

Planning and Managing the Construction Process

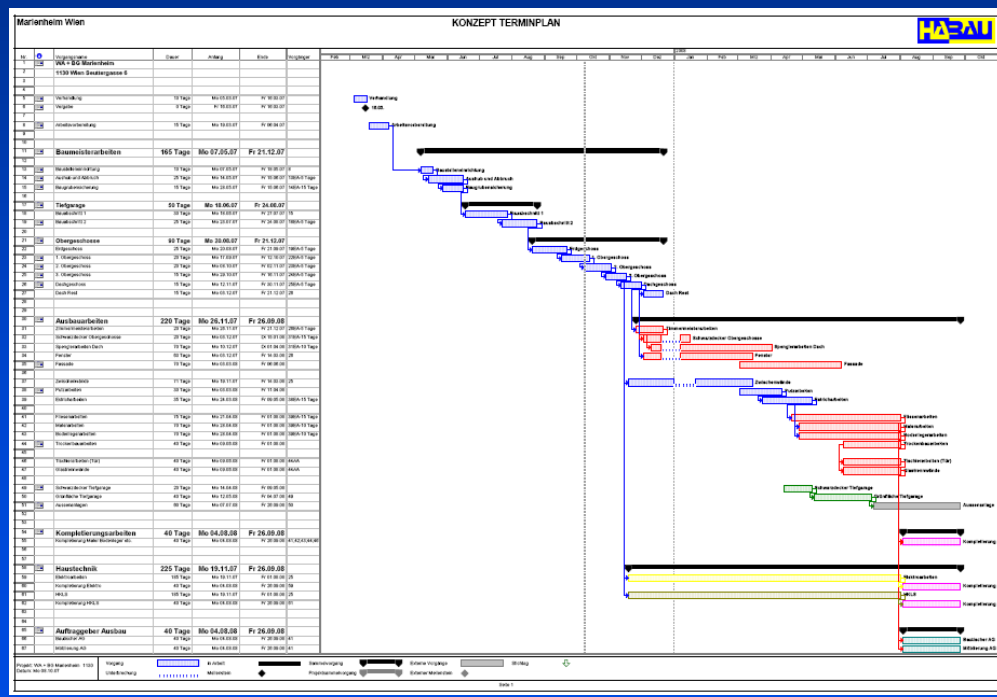
Construction Errors



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For a smooth construction process, one not only needs to show:

WHO does WHAT, WHEN, and WHERE ...



but one also needs:

- **good detailed planning,**
- **a good contractor,**

and above all:

- **a project manager experienced in the building construction.**

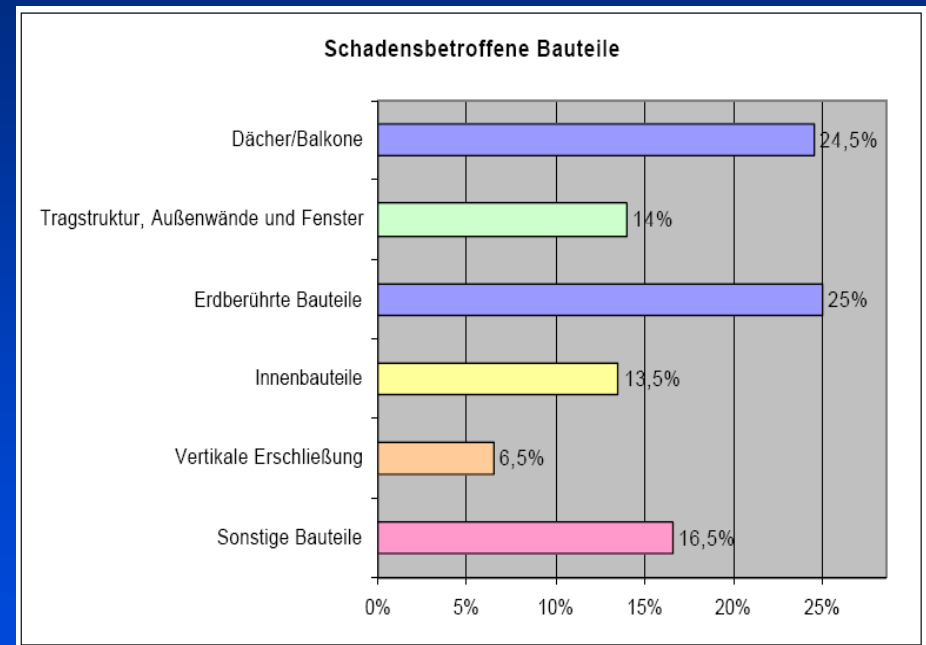
The experienced project manager should have :

- **an interest in working in energy-efficient construction**
- **and have “emotional” capabilities in order to best handle the relevant special circumstances.**

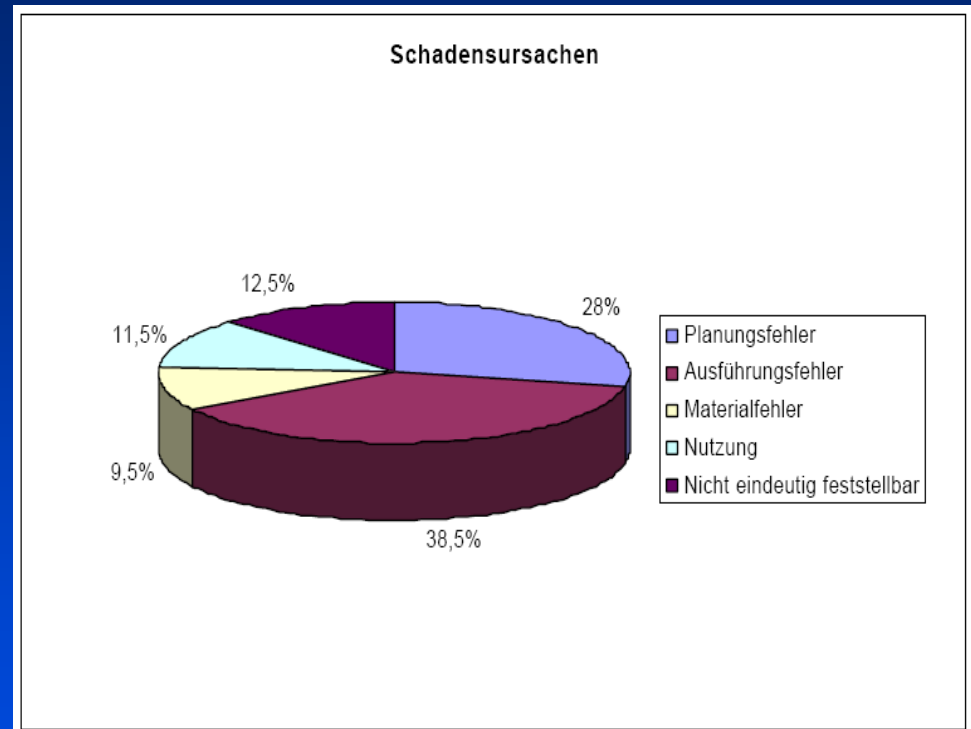
1st Austrian Construction Errors` Report (2005) in building construction is published by the Austrian Chamber of Commerce and the Institute for Construction Errors Research.



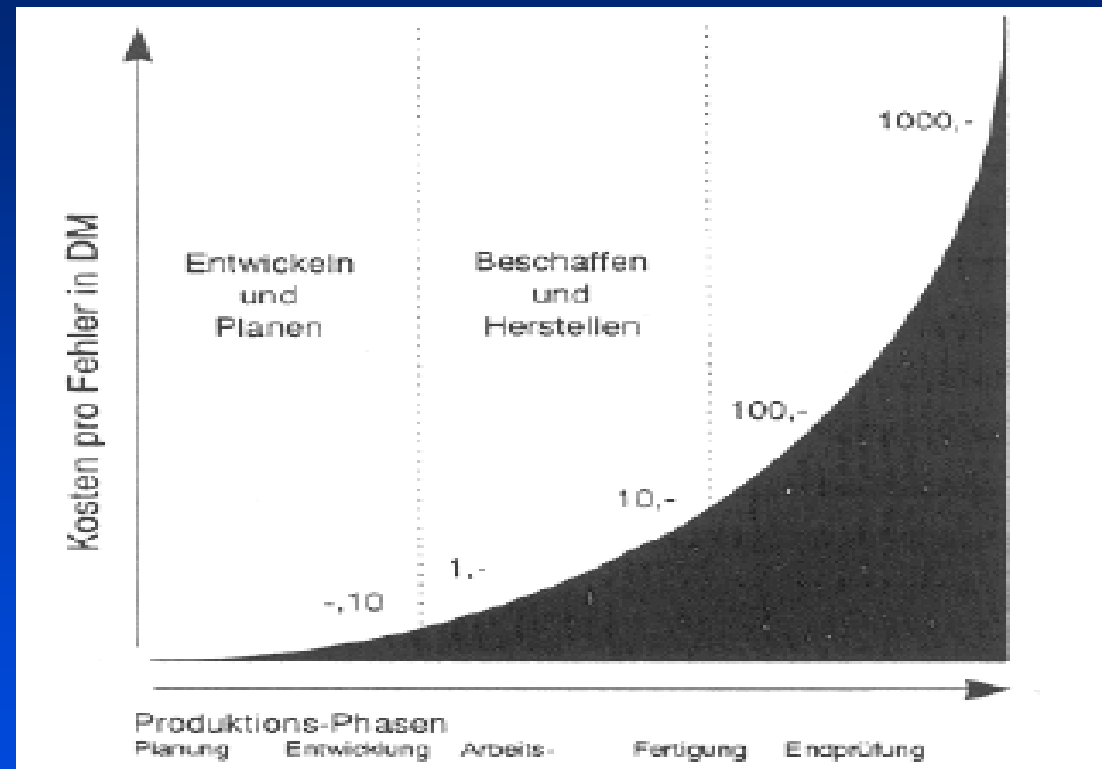
- **Roofs / Balconies (24,5%)**
- **Structures, Exterior walls, Windows (14%)**
- **Ground contact structures (25%)**
- **Indoor components (13.5%)**
- **Stairs (6,5%)**
- **Other components (16,5%)**



**Causes of errors:
Execution related (38,5%)
followed by Planning
mistakes (28%), and then
come Material, Usage
and Unascertain Things.**



Error costs in relation to the production phase



The Magic Triangle

- Quality/performance
- Costs
- Time/deadlines



Summerizing,

- **Never lack a good planning and a good detailed design.**
- **Respect the due dates of planning-submitting to execution.**
- **Enough time to control Designs and calculations before submitting to execution.**
- **Quality Management systems should be applied.**
- **A cooperation between all involved parties.**
- **The presence of a basic trust between the involved parties.**
- **When implementing a new or difficult installation, the first-to-be-installed, should be in presence of a specialist in energy efficiency.**

Check for:

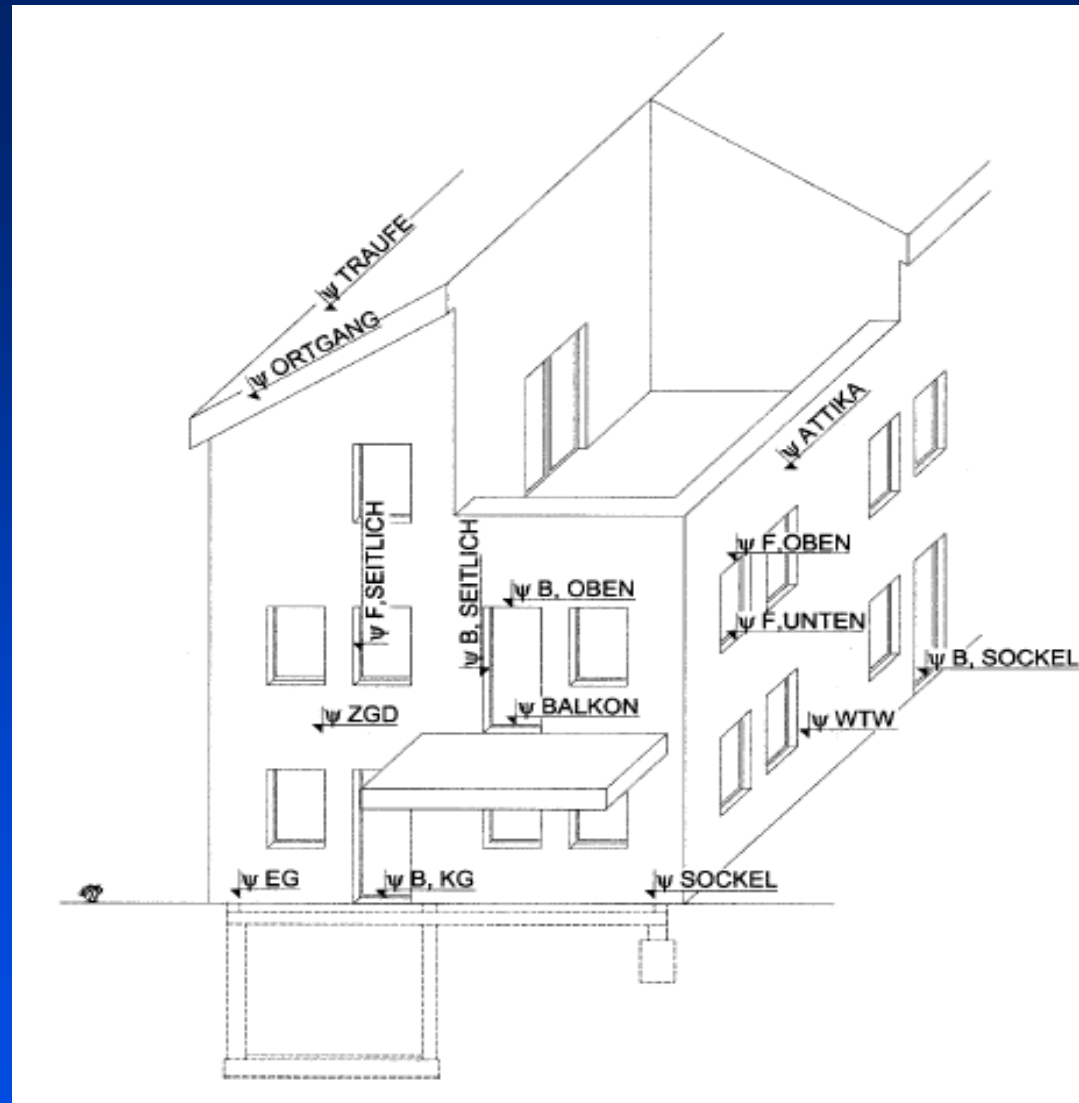
- **Windows before insulating exterior walls.**
- **Roof-skin when fixing TV antennas and railings.**
- **In flat roofs, protect the seal during construction.**
- **Seal penetrating connections as pipes.**
- **Cracks in façade rendering.**
- **Drainages in soil-connected building elements.**
- **Sealing of joints between foundations and exterior walls.**

And also:

- **thickness of screed and its insulation.**
- **Drying of elements during construction.**
- **Horizontal water barriers beneath the upgoing walls.**
- **Impact-noise-elements.**
- **Condensate diversions in chimneys or venting shafts.**
- **Horizontal building reference-lines.**
- **Thermal bridges.**
- **Sound insulation.**

THERMAL BRIDGES

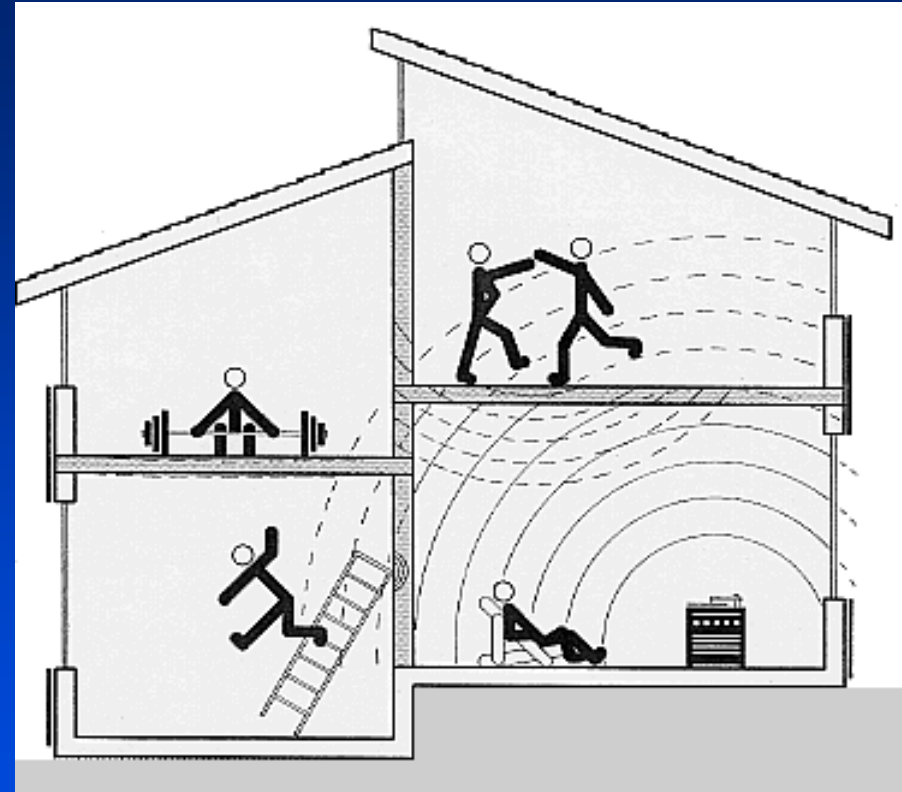
- Foot of building.
- Connection cellar wall and ceiling.
- and the exterior walls and slabs.
- Balconies.
- Connection between roof and exterior wall.
- Attic.
- Window lintel, sill and embrasure.
- Balcony door.



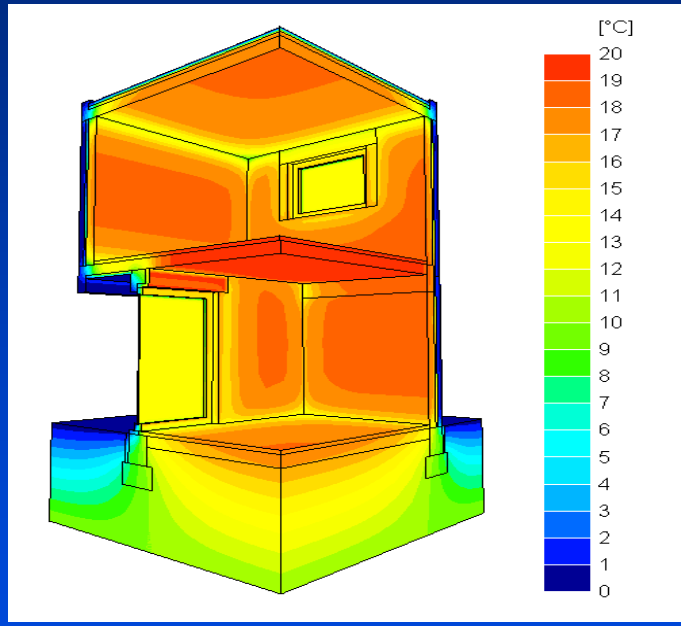
SOUND INSULATION

between individual apartments, and between buildings in the case of row houses.

- Impact noise insulation.
- Air-Sound insulation.
- Sound transfer between apartments / buildings.
- Water pipes and down-pipes.



Thermal bridges, as seen from inside / outside



and their consequences



Some construction errors may nevertheless gain popularity!



Thank you for your attention.