Things are possible in Berlin
experimentation is of all ages

1896

2010
STATEMENT:

Berlin’s current identity is strongly related to its experimental character.

(Koolhaas / Ungers ’77)

(Berlin is not the only city to face the predicament of shrinkage. But the extreme and ideosyncratic character of laboratory would allow the strategies it develops to deal with its contraction to achieve a prototypical ‘pilot’ status that could inject new models in a Zero-growth Europe.)
creative function + = Laboratory Space
“Die Bar 25 ist eine Parallelwelt. Wenn sie das Gelände verlassen, dann sagen sie: Ich gehe mal in die Stadt.”

- Tobias Rapp, Lost and Sound 2009
Gentrification
Baugruppe: bottom-up versus top down
QUESTION:

How can Berlin densify without losing laboratory spaces?
traditional development kills laboratory space
DENSIFYING SURROUNDINGS + ADDING SUPERFLUOUS SPACE

add superfluous space to the development plan!
• *Laboratory Space* is an important element of Berlin: honour it, learn from it.

• provide superfluous space - accept experiments

• design spatial conditions with the tools provided by *Laboratory Space*

• provide and utilize bottom up processes: functionality (freedom and cheap floor space)
Tacheles (functions)

- workshop / exhibition
- restaurant
- bar
- studios
- cinema
- theatre
- shop
- bug farm
- table tennis
passage 1907

inside or outside?
laboratory space = superfluous space x creative function

xxl floorspace

add superfluous space

fine tune
flexible xxl sized floorspace
20

xxl floorspace
add superfluous space
approx. 35m

max 28m

max 800 mm
dependant on span

2.4 m

max 0.8
span dependent

approx. 35m

max 28m
max 28m

max 0,8
span dependent

dependant on span

2,4 m
fine tune
parallel stability & lift

gravitational force from beams
\[ \lambda_{EPS} = 0.035 \]
\[ \lambda_{bath} = 1.9 \, \text{W/mK} \] (material property)

Normal Uranace: \( 0.6 \, \text{W/mK} \)

\[ R_{bath} = \frac{1}{0.1 \lambda_{bath}} = 10 \, \text{m}^2 \text{K/W} \]

\[ R_{\text{EPS}} = \frac{1}{\lambda_{\text{EPS}}} = 0.4 \, \text{m}^2 \text{K/W} \]

\[ R_{B} = R_{\text{bath}} + R_{\text{EPS}} = 0.035 + 11.42 = 11.457 \, \text{m}^2 \text{K/W} \]

\[ U_{p} = \frac{1}{R_{B}} = 0.087 \, \text{W/m}^2 \text{K} \]

\[ U_{a} = \frac{1}{R_{B}} = 3.167 \, \text{W/m}^2 \text{K} \]

\[ \Delta U_{\text{gon}} = \frac{U_{p} + U_{a} \cdot U_{p}}{U_{a} + U_{p}} = \frac{0.2 \cdot 3.162 + 1.0 \cdot 0.087}{1.2} = 0.66 \]
in situ betonvloer, wax 50 mm
aluminium kap
vloerverwarming
langgatplaat
kunstof plaat 30 mm
es isolatieplaat 50 mm
gelisoleerde afvoer D = 110 mm
betonanker met schroefdraad
dampwerende folie
steenwol met dampwerende afwerking 250 mm
in situ gestort plafondkoeling 50 mm
mortel
FACADE SYSTEMS
glas pane size is a result of optimization in material and labour costs, wind pressure and is based on the 1200 mm grid currently estimated:

2400mm x 900

maximum transparency
Curtain Wall

Alcoa AA 100 Q
or similar

max transparency with openable window panes

facade may react to individual wishes and / or internal layout

large window surface with openings
Sky Frame
minimal profile 20mm
sliding pane
max 3,2 x 4 m (set pane)
max 2,3 x 4 m (sliding pane)

minimum profile
folding glass panes up to 5 on one side
70 mm frame
1.2 m wide
max 4 m high

Sunflex

maximal opening
Polycarbonate
rodeca / supersky
lightweight (4-5 kg m²)
max 500 width
max 13 m long (extruded)
possible nanogel additive
for extra insulation
easy to cut angles

Fast operation
industrial like overhead door
existing systems optimized for speed
not insulation
big openings possible (think hangar doors)

Shutter Stack

indoor becomes outdoor
Facade fragment Oranienburgerstraße (North)
scale 1:30

detail A
detail B
detail C
detail D
detail E
Façade fragment southside (inside along Oranienburgerstraße)
scale 1:30
“Berlin ist eine Stadt, verdammt dazu, ewig zu werden, niemals zu sein”
- Karl Scheffler