

# ***RIM***

*relationale Informationsmodelle*

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*11. BIM-Anwendertag | 21.05.2014 | Königstein im Taunus*



die Imagine Firmengruppe

# Imagine computation



Vitra Auslieferungszentrum



HKW Aachen



Novartis Campus Basel

 Imagine  
structure

Fachplaner für  
**Tragwerksplanung**

Frankfurt am Main, Köln

 Imagine  
envelope

Fachplaner für  
**Fassadenplanung**

Delft - Niederland

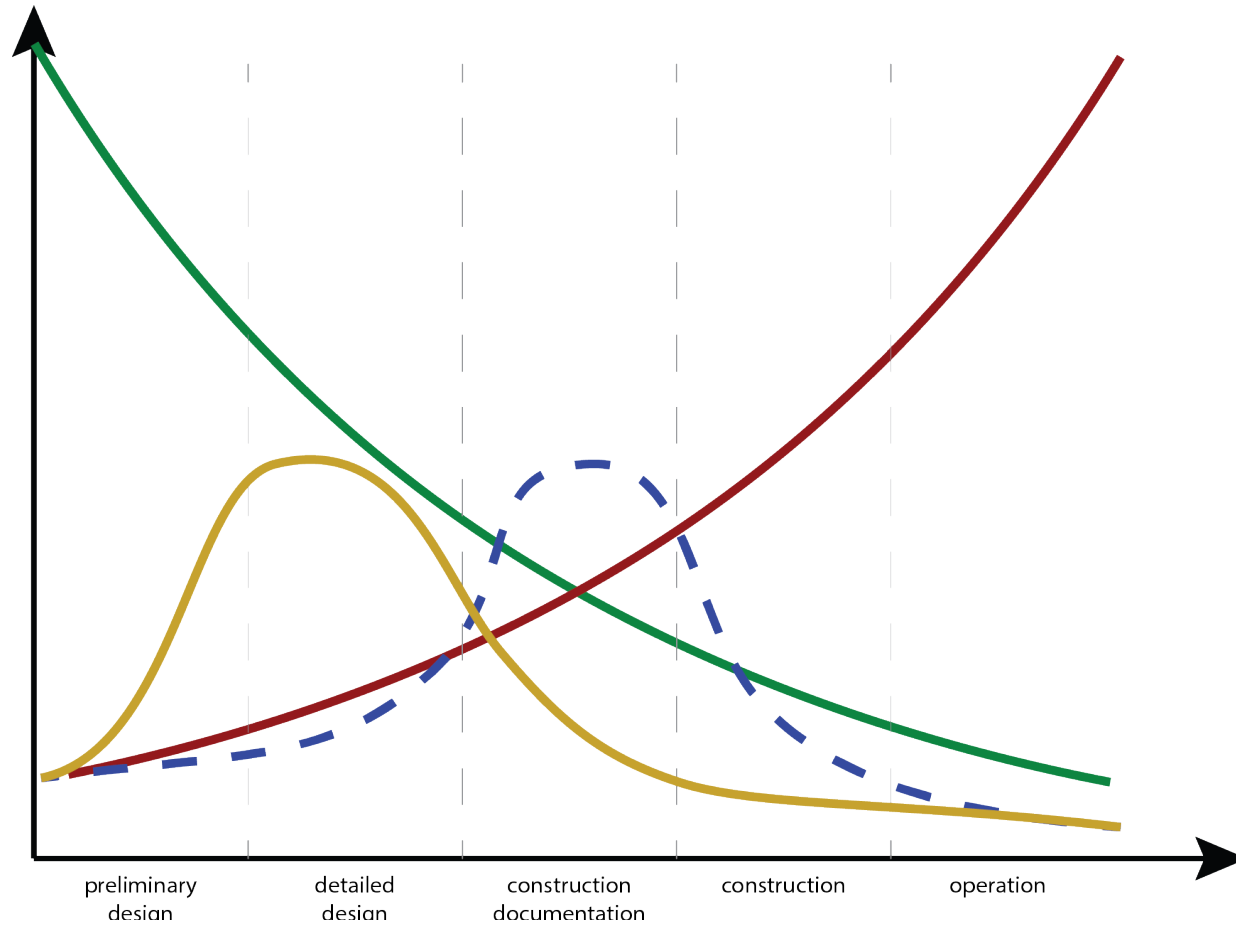
 Imagine  
climate | 

Fachplaner für  
**Klima Design**

Stuttgart – München – New York



# BIM



1

ability to impact cost and performance

2

cost of design changes

3

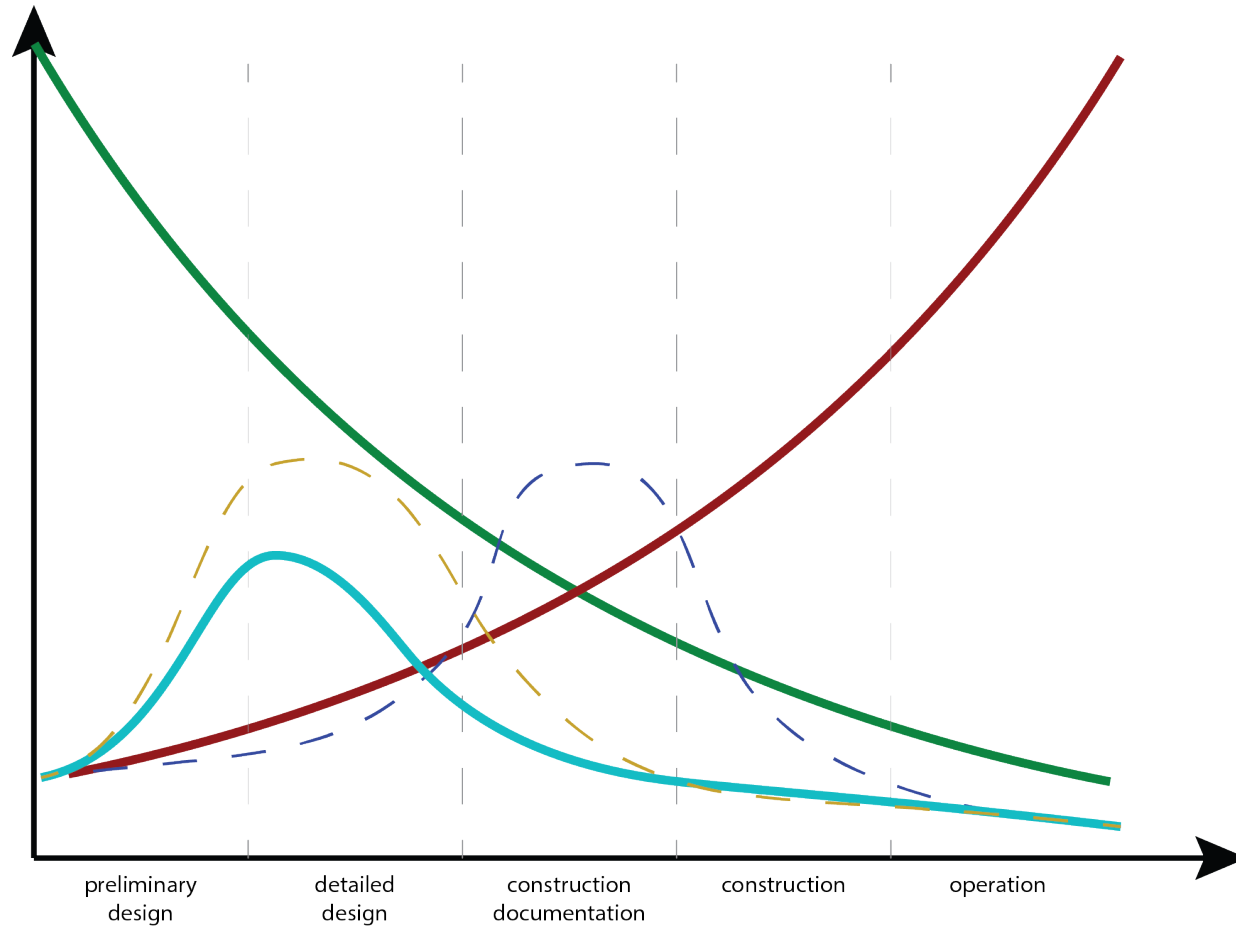
CAD drafting workflow

4

BIM drafting workflow



# parametrische Planung



1

ability to impact cost and performance

2

cost of design changes

3

CAD drafting workflow

4

BIM drafting workflow

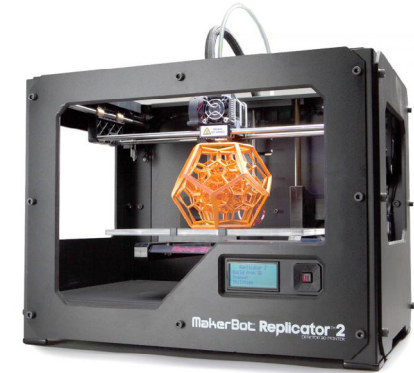
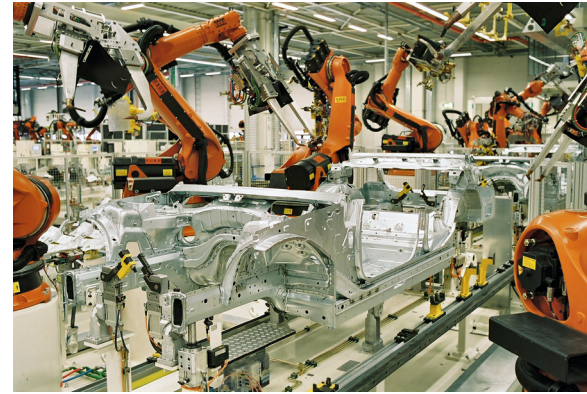
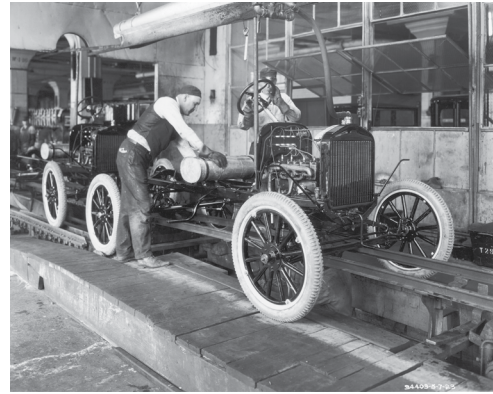
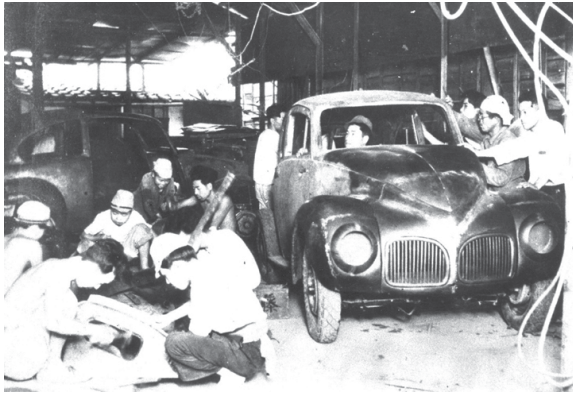
5

associative workflow



# Entwicklung Automotive

## FERTIGUNG



manuell

industriell

digital

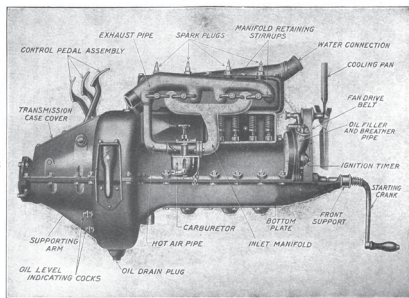
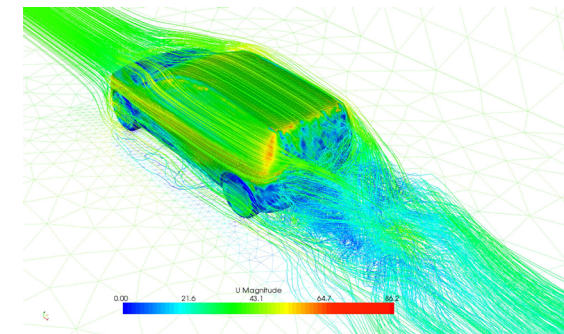
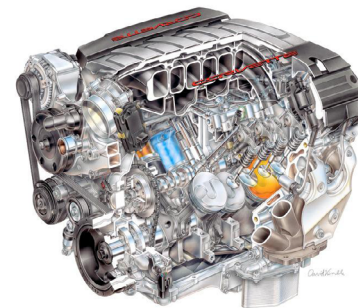
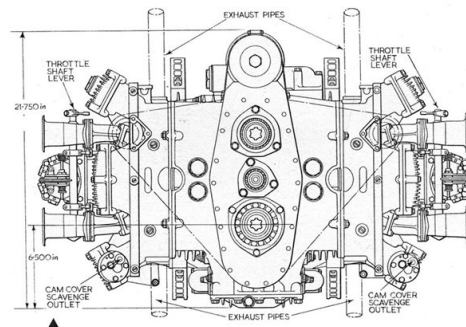


Fig. 6.—Valve Side of the Ford Model T Unit Power Plant Showing Manifold, Carburetor and Interior of One of the Valve Spring Chambers.

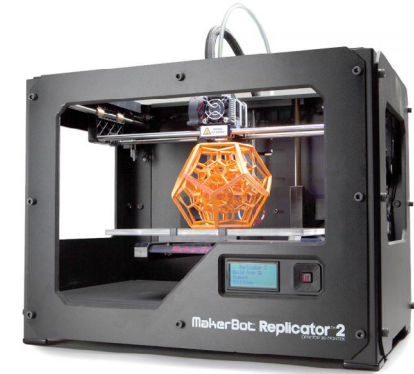


## PLANUNG



# Entwicklung AEC

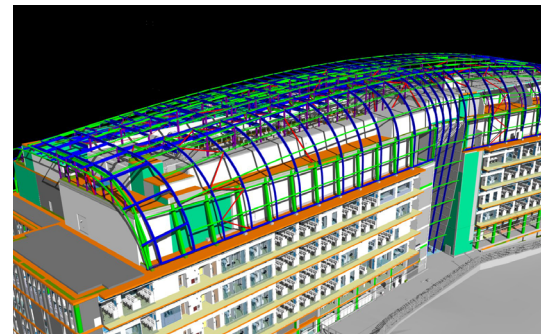
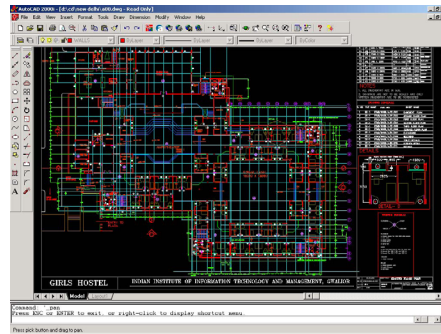
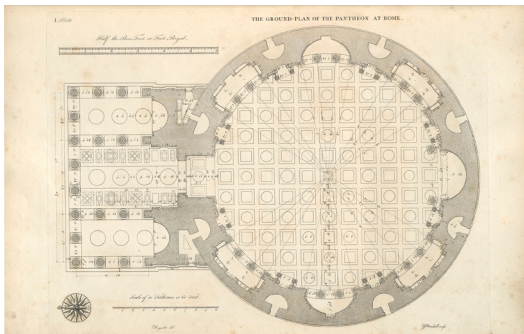
## FERTIGUNG



manuell

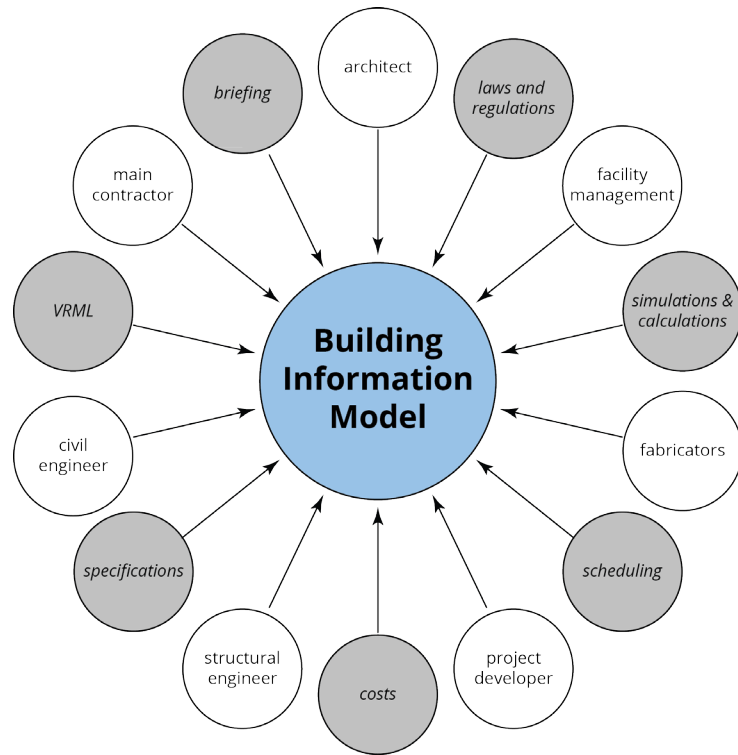
industriell

digital

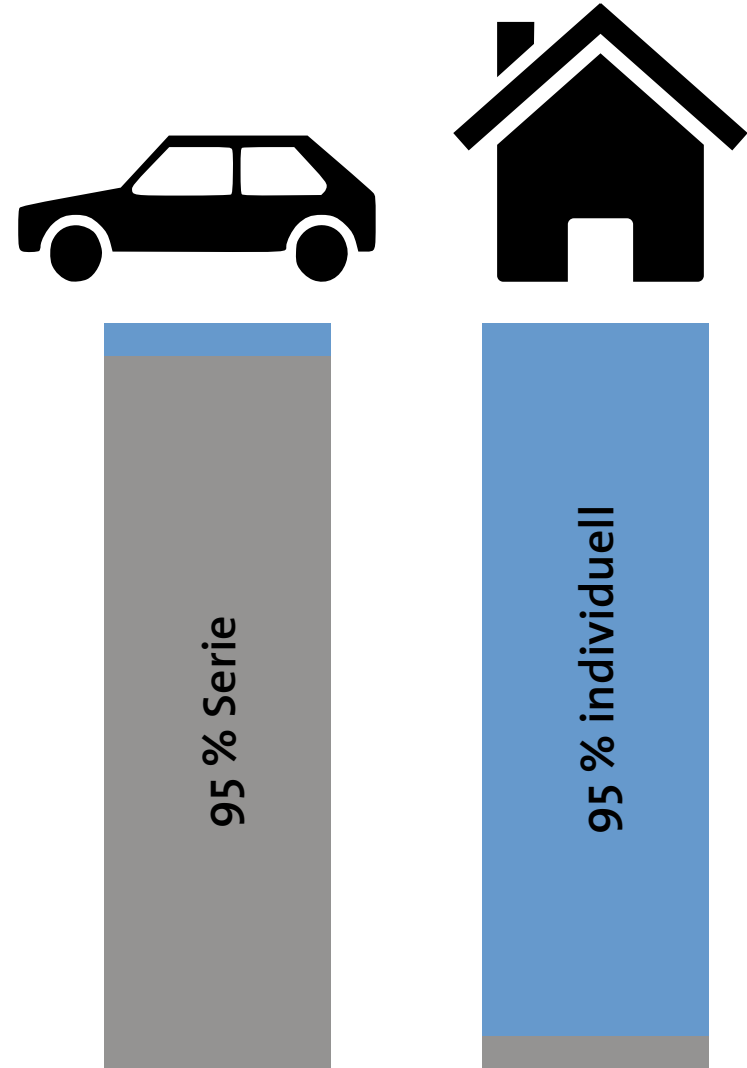


## PLANUNG

# Notwendigkeit zur digitalen Optimierung



*erhöhte Komplexität*



*Serien vs. Individualfertigung*

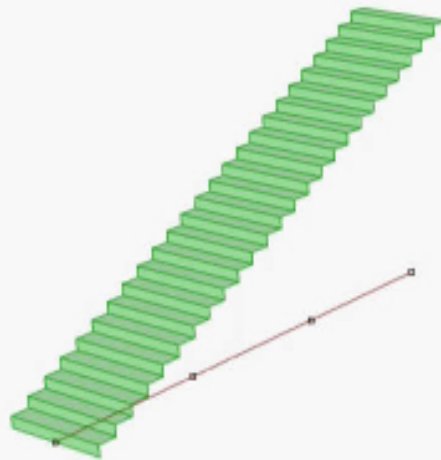
***AUTOMATISIERUNG***  
***OPTIMIERUNG***

*durch relationelle Informationsmodelle*



# relationale Informationsmodelle

## Verknüpfen von Informationen (Parametrik)



```
Script Editor
Script component: VB

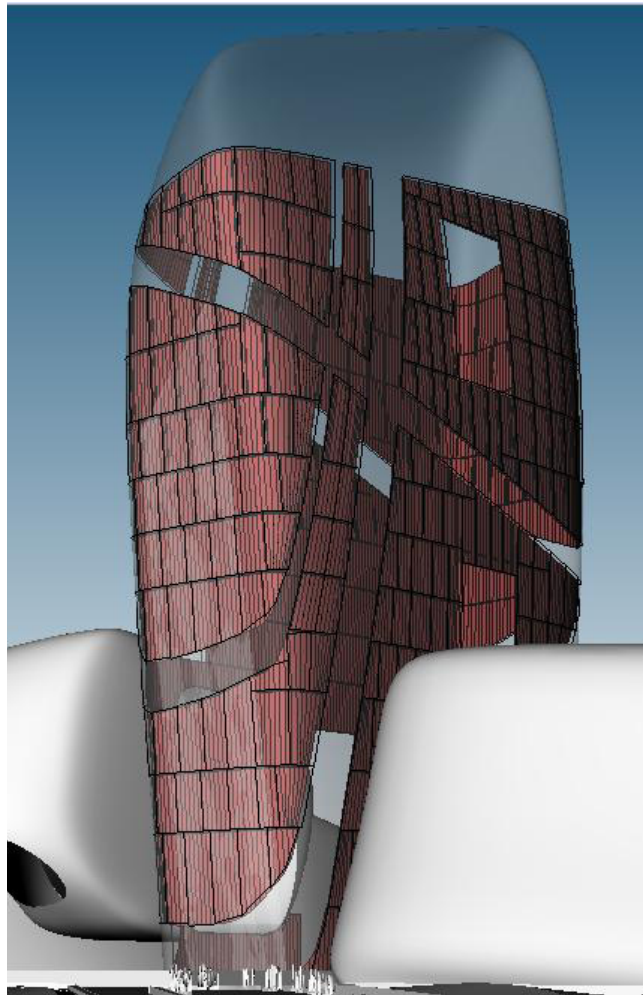
82
83 Dim div As Integer
84 Dim l As Double
85 Dim i, j As Integer
86 Dim ptsPara As Double()
87 Dim pts As point3D()
88 Dim pt As point3D
89 Dim vecs As New list (Of Vector3d)
90 Dim vecTan As vector3D
91 Dim vecN As vector3D
92 Dim vecZ As vector3D
93
94 Dim szfs As New list (Of brep)
95 Dim szf As brep
96 Dim st_h_Real As Double
97
98
99 vecz = New vector3d(0, 0, 1)
100
101
102 l = crv.GetLength()
103 div = math.Ceiling(l / st_d)
104 st_h_Real = h / div
105
106 ptsPara = crv.DivideByCount(div, True)
107 For i = 0 To Ubound(ptsPara) - 1
108     pt = crv.PointAt(ptsPara(i))
109     vecTan = crv.TangentAt(ptsPara(i))
110     vecN = vector3D.CrossProduct(vecTan, vecZ)
111     vecN = vector3D.Multiply(vecN, st_w / 2)
112     ReDim pts(3)
113     pts(0) = point3D.Add(pt, New Point3d(vecN.X, vecN.Y, vecN.Z)
114     pts(1) = point3D.Add(pt, New Point3d(-vecN.X, -vecN.Y, -vec
115
116     For j = 0 To 1
117         pts(2) = point3D.add(pts(1), New Point3d(0, 0, st_h_Real)

```



# King Abdulaziz Center for World Culture

Saudi Arabien // Snohetta





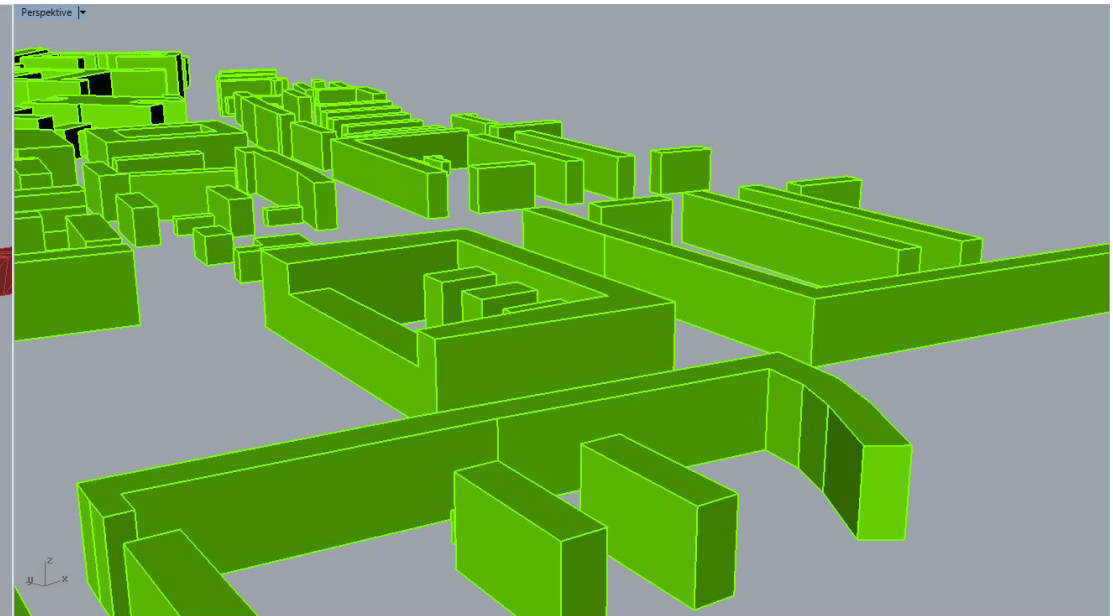
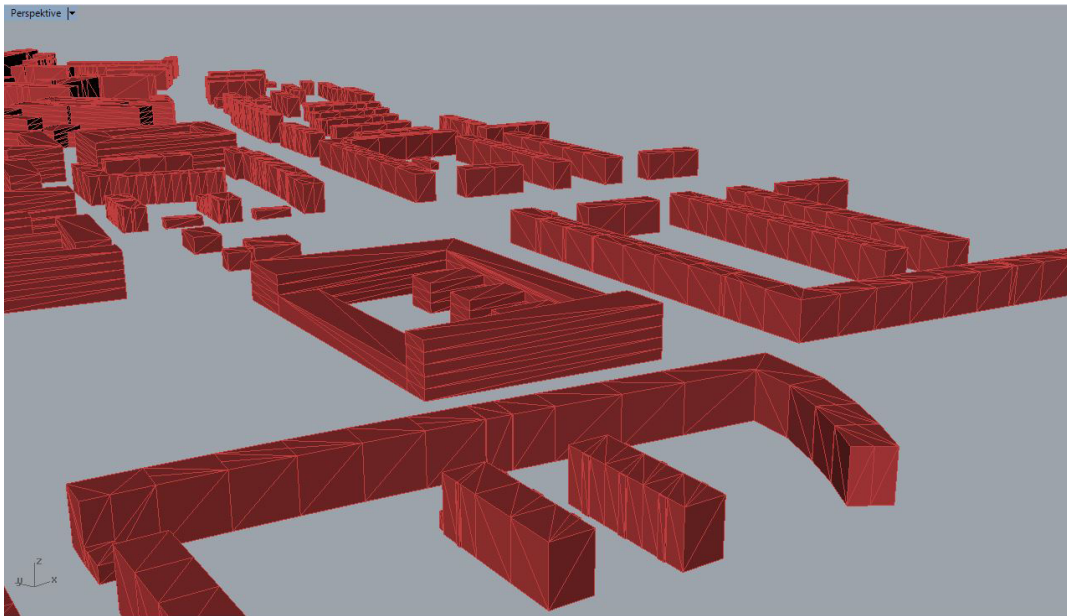
# *Alucobond freeform*

**ALUCOBOND®** freeform



# Transsolar Tool

Automatisierte Vereinfachung von CAD Modellen für die CFD-Analyse






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# 3D 紙藝 PaperArt

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2010中國·瑞士紙藝合展  
A Sino-Swiss Venture

project supported by:

**prohelvetia**

 Smurfit Kappa

**Geisendorf**  
Stiftung für Architektur

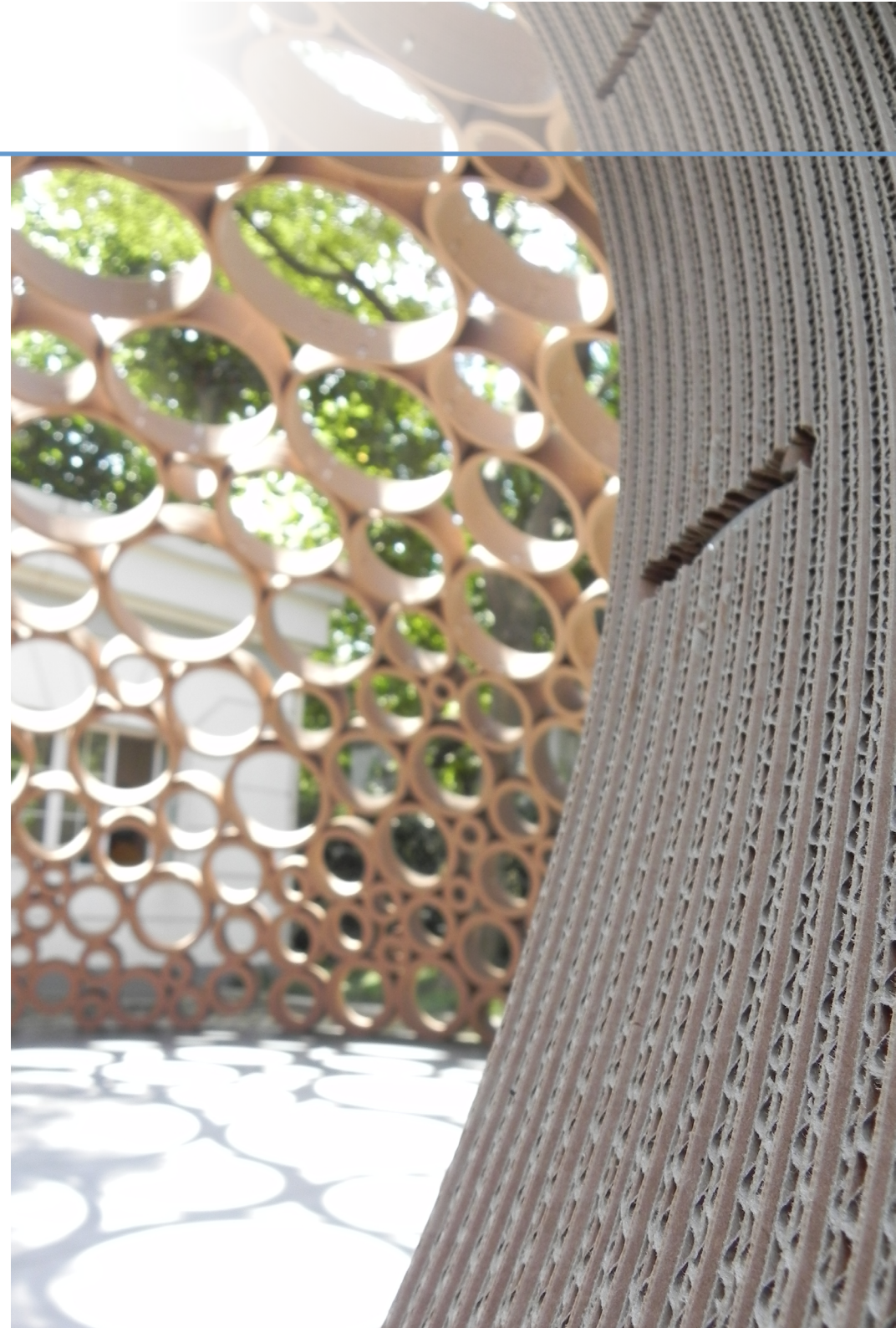
**ZÜN**  
swiss cutting systems

**ETH**



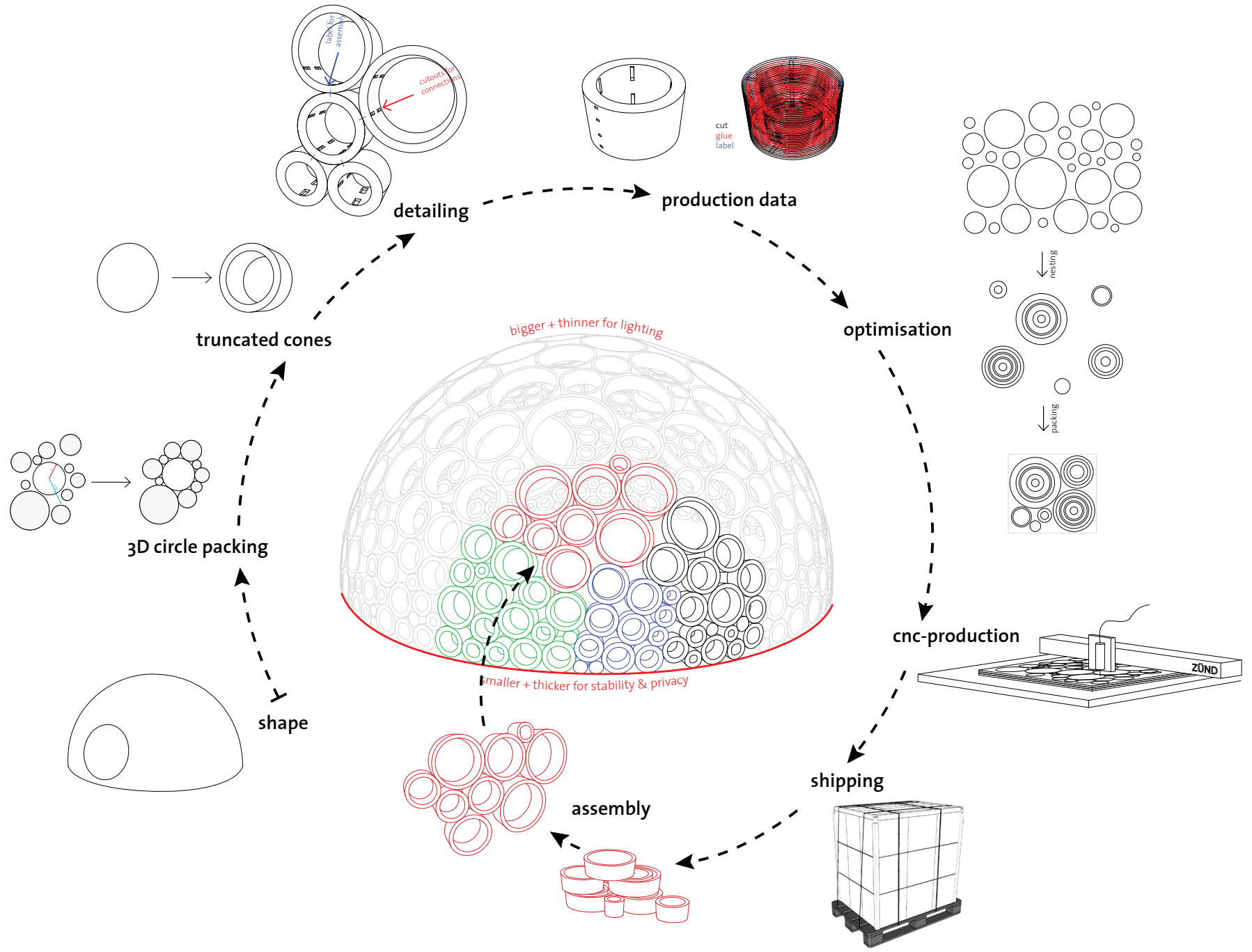
**CAAD**

Professur Hovestadt  
ETH Zürich



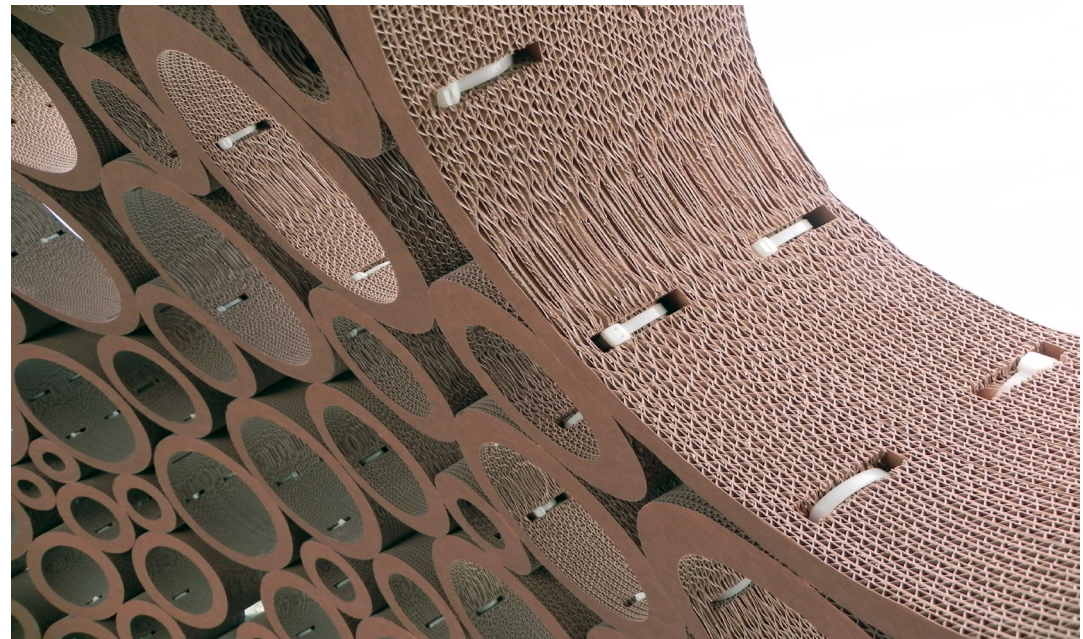
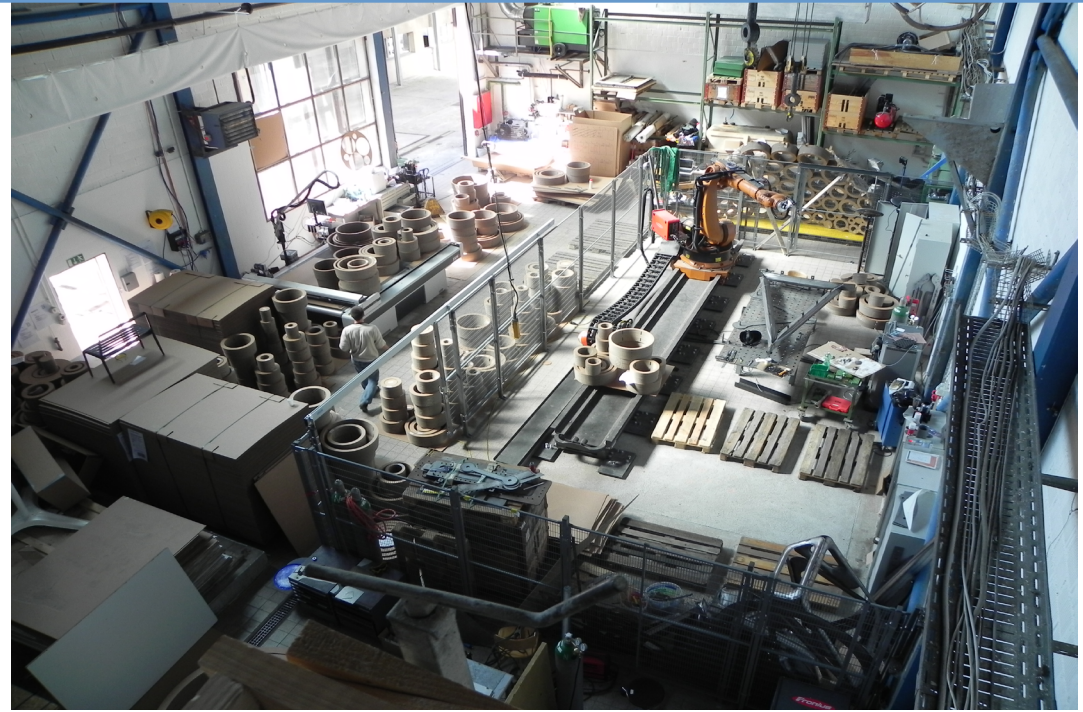


# Forschungs-Pavillon Shanghai 2010





# Forschungs-Pavillon Shanghai 2010



*Forschungs-Pavillon Shanghai 2010*







# *Forschungsgruppe Kaisersrot, CAAD, ETH Zürich*

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Optimierung von Gebäuden auf Grundstücken



# *Forschungsgruppe Kaisersrot, CAAD, ETH Zürich*

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Optimierung von Räumen in Gebäuden

 **Imagine**  
computation

*Ingenieure für Ideen*