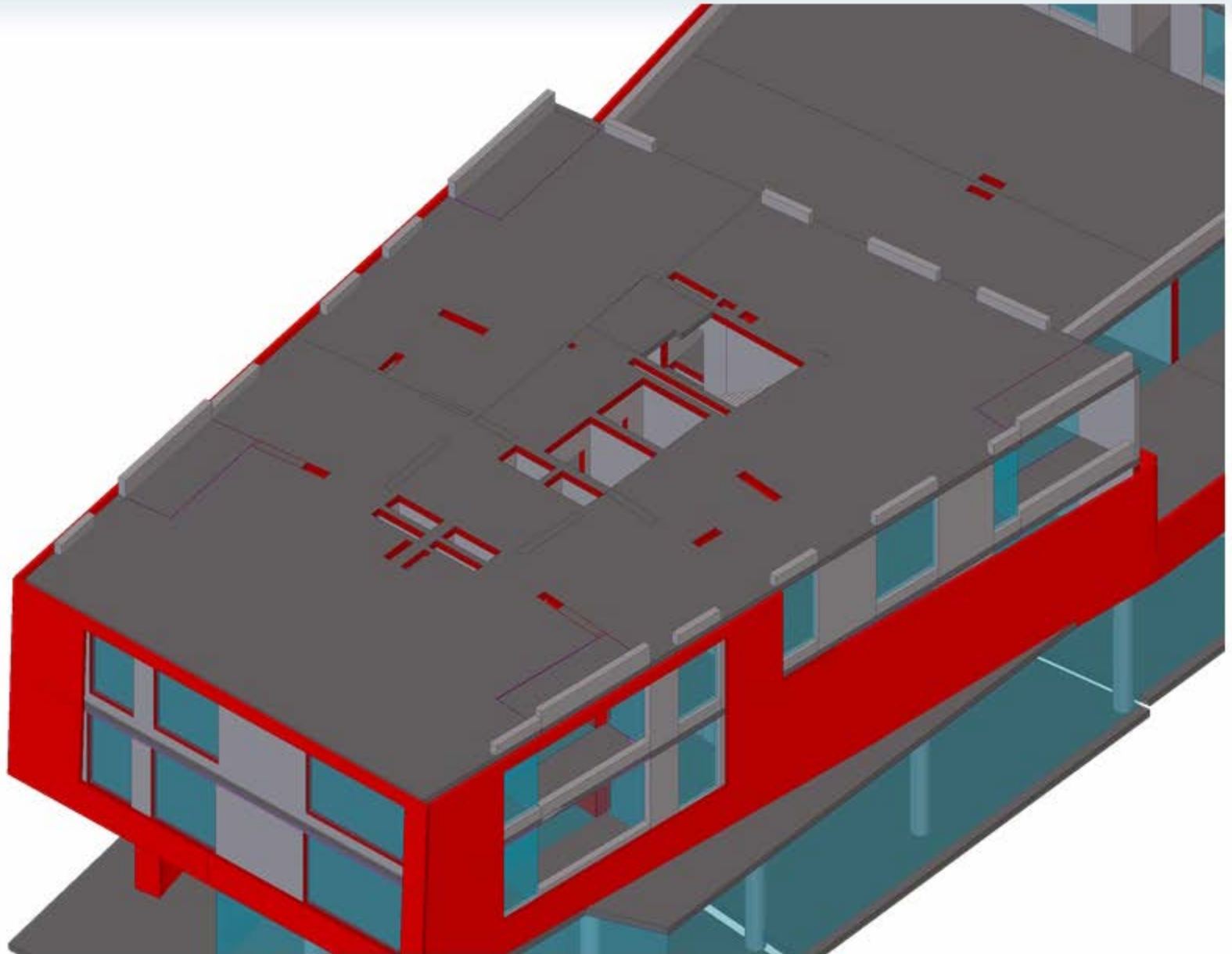


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- Place of Construction
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- CAD vs FEM Model
- Structural Analysis / Simulation

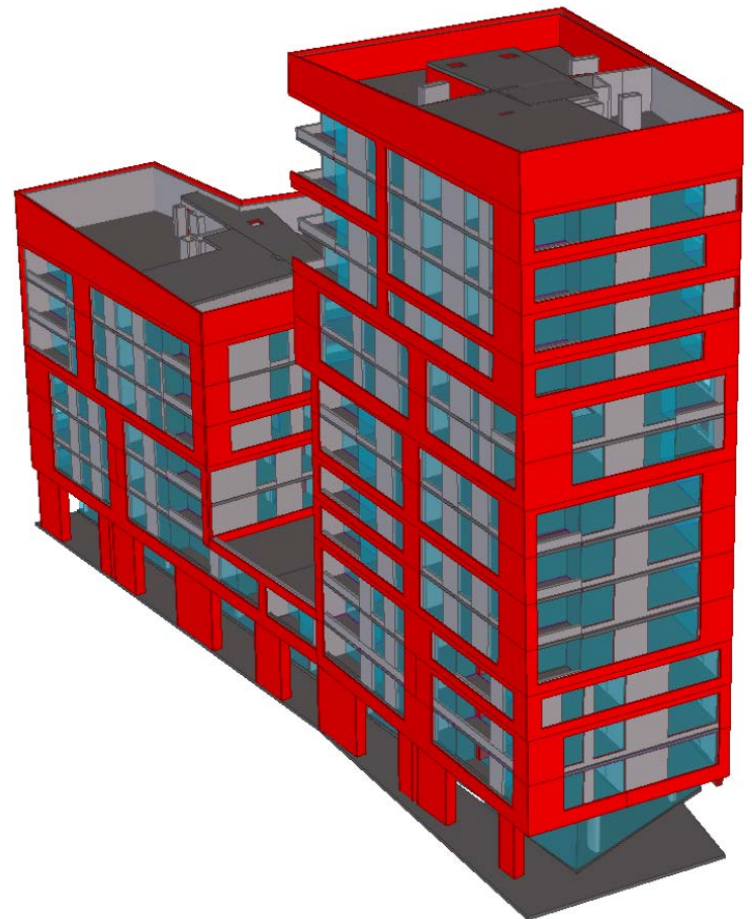




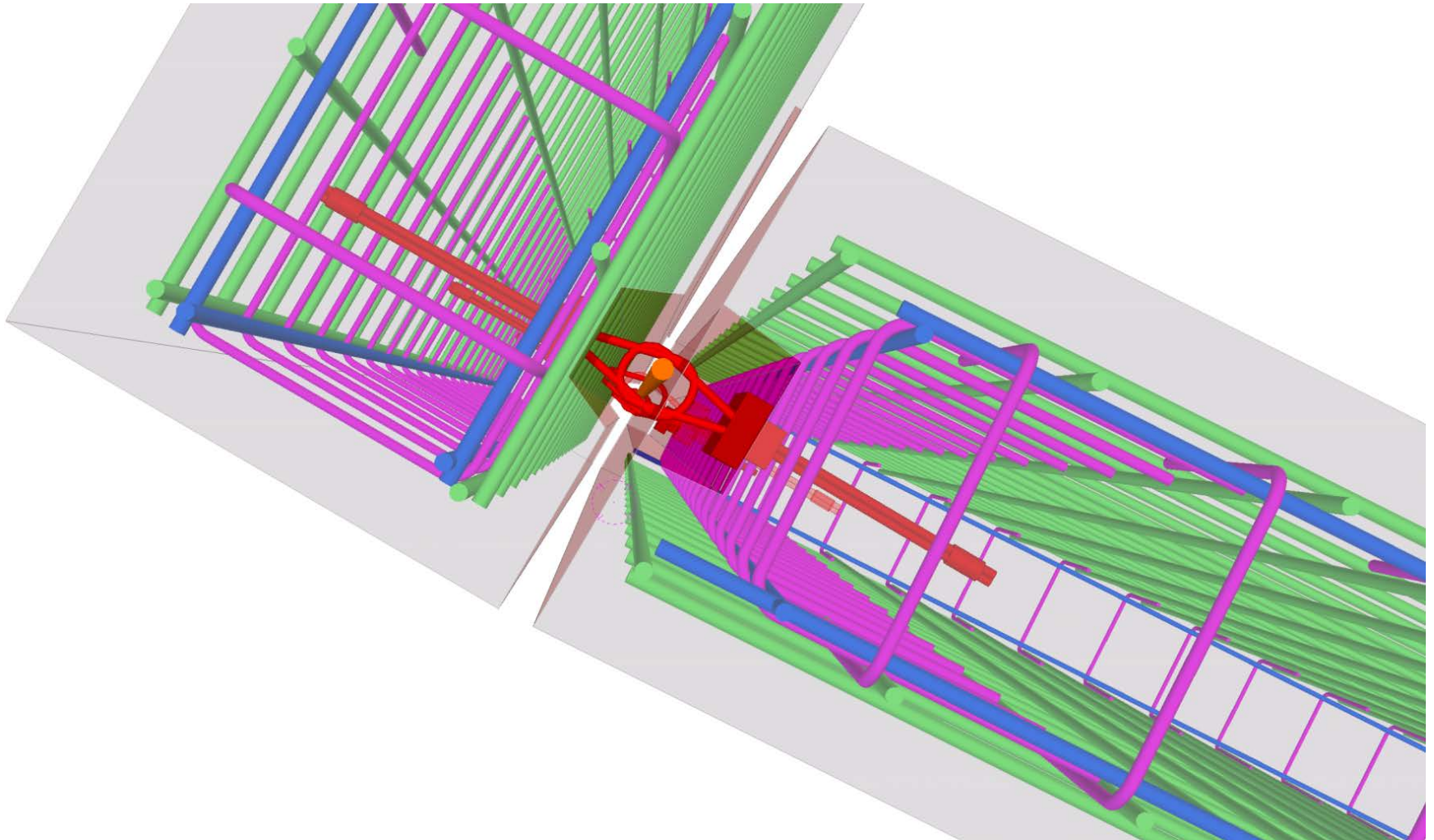
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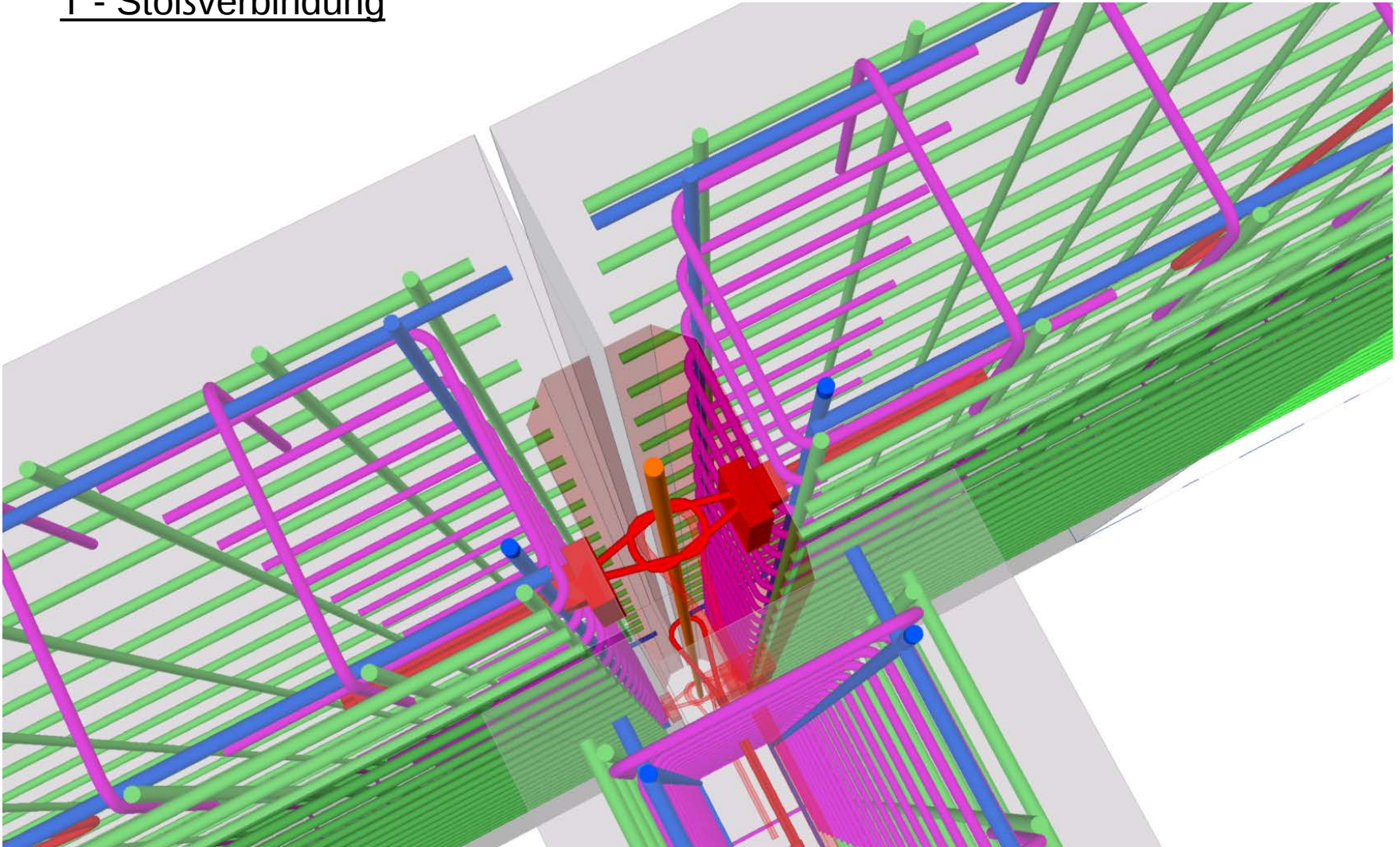
- Place of Construction
- Looking from the outside
- CAD vs FEM Model
- Structural Analysis / Simulation
- Details

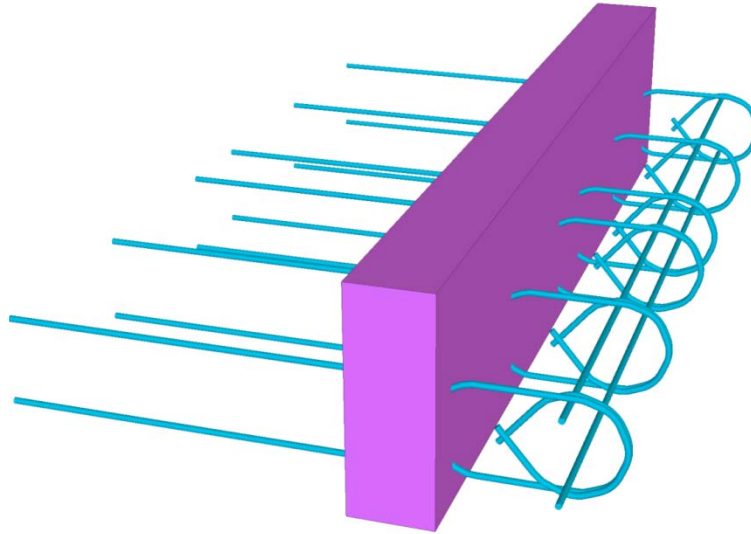


Eckstoßverbindung

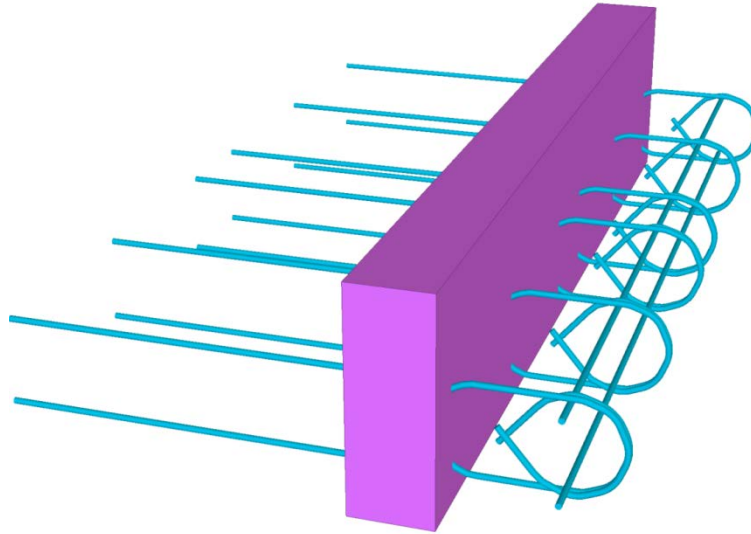


T - Stoßverbindung

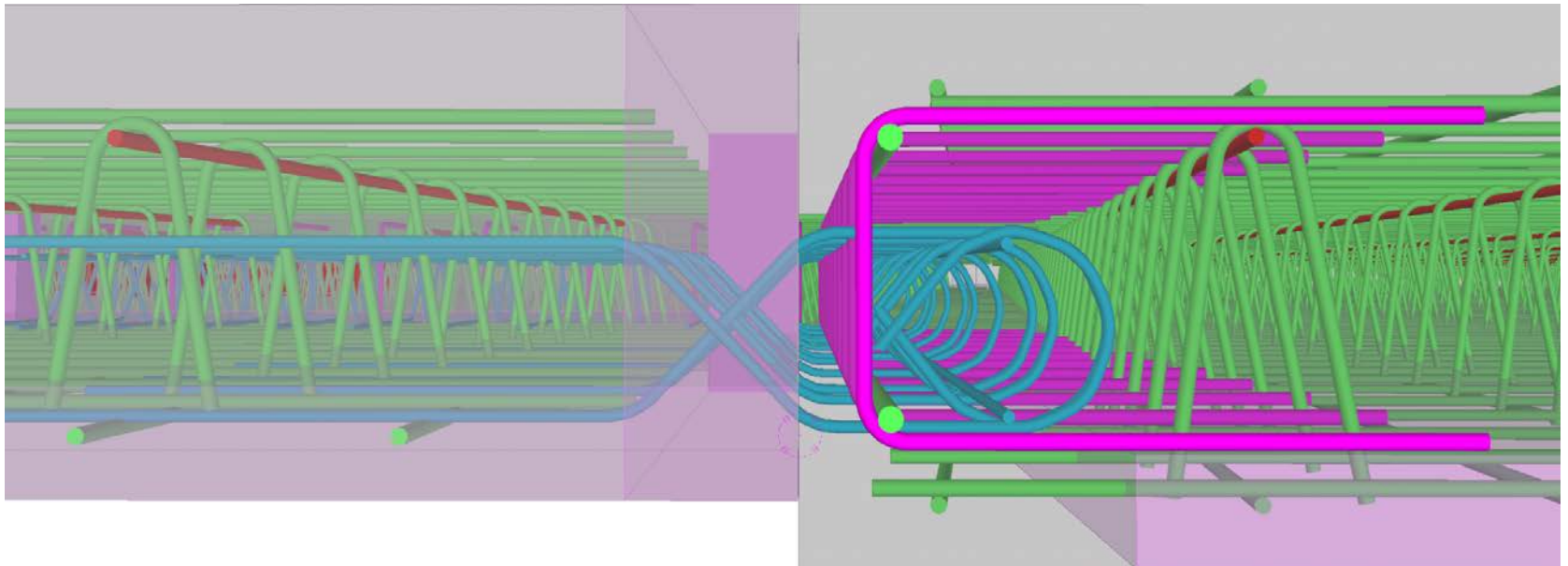




Schöck-Isokorb
Typ Q50+50-22



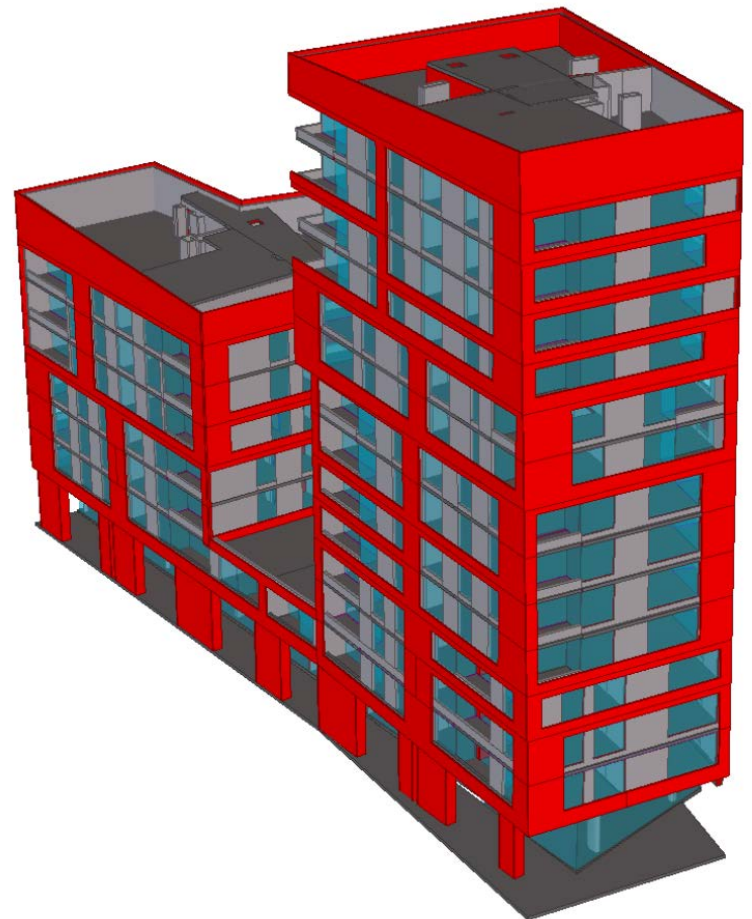
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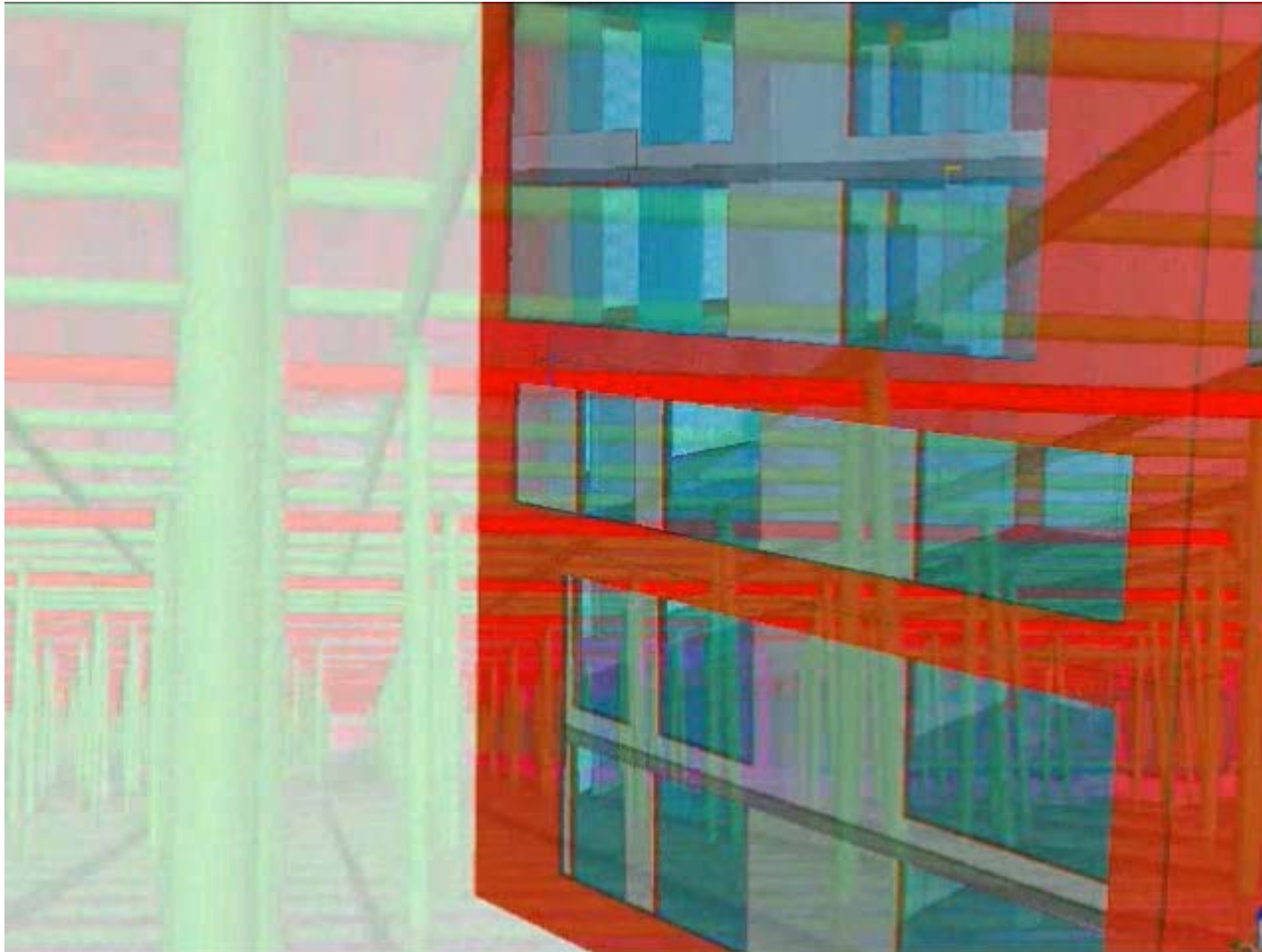


ii) From the model to the details

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Thesis from 2008

- Place of Construction
- Looking from the outside
- CAD vs FEM Model
- Structural Analysis / Simulation
- Details
- Looking from the inside





Conclusions due to education i):

- Most of our students like modeling work.

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a really nice side-effect:

→ rapid-prototyping 3d-Models

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- Most of our students like modeling work.
- The information inside of the model is increasing by time. It is collected due to the engaged engineers and other co-workers.
- Presentation and communication become more and more fundamental tools for engineers.
- The Model is the basis for further Investigations.

Conclusions due to education i):

- Most of our students like modeling.
- The information is more and more time.
It is

**Let our students work
on, in and with
virtual 3d-Models!!**

basis for further Investigations.

Conclusions due to education ii):

... sehr frei zitiert:

Der Ingenieur, der einen Fehler gemacht hat,
der hat sich verrechnet!

Der Ingenieur, der richtig Mist gemacht hat,
der kann das nur mit dem Computer gemacht haben!

Conclusions due to education ii):

... sehr frei zitiert:

Der In-

**Teach CAD-modeling ... and
basic/advanced structural analysis
basic/advanced controlling methods
basic/advanced economics**

... nat,
computer gemacht haben!

Conclusions due to education iii):
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Conclusions due to education iii):

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- Junior-Professors
- Teaching on hard- and software
- The input from Real-Live-Projects
- Senior-Professors