

# LABORATORY SPACE

DENSIFYING BERLIN





**‘Berlin ist eine Stadt, verdammt dazu, ewig zu werden, niemals zu sein’**

Karl Scheffler, author of Berlin: Ein Stadtschicksal, 1910





**Laboratory space**

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for graduation studio of Dwelling:  
At Home In The City

tutors:  
Birgit Jurgenhake  
Jasper van Zwol

(c) 2009



# PREFACE

.....  
preface

laboratory space /  
preface



.....  
This work is the result of the research we have conducted for  
.....  
the final thesis project on the topic of dwelling at the faculty of  
.....  
Architecture at the Technical University of Delft. Besides being  
.....  
a starting point for a design concerning the Tacheles site in  
.....  
Berlin, it deals with the larger question of Berlin as a city and  
.....  
its direction towards the future. Within a limited amount of  
.....  
time (8 weeks) we have managed to lay out a basic research  
.....  
framework and answer some of our most important ques-  
.....  
tions. However, we considered the topic intriguing enough to  
.....  
spend much more time on it, would it have been there for us.  
.....  
Perhaps in the future...





# ACKNOWLEDGEMENTS

First of all we would like to thank our tutors Birgit Jurgenhake and Jasper van Zwol for their support and enthusiasm for this research and their apt guidance. Secondly we thank the people of Berlin for their creativity and in presenting radical alternatives to the rest of Europe. And finally we would like to thank the people involved in the development of Google Earth and Bing Maps (birdseye), for without them this research would not have been possible.





# CONTENT

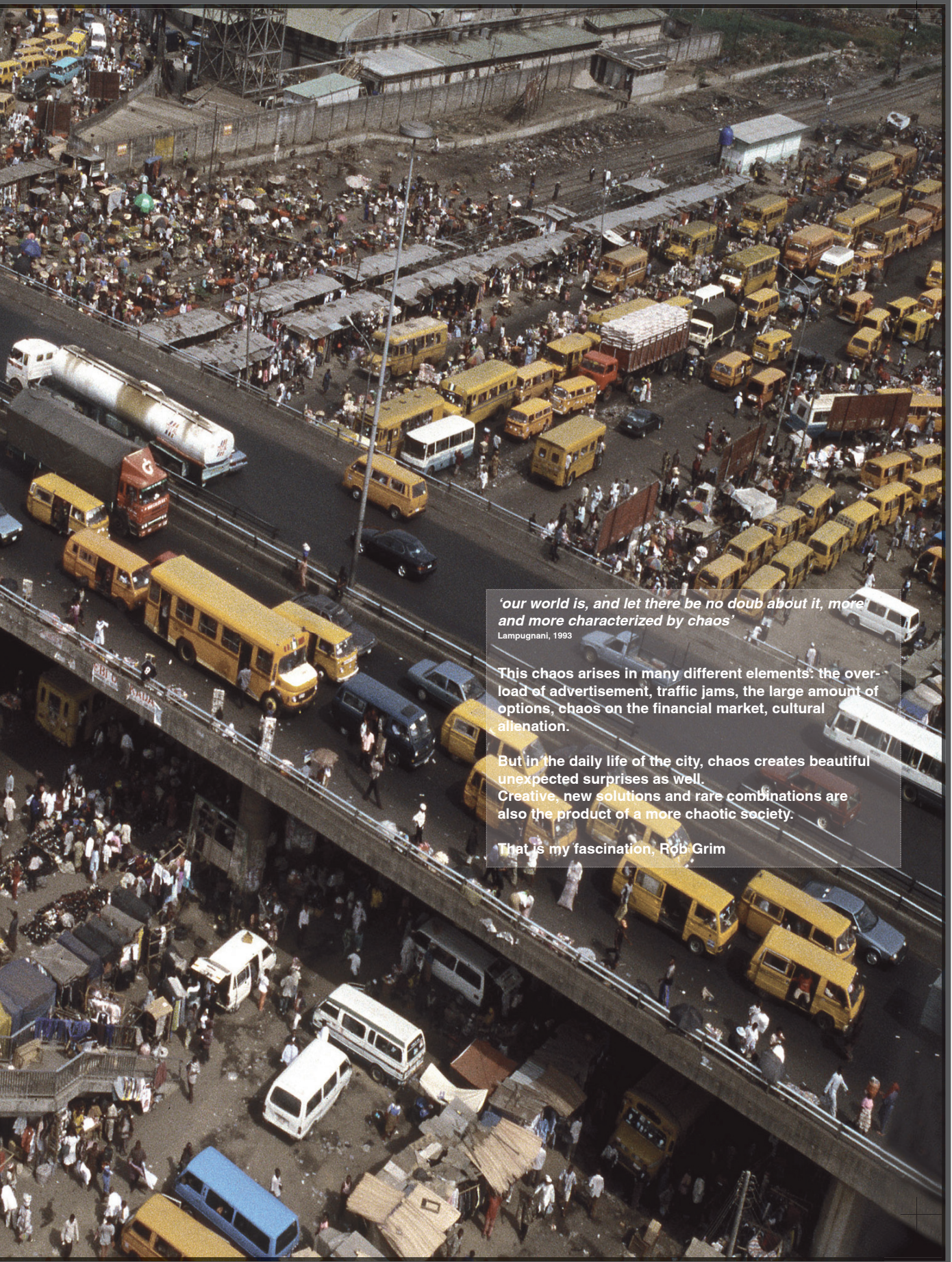
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*'our world is, and let there be no doubt about it, more and more characterized by chaos'*

Lampugnani, 1993

This chaos arises in many different elements: the overload of advertisement, traffic jams, the large amount of options, chaos on the financial market, cultural alienation.

But in the daily life of the city, chaos creates beautiful unexpected surprises as well. Creative, new solutions and rare combinations are also the product of a more chaotic society.

That is my fascination, Rob Grim

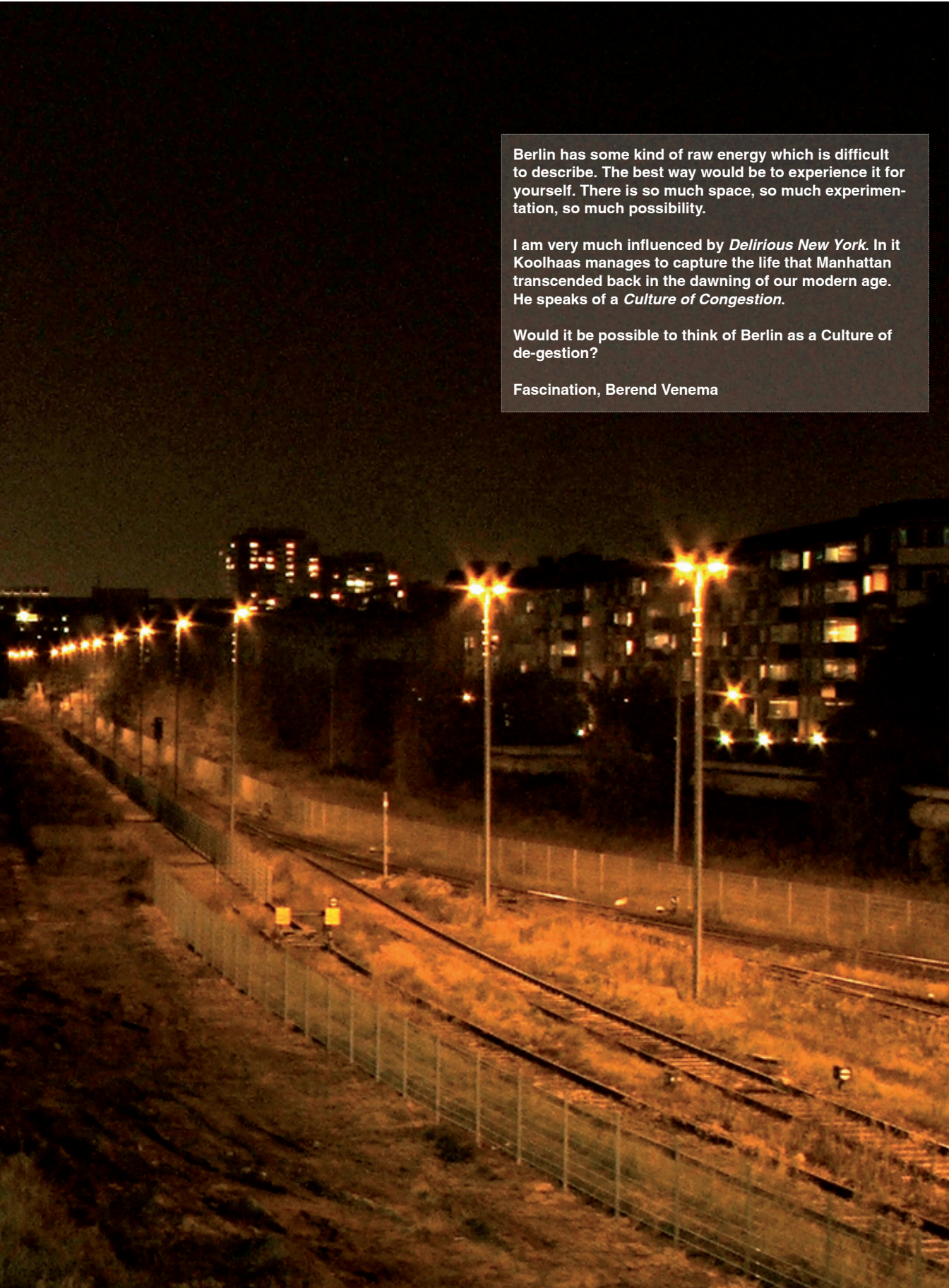


Berlin has some kind of raw energy which is difficult to describe. The best way would be to experience it for yourself. There is so much space, so much experimentation, so much possibility.

I am very much influenced by *Delirious New York*. In it Koolhaas manages to capture the life that Manhattan transcended back in the dawning of our modern age. He speaks of a *Culture of Congestion*.

Would it be possible to think of Berlin as a Culture of de-gestion?

Fascination, Berend Venema







# INTRODUCTION

Berlin has two faces. One is official. Not unlike any given West-European capitol, it deals with its history, provides for high arts and culture, feeds the many visitors, connects nodes within the city and to the world, governs the country and houses some large universities and company headquarters.

But the other face is completely different. It is the underground of Berlin. It is about 'the other': other ways of living, of expression, of doing things. Other concepts of time. It is about hedonistic parties that last longer than the weekends and about a music scene that has developed along with that. It is about turning an old bunker into a climbing wall in the middle of a neighbourhood. About an urban driving range positioned underneath the S-bahn rails. Above all, it is about the experiment.

It was this experimental face that attracted us. We desired to know more about it in an architectural and urbanist way. We found that these experiments were very much connected with spaces. One could visit Berlin, without discovering any of these spaces. But if one was to enter one of these spaces he or she would become engulfed in a world of experimentation. Often so intense, one might lose his or her bearings: an existential experience. Because of the experimental character, we call these *Laboratory Spaces*. This is the main theme of our research. A more detailed definition will follow, but for now it is sufficient to know the following: on the production side is the economic and spatial framework of Berlin. The overcapacity has led to unused, *Superfluous Space* and cheap rent prizes. On the consumption side are the people of Berlin with their cultural heritage and creativity. Combine these two and Laboratory Space occurs.





# TRANSFORMATION AND IDENTITY

transformation strategy

Overcapacity has not only lead to low rent prizes in Berlin, but to large amounts of *Superfluous Spaces*. In some cases these spaces have been transformed into *Laboratory Spaces*. The city council is slightly aware of the qualities of *Laboratory Space*:

*The strategy 'Spaces for new ideas' seizes upon this potential. The strategy aims for a policy that increases the manoeuvrability and creates opportunities for all - for the strong as well as for the weak in society.*<sup>[1]</sup>

*A large portion of the excitement in this city arises from the visible fractures.*<sup>[2]</sup>

We believe that Berlin's identity is strongly connected to its experimental character. This is further illustrated by the *badeschiff*. Today it is seen as a cutting edge development, but the concept dates back to 1890. The following quote from Koolhaas and Ungers (1977) under scribes the *Laboratory* concept:

*But its (Berlin's, ed.) extreme and idiosyncratic 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.*<sup>[3]</sup>

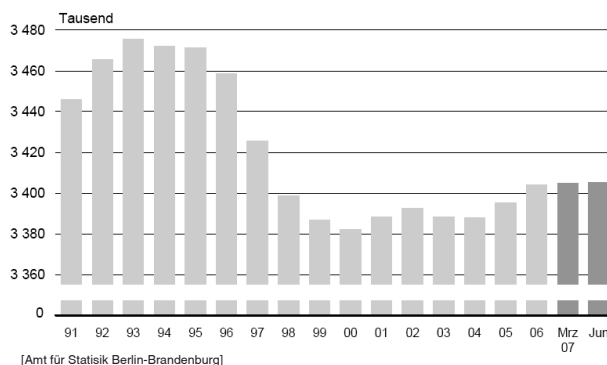
In the city this character is manifested in the *Laboratory Spaces*. Berlin now needs a transformation strategy that "is oriented to the demands of the creative class and at the same time represents the value of a city of solidarity."<sup>[4]</sup> We believe that *Laboratory Space* is the key to a transformation strategy that will re-enforce Berlin's identity and attract the creative

What does transformation mean? After *die Wende* Berlin did not experience the long term economical growth it had expected. For a long time the high influx of immigrants was about equal to the amount of emigrants, leaving the city to find better opportunities elsewhere.

Interestingly however, Berlin's population has been on the rise for six years now, after a heavy decline in the late nineties. This is set against an extreme demographic aging within Germany (slightly ahead of the rest of Europe), and a heavy population drop throughout the whole eastern parts of Germany. Apparently Berlin is able to attract growth, even in recessive times.

Berlin has just finished negotiations with Brandenburg to expand the Airport *Shönefeld* and develop it a big European traffic hub. Along with that, the *Hauptbahnhof*, now the biggest train station in Europe, has recently been completed. Not surprisingly the number of tourists have been increasing in accordance. "With approx. 14 million overnight guests annually the German capital has in the meantime attained the third place in Europe, preceded only by London and Paris. (in 2006 an increase of almost 20%)."<sup>[5]</sup>

Bevölkerungsstand in Berlin seit 1991



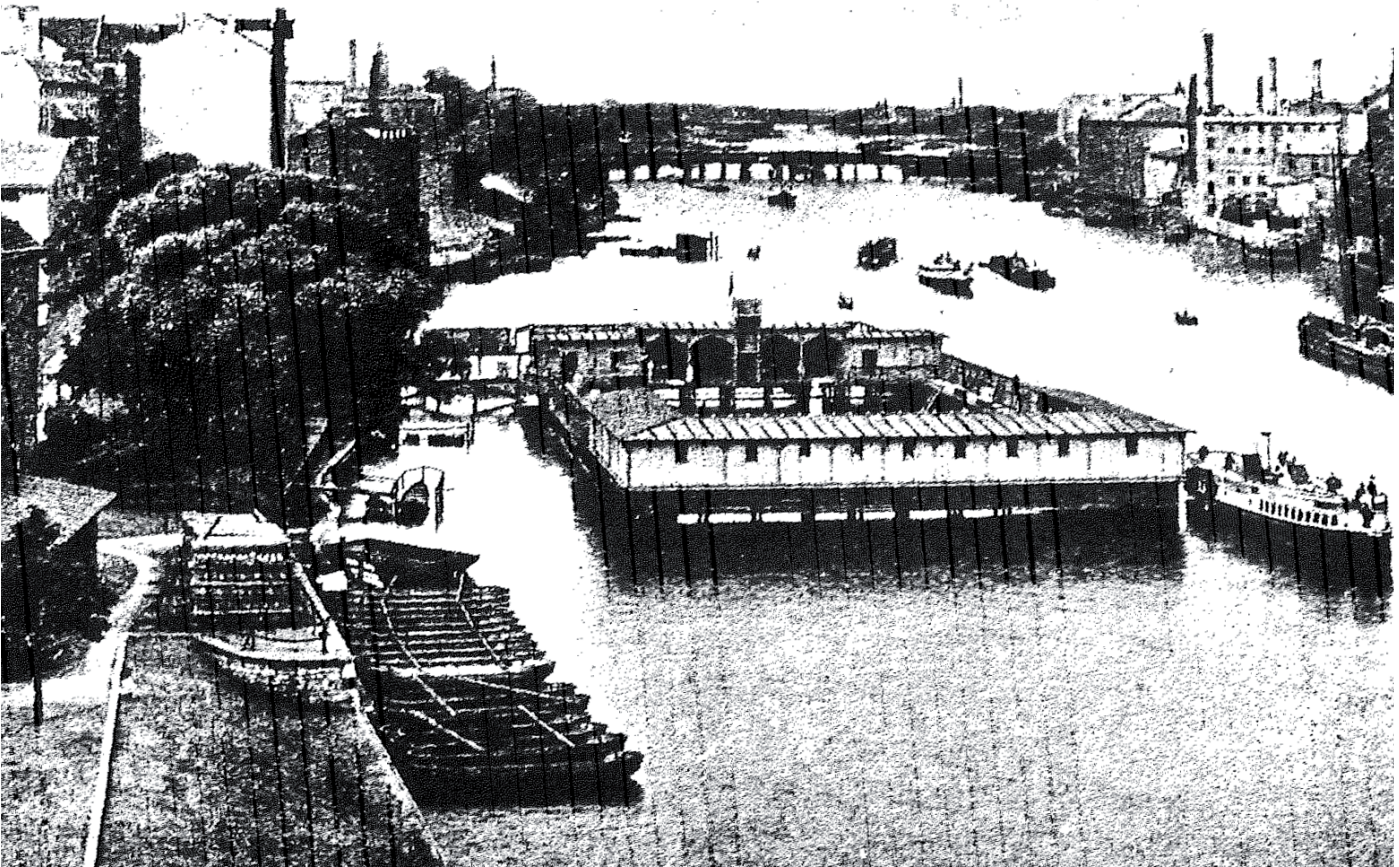
The creative class is ever more mobilized and looking for creative environments to work in. Berlin fits extremely well within the profile. "Cities can no longer compete for that talent (creative talent, ed.) just by providing economic opportunity and high paying jobs; people have come to expect a certain working environment and lifestyle, too."<sup>[6]</sup>

"Social tolerance, technological development and a bank of talent are proven factors in determining the economic success of a region. A new study ranks Berlin at the top, suggesting the economically weak city may soon be poised for a boom driven by the creative class."<sup>[7]</sup>

The perspectives for Berlin have thus changed from shrinkage to growth, "a post-industrial society in competition with many other European metropolises."<sup>[8]</sup> Add up that, that Berlin is quite unique in the fact that it is not surrounded with urban sprawl, but with valuable woodlands and green fields.

The solution for growth is then not expansion but densification, which is equivalent to current urban strategies that deal with growth in European cities. But what is wrong with Berlin? Is it not right the way it is? Berlin's weakness is its economy. It does not have enough jobs to go around. By moving forward and adapting, Berlin could answer to this need and become a booming city again.





experimentation is of all ages





# GENTRIFICATION

gentrification

There is a certain risk in development for Berlin: the risk that you might destroy the very thing that drives it. This brings us to the subject of gentrification.

main entry: *gen.tri.fi.ca.tion*

date: 1964

: the process of renewal and rebuilding accompanying the influx of middle-class or affluent people into deteriorating areas that often displaces poorer residents <sup>[9]</sup>

Gentrification is a term first coined by the British Sociologist Ruth Glass in 1964, when she signified the influx of the middle class into certain neighbourhood, displacing the lower classes. It is derived from gentry, which is derived from the Old French word *genterise* denoting “people of gentle birth”.

*Take gentrification of inner city neighbourhoods like New York's SoHo or San Francisco's SoMa. What came first in these places? As any sentient observer of urban affairs can attest, these neighbourhoods initially lost blue-collar jobs as factories and warehouses moved out of outmoded facilities. Artists, culturally creative people, and immigrants moved in, often reclaiming the properties from ruin by way of illegal conversions and sweat equity revitalization. Gays and singles came next. Only much later—once these initial, pioneering groups had increased real-estate values - did families, professionals, yuppies, technology-based businesses, and retail shops follow.<sup>[10]</sup>*

Today many neighbourhoods are being or have been gentrified: In New York besides Soho, the Bronx, Harlem and Brooklyn; among others London has Islington and Barnbury; in Amsterdam we have 'de Jordaan' en 'de Pijp' and Berlin has Prenzlauer Berg.

This is how gentrification works:

1. Poor neighbourhoods, surrounded by more expensive neighbourhoods become attractive for the lower middle class, for their cheap rent and centrality. A concentration within the cheaper neighbourhood arises. Typically this group is made up of teachers, students, artists, architects, etc.

2. The group starts adding cultural value to the neighbourhood with art, cafe's, music, small shops, etc. In some cases, given the spatial conditions, *Laboratory Spaces* can develop. These are spaces where the creativity and function are combined and transform the public realm. Through this process, the image of the neighbourhood is transformed from negative to positive. Then the rent prizes start to rise.

3. This is when the developers hop on board. Since the surrounding area's are more expensive, there is a discrepancy with the rent prizes in the concerning neighbourhood. This is what is called the 'rent-gap'. By renovating and renewal, developers strive to close this rent gap.

4. At this point the higher middle class (the gentry) starts to move into the area. When the suburban gentry tire of the

automobile-dependent urban sprawl style of life; thus, professionals, empty nest aged parents, and recent university graduates perceive the attractiveness of the city center—earlier abandoned during white flight. The rent prizes increase and drive the original dwellers away to other cheaper area's.

It could be that the original group has gone from being students and artists to lawyers and doctors. In that case the same group of people will gentrify their own neighbourhood, but because they have a strong tie with it, the result may be completely different. This point is interesting to keep in the back of our minds when we think of possibilities for Berlin.

The downside of gentrification is that the neighbourhoods lose some of their originality and rawness and become like other neighbourhoods. The key in new developments, is that the creative class is not looking for standard places.

Place, (...) has replaced the giant corporation of the industrial age as the central economic and social organizing unit of our time. Place is the factor that organically brings together the economic opportunity and talent and the people required for creativity, innovation and growth.<sup>[11]</sup> We need to create places that are unique, full of opportunities for creativity and economy.

The interesting part for us in this cycle is the *Laboratory Space*. Within this cycle, *Laboratory Space* is connected to a moment in time. It exists in an 'in between' situation, before the neighbourhood catches up with other parts of the city. It is like a school boy that does not pass to the next class because it is dreaming too much in stead of learning. It is a temporary thing that can provide new ideas.

Most of the Berlin neighbourhoods have not been gentrified, yet... With this knowledge Berlin has a chance to learn from other cities and to make decisions towards a different direction.





research question

# RESEARCH QUESTION

The attractiveness, that makes it possible for Berlin to think about growing, is very much related to its experimental laboratory character. No longer is constructing new buildings a matter of unlimited demand. We need to think about growth that focuses on qualities. These qualities are encapsulated within the *Laboratory Space* idea, which in turn exists by the grace of overcapacity at a certain moment in time. If Berlin was to follow the traditional development models of other European cities, it may well bite the hand that feeds it. That is exactly why there is a need to think about new alternatives:

## **How can Berlin densify, without the loss of Laboratory Spaces?**

This question calls for knowledge about Laboratory Space and different types of density in Berlin, and the contemplation of new development strategies. The answer to this question is as much a spatial model, as it is a way of thinking. Multiple and even contradictory answers are possible.





# METHODOLOGY

how to answer the question  
To answer this question, it first needs to be taken apart.  
The question: 'How can Berlin densify, without the loss of Laboratory Spaces?' consist of two parts.

**Part A:** In this part the phenomenon **Laboratory Space** will be studied and clarified.

Techniques applied:

- phenomenal
- spatial analytical
- spatial modelled
- mathematical

**Part B:** This part studies the typical Berlin blocks through history every type represents a different **way of densifying** the city.

Techniques applied:

- spatial analytical
- spatial modelled
- mathematical

By combining part A and part B into part C, we project different ways of densification onto the laboratory space. Through this experiment we can approach the right answer to our question.

**Part C:** In the **experimental** part we have included different scenarios, which do not arise out of the previous combinations.

Techniques applied:

- typo morphological
- spatial analytical
- spatial modelled
- mathematical
- theoretical



In line with the experimental character of Berlin we will set this research up as an experiment. Experiments are done in laboratories under certain controlled conditions: by controlling a parameter, while keeping the others constant, the outcome can be influenced in a certain way. This is the scientific sound way of conducting an experiment. But many inventions (for instance champagne and penicillin) have been created by accidents, by accidentally not controlling one or more of the parameters. And, scientific or not, our mind helps us to do 'mind-experiments', increasing possible outcomes and speeding up the experiments.

This research will apply all of the above experiment techniques, in order to get a good overview of the possibilities. Berlin will be our contextual field and the Tacheles site will stand as a pars pro toto, as what the fruit-fly is to DNA research.

The architect has a large number of research and design tools to his disposal. This research has applied the following.

#### **Phenomenal**

This is a descriptive method exercised by text and image, that focuses on certain existing phenomena. A method used mainly in social sciences, it allows to seek out the exciting and remarkable by observing or researching what is happening or has happened. We use this method to deepen and share our knowledge on the laboratory spaces.

#### **Spatial analytical**

This is a traditional method primarily used by architects. It transcribes a certain spatial configuration (either real or modelled) into drawing and analyses the spatial qualities (i.e. closed/open, big/small, private/public, etc). Because of the analytical qualities, the axonometric is a very useful drawing technique. Therefore the axonometric drawing is a recurrent theme in this research.

#### **Typo-morphological**

Again a very traditional architectural and urbanist research and design tool. Urban maps in combination with typological floor plans can give a lot of information about the city structure and use. By studying these drawings, an idea is formed about how it is to live in the concerning city or area and how the private is connected to the public. In this research the typo-morphological method is used to generate understanding about the history of dwelling blocks in Berlin and to create projections onto the current city structure.

#### **Spatially modelled (projected) reality**

This is a technique applied to extend the knowledge about the typo-morphological structures. By modelling these realities into the computer, a stripped and hypothetical image arises, that provides the circumstances needed to calculate these models. Consequently the same models and calculations can be applied to the experiments, making the retrievable information comparable.

#### **Mathematical visual representation**

For us, an important element of numerical research is visualizing the numbers.

By that they become more accessible and comparable. For this research we have invented new presentational diagrams, hoping to improve the readability.

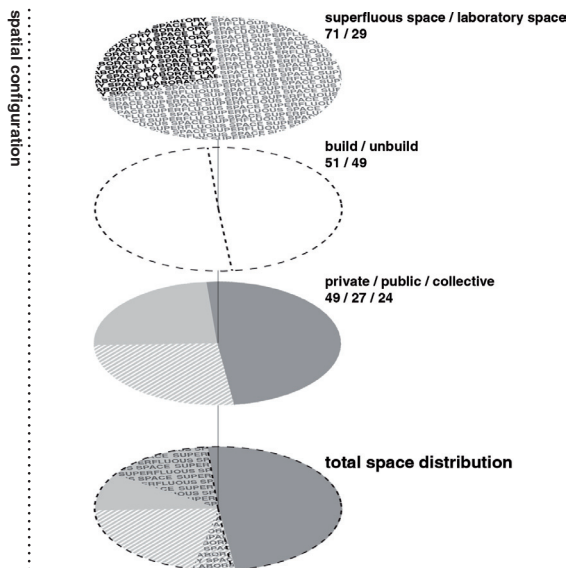
#### **Theoretical**

The theoretical mind experiment fits within this method: the projective 'what if' scenario. By coming up with a certain scenario in our mind first, we can bring it to the laboratory and discover what happens in real life.





# SYMBOLS, GRAFICS AND FIGURES

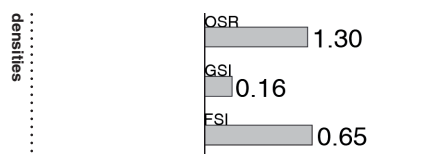


This figure contains four disks. The lowest disk is a summary of three above it.

The first disk shows the relation between *Superfluous Space* and *Laboratory Space*. *Laboratory Space* is the lighter grey part.

The ratio of build and unbuild spaces is shown in the second disk. The right part is always the build part. The left is unbuild.

The third disk is about the different types of space, divided into private, public, collective. Every type of space has its own colour or texture.



FSI, GSI and OSR are the main numbers to show densities.

FSI = gross floor area / plan area

Floor Space Index, expresses the built intensity of an area.

When FSI is 1, it means an area is totally filled with one build floor.

GSI = built area / plan area

Ground Space Index, expresses the compactness of an area.

OSR = (plan area - built area) / gross floor area

Open Space Ratio, expresses the openness of an area and the pressure on the non-built space.<sup>[12]</sup>

These numbers are used to compare the different projects with each other.





urban frame



The urban frame of a city, is the system of streets, squares and parks.

Every movement through the urban frame is registered in the brain. But there is a limit to the sort and amount of data that can be stored, for example the number of directional changes one encounters along one's path.

It becomes difficult to remember more than three turns away from the starting point. By knowing that it's possible to analyse an urban element by retracing those three steps.<sup>[13]</sup>

The streets which lie directly along the locations of the *Laboratory Space* are the called 'first order', and have the thickest line type. Connected to the first order-streets, the second order streets are shown by slightly thinner lines. The thinnest lines show the final, third order streets. Together they form the urban frame of the locations.

By doing this, the maps show toward which direction and into which district the loctions are linked.

The maps do not show the nonphysical attractions to the laboratory space. This attraction made possible by for instance advertising on the internet is not measurable. This kind of network is not controlled by the architect or urbanist. Therefore this aspect will not be included in this research.

spatial elements

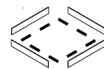
To show the different spatial elements of the space, we have designed a set of symbols.



The space has a hidden and obscure entrance. Examples of these are entrances hidden behind walls or green.



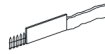
Only one entrance leads towards the space. This element makes the locations even more hidden.



The space is enclosed. This does not say anything about the borders, because these are largely differentiated.



The borders are mysterious. This means the space has at least one border which is not very clear defined.



Fences, walls and hedges have been applied to define spaces.



The space contains spatial objects, that encourage function. These spatial objects could be a car wreck, a container or an old bunker.

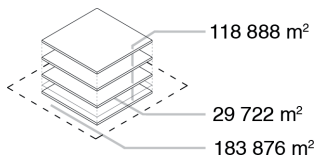


The space has opportunities to explore. This means the total space is not experienced in one view.



A lot of green fills the space.

areas

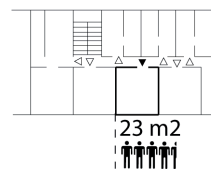


In the figure of 'areas', the total amount of the environment, footprint and floor areas are shown.

The lowest number shows the total environment including the footprint which is shown by the number above.

The top number shows the total amount of floor space of the entire area.

floor plan



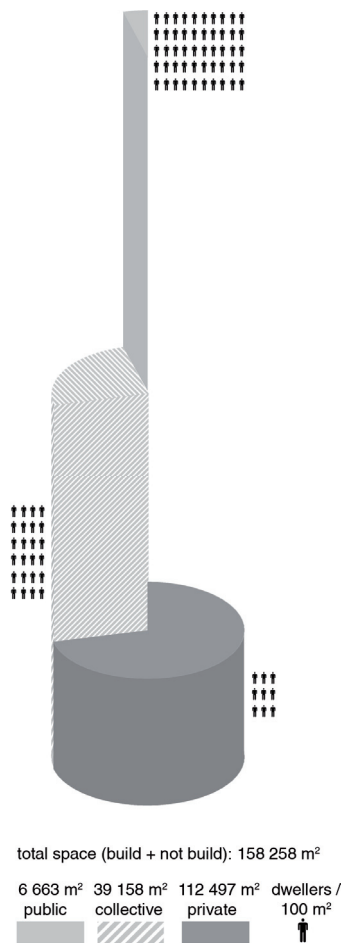
The floorplan of the project is drawn. The floorarea of one dwelling is added to that.

How many people lived there varies between the different dwellings. This means that number of people living in the dwelling shown by the pictogram, in this case 4,5, is an average number. <sup>[14]</sup>



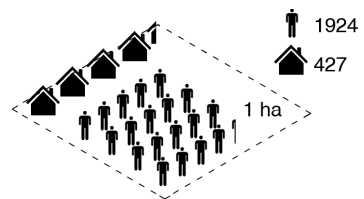


pressure and spatial configuration



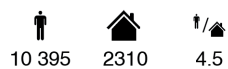
The diagram above shows the different types of spaces in different shading on the disk. The height of the disk shows the pressure on that type of space. The higher the part, the more dwellers use that particular space. This is calculated by dividing the number of dwellers over the amount of space. The number of pictographs shows how many dwellers occupy every 100m<sup>2</sup>.

number per hectare



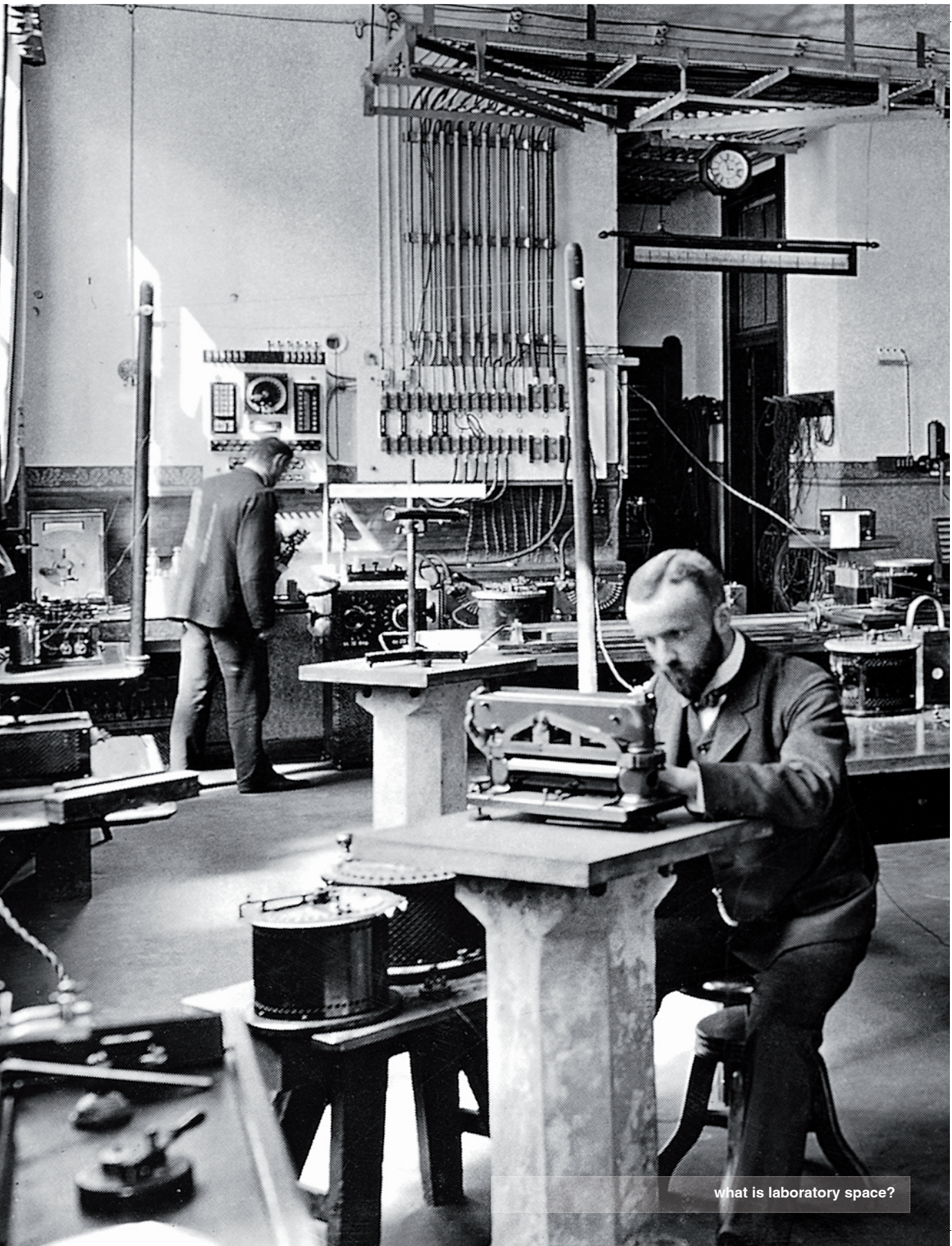
The number of dwellings and dwellers per hectare is shown by the pictograms above. Every doll means 100 dwellers. Every house means 100 dwellings.

areas



The number of dwellings is retrieved from the floorplans. The number of people per dwelling is shown at the right. By multiplying the number of dwellings with the people per dwelling, the total number of dwellers is calculated.





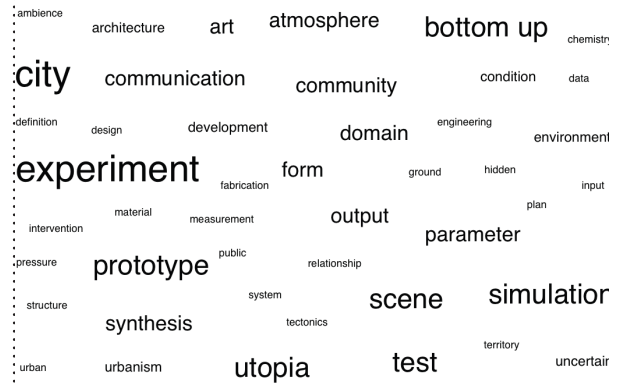
what is laboratory space?





# A: WHAT IS LABORATORY SPACE?

textually First, through cross referencing websites (in much the same way as the Google search engine works) we came up with a list of keywords, related to the words 'laboratory' and 'space'. The font size is an indication for the level of relevance. By looking at the list, you can start to grasp the field of topics that these words account for.



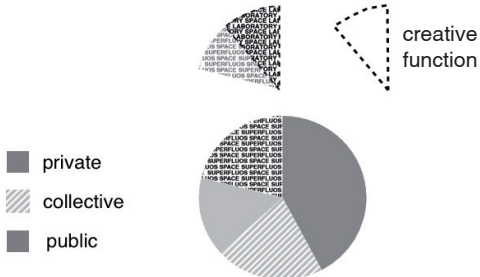
photographically Secondly, we have documented *Laboratory Spaces* through photography. During our visits to Berlin, we have encountered many of such spaces and have brought them back home through our lenses. The photographs give a better understanding of the atmosphere and excitement of these spaces.



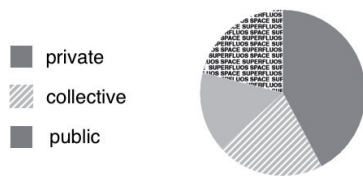
mathematical

We are able to give a more precise descriptive and mathematical definition.

*Laboratory Space* is residue space, or *Superfluous Space*, that is accommodated by the public and has become functional for their own wishes in a bottom up and creative manner.



Laboratory Space = Superfluous Space x Creative Function



Superfluous Space = Total space - (private+collective+public) space

*Superfluous Space* has no functioning, no human activity - except perhaps graffiti, and therefore does not belong to the ordinary urban spaces. It is residue. Berlin has many of these *Superfluous Spaces*.

example

We have chosen 5 Laboratory Spaces in the city, that we wish to explore:

laboratory space / part A / what is laboratory space?

1. Tacheles
2. Bar 25
3. Kiki Blofeld
4. Gleisdreieck
5. RAW Temple

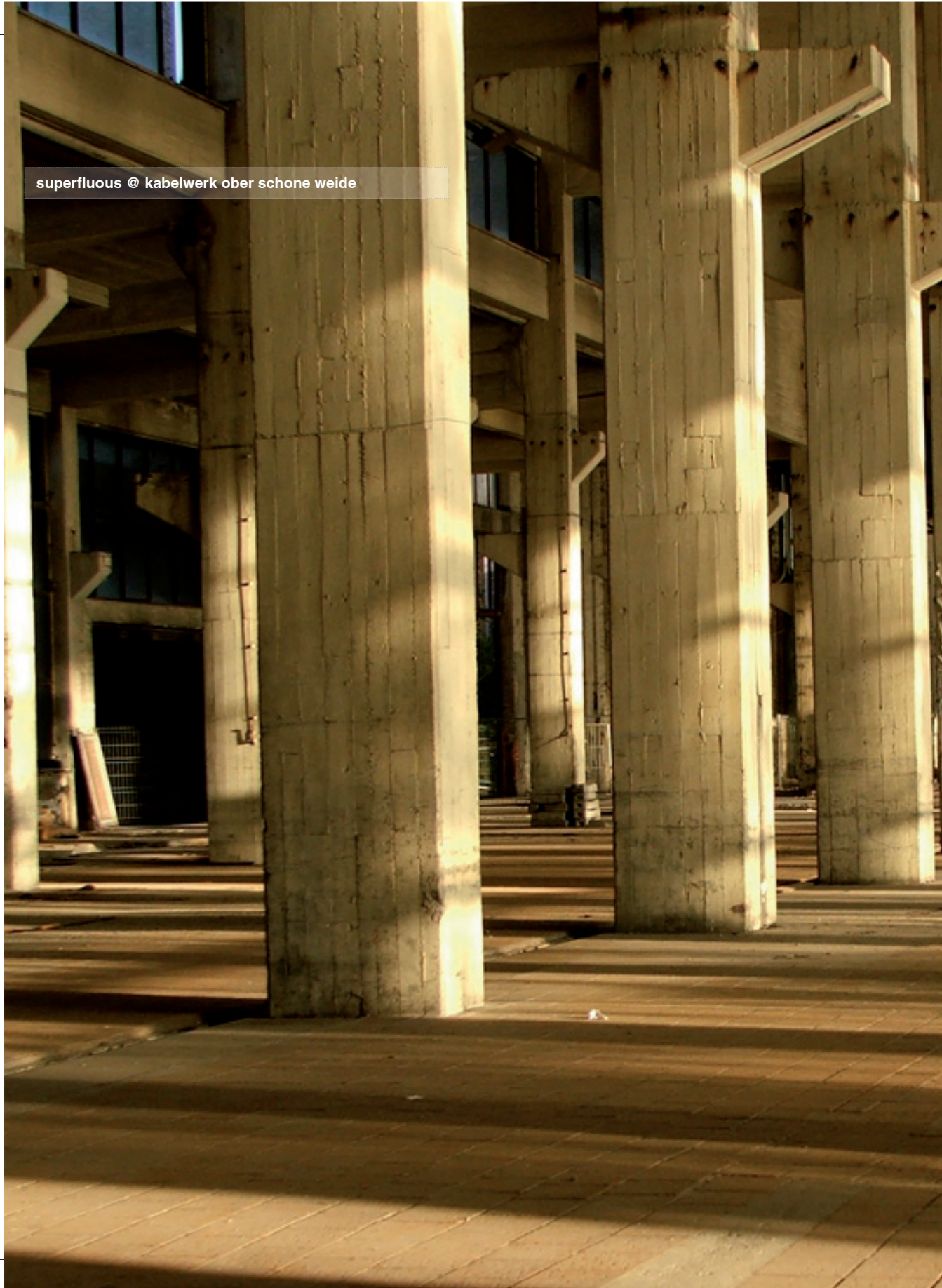
Since Bar 25 and Kiki Blofeld are opposite to each other, we have decided to study both of them together.



laboratory space



superfluous space



superfluous @ kabelwerk ober schone weide







Bar25 on a Sunday morning



build: 1850 laboratory since: 2003

## BAR 25 / KIKI BLOFELD



*Feiern als gäbe es kein Morgen: die unwahrscheinliche Geschichte einer Feier-Kommune, die den berühmtesten After Hour Club der Welt betreibt. Und ein Hostel. Und ein Restaurant. Und ein Radio. Und ein Wellness Centre.<sup>[15]</sup>*

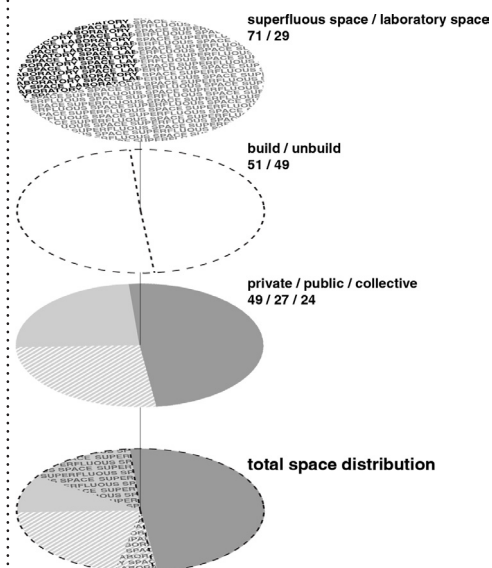
*Since business started in 2003 with two beer crates and not much else, Bar 25 has grown into a little parallel universe complete with a highly lauded restaurant, an outdoor cinema, a circus, a record label and 100 employees - even a sauna that goes by the name "Spa 25".<sup>[16]</sup>*

*Die Bar 25 ist nicht nur für die Gäste eine Parallelwelt - auch für ihre Bewohner. Wenn sie das Gelände verlassen, dann sagen sie: Ich gehe mal in die Stadt.<sup>[17]</sup>*

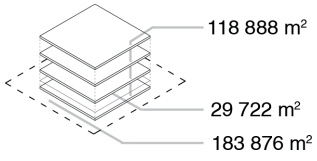
Opposite, on the other bank of the Spree, Kiki Blofeld is hidden away behind some green and old factory buildings. During the day it is a very quiet and relaxing place, suited for anyone who likes to get out of the city buzz, from students to mothers with children, to businessmen. At night the situation is somewhat different:

*Kiki Blofeld is a one-hectare adventure playground for night-hawks. This "Teletubbyland for adults", offers not only the usual beach bar ingredients – riverside lounging and barbecue finger food - but also a fire pit, a pool table hidden in the bushes, hammocks under robinia trees and all sorts of little hideaways complete with grass couches to chill out on.<sup>[18]</sup>*

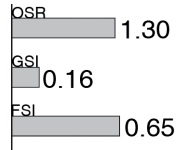
spatial configuration



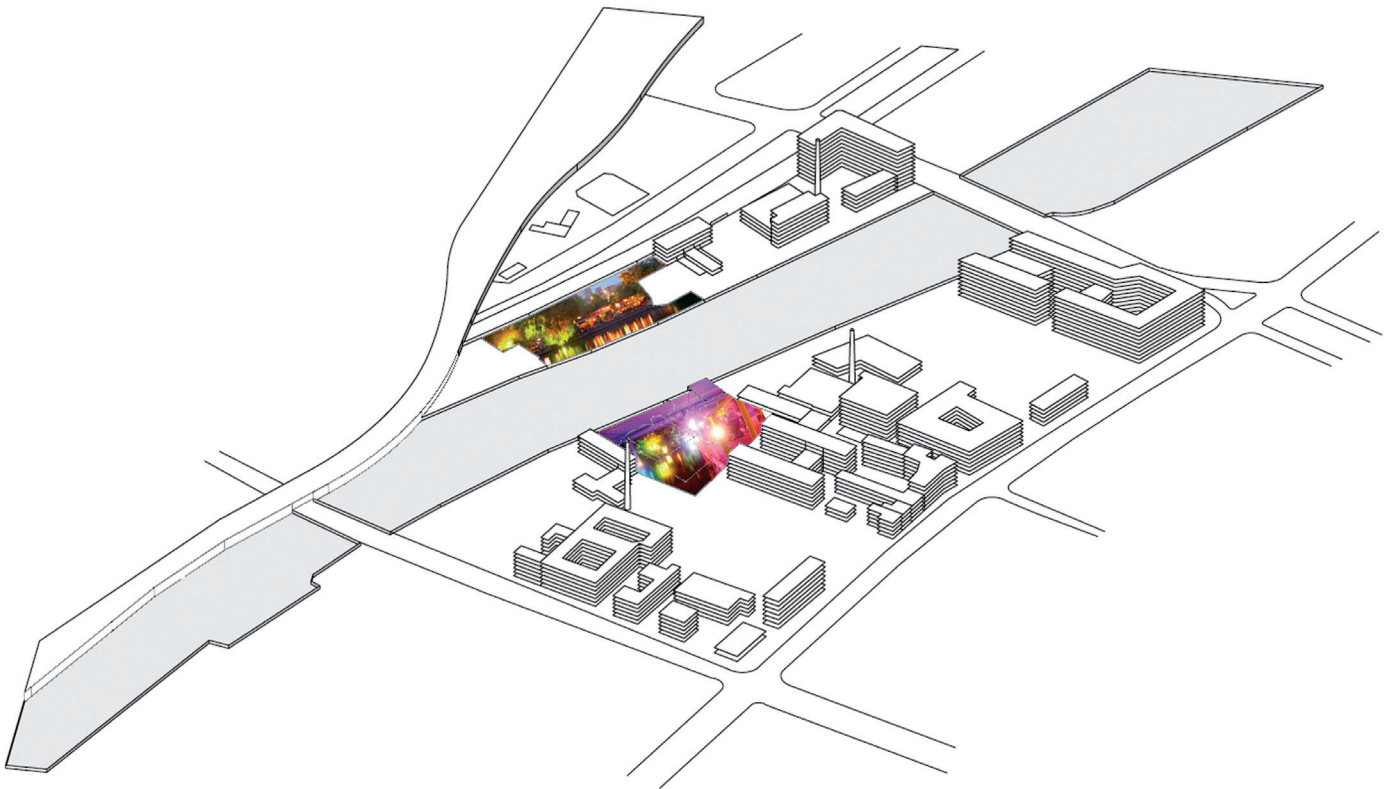
areas



densities



laboratory space /  
part A /  
laboratory space /  
**bar25 + kiki blofeld** /  
introduction, spatial  
configuration, density







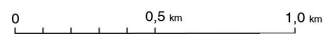
These locations seem to be connected with the eastern periphery of the city centre in a more homogenous way. It is remarkable that even if these places have been hidden away, they still connect to the larger scale of Berlin.

urban frame



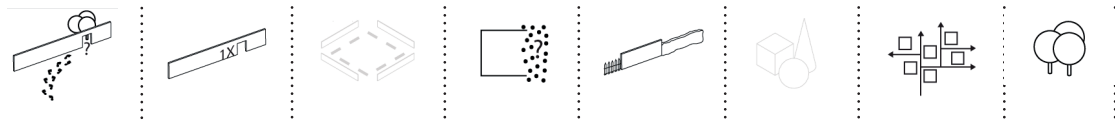
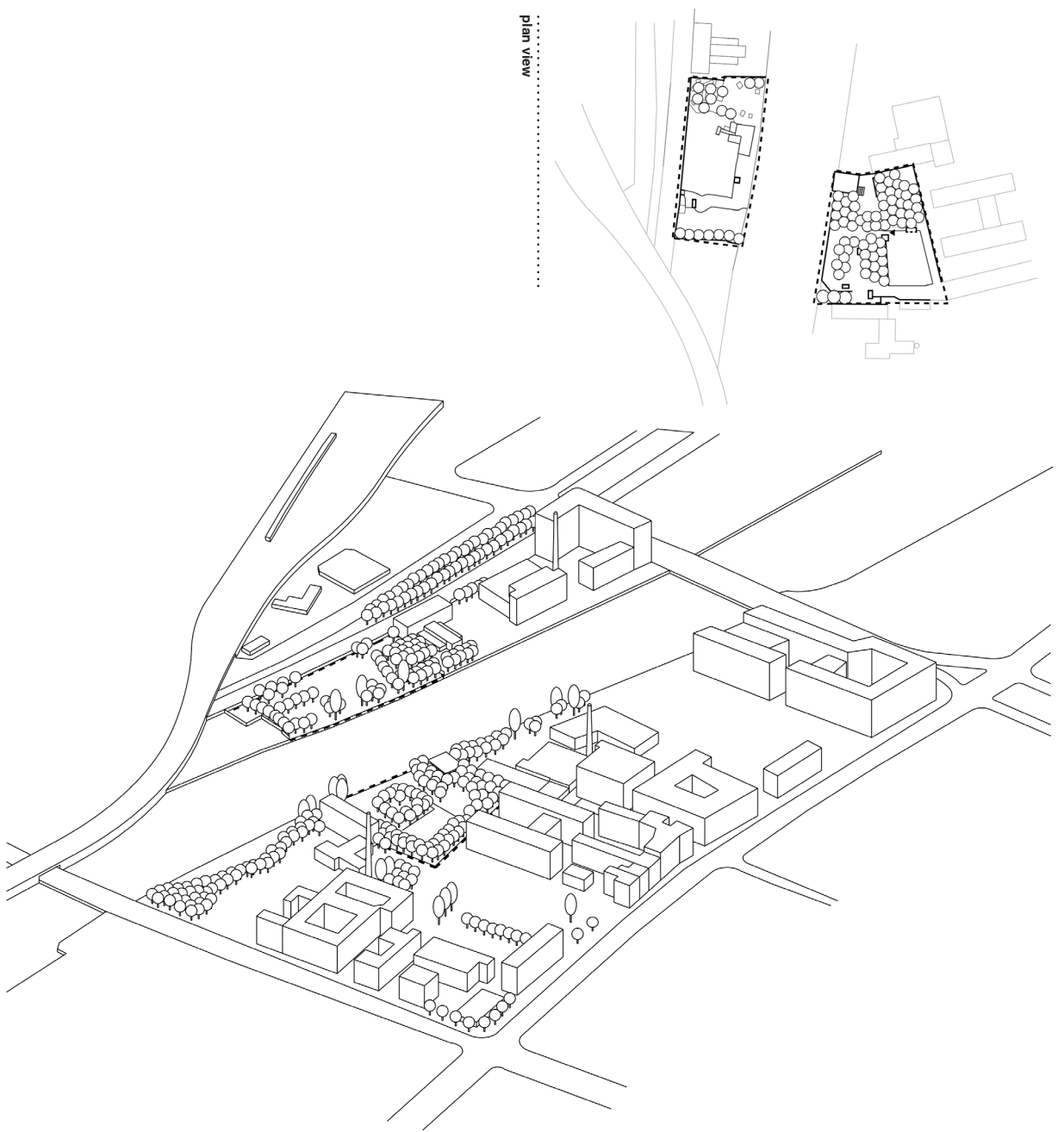


laboratory space /  
part A /  
laboratory space /  
**bar25 + kiki blofeld** /  
urban frame



axometric view

plan view



75%

spatial elements

**club (boathouse)**



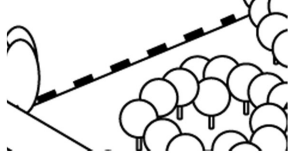
**bar**



**fireplace / billiards**



**beach**



**beachbar**



**table tennis**





functions Bar25

open air cinema



circus



bar



restaurant



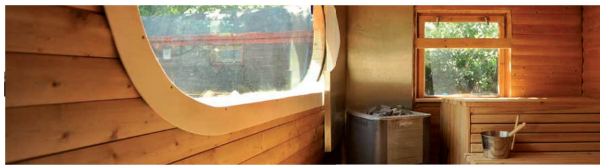
shop



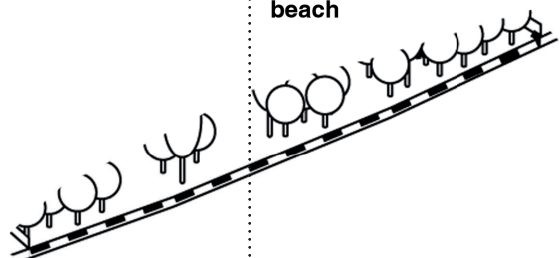
hostel



sauna



beach





Boathouse Club © Kiki Blofeld





urban golf @ gleisdreieck





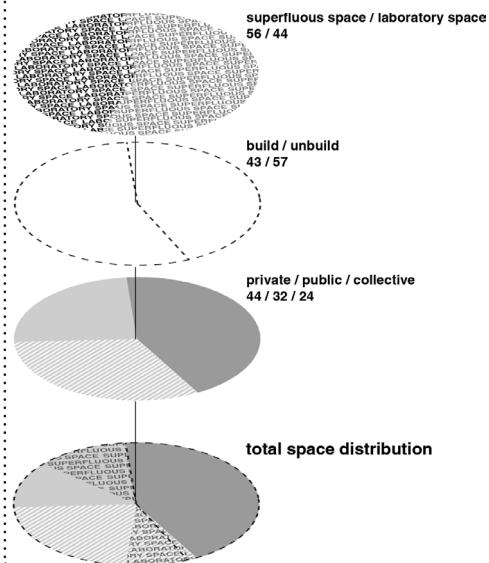
build: 1902    laboratory since: 2004

# GLEISDREIECK

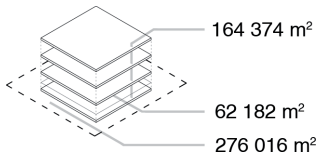


The Gleisdreieck, literally meaning 'rail triangle', is the place where the train tracks came together from the Potsdamer Bahnhof and Anhalter Bahnhof around 1900. It is situated just south of Potsdamer Platz, taking in a very central space in Berlin. Most of the rails have disappeared now, although it has not completely lost its feeling of the railroads through the grace of the S-Bahn, that flanks two sides of the large open space. The open space has been converted into a driving range for golf, complete with a small pitch and put course, two bunkers and a clubhouse. The remarkable thing, is that you could walk from your office at Potsdamer Platz to the Gleisdreieck in five minutes, hit a couple of balls from under the S-Bahn tracks, and return after lunch. Taking something like golf and transforming it into an urban experience is so typically *Berlin*.

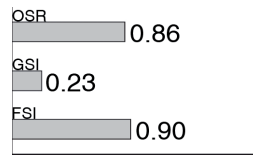
spatial configuration



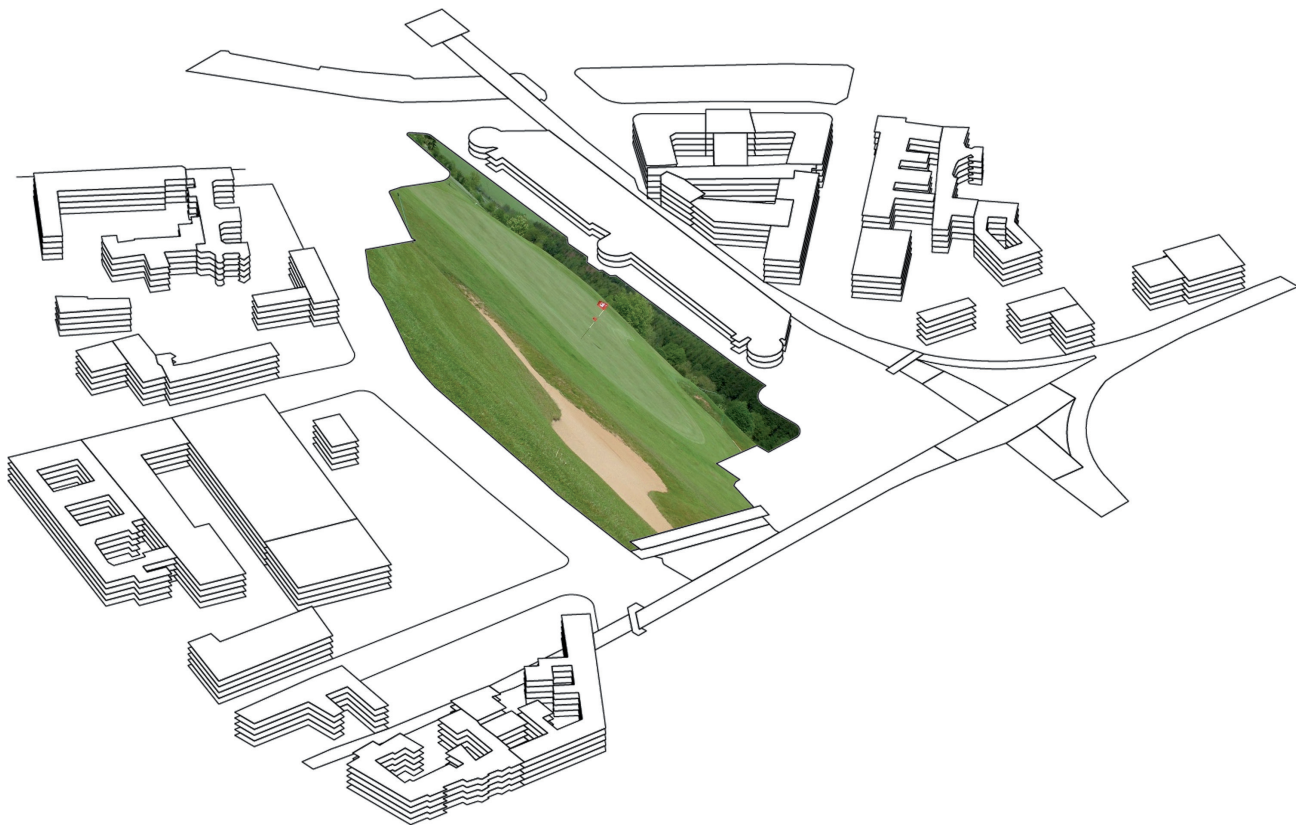
areas



densities



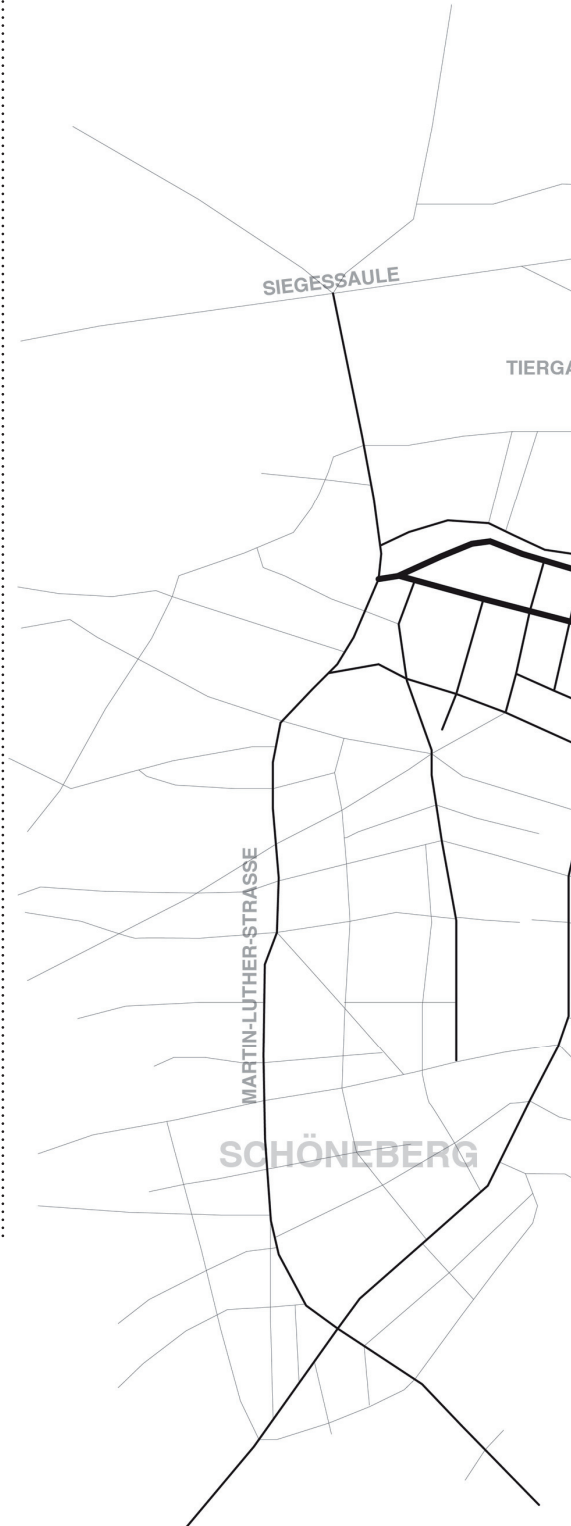
laboratory space /  
part A /  
laboratory space /  
**gleisdreieck** /  
introduction, spatial  
configuration, density

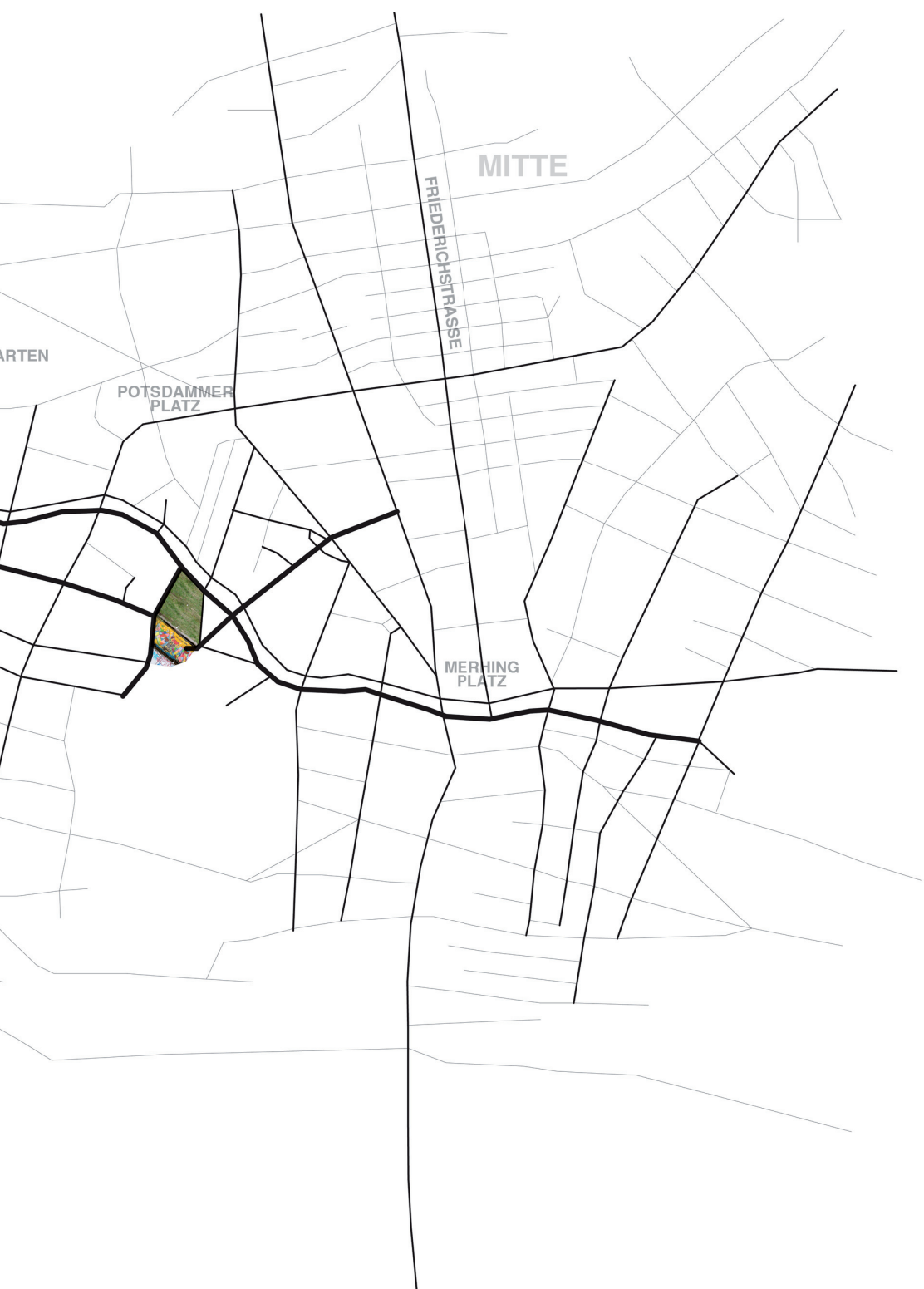




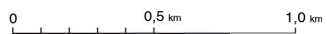
The connection to Gleisdreieck becomes very pronounced along the Southern Spree banks, Mitte (around Friedrichstraße) and Shöneberg, notorious for the fact that is Berlin's gay neighborhood. The direct surroundings are much less pronounced. Perhaps golfing is popular with the gay community in Berlin?

urban frame



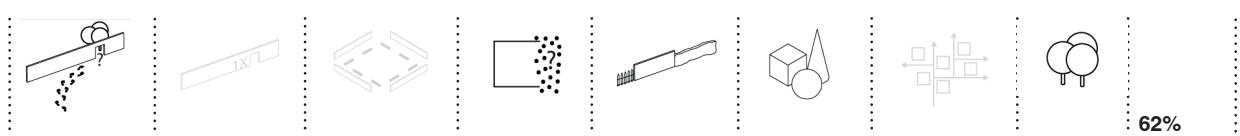
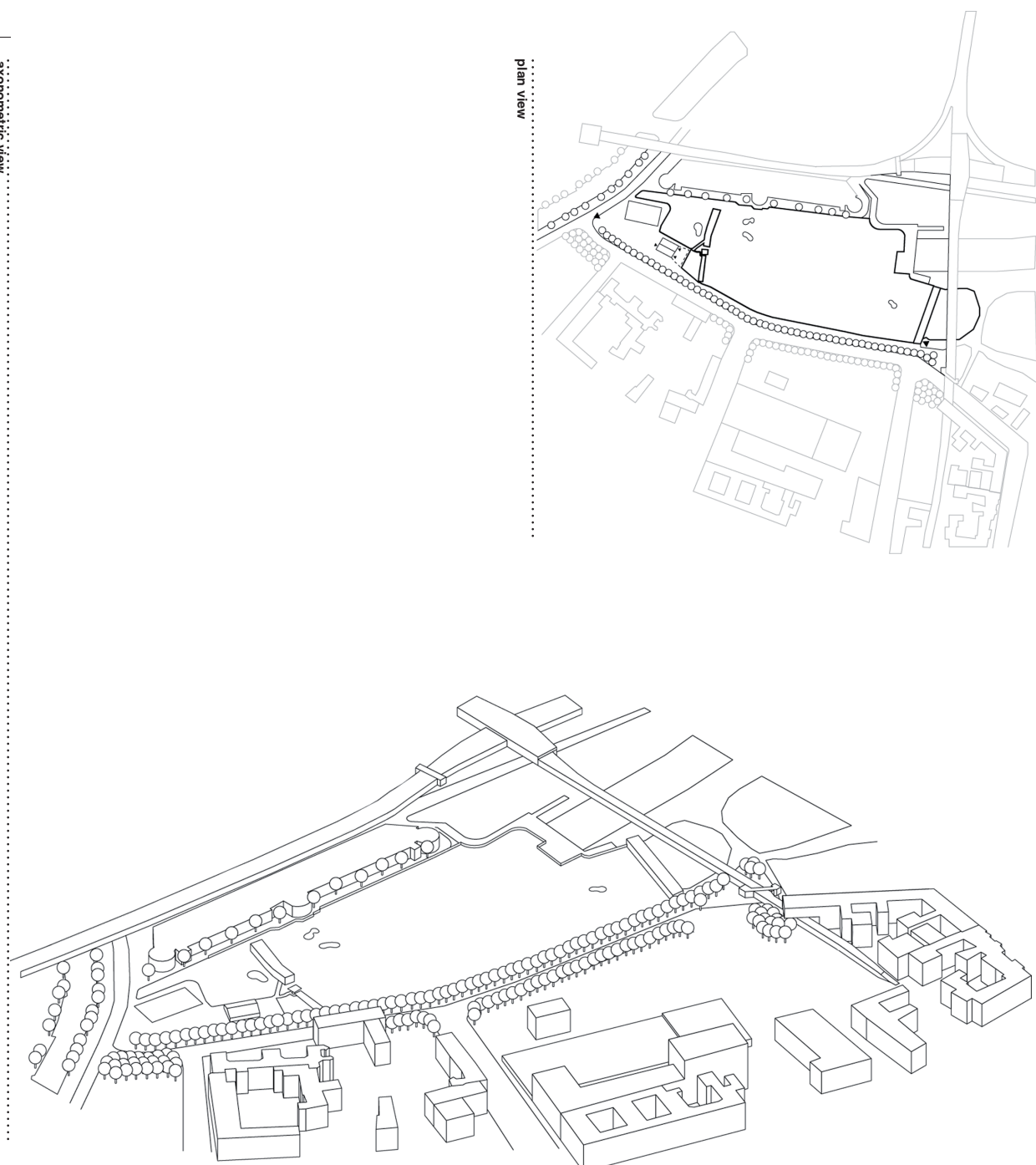


laboratory space /  
part A /  
laboratory space /  
**gleichs**dreieck /  
urban frame



axonometric view

plan view



62%

spatial elements



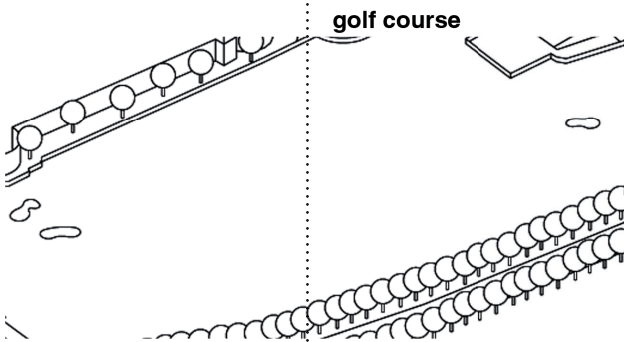
laboratory space /  
 part A /  
 laboratory space /  
**gleichdreieck** /  
 spatial elements, functions

functions

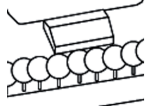
**drying range**



**golf course**



**clubhouse**



**club (90grad)**







laboratory space © RAW-Tempel





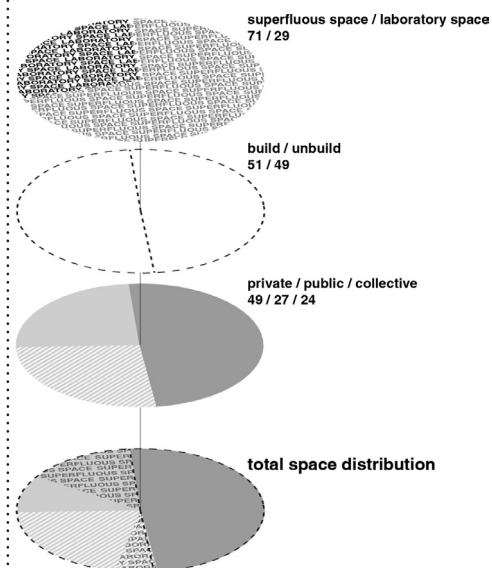
built: 1867 laboratory since: 1998

## RAW-TEMPEL

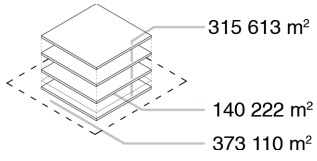


The RAW-tempeL terrain is located in Friedrichshain on Revalerstraße. It is part of a former railway maintenance yard of the RAW (Reichsbahn Ausbesserungs Werk). Nowadays the complex hosts a music hall and club called Casiopeia, an indoor skate park with cafe, a cultural centre, as well as private music studios.<sup>[19]</sup> RAW-tempeL also houses a children circus, a martial arts school, a climbing wall and an outdoor cinema. It houses dancing classes and a public conference room. The list of functions goes on forever...

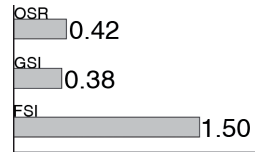
spatial configuration



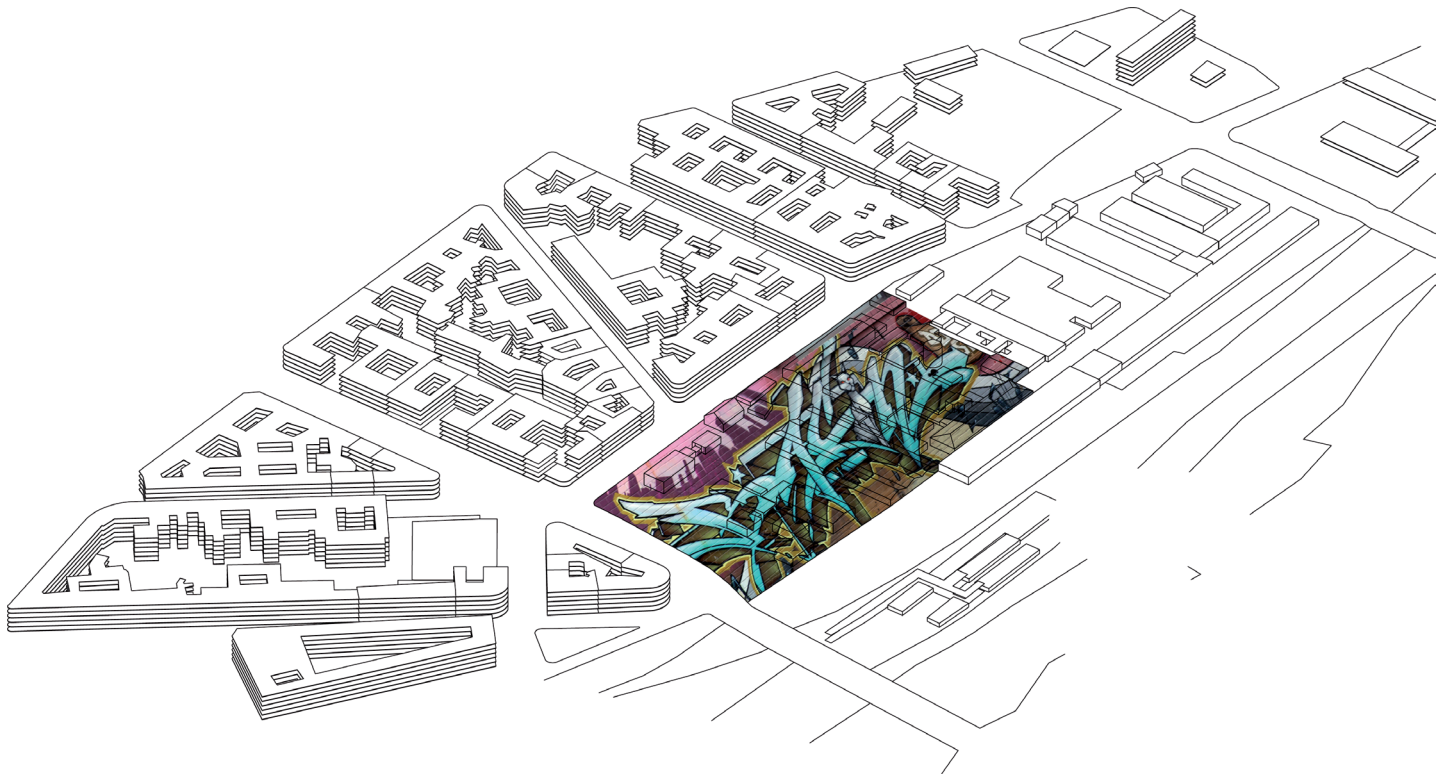
areas



densities



laboratory space /  
part A /  
laboratory space /  
**raw-tempel** /  
introduction, spatial  
configuration, density





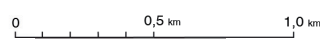
Again this site is well connected across the city. However, more than in other cases, the surrounding area itself stands out, in this case Friedrichshain. RAW Tempel is very much a place by and for Friedrichshainers. This spot might be part of the reason why Friedrichshain is so incredibly popular at the moment.

urban frame

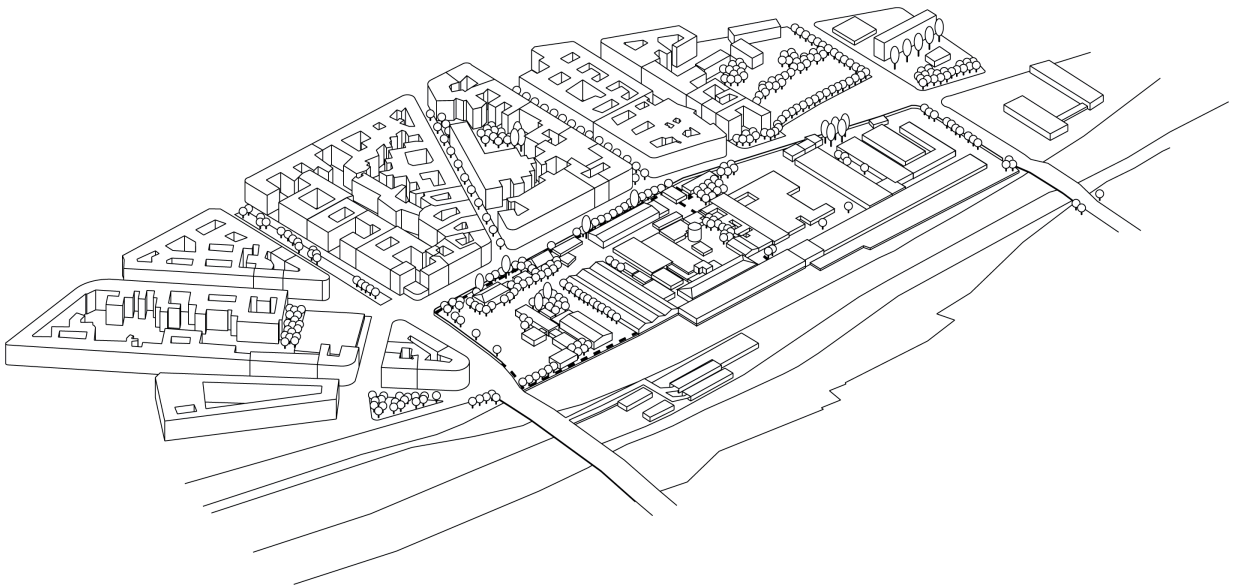
ALEXANDER PLATZ



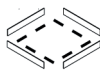
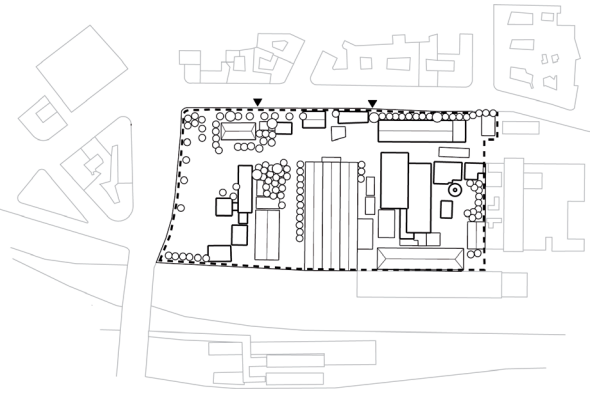
laboratory space /  
part A /  
laboratory space /  
**raw-tempel** /  
urban frame



axonometric view



plan view



82%

spatial elements

climbing tower



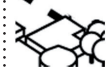
indoor climbing



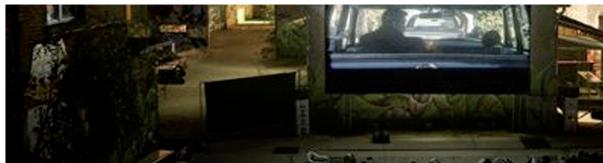
bar



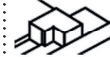
club (Cassiopeia)



outdoor cinema



cafe



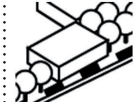
skate hall



gym



“astra culture haus”







artshop Tacheles





built: 1907    laboratory since: 1990

# TACHELES

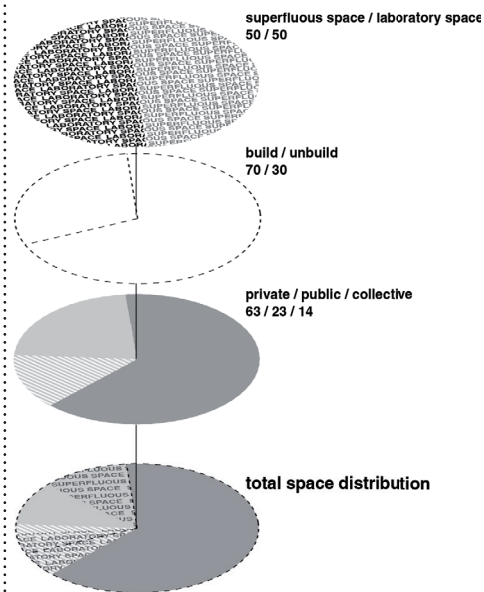


*Wer heute durch die Ruine - es ist eine der letzten großen Ruinen Berlins - streift und die Umgebung durchwandert, hat das Gefühl, es mit etwas Unwirklichem, völlig Deplaziertem zu tun zu haben.<sup>[20]</sup>*

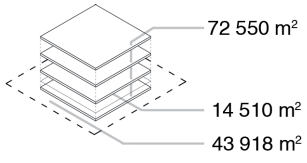
Kunsthau Tacheles is a collective of artist on Oranienburgerstrasse in Berlin-Mitte. They have occupied the former department store. Before the artist came, the building was deserted, used by the NSDAP, AEG and the Free German Trade Union Federation.

Today Tacheles is a well known point on the backpacker type of tourist map. It is the symbol for the creative and underground scene in Berlin and has given space for many famous artists and musicians. Among them was 'A Guy Called Gerald,' an very influential musical pioneer for the Madchester and Manchester Acid House scene. Speculations on redevelopment have forced Tacheles to become part of the debate and open itself to the public. Even with its now more public involvement, Tacheles has held its experimental character. Besides providing rooms and shops for artists, it provides a number of functions, including different bars, an excellent theatre and a club. Brilliant is the cinema which has been supplied with couches in stead of chairs. On the roof a big hippie sign marks this enclave as seen from the air or on Google Earth.

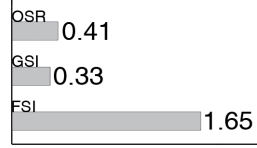
spatial configuration



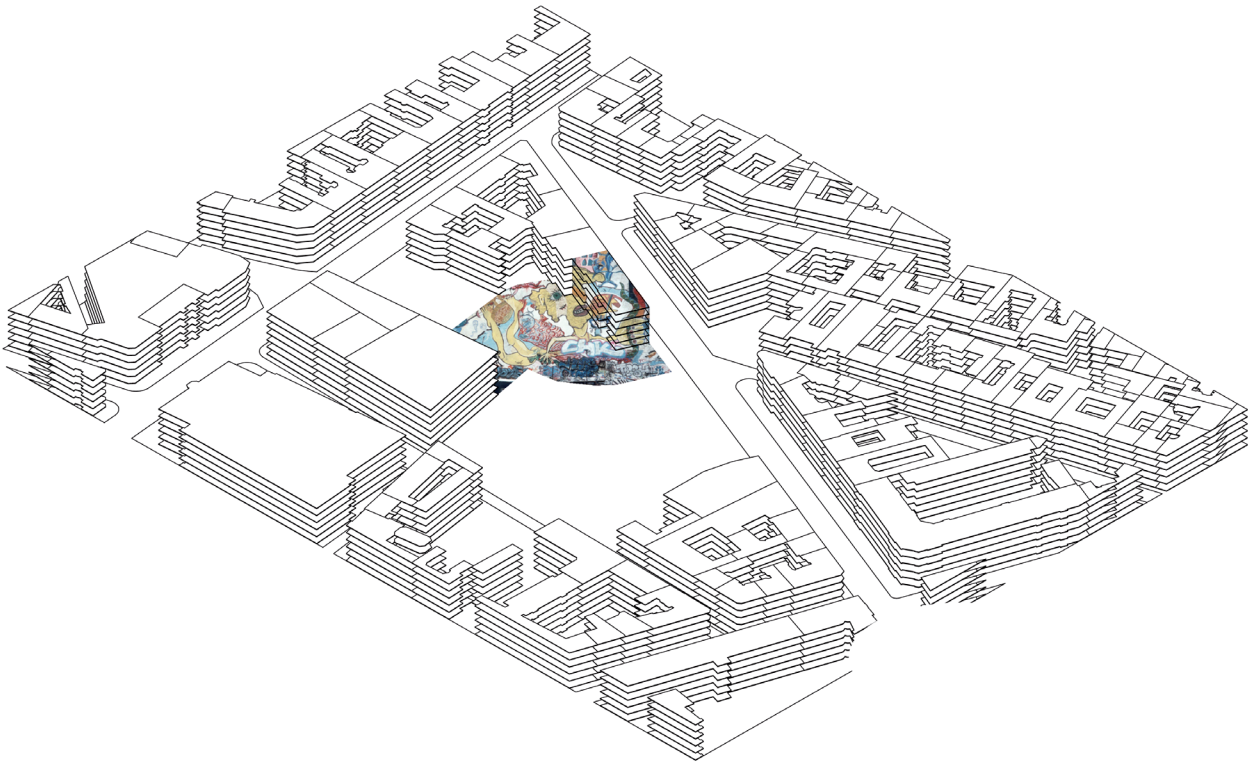
areas



densities



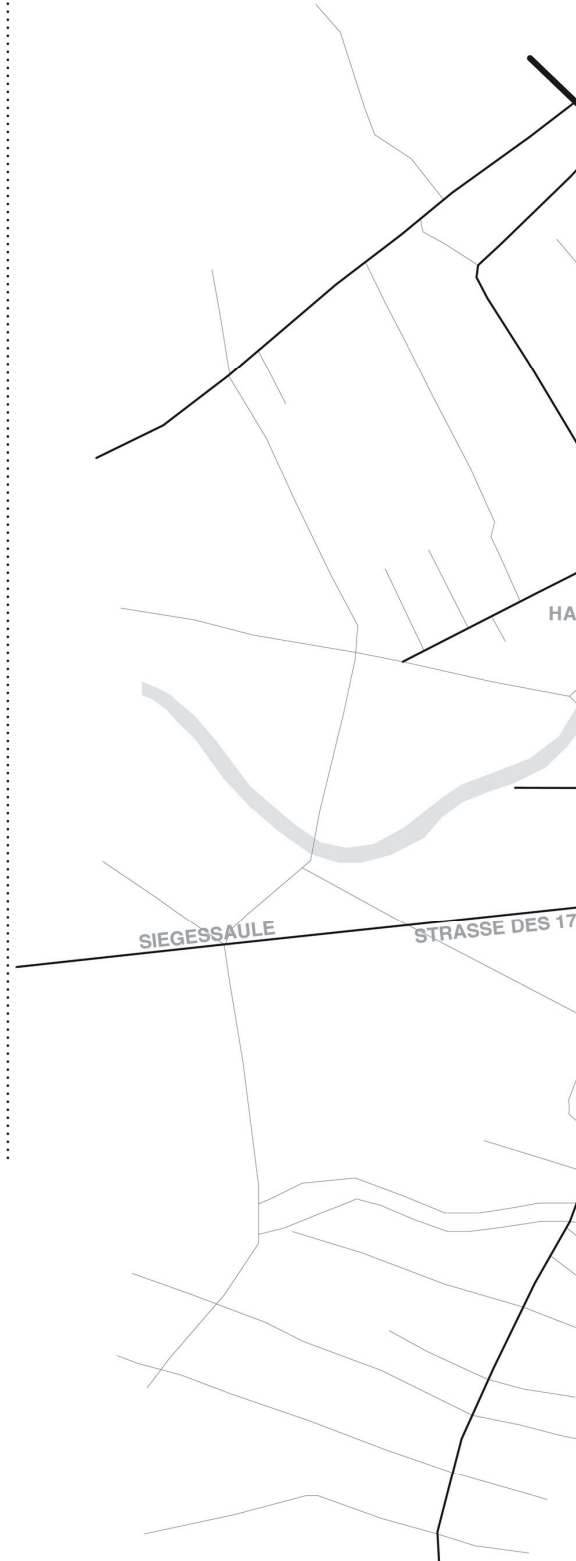
laboratory space /  
part A /  
laboratory space /  
**tacheles** /  
introduction, spatial  
configuration, density





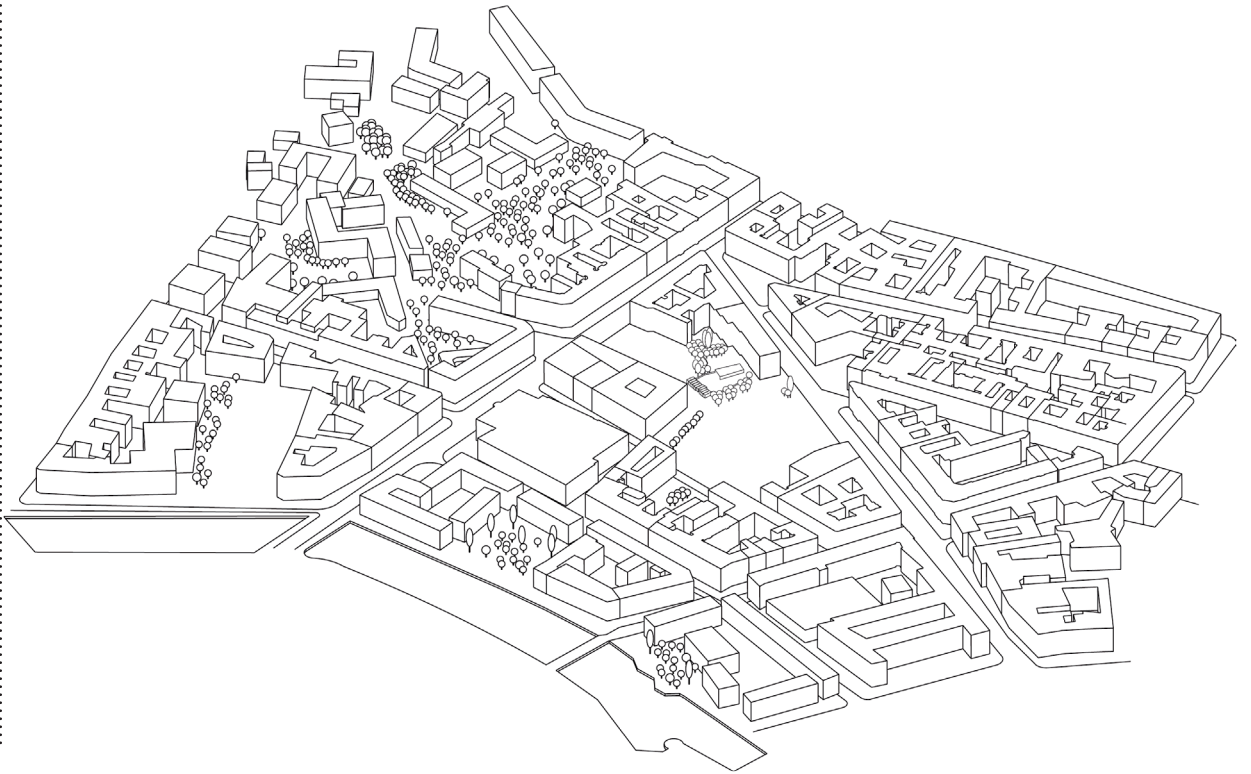
Tacheles is extremely well connected to the whole city of Berlin. The Friedrichstraße area and the area around Augusstaße and Oranienburgerstraße stand out very clearly, all of them very much public places, well know in Berlin. Tacheles is as much part of these places as they are a part of Berlin.

urban frame

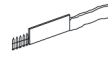
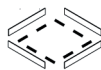
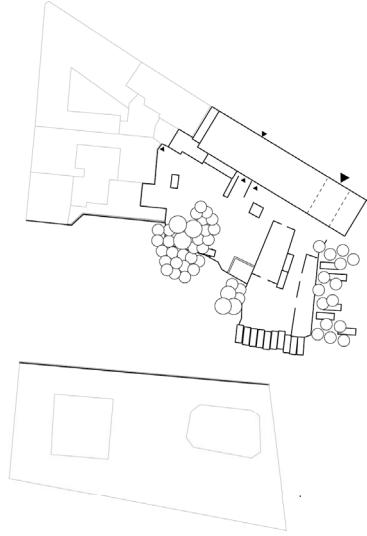




axonometric view



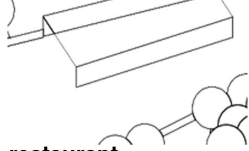
plan view



75%

spatial elements

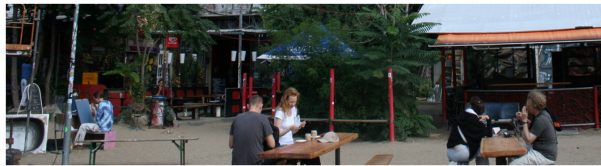
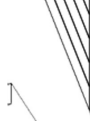
workshop / exhibition



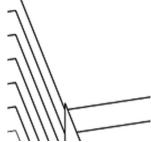
restaurant



bar



studios



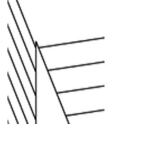
cinema



theatre



shop



bug farm

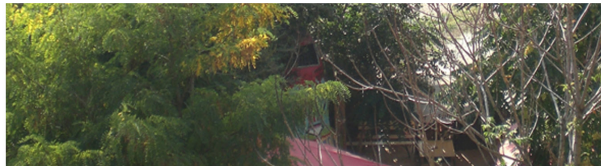
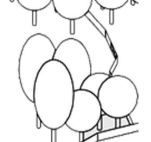
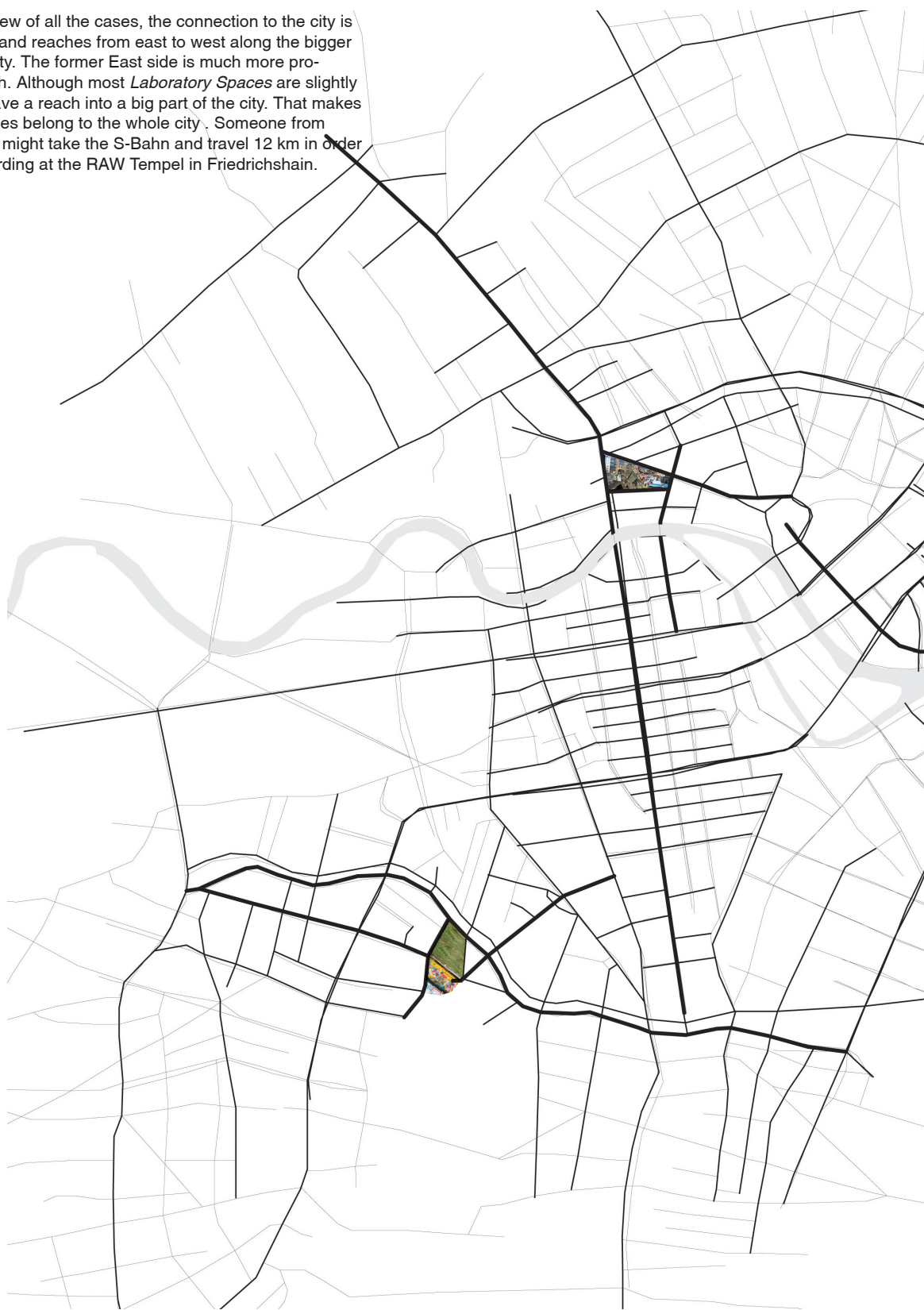


table tennis





In all the overview of all the cases, the connection to the city is very extensive and reaches from east to west along the bigger streets in the city. The former East side is much more pronounced though. Although most *Laboratory Spaces* are slightly hidden, they have a reach into a big part of the city. That makes that these spaces belong to the whole city. Someone from Charlottenburg might take the S-Bahn and travel 12 km in order to go skateboarding at the RAW Tempel in Friedrichshain.









# OVERVIEW

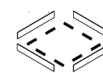
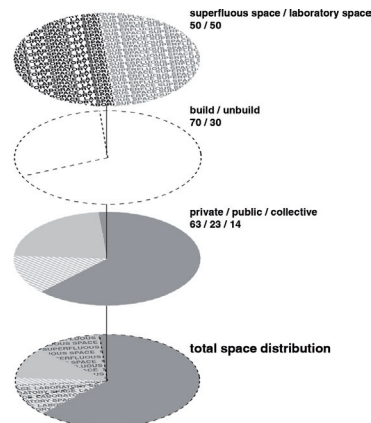
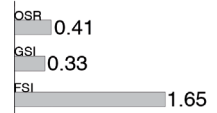
The relationship built / unbuilt changes is the five different cases. In the two examples more connected with urban neighbourhoods (Tacheles and RAW Tempel), the Floor Space Index is higher than the cases in post industrial area's (Gleisdreieck, Bar25 and Kiki Blofeld). The proportion built / unbuilt is higher as well, ranging from 50/50 to 70/30.

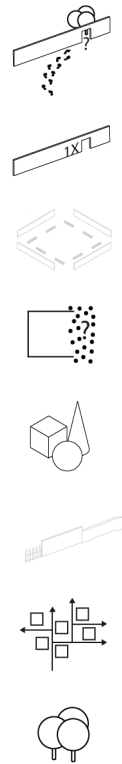
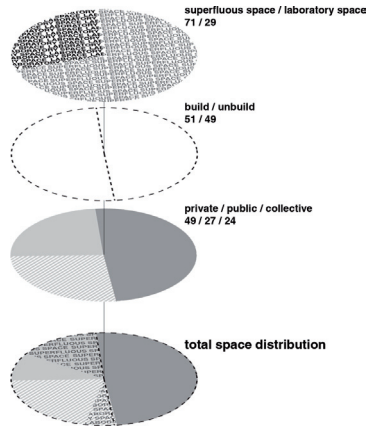
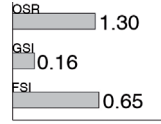
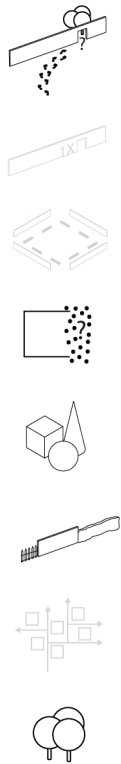
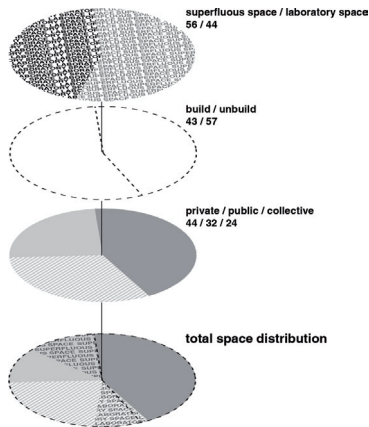
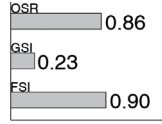
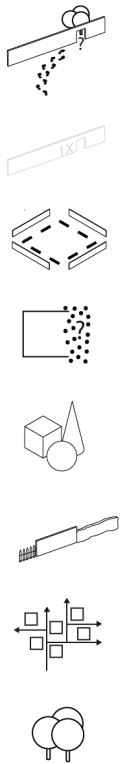
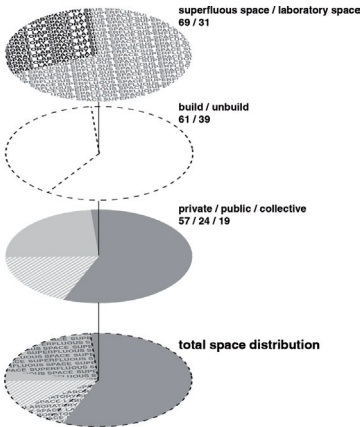
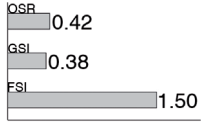
In all cases there is a lot of *Superfluous Space*, 50% or more. More pressure means less *Superfluous Space*. The relationship public to collective is on average around 50/50. The amount of private space is quite low, which makes sense, considering the low pressure on the system and the large amount of *Superfluous Space*.

Spatially, RAW Tempel scores the highest, mainly due to its positioning within the urban fabric and its different type of borders and internal configuration. As a result, this site boasts the richest and most diverse functions. Gleisdreieck has the lowest score, and accordingly the least amount of function. Here we can begin to identify a relationship between the spatial quality of a *Laboratory Space*, and the diversity of functions. The situation (place) within the larger city is likely to play an important role to this aspect as well as the amount of *Superfluous Space*. If you have more *Superfluous Space*, there is more choice for the *Laboratory Space*, making quality of space and place the most important parameters.

In all the cases, except Tacheles, the *Laboratory Space* makes up a small amount of the public and collective space. This aspect is very important, for although *Laboratory Space* has a public and collective component, it should never be public, nor collective. People should have access to *Laboratory Spaces* in addition to 'ordinary' collective and public urban spaces. They should never be the same, for the experiment will be lost and replaced with a well defined urban function. We could argue that because in the case of Tacheles the cut for *Laboratory Space* is much bigger, the place has become less experimental, and more defined to the public. Tacheles is on its way to becoming part of the ordinary urban functions.

tacheles



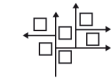
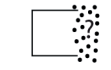
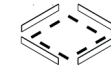
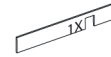




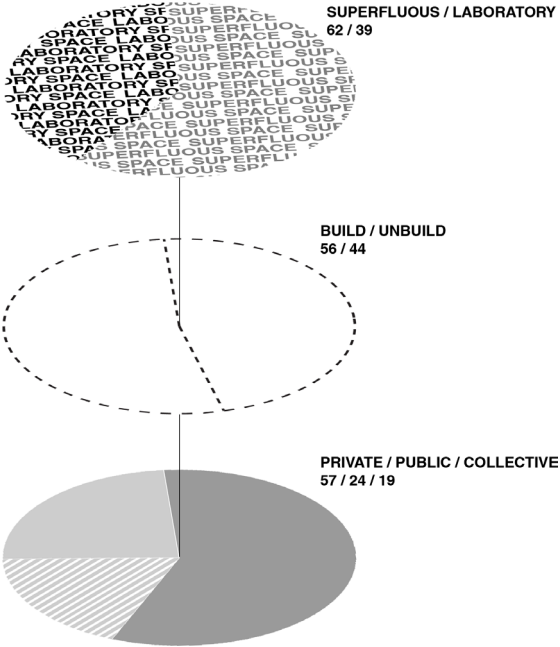
# AVERAGE LABORATORY SPACE

By adding up and calculating the average numbers for the different *Laboratory Spaces*, we obtain an idea of what is needed for a new *Laboratory Space*. The ratio built / unbuilt is about 50/50, meaning that 50% of the activities happen inside and 50% outside. Another interesting figure is the ratio public / collective, which is 57/42. It is interesting to see how well balanced these figures are.

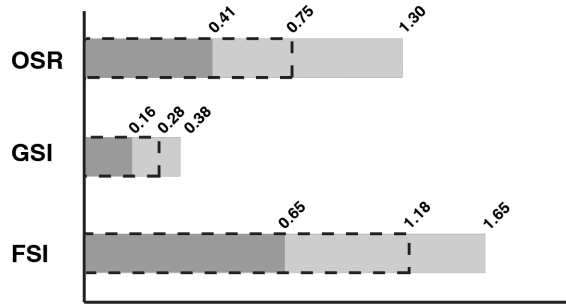
.....  
average laboratory space  
.....



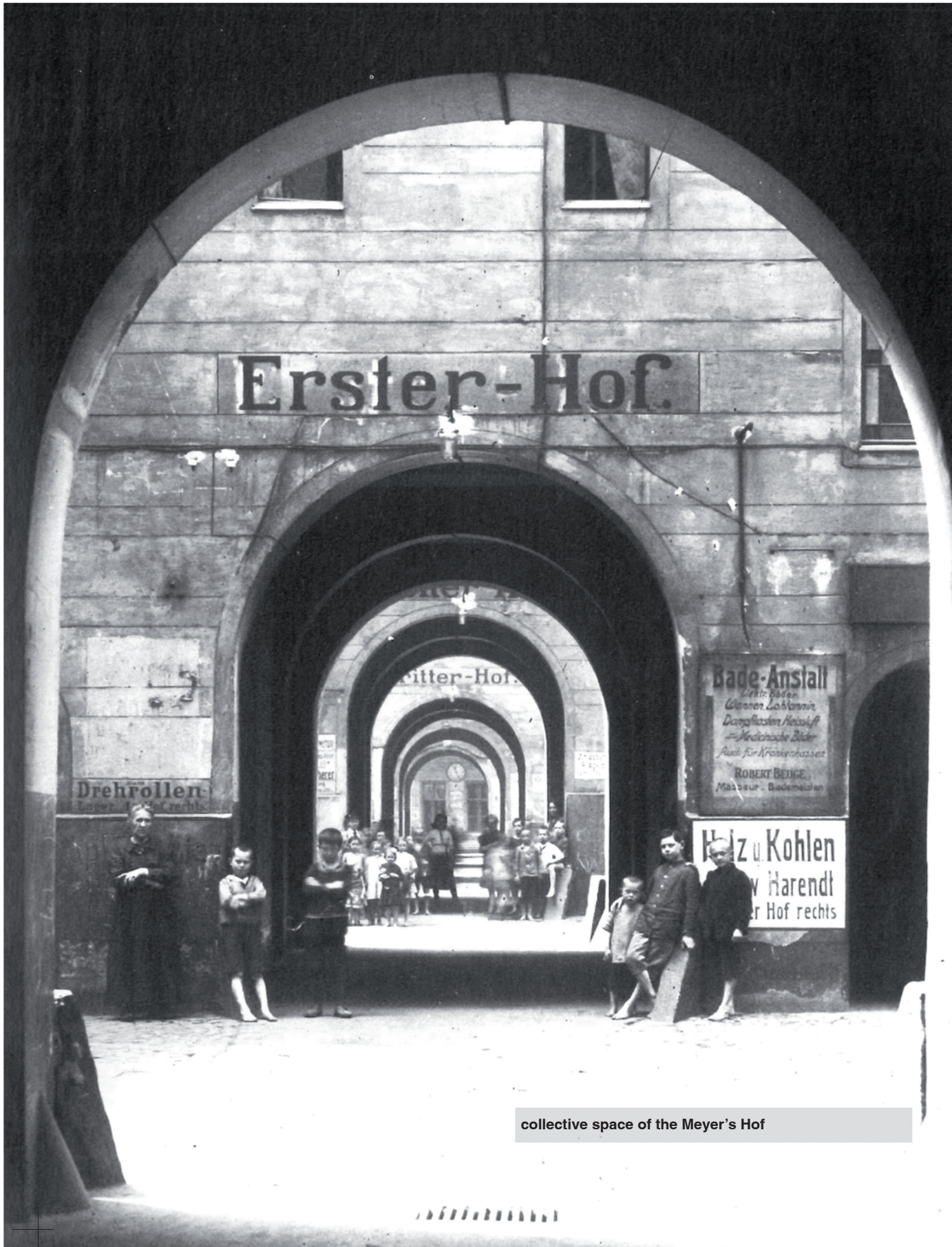
spatial configuration



density



laboratory space /  
part A /  
average



Erster-Hof

Zweiter-Hof

Drehrollen  
Lagerhof rechts

Bade-Anstalt  
Elektr. Bäder  
Wannen, Laibwannen  
Dampfbäder, Heißluft  
- Heiße Bäder  
auch für Kränkelnde  
ROBERT BEUGE  
Maçon - Bademeister

Holz u. Kohlen  
Warendt  
Hof rechts

collective space of the Meyer's Hof

# B: DENSITY IN BERLIN TYPOLOGIES



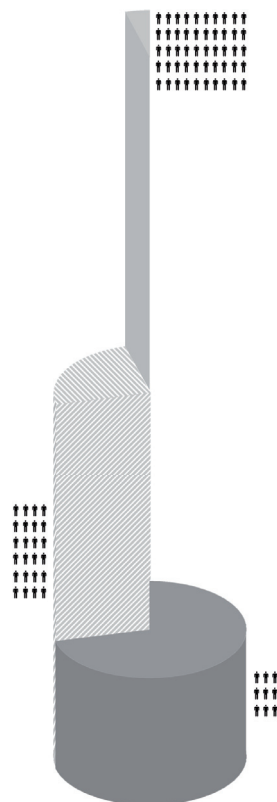
Berliner Architekten-Verein - 1890

# MEYER'S HOF



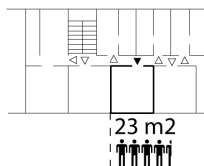
In the last half of the 19th century the Berlin population grew enormously. To provide housing for all these people large "Mietshausen" arisen. Meyer's Hof is an example of these dense housing complexes. The complex is a repetition of blocks parallel to the street. The blocks have a height of approximately 22 meters and are positioned very close (less than 10 meters) to each other. In the courtyard, between the blocks, smaller buildings house the collective facilities. The courtyard itself is collective as well. The blocks themselves are private, but very densely populated, so real privacy is out of the question. The only public space is the space outside the complex. A portal in the middle of the blocks creates a street which links all the blocks and courtyards. Through this street, the blocks can be accessed.

pressure and spatial configuration



total space (build + not build): 158 258 m²

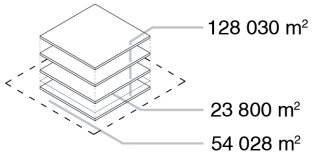
6 663 m² public    39 158 m² collective    112 497 m² private    dwellers / 100 m²



floor plan

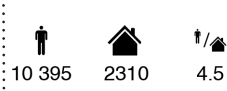


areas

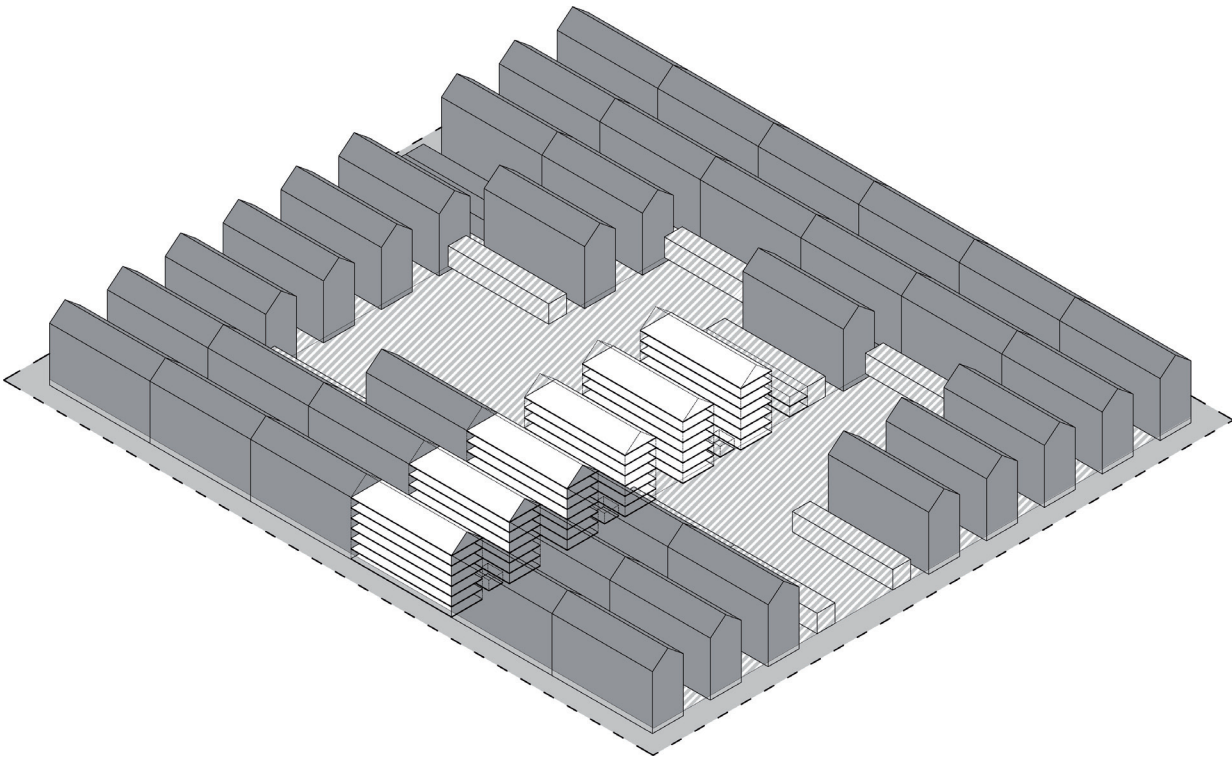


densities

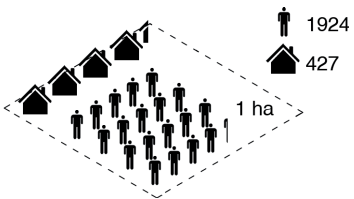
numbers



laboratory space /  
part B /  
berlin blocks /  
1890 /  
meyer's hof



numbers / hectare







Bruno Taut - 1929/1930

# CARL LIEGEN WOHNSTAD



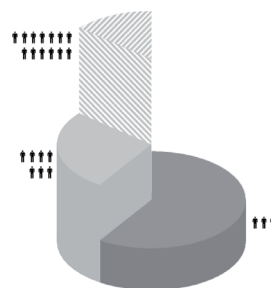
Wohnstadt Carl Liegen is named after the first president of the 'Allgemeinen Deutschen Gewerkschaftsbundes' (ADGB) in 1919.

The Carl Liegen Wohnstadt was a distinctly urban and integrative expression of contemporary industrial society. Taut felt that workers' quarters should be surrounded by lots of green, much like villas of the upper classes. They should be laid out in such a way as to provide an 'outside living space'.

The Wohnstadt consist out of six U-shape blocks. The space within the block is enclosed by three sides and is entirely green. By opening one side of block there's no built boundary between the public space outside the block and the collective space within.

The dwellings are clustered in groups of two, around a central staircase. The porches can be entered from outside of the blocks.

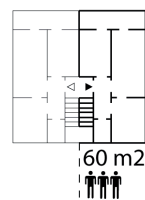
pressure and spatial configuration



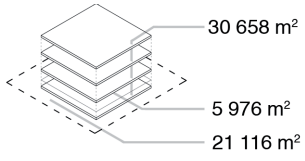
total space (build + not build): 51774 m<sup>2</sup>

Space Type	Area (m²)	Dwellers / 100 m²
public	14016	1
collective	7160	1
private	30658	1

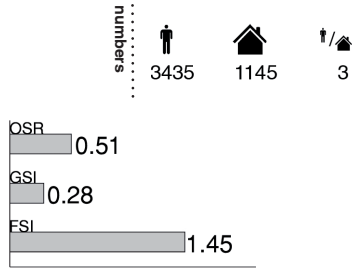
floor plan



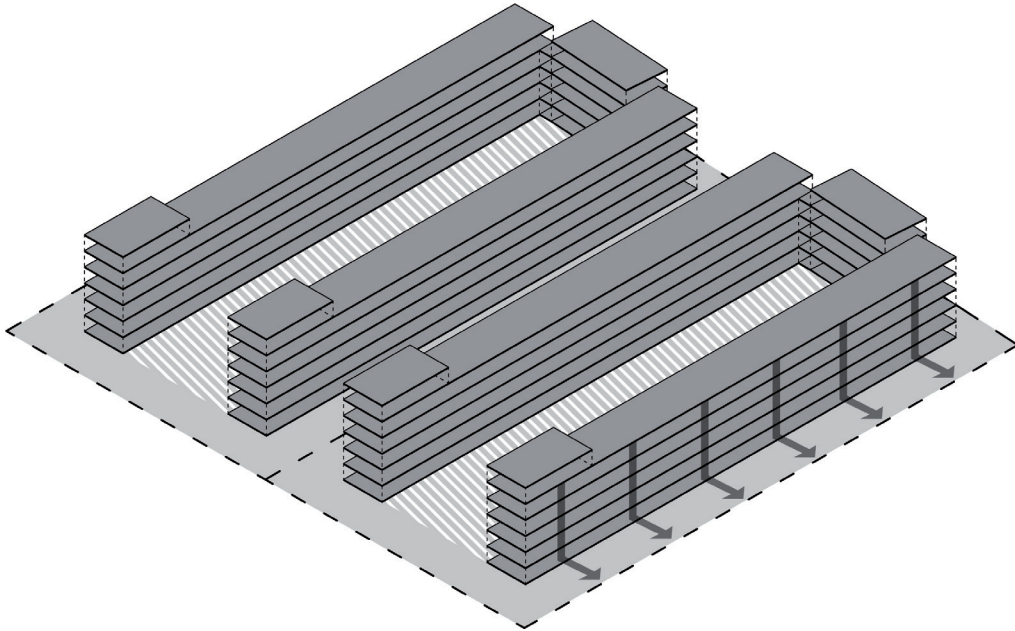
areas



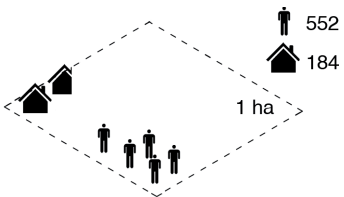
densities



laboratory space /  
part B /  
berlin blocks /  
1929 /  
carl liegen wohnstadt



numbers / hectare





Aalto, Niemeyer, Bakema - 1955/1960

# HANSAVIERTEL



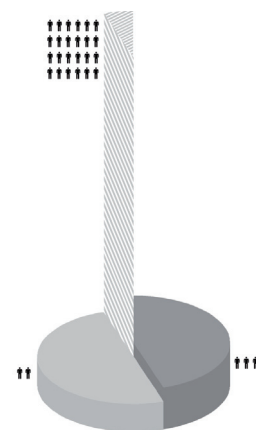
In 1957 West-Berlin organizes the IBA (Internationales Bau Ausstellung), an international architecture exhibition. The Hansaviertel was the location of this exhibition. With it, Western Berlin critiques the 'Plattenbau' of the Eastern part of the city. Famous architects as Jacob Bakema, Oscar Niemeyer and Alvar Aalto design a block for this exhibition.

The Hansaviertel is created as a big, park-like environment, with randomly placed blocks. The blocks are different in footprint and height.

They have been placed freely in the park situated towards the sun, so the streets are not bordered by the blocks. The public space is thus everywhere in between the blocks. The green provides slight differences in the degree of publicness.

The ground floor of most blocks is collective and houses the entrances to the staircases and elevators. The entrances of the blocks have been designed delicately with the transition from public to private in mind. To enforce the park like atmosphere, they exit towards a path in the green.

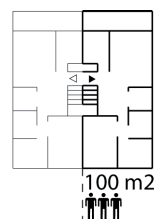
pressure and spatial configuration



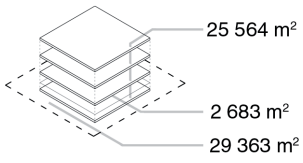
total space (build + not build): 53 514 m²

26 679 m² public    2 683 m² collective    24 151 m² private    dwellers / 100 m²

floor plan



areas

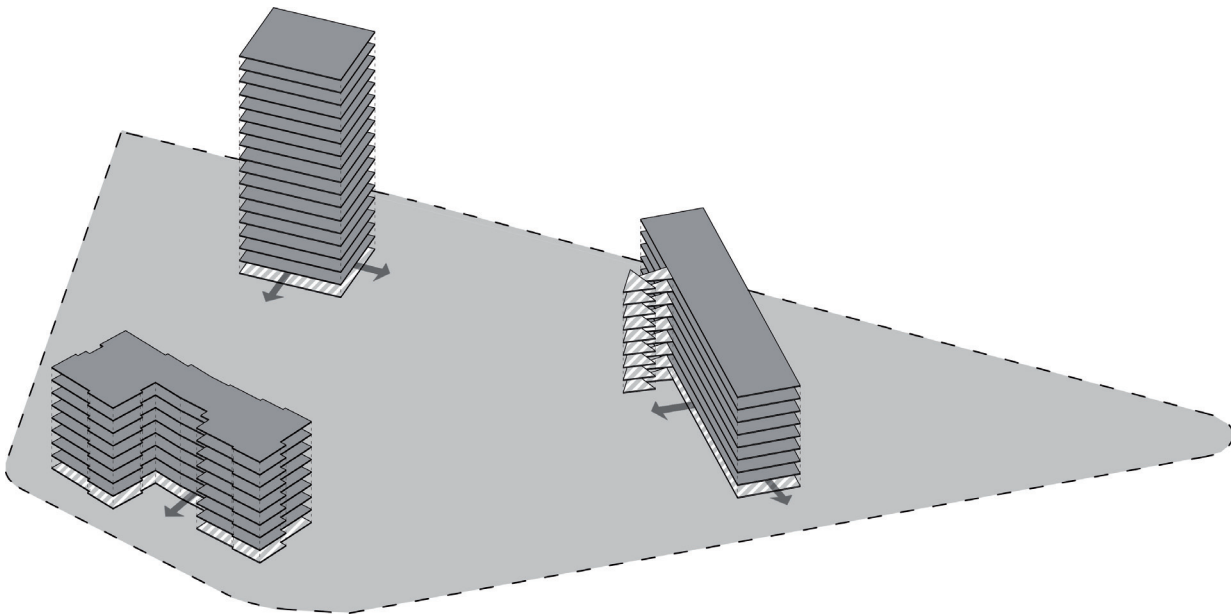
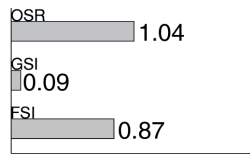


densities

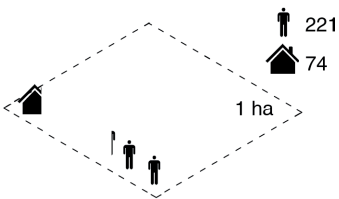
numbers



laboratory space /  
part B /  
berlin blocks /  
1955 /  
hansviertel



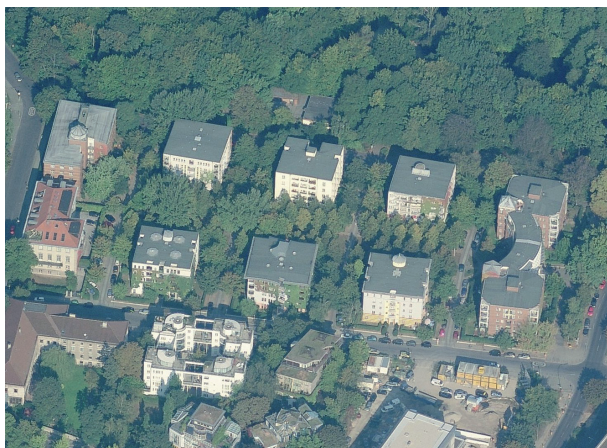
numbers / hectare





Rob Krier - 1980/1985

# RAUCHSTRASSE



As part of the International Building Exhibition in Berlin (part 3), the IBA of 1985, nine urban villas were designed by Rob Krier on the Rauchstrasse. The complex was inspired by the typology of upper class villas and embassy buildings that stood on this site before the Second World War.

'Efforts were made to "reconstruct" historical planning patterns with new architecture and utilize them for inner-city residential purposes.'<sup>[21]</sup>

The complex at the Rauchstrasse consist of 9 buildings which are grouped around a courtyard. Together they form a rectangular block.

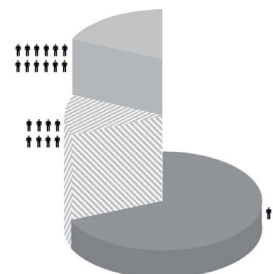
The complex is not closed, as four streets cut through it. Through this operation, the collective courtyard is mixed with the public streets.

Around the buildings are small gardens. These form a collective transition between the public streets and the private buildings.

All the buildings of the complex are different, as they have been designed by different architects. However, all the buildings have the same entrance typology.

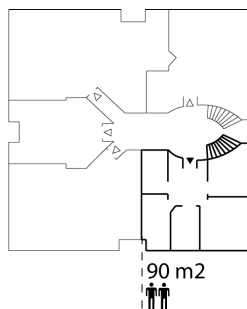
A single entrance leads to a central staircase with royal halls form were the dwellings can be entered.

pressure and spatial configuration



total space (build + not build): 39 110 m<sup>2</sup>

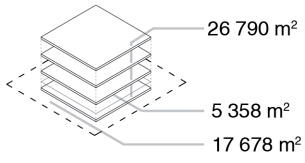
5 098 m <sup>2</sup>	7 222 m <sup>2</sup>	26 790 m <sup>2</sup>	dwellers /
public	collective	private	100 m <sup>2</sup>



floor plan

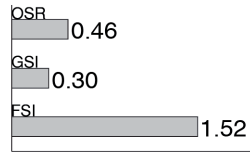


areas

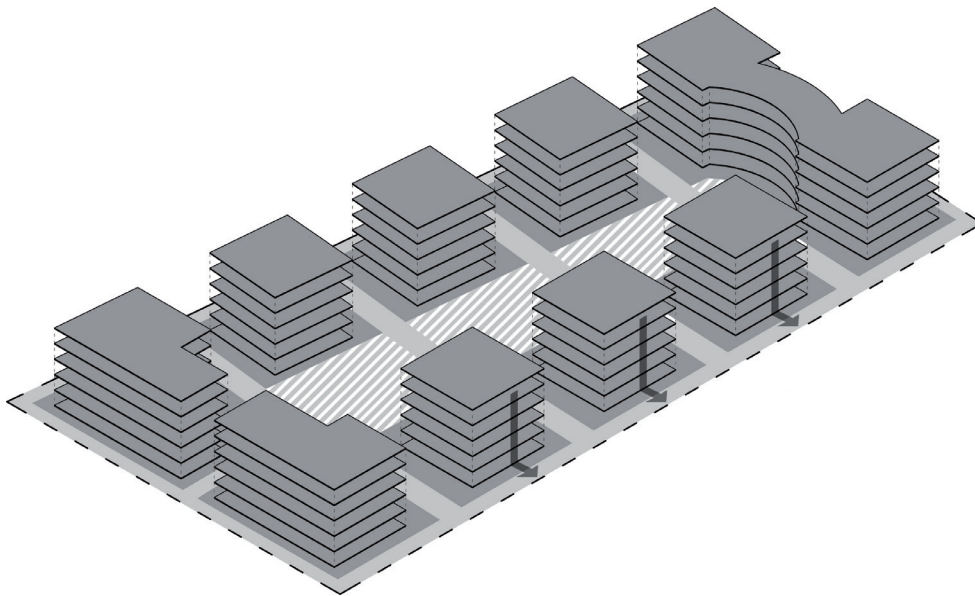


densities

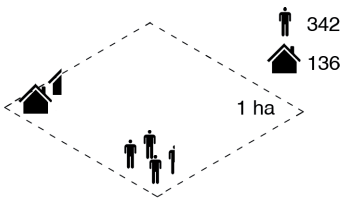
numbers



laboratory space /  
part B /  
berlin block /  
1980 /  
rauchstrasse



numbers / hectare





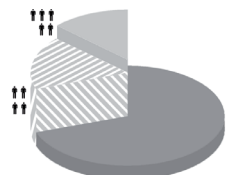
built:1858 restored: 2000

# HACKESCHE HÖFE



'Hackesche Höfe, located in Berlin's Scheunenviertel Quarter, is a series of eight courtyards, all linked together and (...) restored to form one complex consisting of shops, apartments, offices and more.<sup>[22]</sup> The Hackesche Höfe are a sequence of different connected courtyards. It is a popular tourist spot for its shops, cafe's and remarkable architecture. The traditional Berlin block with its courtyards has been transformed into a public showcase. This type is in itself the result of an experiment. The streets around the block and the courtyards in the block are all public. The entire ground floor has collective functions. The private functions are situated above the collective floor. The block has most of its entrances on the courtyard side. From some of the courtyards you could exit towards the street, others are enclosed by a thick wall of green. At night the courtyards close off for the public and become collective.

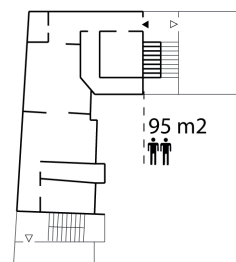
pressure and spatial configuration



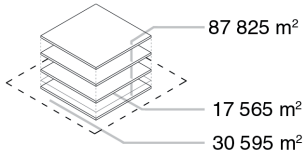
total space (build + not build): 100 855 m<sup>2</sup>

13 030 m <sup>2</sup>	17 565 m <sup>2</sup>	70 260 m <sup>2</sup>	dwellers /
public	collective	private	100 m <sup>2</sup>

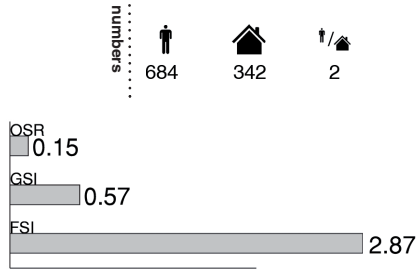
floor plan



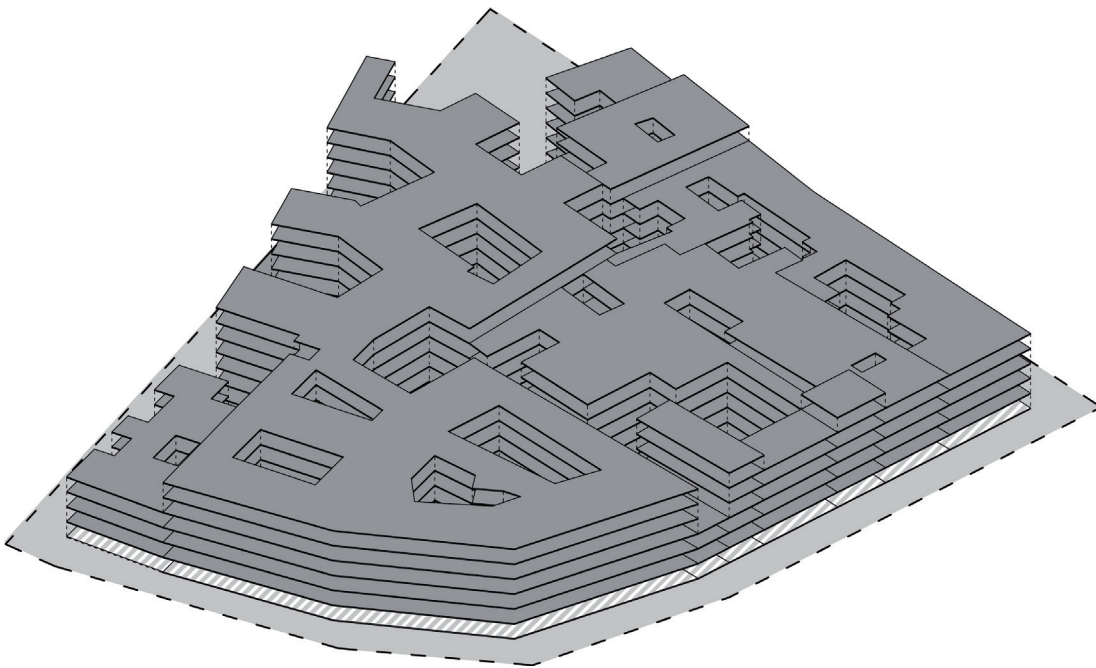
areas



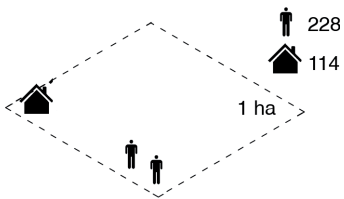
densities



laboratory space /  
part B /  
berlin block /  
2000 /  
hackesche höfe



numbers / hectare







# C: EXPERIMENTS

The first phase of our experimentation consists of projecting the different modeled typologies onto Tacheles without too much consideration for the context and retro-actively analyzing the outcome. This is like throwing different unknown substances into a test tube during chemistry class, with the hope and fear of an explosion.

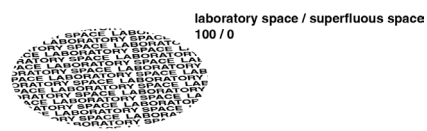
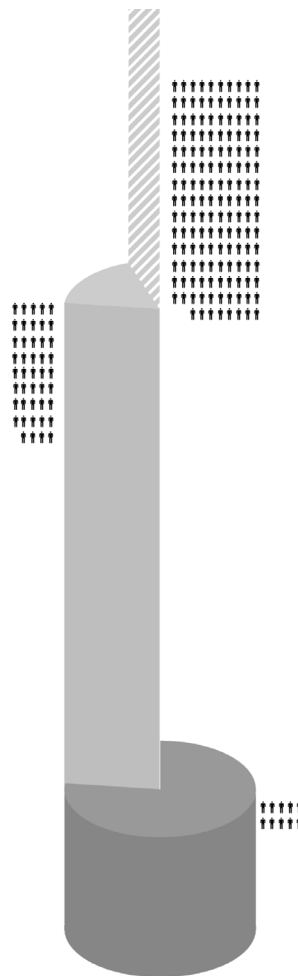


# TACHELES + MEYER'S HOF

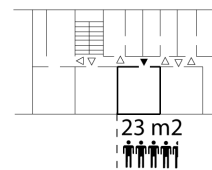


In accordance with the type of the Mietshaus, all the *Superfluous Space* is filled with dwellings. With only 5 m<sup>2</sup> of living space per person, the result of the pressure on the public and collective is of the charts. The Laboratory Space itself can take the extra pressure intrinsically (the surplus is negligible compared to the numbers in the whole city plus the extra tourists), but in this scenario there is a large chance the Laboratory Space will be appropriated for public or collective functions because of the high pressures on those spaces. Without any caution towards the spatial quality the score has dropped to 62%.

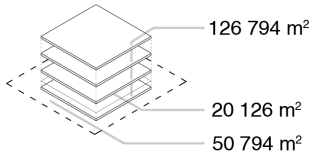
pressure and spatial configuration



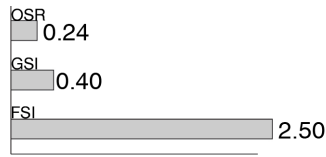
floor plan



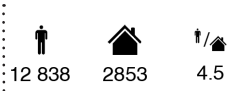
areas



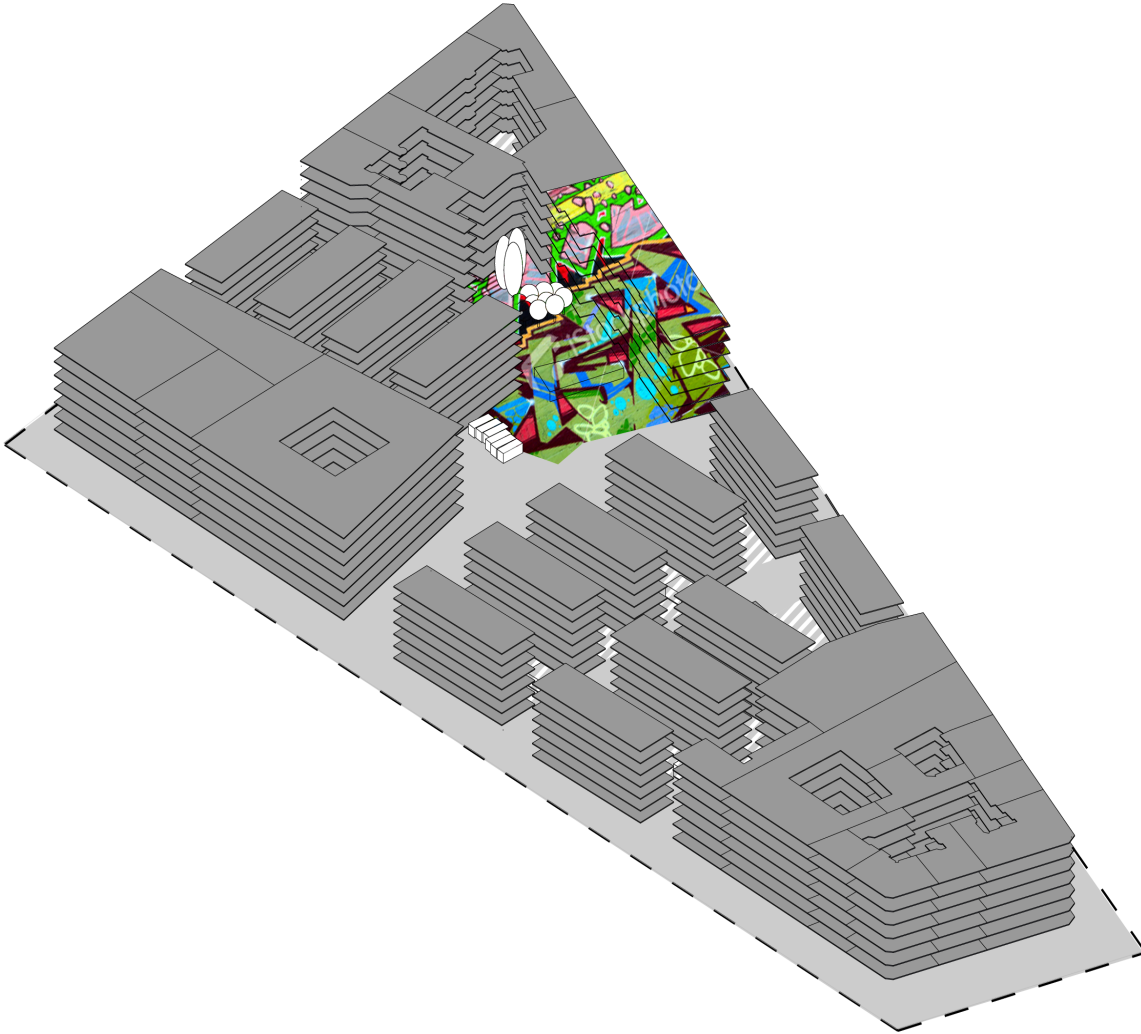
densities



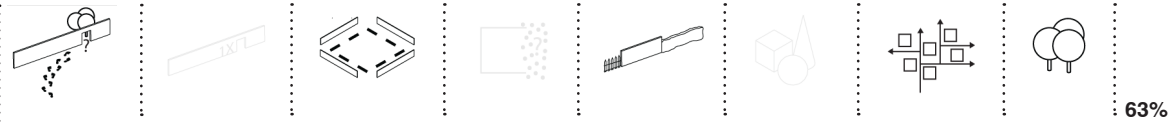
numbers



laboratory space /  
part C /  
combination 01 /  
tacheles + meyer's hof



spatial elements



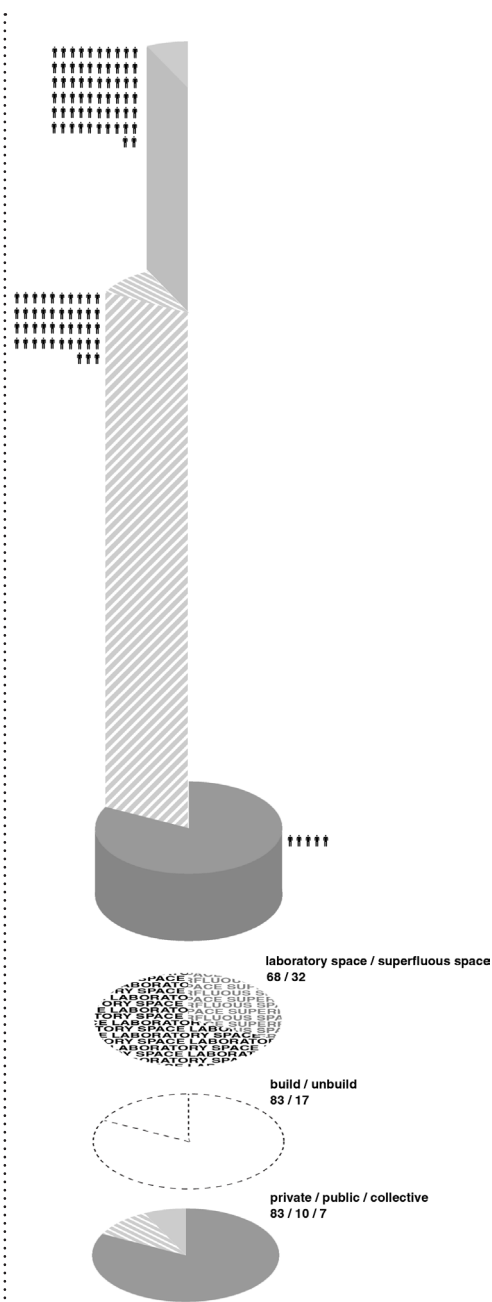


TACHELES+  
**CARL LIEGEN  
 WOHNSTAD**

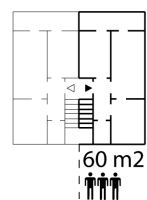


In this case, the pressure is highest on the public space. The question is, what will happen to the *Superfluous Space*? Will it become public, because of that high pressure, or can the *Laboratory Space* grow because of more demand? In this configuration the *Laboratory Space* loses a lot of its obscurity and spatial quality, because the new dwellings need a road and a front facade for disclosure. Therefore we would expect the public space to devour the *Superfluous Space* and completely surround Tacheles, reducing its obscurity even further and laboratory character even further.

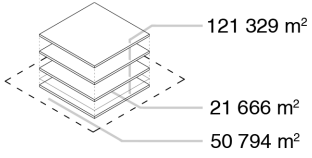
pressure and spatial configuration



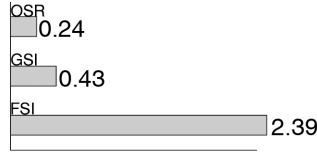
floor plan



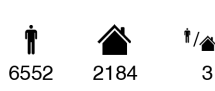
areas



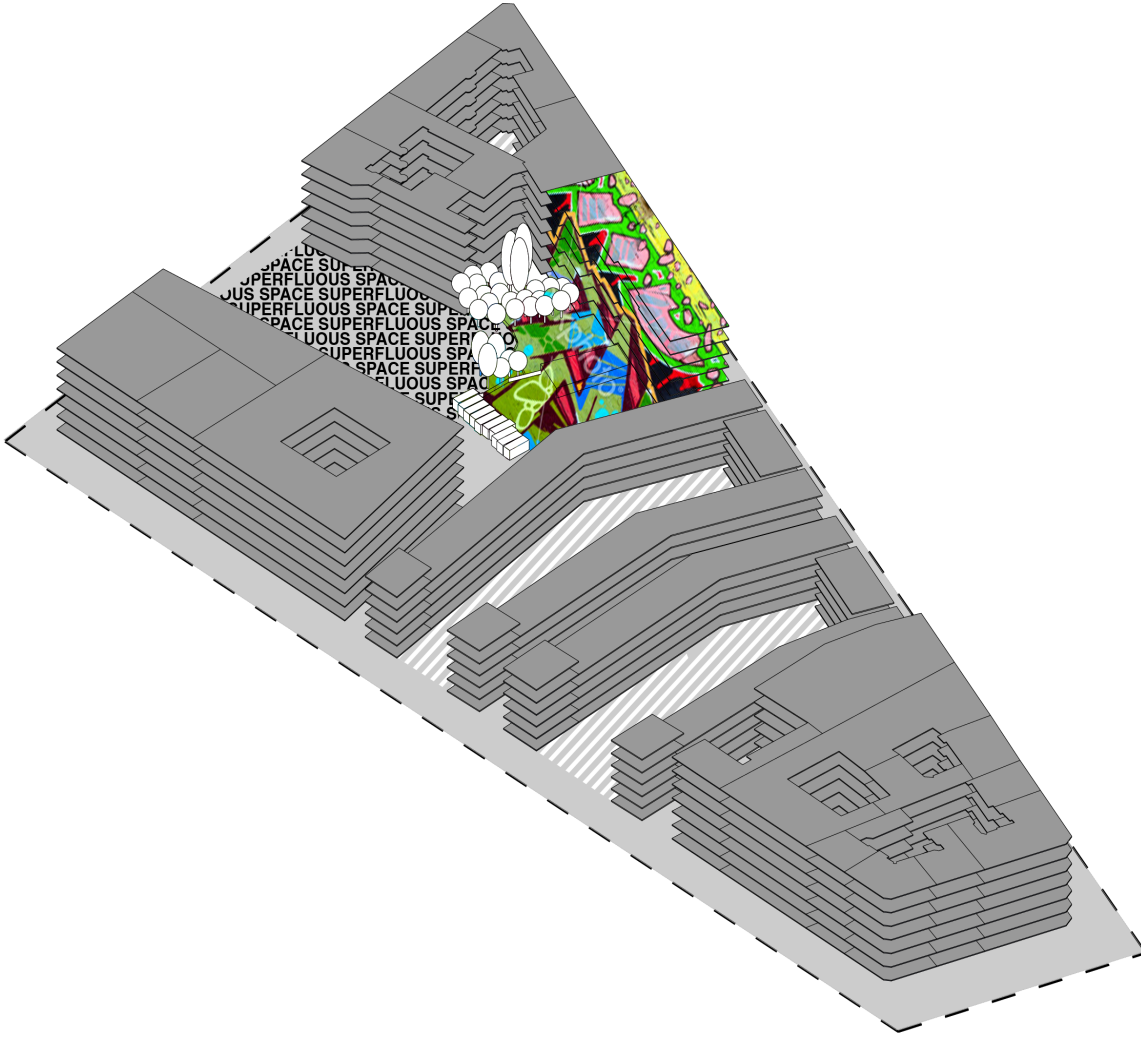
densities



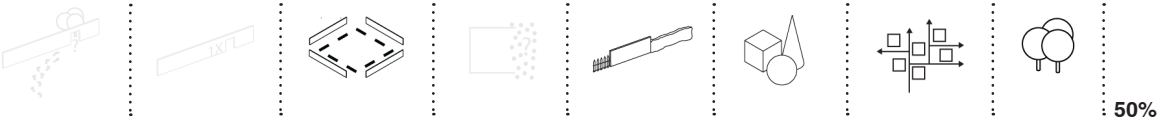
numbers



laboratory space /  
part C /  
combination 02 /  
tacheles + carl liegen wohnstad



spatial elements



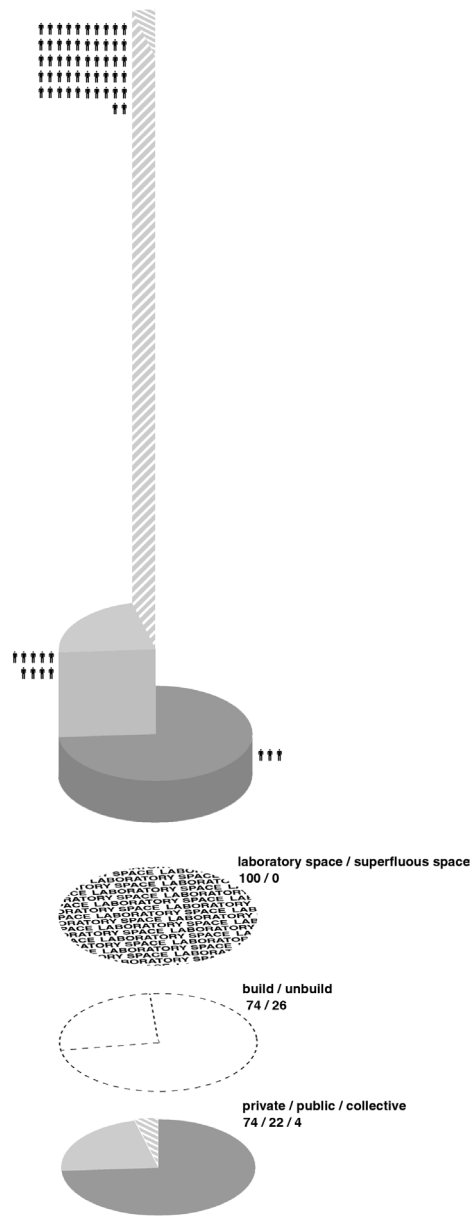


# TACHELES + HANSAVIERTEL

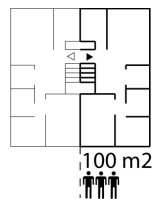


The pressure on the public has dropped drastically, because of the large amounts of public space. It has taken up all the *Superfluous Space*. The pressure on the collective space is now very high, because of the limited amount. The quality of the collective space is very questionable as well, so one would expect Tacheles to be taken over by the new communities. Spatially this experiment does not change a lot, except for de-mystifying the borders.

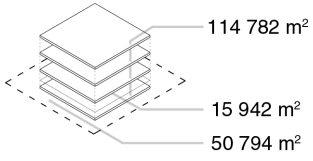
pressure and spatial configuration



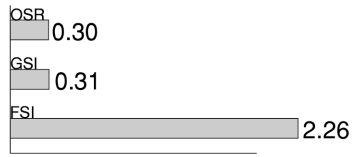
floor plan



areas



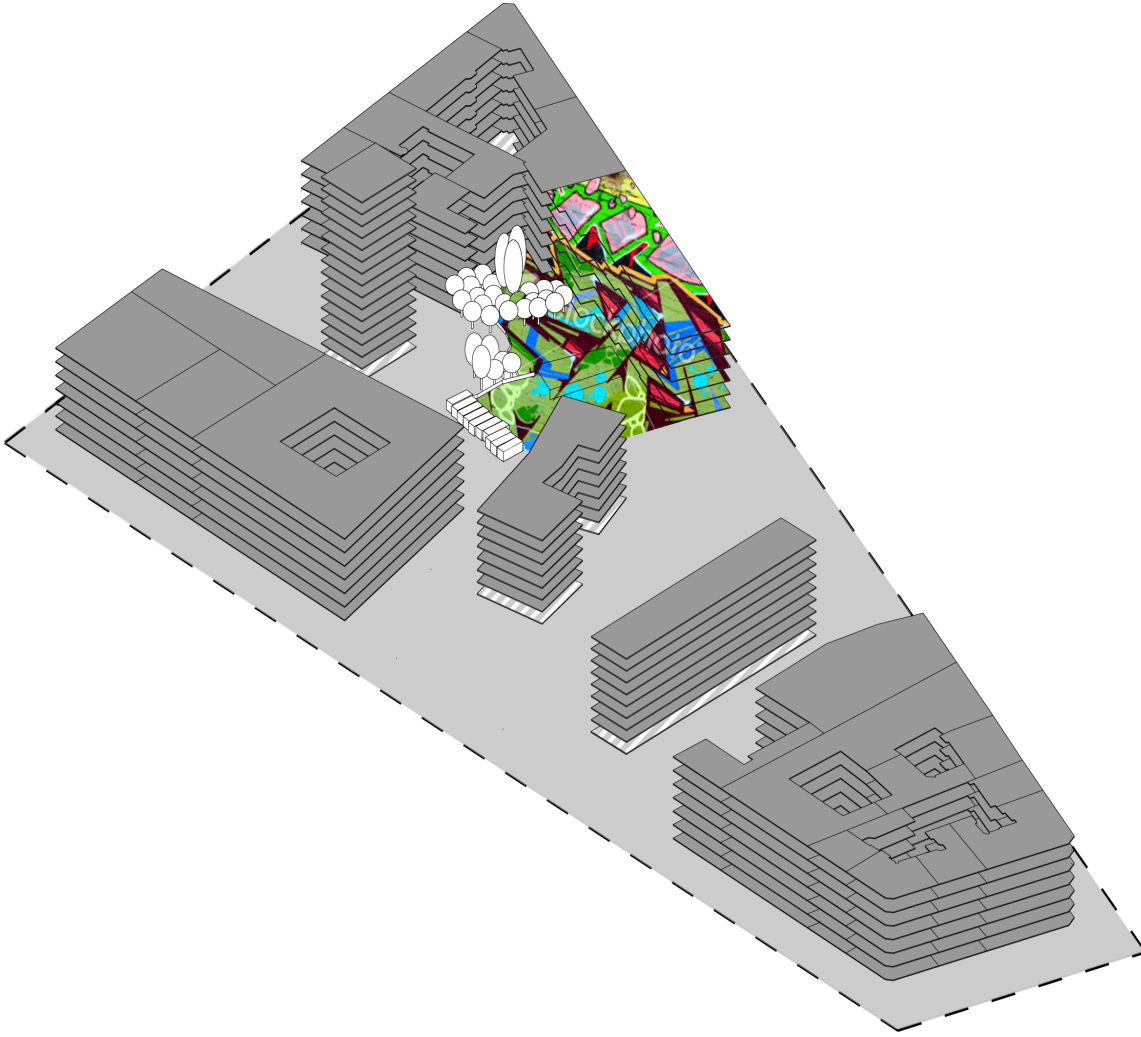
densities



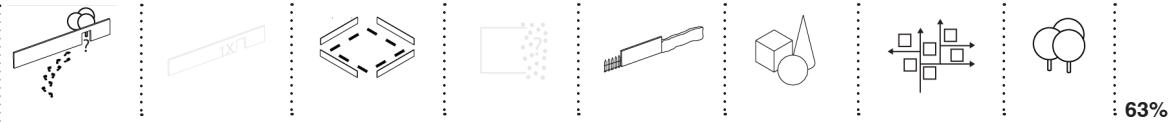
numbers



laboratory space /  
part C /  
combination 03 /  
tacheles + hansviertel



spatial elements





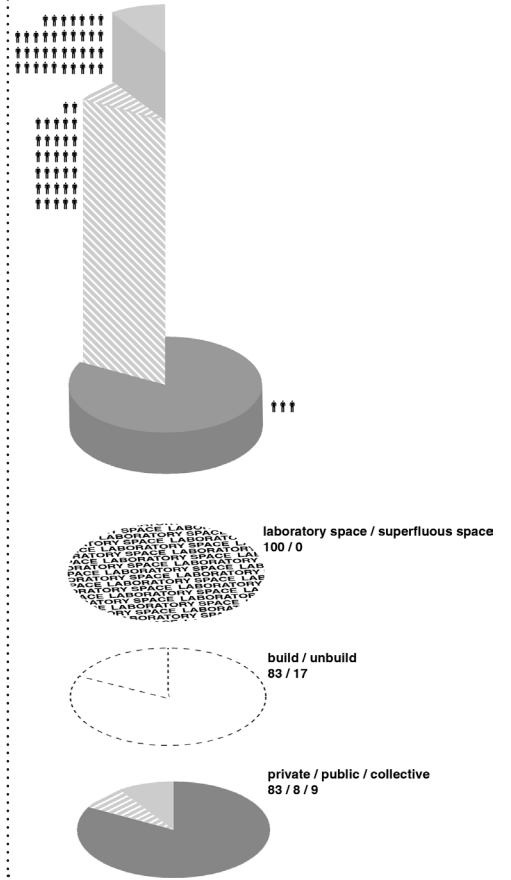


# TACHELES+ RAUCHSTRASSE

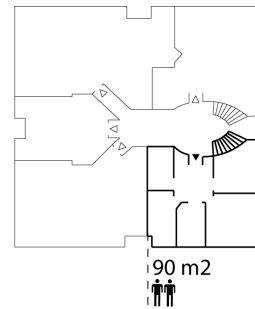


The outcome in this scheme is more balanced, even with a high Floor Space Index. This scheme would work well, if the spatial qualities were not so poor. Add to that, the enforced symmetry of the plan which could possibly be harmful to the informality of Tacheles. The high amount of private space relates to the increase in square meters per person and has an effect on the street pressure.

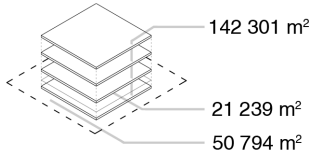
pressure and spatial configuration



floor plan



areas

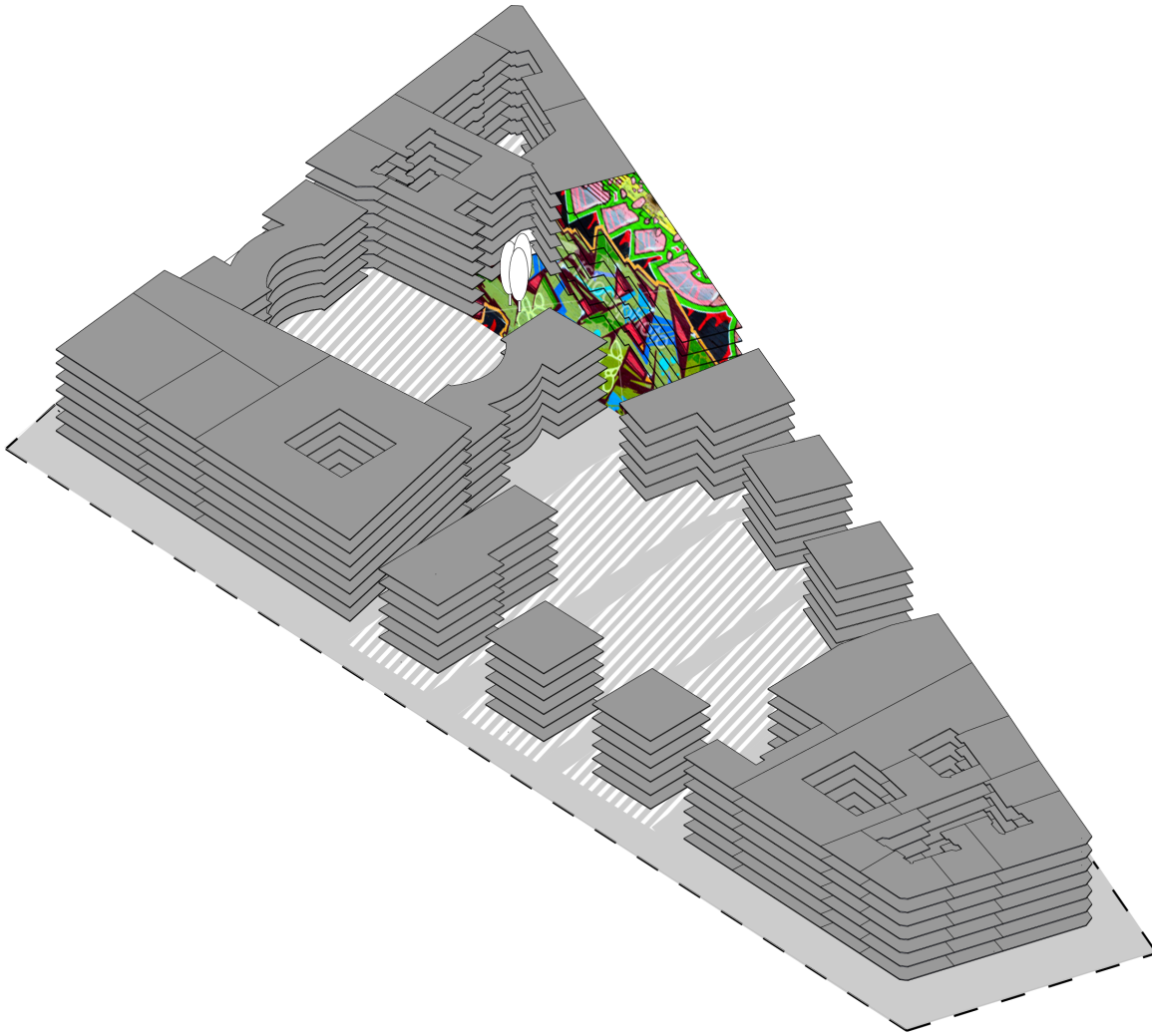


densities

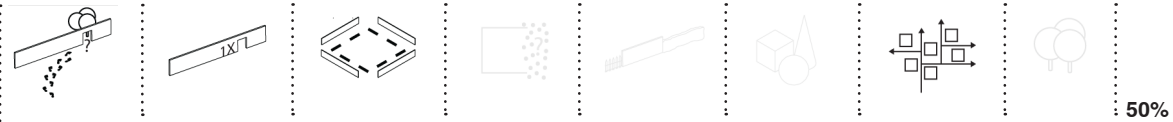
numbers



laboratory space /  
part C /  
combination 04 /  
tacheles + rauchstrasse



spatial elements



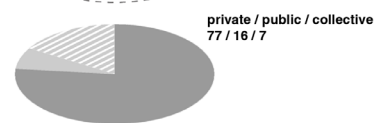
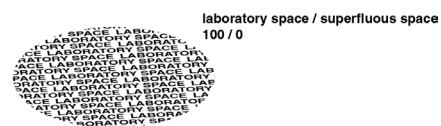
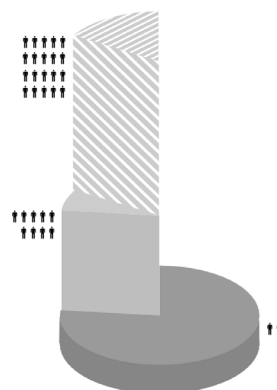


TACHELES+  
**HACKESCHE HÖFE**

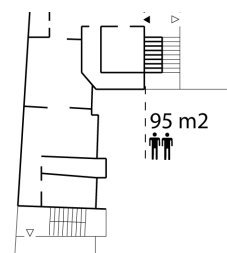


The Hackesche Höfe, in itself an experimental type, provides for low public pressure (by the dwellers themselves, this number changes if you consider the users from outside of this block). Due to low amount of collective space, the pressure is quite high. The outcome of the overall pressure is surprisingly low, compared to the Floor Space Index. The dweller of this type might not be looking for collective space. This person prefers the extreme contrast between the city outside and the private inside.

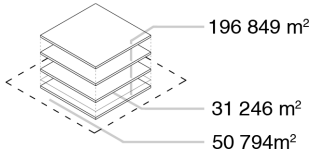
pressure and spatial configuration



floor plan



areas

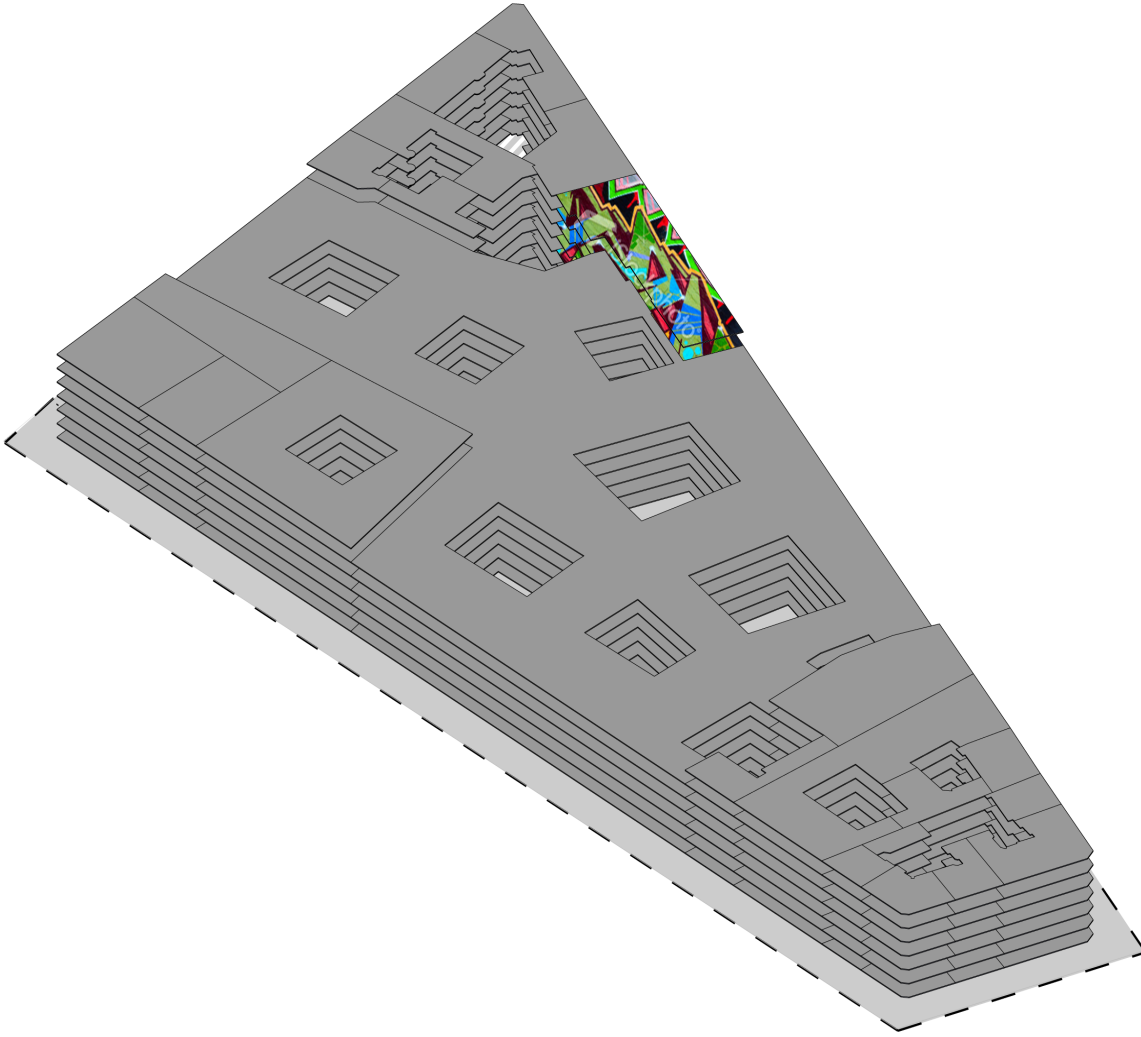


densities

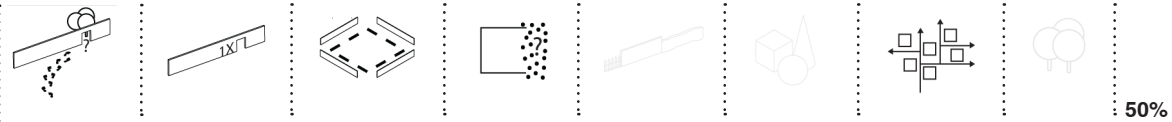
numbers



laboratory space /  
part C /  
combination 05 /  
tacheles + hackesche höfe



spatial elements





results

## EXPERIMENT RESULTS

With respect to the *Laboratory Space*, some types fit better on the site than others, for instance the Rauchstraße. In all cases the spatial quality has receded somewhat - not completely surprising, since we did not control this parameter when placing the typologies. We can conclude, however, that spatial quality is not a given and that it is necessary to take it into the design process.



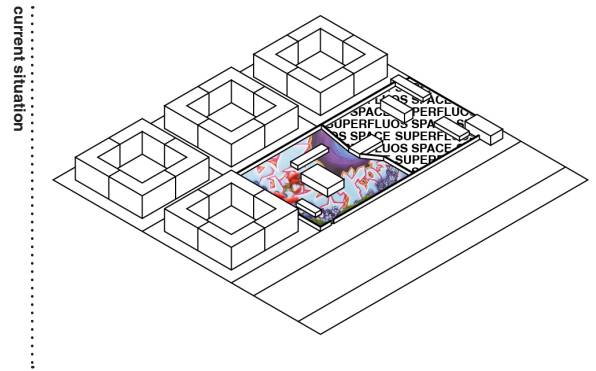


density

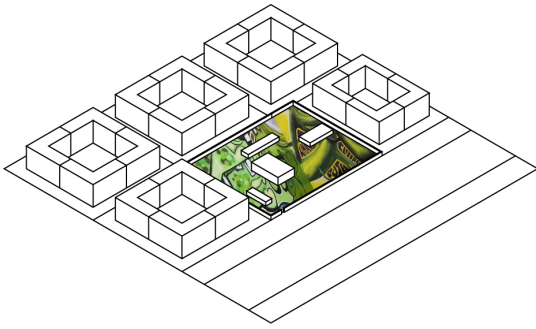


## SCENARIO'S

The second type of experiment is based upon scenario's of densification. By projecting these scenario's through a theoretical model we gain insight towards the different types of densification, and their relation to *Laboratory Space*. From there we move to the Tacheles model where we can test the result of these scenario's. We have looked at three different scenario's: (1.) Filling *Superfluous Space*, (2.) Densifying surroundings, (3.) Densifying surroundings + adding *Superfluous Space*.

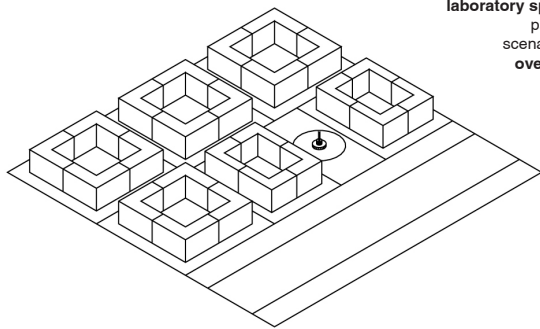


filling superfluous space



balance

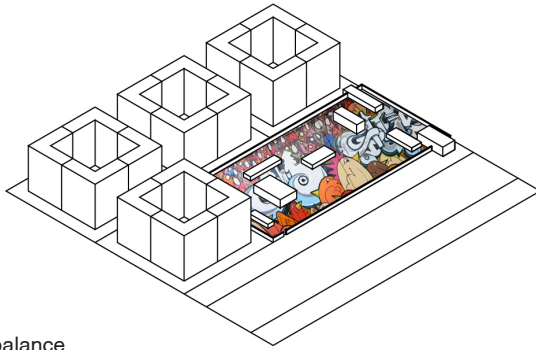
filling superfluous space



extreme

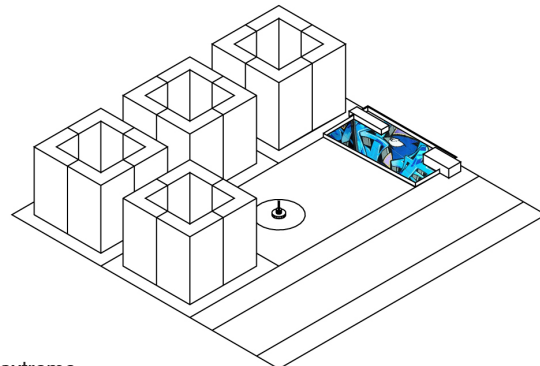
laboratory space /  
part C /  
scenario's /  
overview

densifying surroundings



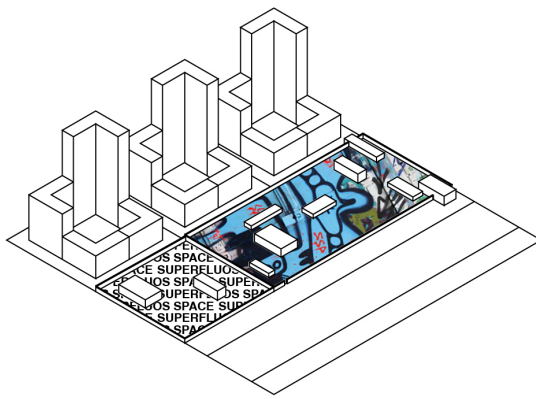
balance

densifying surroundings



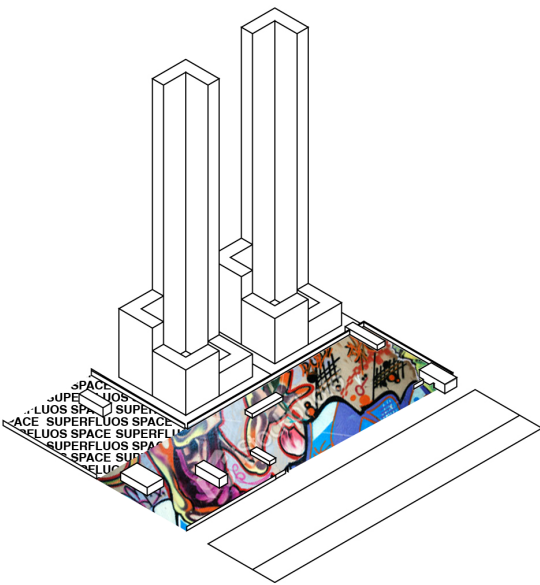
extreme

densifying surroundings + adding superfluous space



balance

densifying surroundings + adding superfluous space



extreme



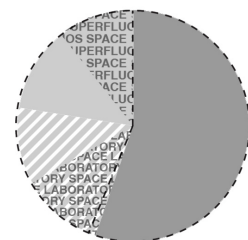
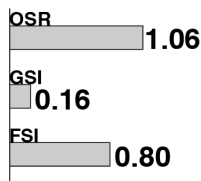
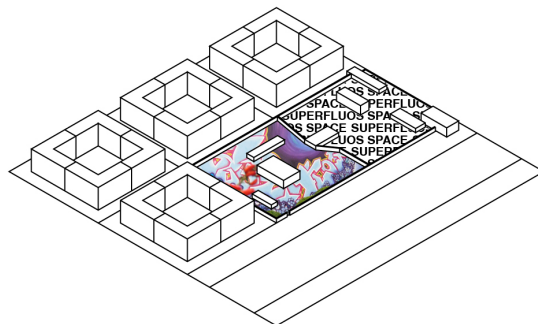


# FILLING SUPERFLUOUS SPACE

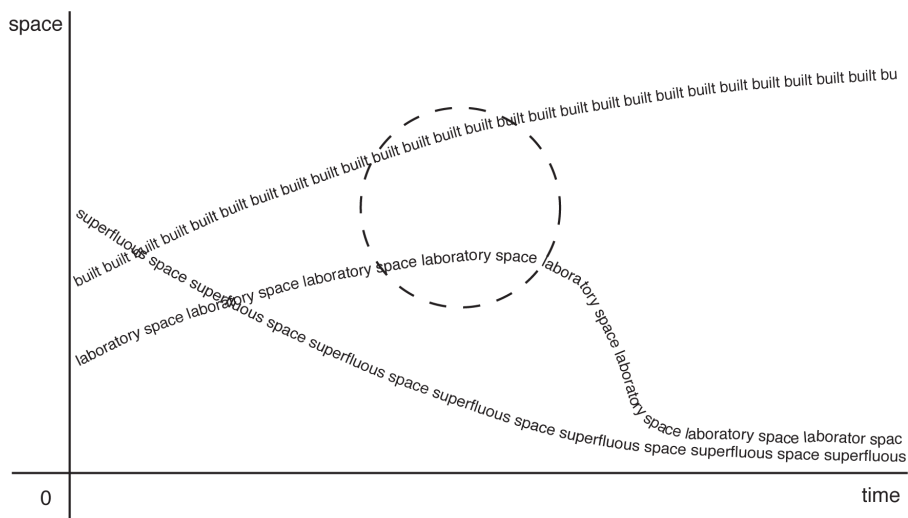
Since most of the sites put under our loop, contain more than 50% Superfluous Space, the most logical move would be to fill that space with buildings. By reserving a certain amount of the *Superfluous Space* for *Laboratory Space*, the balance can be maintained. However, this balance is very delicate and there is a chance that new developments ruin the *Laboratory Space* all together. This becomes clear when presented in a space-time graph.

The built space can grow steady, filling in the *Superfluous Spaces*, but the more saturated a city becomes, the more expensive it becomes to build, slowing down the curve in the chart. This is not to say that the curve has to flatten. If there is a certain need, a city can always grow denser, take a look at Tokyo for instance. The *Superfluous Space* recedes and levels of just before it reaches zero. There is always a little bit of this type of space left over in any city. The *Laboratory Space* can grow slightly, before it shrinks drastically. At a certain point ground prices become too high to be left unclaimed, and that is when *Laboratory Space* is expelled. We are looking for the balance just before that point. We need a little bit of *Superfluous Space*, to make the *Laboratory Space* work. As shown before, the *Laboratory Space* can add economic value to the whole city, thus repaying for itself on a larger scale.

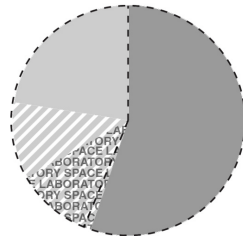
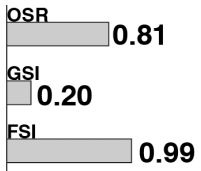
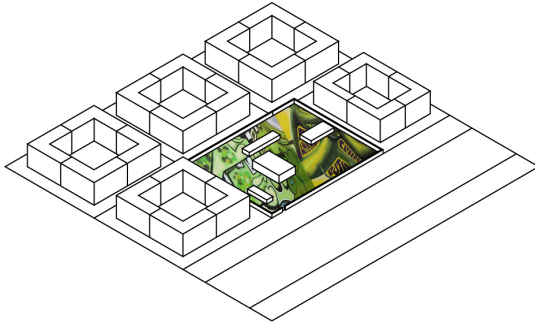
current situation



The location consists out of public, collective and private space. The public space contains *Superfluous Space*. Part of the collective space is laboratory.



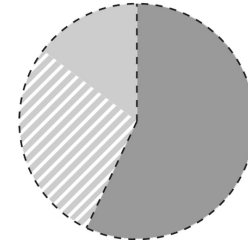
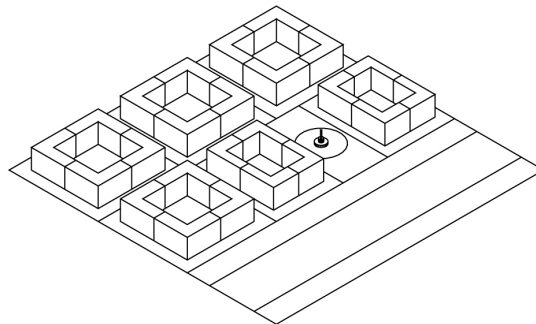
filling superfluous space



balance

The *Superfluous Space* is partly filled with private space. The *Laboratory Space* also uses a part of the *Superfluous Space*. There's no possibility for the *Laboratory Space* to expand any more.  
The density did not increased so much.

filling superfluous space



extreme

The public space has now filled all the *Laboratory* and *Superfluous space*. The high pressure on the public space, by increase in the private space, has expanded itself. This means that, although not everything is build, the *Laboratory Space* will disappear.

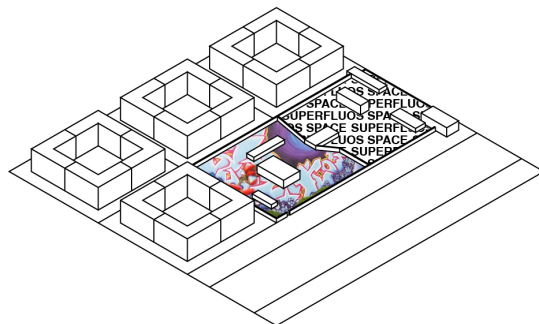
laboratory space /  
part C /  
scenario's /  
filling superfluous space



# DENSIFYING SURROUNDINGS

By leaving the *Superfluous Space* as it is and densifying the surroundings, we create more need for *Laboratory Space*. Therefore, the *Superfluous Space* can become saturated with *Laboratory Space*. This scenario works good for the *Laboratory Space*, but there is a risk in creating too much pressure, turning it into 'ordinary' public space. In this case the graph resembles the previous scenario, but there are some minor changes. First of all the 'built' curve starts of flatter. It would be more expensive to densify surroundings, than to build new. Secondly, the *Laboratory Space* can react faster to the growth, so initially that curve is slightly steeper. But the transformation of *Laboratory Space* into public space happens more gradually, so that part of the curve is balanced out. This scenario is interesting for planning on a city scale. If you can find enough *Superfluous Space* not connected to *Laboratory Space*, you would want to densify those spaces first.

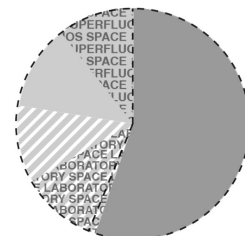
current situation



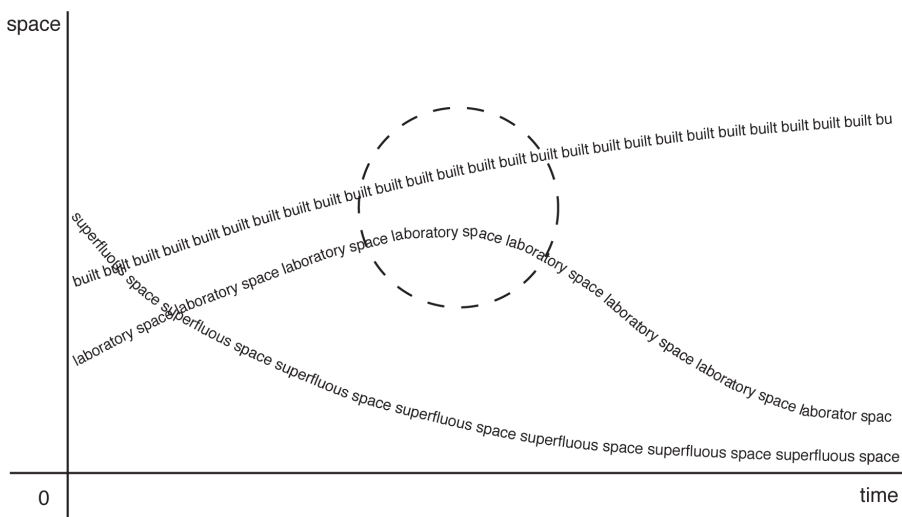
OSR 1.06

GSI 0.16

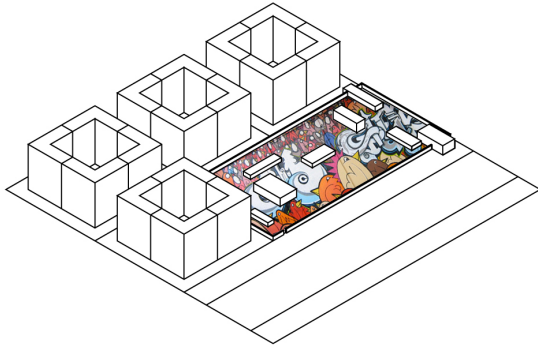
FSI 0.80



The location consist out of public, collective and private space. The public space contains *Superfluous Space*. Part of the collective space is laboratory.



densifying surroundings



OSR 0.30

GSI 0.40

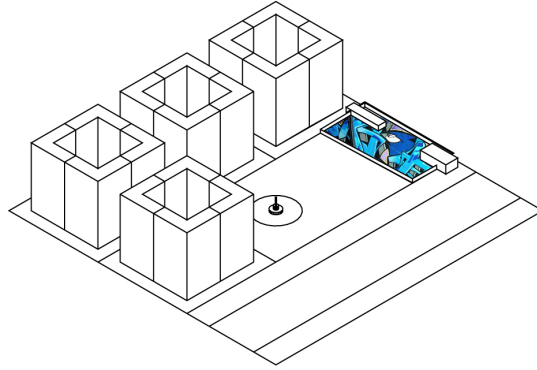
FSI 1.99



balance

- The location is densified by creating more private space.
- Because of the higher pressure the *Laboratory Space* occupied the *Superfluous Space*.
- This means all the public space is used.
- The density, shown by the FSI, more than doubled.

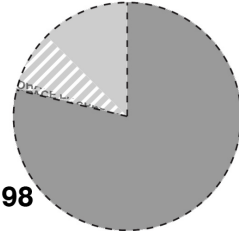
densifying surroundings



OSR 0.14

GSI 0.60

FSI 2.98



extreme

- Densifying by making even more private space means a higher pressure on public space. By this the used public space is expanded, and the *Laboratory Space* is repressed.

laboratory space /  
part C /  
scenario's /  
densifying surroundings

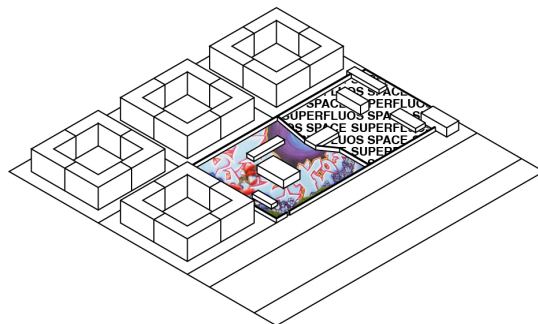




# DENSIFYING SURROUNDINGS + ADDING SUPERFLUOUS SPACE

By keeping the amount of *Laboratory Space* artificially high throughout the densification process, the skyscraper has to be applied. Economically this scenario is very unlikely, because the densification on one hand, does not relate to the low pressure on the surroundings. Still, this scenario is very interesting, because - to a certain extent - this could be a way of enforcing density, while creating qualities. If this scenario was to continue without regard to spatial quality or economic and technical possibility, we would get one very thin and very high tower, in which perhaps 'existenzminimum' rooms are stacked on top of each other. In the graph the growth of 'built' levels of, exactly due to these kind of restrictions.

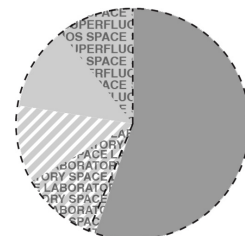
current situation



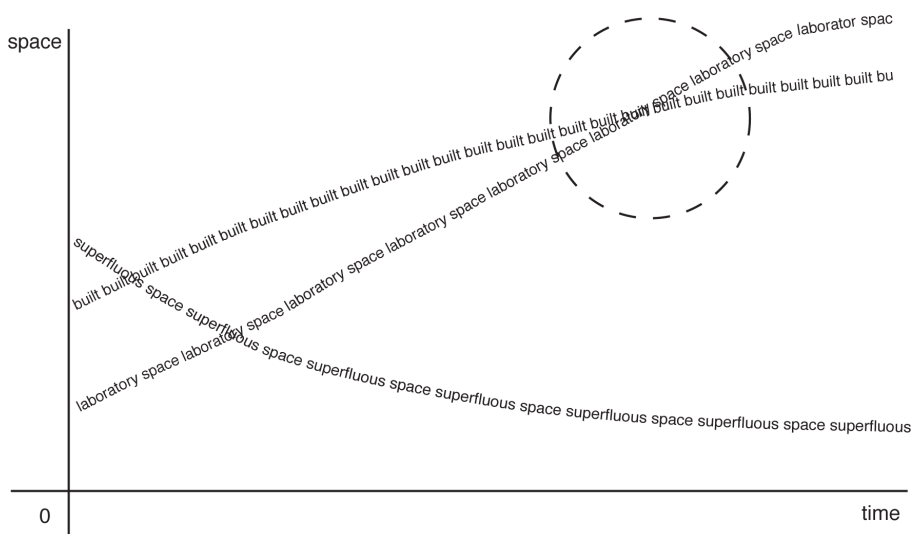
OSR 1.06

GSI 0.16

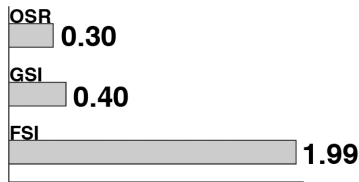
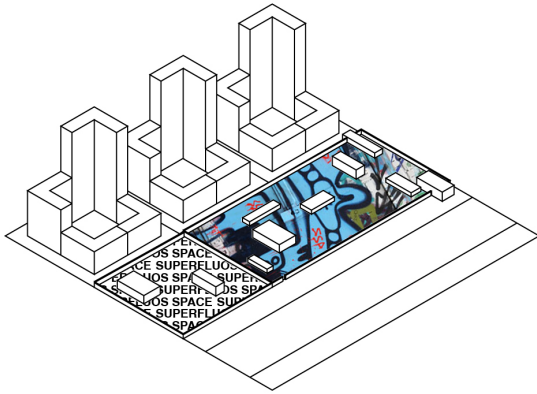
FSI 0.80



The location consist out of public, collective and private space. The public space contains *Superfluous Space*. Part of the collective space is laboratory.



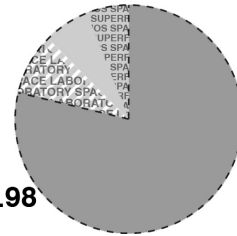
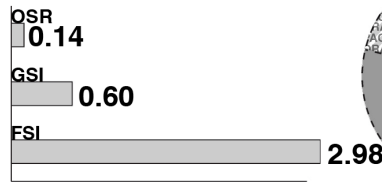
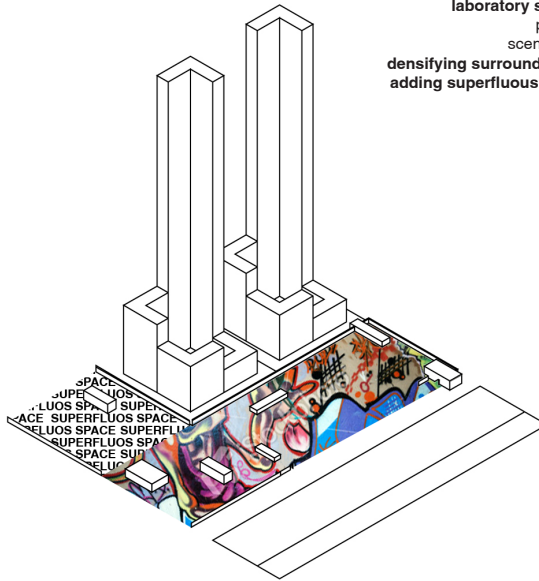
densifying surroundings + adding superfluous space



balance

The *Superfluous Space* has taken the place of private space.  
 The *Laboratory Space* uses a part of the *Superfluous Space* and private space as well. There's no possibility for the *Laboratory Space* to expand any more.  
 The density did not increased so much.

densifying surroundings + adding superfluous space



extreme

The extra space created, can accommodate all types of spaces, like *Laboratory Space*. The high pressure on the space is crated by building up into the air. The unbuilt space becomes a no mans land, difficult to predict.

laboratory space /  
 part C /  
 scenario's /  
 densifying surroundings +  
 adding superfluous space

+

+

100



## SCENARIO RESULTS

Within the economic model, we have to consider that *Laboratory Space* can not only function as an experimental space for a neighbourhood, with its possibility of succeeding and turning out something of economic value, but it can actually be considered at the larger scales of the city and even the continent. *Laboratory Space* can strengthen the image of Berlin and attract the *creative class* to this region. With that in mind, the investments involved could provide for more extreme scenario types, that would encourage further economical development.







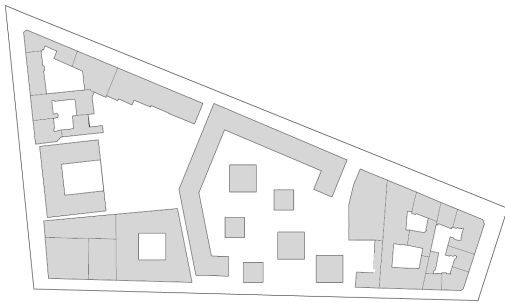
# SPATIAL EXPERIMENTS

Now forgetting about density, typology and scenario's, space is the central theme. We have tried to come up with models that would respect and improve the spatial qualities, in relation to Laboratory Space. We have mainly focussed on the borders, for they are very important. As we have shown before, the Laboratory Space itself can adjust to different spatial conditions, as long as these are inviting enough, to think of new functions. This part is not unlike the first steps in a design process and we can think of many different spatial configurations that would comply with the necessary spatial conditions.

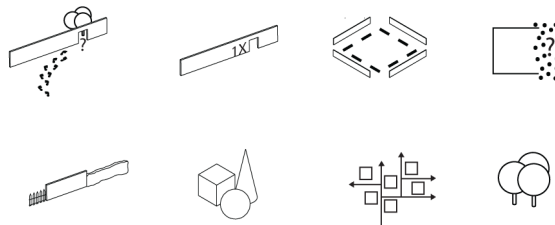
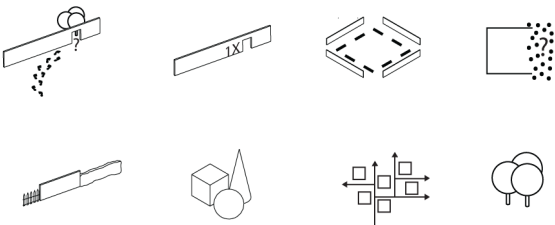
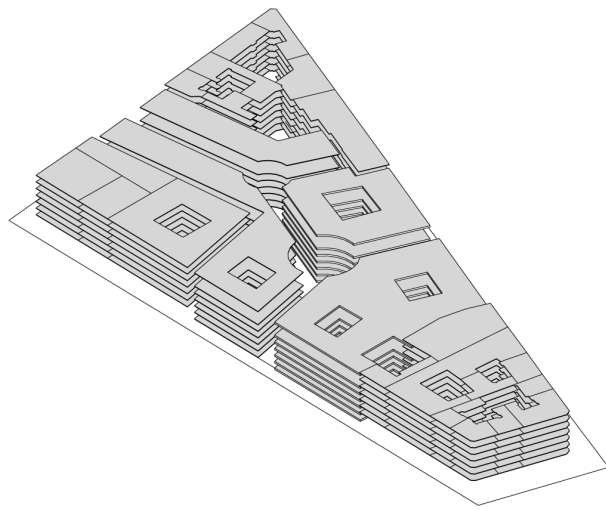
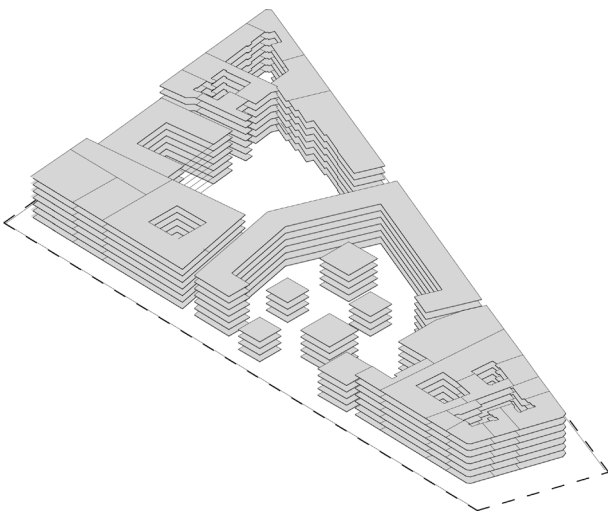
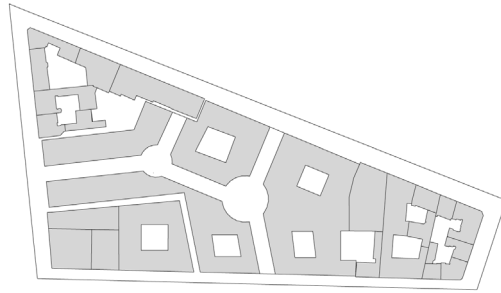




spatial experiment 1



spatial experiment 2



This model turns it back towards the Laboratory Space, facing it with blank walls, leaving it to its own fate and closing it off from the rest of the city. By turning its back to the Laboratory Space, the main building creates a protected place on the South side. Here smaller buildings define smaller, more intimate spaces, adjusted to the individual dweller.

This model is much higher in density. Inspired by the history of the site and the Hackebe Höfe typology, a number of passages cut through the building mass. These connect the different nodes and spaces, as in a network. This way the Laboratory Space can be divided over a back, more secluded, and a front, more public side. The network could lead to all kind of different spaces and corners.







# SUMMARY OF CONCLUSIONS

With *Laboratory Space* Berlin has a powerful means to attracting the *Creative Class* and revitalizing the economy.

Berlin can learn from the gentrification process of other cities that have gone before and adjust its path accordingly.

Within the *Laboratory Space* there is a connection between the diversity and richness of functions on one side, and the spatial qualities on the other.

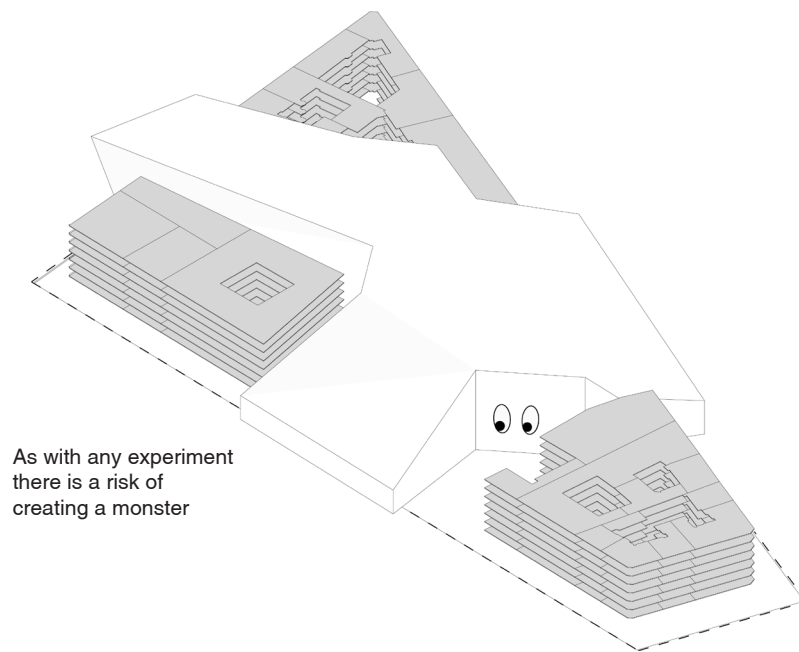
*Laboratory Space* belongs to, and is a part of, the whole city.

Although *Laboratory Space* should be public accessible, it is not part of the 'ordinary' city spaces - the public and the collective. It can be seen as an addition to those spaces, with a public and collective component. This addition should always make up a small part of the total amount of spaces.

When densifying, with respect to *Laboratory Space*, the key is in the *Superfluous Space*. There should always be a small part of *Superfluous Space* left.

Densification with *Laboratory Space* is a matter of carefully planning, testing, experimenting and designing. Different approaches can lead to different outcomes and not all outcomes are suitable. However, there are definitely a number of possibilities for densification, without the loss of *Laboratory Spaces*.





As with any experiment  
there is a risk of  
creating a monster





**‘Science, in general, generates too much hope and too much fear, and the history of the relationship of scientists and nonscientists is fraught with passions, sudden bursts of enthusiasm, and equally sudden fits of panic.’**

Jonas Salk, introduction of, *Laboratory Life - The Construction of Scientific Facts*, 1986





# NOTES

- [1] Senatsverwaltung für Stadtentwicklung, Perspectives for Berlin, p. 39
- [2] *ibid.*, p. 8
- [3] Koolhaas, Ungers, 'Imagining Nothingness' in, SMLXL, p. 198
- [4] Senatsverwaltung für Stadtentwicklung, Perspectives for Berlin, p. 6
- [5] *ibid.*, p. 32
- [6] Florida, The Flight of the Creative Class, p.180
- [7] [www.spiegel.de/international/business/0,1518,510609,00](http://www.spiegel.de/international/business/0,1518,510609,00)
- [8] Senatsverwaltung für Stadtentwicklung, Perspectives for Berlin, p. 6
- [9] [www.webster.com](http://www.webster.com)
- [10] Florida, The Flight of the Creative Class, p.154
- [11] Florida, The Rise of the Creative Class, p. 47
- [12] [www.permeta.nl/spacemate](http://www.permeta.nl/spacemate)
- [13] Buurmans, de Bois, Frame - Pattern - Circuit and the becoming of a (New) Town, article
- [14] Uytengaak, Steden Vol Ruimte, p. 16
- [15] Rapp, Lost and Sound - Berlin Techno und der Easyjetset, p. 162
- [16] [www.exberliner.net/nightlife/bar-25](http://www.exberliner.net/nightlife/bar-25)
- [17] Rapp, Lost and Sound - Berlin Techno und der Easyjetset, p. 167
- [18] [www.exberliner.net/nightlife/kiki-blofeld](http://www.exberliner.net/nightlife/kiki-blofeld)
- [19] [www.artreview.com/groups/graffiti/forum/topic](http://www.artreview.com/groups/graffiti/forum/topic)
- [20] Geist, Passagen, p. 141
- [21] Scheer, City of Architecture: Berlin 1900 - 2000, p. 321
- [22] [www.aviewoncities.com/berlin/hackeschehofe](http://www.aviewoncities.com/berlin/hackeschehofe)





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- Uytenhaak, Rudy, *Steden Vol Ruimte - kwaliteiten van dichtheid* (Rotterdam: 010 publishers, 2008, 2nd edition 2009)



# PICTURES

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- pag 22: [www.flickr.com](http://www.flickr.com)
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