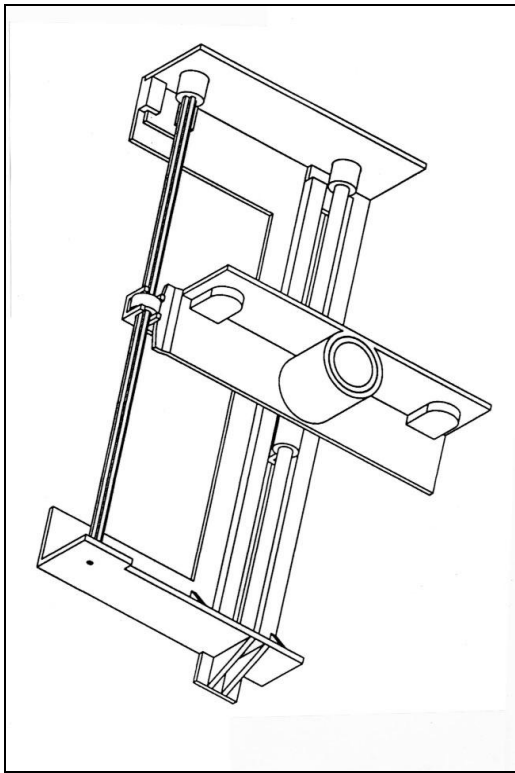


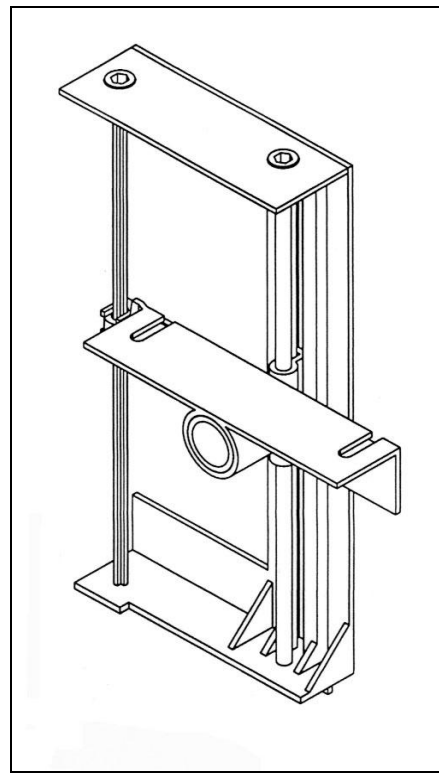
Category: Design & Analysis

Example: Design of an all-plastic mechanism for cremation caskets

Situation: Deceased persons being cremated are displayed in the same casket that goes into the crematorium. Caskets incinerate except for steel mechanisms that permit lifting and tilting of the deceased for display.



Isometric view upwards



Isometric view downwards

Problem: Design a plastic mechanism at equal cost that would eliminate the need to remove steel mechanism from crematorium oven

Action:

1. Examined current steel mechanism; mimicked steel components
2. Selected material based on aggressive cost target
3. Examined customer specifications and developed load cases for finite element analyses (FEA); obtained customer approval
4. Found lift screw could not support calculated moment due to loaded platform; added additional track feature to provide torsion support
5. Iterated FEA analyses and design alterations to obtain viable design

Result:

1. FEA results showed assembly would withstand load cases
2. Estimated product cost in line with matching steel mechanism
3. Report to customer included dimensioned drawings of each component