DTU Byg
Institut for Byggeri og Anlæg

INNOVATION DAY 2013

DTU

Glass for structural load-carrying applications

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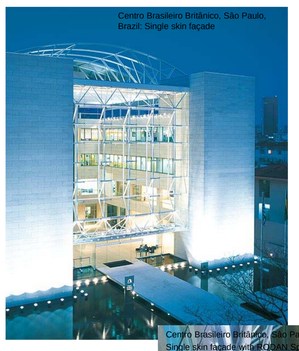
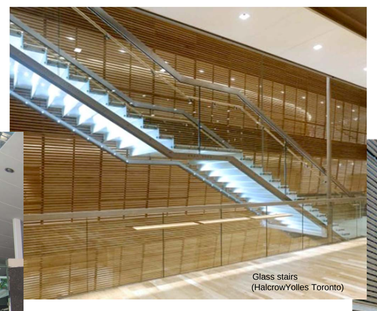
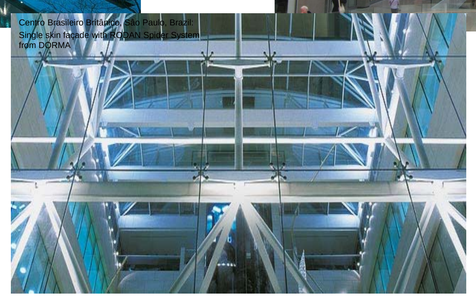
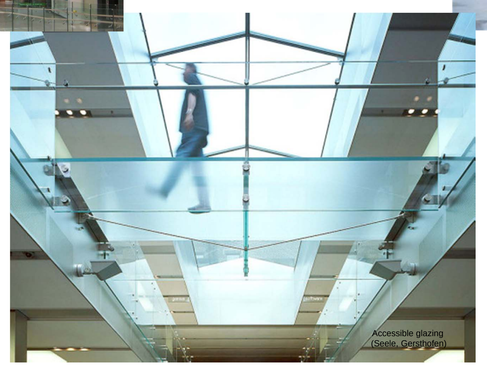
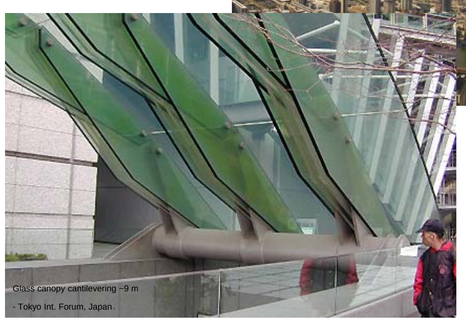


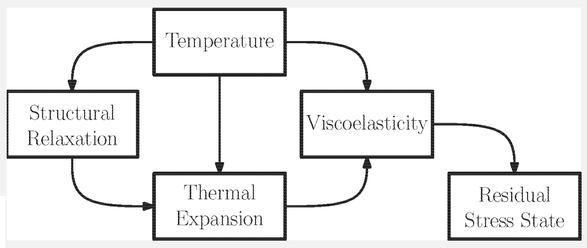


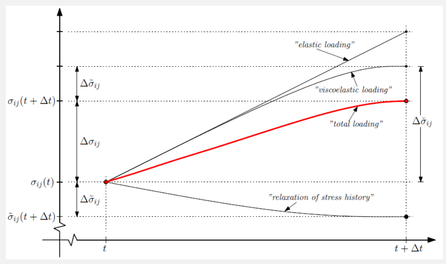


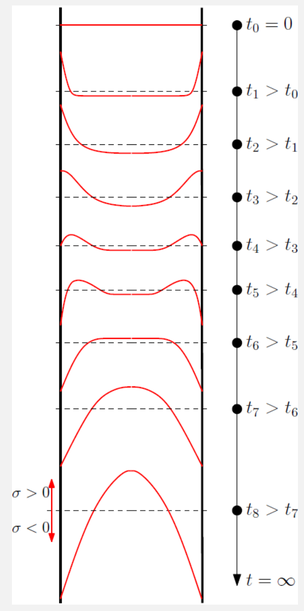


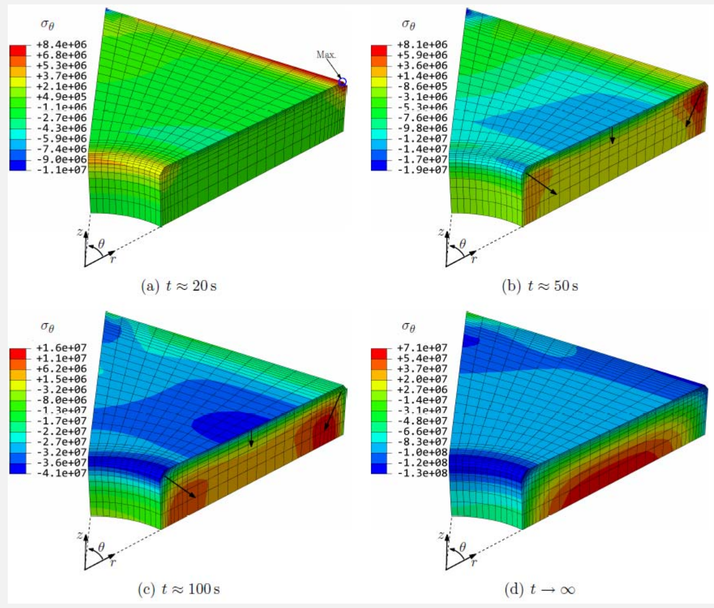


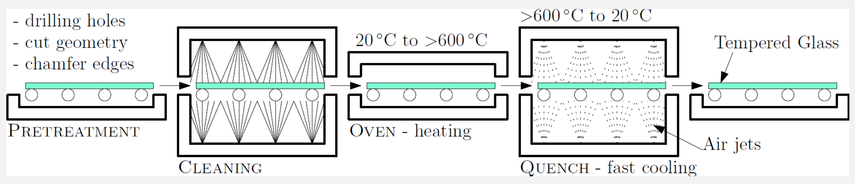
Tempered Glass – Investigating the Residual Stress State. In ordinary float glass the strength is a pure material strength, in tempered glass the apparent strength is a combination of the residual stress state and the material strength. The part of the apparent strength originating from the residual stresses may count for more than 80% making it very important and furthermore this part of the strength is independent of time. However, the challenge is to determine these residual stresses which are far from uniformly distributed and impossible to measure near edges, corners and holes which are typical locations of interest.



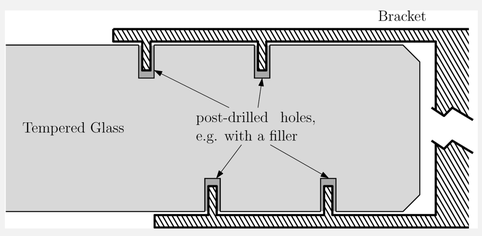


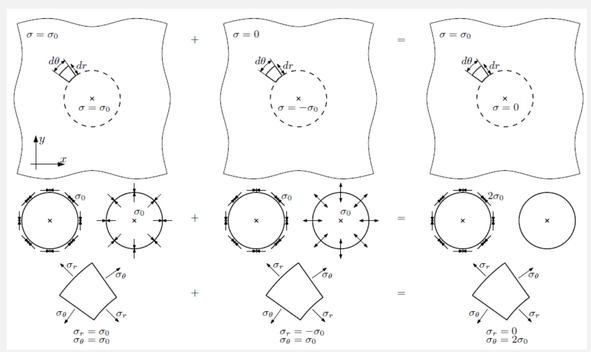


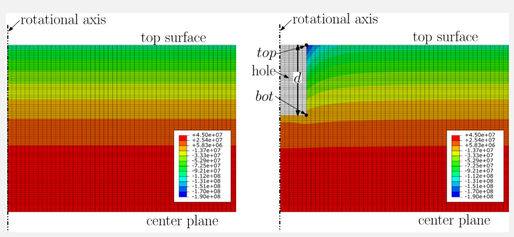


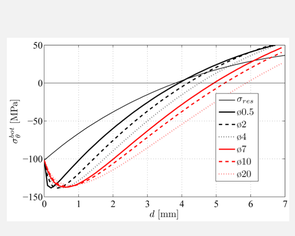


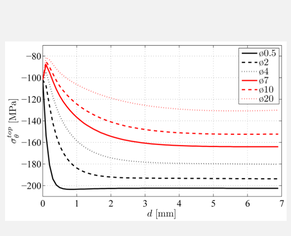
Innovative joints in tempered glass. It is commonly assumed that you cannot drill in tempered glass. All geometric features, e.g. holes for assembling needs to be made prior to the tempering. This reduces the precision of the holes and leads to more expensive products.
This research project investigate the possibility to partly drill holes in tempered glass and use these for transferring forces.











Reinforced Glass Beams. Glass is a brittle material which do not give any warnings before failure. Reinforcement of the glass component could therefore be an appealing concept. Adding steel reinforcement to the bottom face of a beam has been shown to improve the ductility significantly.