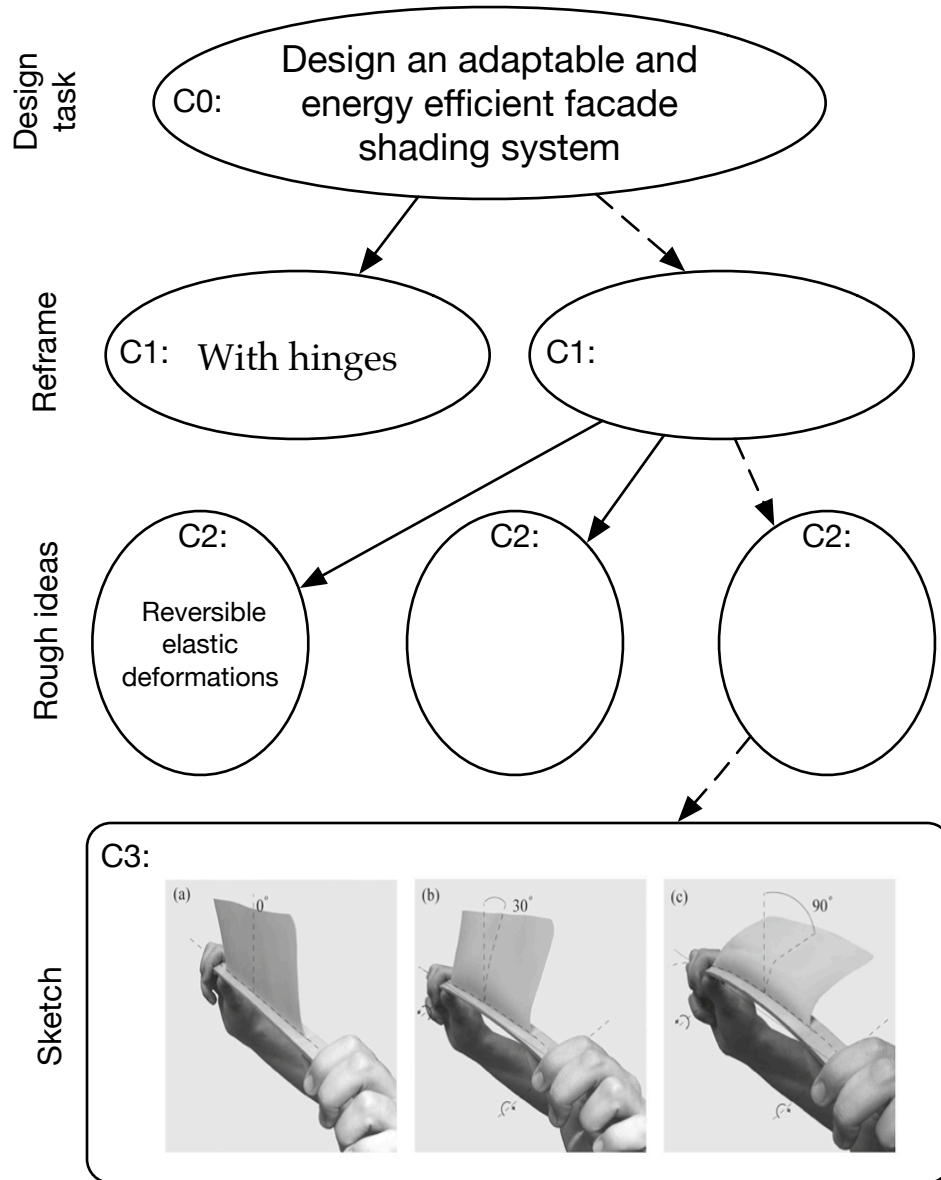


## Concept Space



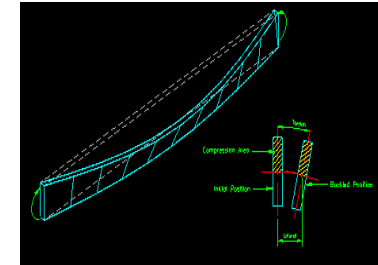
-----> Dashed line defines the design path

## Knowledge Space

### Existing Solution

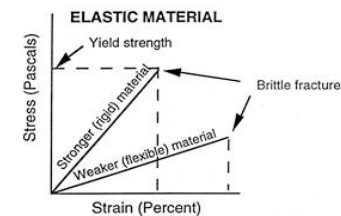
Hinges and rollers used in building shading systems (blinds) wear and require maintenance.

Only work well for buildings with flat sides.



### Traditional Knowledge

Lateral torsional buckling is a type of material failure.



All materials (metals, polymers, ceramics, etc) have an elastic and plastic region. Deformations in the elastic region are not permanent.

### Biological system:

Bird of Paradise

### Biology Knowledge

### Unexpected Property



Reversible deformation, bending the perch unfolds the petals exposing the pollen