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Time architecture: Stadtlandschaft Lichterfelde Süd, Berlin

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This winning design in the 1998 Lichterfelde Süd International Landscape and Urban Design Competition is for the regeneration of a former military training ground on the southern boundary of Berlin. The brief was for a new urbanism of the periphery, with 3200 dwellings on a 115 hectare site. The design is a continuation of research embracing conditions of uncertainty and change on mainly post-industrial or former military sites. It could be described as a fragment of an infrastructural urbanism in preparation for an unpredictable diversity of architectures.

Paul Klee's engraving '1928, N6 ein Blatt aus dem Städtebuch' (N6: a Leaf from the Book of Cities, 1928) is a scripture [Fig. 2]. It is a tabulation of city elements, similar to a textile, a texture. The ground of the engraving appears to be a stone tablet. At the bottom of this tablet the title is inscribed and signed by Klee. The leaf appears to be a parchment laid on this stone. The top third has a kind of chapter *signum* which could be an abstracted sun with a strip of sky above and a horizon below. Below a text of pictograms continues to the bottom of the leaf. It consists of an evolving city typology. The pictograms are arranged in a series of horizontal lines sometimes attached, sometimes detached, and there are detached and attached pictograms within the lines. Basic patterns in the texture have a high degree of formal repetition. Some consist of a row of basic types with variations. It is possible to associate building typologies with the pictograms. It is a sophisticated and rich composition.

This is an interesting representation of the city. It evokes a sense of a time before literacy and writing. A record of a civilization, or the city, is written down rather than made into a picture as in a perspective description. This leaf is not a finite description of the city, because it is only one page out of a book, a fact signalled by the 'N6' in the title. The engraving somehow conveys an idea of a complex evenness and equality, like a group of characters. It suggests a certain exchangeability and encapsulates a strong sense of relativity.

The contemporary city/landscape

The city edge condition in Lichterfelde Süd can be described as an archetypical metropolitan peripheral site within the region of Berlin/Potsdam [Fig. 3]. Here, one is really neither in the city nor the open landscape. This region is increasingly becoming a large-scale citylandscape,¹ closely connected to modern communication systems. Lichterfelde Süd has the potential to become a fragment of a new model of the in-between city. One might also speak of an ecological urbanism.

We are living at a time when the speed of transportation is rapidly increasing and exceedingly powerful information systems are becoming commonplace. It is a period of simultaneity of experience and place. Our understanding of the meaning of place is undergoing change. An increasing artificiality in the entire physical environment, from urban to rural, is occurring. There is no longer a city and there is no longer a landscape. We are living in an agglomerative space, a citylandscape.

In addition to this changing attitude towards place, we find ourselves in a multi-value society, where people are accepting a plurality of directions and aspirations. Diverse interpretations of reality coexist, and viewpoints multiply. This is gradually creating the possibility for simultaneous interpretations of various planes of reality. Architecture is being presented with a wide diversity of forms, origins and intentions. Urban development is a patchwork. The idea of the urban masterplan is finished.

facing page
1 Collage plan showing an incremental field-by-field partial development of the site. A number of grounds and field boundaries have been given a new structure, and several fields have new buildings on them



2

2 Paul Klee, *Ein Blatt aus dem Städtebuch*, 1928 (accession nr. 1795). Engraving on chalk on paper on wood panel, 42.5 × 31.5cm. (Credit: Oeffentliche Kunstsammlung Basel, Kunstmuseum.

Photograph: Oeffentliche Kunstsammlung Basel, Martin Bühler). A tabulation of city elements conveying an idea of complex evenness and exchangeability

3 The site is a typical city edge with several unplanned small-scale industrial settlements. Many are low cost small businesses with temporary or illegal tenure.



3

As architects, we are interested to discover new and intelligent ways of working with these conditions of connectivity of place and plurality of lifestyle. Design strategies are needed to utilize processes of change, complexity and uncertainty as active ingredients in a project. Masterplanning as an approach is now too fixed and final for the formulation of architectural futures for these complex situations. Design strategies that work with the dimension of time are called for – an anticipatory architecture (Price, 1996) that allows and assumes change and is capable of continuous responsiveness to new conditions and unknown future needs. We are finding new ways of using diversity and uncertainty as active generators of design.

'Infrastructurel urbanism is flexible and anticipatory. It works with time and is open to change. By specifying what must be fixed and what is subject to change, it can be precise and indeterminate at the same time' (Allen, S.1998).

A spatial concept: architecture is individual, landscape is shared

The point of departure for this research is the design of a landscape infrastructure providing a framework for a diversity of urban development to happen in time. Landscape infrastructures are thought of as catalysts for architectural development (Desvigne, M. and Dalnoky, C., 1995). We intend to introduce landscape elements which make diversity enjoyable, creating a common ground for unknown futures. It is our premise that landscape infrastructures can be generated from the existing landscape conditions. We propose to identify specific aspects of the history

and complexity of the site that have physical presence in the Lichterfelde landscape, and can be used as a basis of the design proposal.

In this sense we have taken up the challenge made by Rem Koolhaas in 'Bigness', (Koolhaas, R. and Mau, B. 1995) without assuming that the result will be a megabuilding or an isolated structure that is 'no longer part of any urban tissue'. While Koolhaas expects that the containment of the big building will make 'the parts remain committed to the whole', we are perhaps doing the opposite to achieve this. The presence of the land and its accumulated physical culture – the conditions that exist in the place – are intensified or at least made visible, and therefore utilized for their 'potential to reconstruct the Whole, resurrect the Real, reinvent the collective, reclaim maximum possibility ... in a landscape of disarray, disassembly, dissociation, disclamation ...' Replacing the words 'landscape infrastructure' for 'Bigness' in Koolhaas's text, 'A paradox of [landscape infrastructure] is that in spite of the calculation that goes into its planning – in fact, through its very rigidities – it is the one architecture that engineers the unpredictable. Instead of enforcing coexistence, [landscape infrastructure] depends on regimes of freedoms, the assembly of maximum difference ... It develops strategies to organize both their independence and interdependence within a larger entity in a symbiosis that exacerbates rather than compromises specificity' (Koolhaas, R. and Mau, B., 1995).

Four landscapes

We have identified four landscapes on the site. This is our own reading of the place [Fig 4]. We have discovered the geological landscape formed by sea

sedimentation; the agricultural field pattern of the eighteenth century and its transformation into the extensive cooperative farmlands of the German Democratic Republic; the military landscape theatre with its artificial topographies, its east/west conflicting stage sets and defensive structure; and the wild landscape that has now taken over, bringing with it a new ecological diversity.

These landscapes each have a powerful sense of time, and it is this temporal presence that is the most essential aspect of the architectural design and form of this project. The traces of history are the characteristics we want to expose, reveal and develop. They are the substances and the values one can share with other people (Beigel, F. and Christou,

1997). It is a complex and rich phenomenon and a safety net for a chaotic love affair with diversity in our time. It could make variety enjoyable.

'I believe we attach too much importance to art and architecture in producing an awareness of our belonging to a city or a country, when what we actually share is a sense of time. What we commemorate is its passing; and we thus establish a more universal historical bond and develop a deeper understanding of our society' (Jackson, 1994).

In geological time this land was covered by the sea. Brandenburg has a very flat, very open landscape, with a large sky [Fig. 5]. Historically it is a very wet and sandy land with large wooded areas standing under water (for example, the Spreewald region



4 Aerial photo of Lichterfelde Süd. The open lands to the south are grain farming fields (formerly collective farms). The V-shaped line next to these fields is the line of the Berlin Wall, on the southern edge of West Berlin

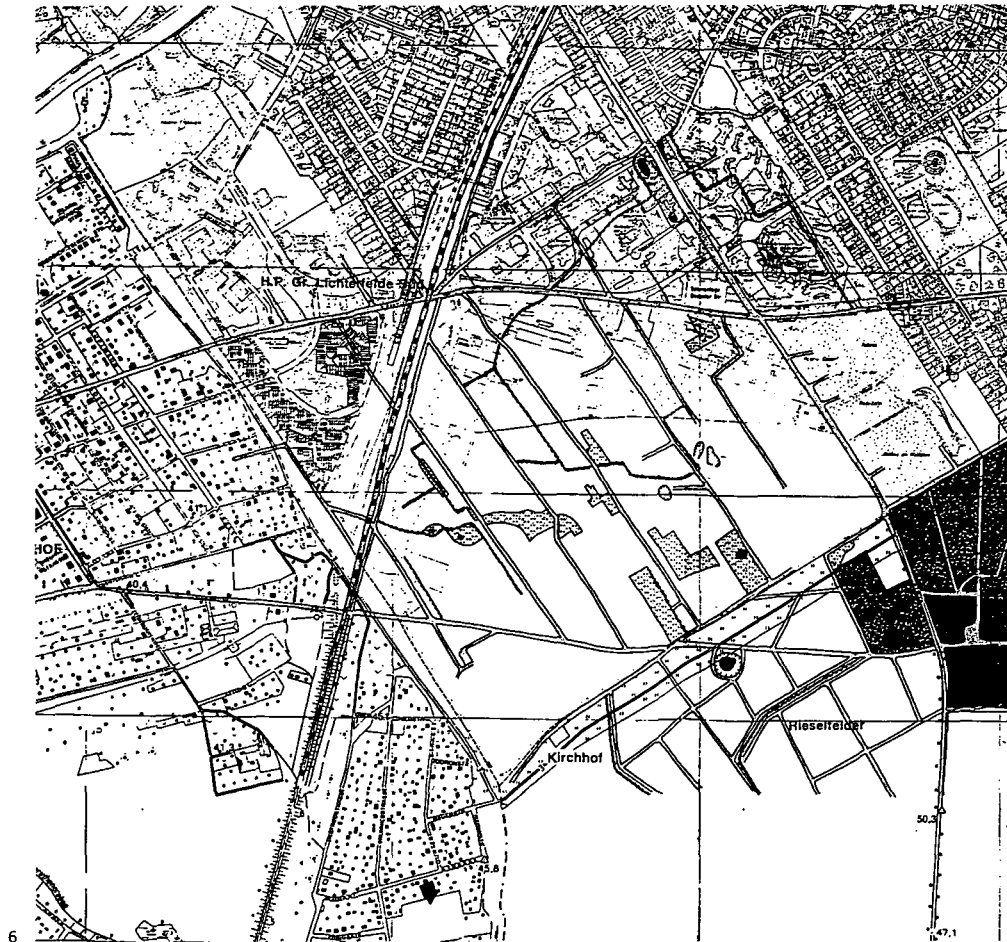
5 The flat, often sandy Brandenburg farmland, seen from the southern part of the site. This horizontal landscape was formed by successive glaciers and shallow seas



south-east of Berlin is a dense network of canals and wetland forests). After the land was drained in the eighteenth century, it was used for agriculture. The field pattern of that period is reflected in the plot pattern of the surrounding suburbs and the allotment gardens to the east of the site [Fig. 6]. In 1938 the land was acquired from the Sabersky family

by the German Railways to build a railway system repair works on the site: this was never realized. The railways, in the form of the Eisenbahn Immobilien Management Company, own the site today. It is their second largest property in Germany.

With the hardening of the Cold War following the uprising in East Germany on 17 June 1953, the



6 A 1906 map of Lichterfelde Süd showing the site with its eighteenth-century field pattern. Since 1938, the site has been in railway ownership

7 In 1953 the Americans constructed an urban warfare practice ground on the site. Only the street patterns survive
 a West Berlin suburb with a meandering curved street layout
 B East Berlin suburb with rectangular grid street layout



American protection force constructed an urban warfare practice ground in the southern two thirds of the site. Along the Berlin Wall in the south and south-western areas of the site they built a rough and impassable military topography including a hill (approximately 10 metres high) between two heavy concrete roads for tanks, one running along the former Berlin Wall and the other along the northern edge of the rough terrain. From the top of the hill one has a panoramic view to the vast openness of the Brandenburg landscape.

On a level plain north of the rough terrain, the Americans constructed a military theatre set as a divided Potemkin Town, with a curving street pattern like that of a West Berlin suburb on the west side [Fig. 7a], and a rectangular grid pattern of streets as an image of East Berlin [Fig. 7b]. These two imaginary city fragments were divided by a 6 metre high earth dam with a small railway on top. Only traces of this remain today.

After the Americans left the site in 1990 following reunification in 1989, the southern two thirds of the site lay abandoned behind fences and locked gates. The fences along the Osdorfer Straße in the east and along the former wall in the south are still in place today, and access through the gates is controlled. A certain sense of eeriness and danger is almost inescapable when entering the southern, former military, territory of the site. One finds oneself in an urban wilderness. It is a *terrain vague* (Sola-Morales, I. 1996), full of adventure for the young of the Thermometer Siedlung (a housing estate of medium and multi-storey apartment buildings up to 22 floors high built in the 1970s just to the north of the site). One comes across the occasional *promeneurs* on horseback from the riding school situated in the unplanned small-scale industrial estate along the north edge of the site. The place has waited for a long time and continues to wait. There is a certain enigma of place, a sense of mystery. One senses a strong potential here. It is fragile and threatened – a place where one should tread gently and which should perhaps be left untouched (Pikionis, 1989). The birch trees with their white bark on which the light reflects are taking over [Fig. 8]. We are interested in the protection of a number of valuable biotopes² within the site and particularly in the large central grassland, as recorded in a number of ecological studies carried out on the site by the Berlin Senate and described in the competition brief [Fig. 9].

These biotopes offer a unique character to the new Lichterfelde Süd. It may be possible to limit the access to specially protected territories where there are protected species such as *Pfuhl* and *Silbergrashügel* [Fig. 10a], by forming fences and gates. Footpaths will be located mainly within the perimeter of the field with one or two jetties for pedestrians connecting the north/south roads across this open ecological grassland in the centre of the site [Fig. 10b]. An ecological study station and a café could be attached to these jetties. Lines of trees, hedges, swales, tunnels and pipes under roads will connect the various biotopes (Merritt, A., 1994). This green network will be linked to the new horseriding meadows at the



8



9

8 The site is now an urban wilderness – fragile and threatened. There are several dense forests of self-seeded birch trees scattered across the site

9 Infrared aerial photo with transparent overlay showing biological areas of particular ecological importance identified in the competition brief

High dry grass areas (nos. 1, 8 and 12)
1 former railway area with a variety of protected sand dry grasses. The self planted birch forests are important for slowworms and dry grasses for fence lizards. Birds include Bluthanfling; Neuntöfer;

Baumpieper; Steinmatzer
8 silver grass area. In addition to silver grass there are also dry grass species protected by law

12 an area with a wide range of species of special grasses – mixed with single pine and birch trees

Areas with temporary ponds (5 and 7)
5 has a small pond with a protected reed species
7 small ponds which were dry when the ecologists did the survey. In former times they were important for spawning of various now rare and protected amphibians. The ecological report recommends that the dry ponds are worth keeping

Areas of trees (4, 10 and 11)
4 forest at southern tip of site
10 field trees – separate groups and single trees which should be retained if possible but do not have legal protection. The strip contains protected reeds providing a place for amphibians to spawn
11 high quality forest immediately north of large grass field. In both 4 and 11, birches are dominant, but there are also pines and oaks. A special kind of plant that depends on the oak grows on the ground between the trees. These partially protected forests could be developed into semi natural mixed oak forests



south side of the American Road and to the large open fields of the planned Teltow Regional Park south of the site.

Landscape infrastructures

The landscape infrastructures we are proposing consist in essence of landscape fields similar to a horticultural or agricultural structure, laid out on the site in response to the layered reading of the history of the landscape. In the Witznitz project (Beigel, Christou, 1996), we referred to these fields as landscape carpets. The premise is that, in time, these carpets will become the generators of a variety of building patterns, turning landscape fields into fields of buildings.

There is a high degree of uncertainty and therefore unpredictability in the formation of these building fields. They will be built gradually, as the Berlin economy allows (the current economy is very depressed, and it is not expected to improve before 2002–3), by different developers and different architects, for different users. The relative proportion between apartments and houses (all owner occupied) is changing by the day. The number of units that can be accommodated on the site is therefore changing. At the time of the competition, 3200 units were asked for with a mix of roughly 50% apartments and 50% houses. The current proportion is somewhat polemically estimated as being 5% apartments and 95% one family houses, as proposed by market analysts. This proportion is expected to change again. Five years ago, it was estimated that the population of Berlin would grow in the space of 15 years to 5 million inhabitants owing to its new status as a national capital. The reverse now seems to be the case. In the last few years people have been moving out of Berlin at a rate of 30,000 per year. They move into the *Speckgürtel* (the affluent belt) of the city. Building societies are now considering demolition projects in Berlin. In the case of the Lichterfelde site, the investors first assumed that the development would grow from the S-Bahn station in the north-west towards the south. Now it appears that the sites in the south near the open land will be more attractive to the first inhabitants [Fig. 1].

We have proposed the concept of *Wohnmenü* (see below) as a strategy for the housing fields. The landscape carpets could be seen as providing the

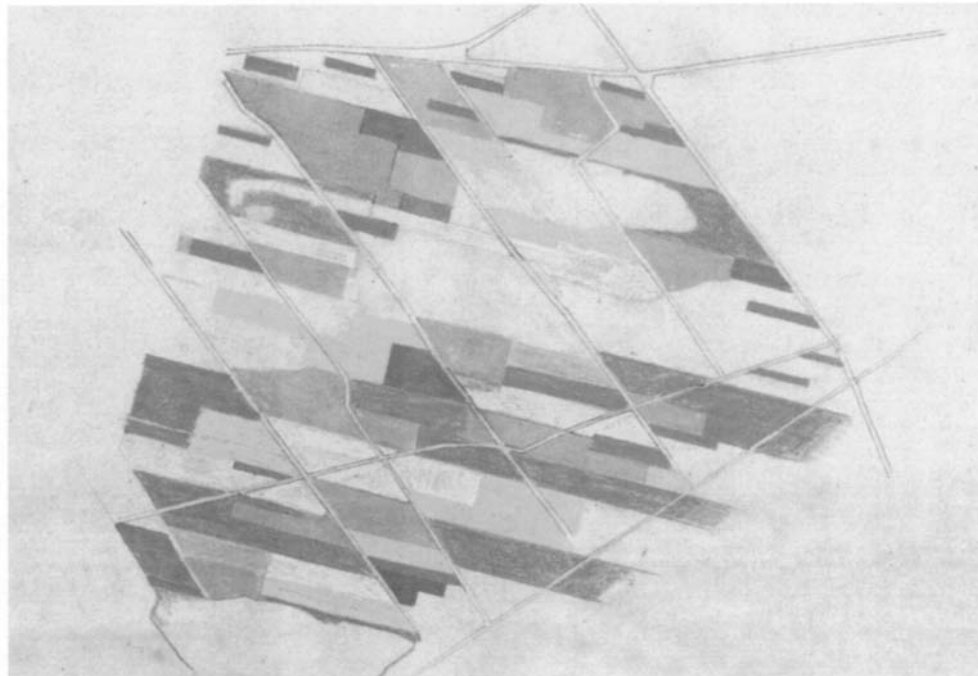
ground for an ‘architectural picnic’, giving the development a sense of place originating from the specificities and materialities of the immediate, near and distant landscape. Our competition submission showed choices from the *Wohnmenü* as inhabitation patterns of the landscape fields. The choices are in part informed by the contextual qualities of the landscape fields: proximity to the S-Bahn station; proximity to the large grassland biotope in the centre of the site; proximity to the Osdorfer Straße in the East (the only access to the network of public highways); proximity to the very large open landscape to the south of the site and so on. Near the S-Bahn station and along the southern edge adjacent to the large open landscape, the use of the landscape fields tends to be denser than the fields surrounding the ecological biotope area in the centre. The fields along the Osdorfer Straße are given over to commercial uses, keeping heavy traffic away from the housing fields. Otherwise, the proposals are only meant to be suggestions. The plan could be seen as a test for the process of growth and change.

We feel the proposed infrastructural design can cope with all the uncertainties and changes in brief (Alonso, P., 1989). This incremental field-by-field progression has the advantage of looking more complete than an unfinished masterplan with a more finite image of the whole.

The pattern of the fields

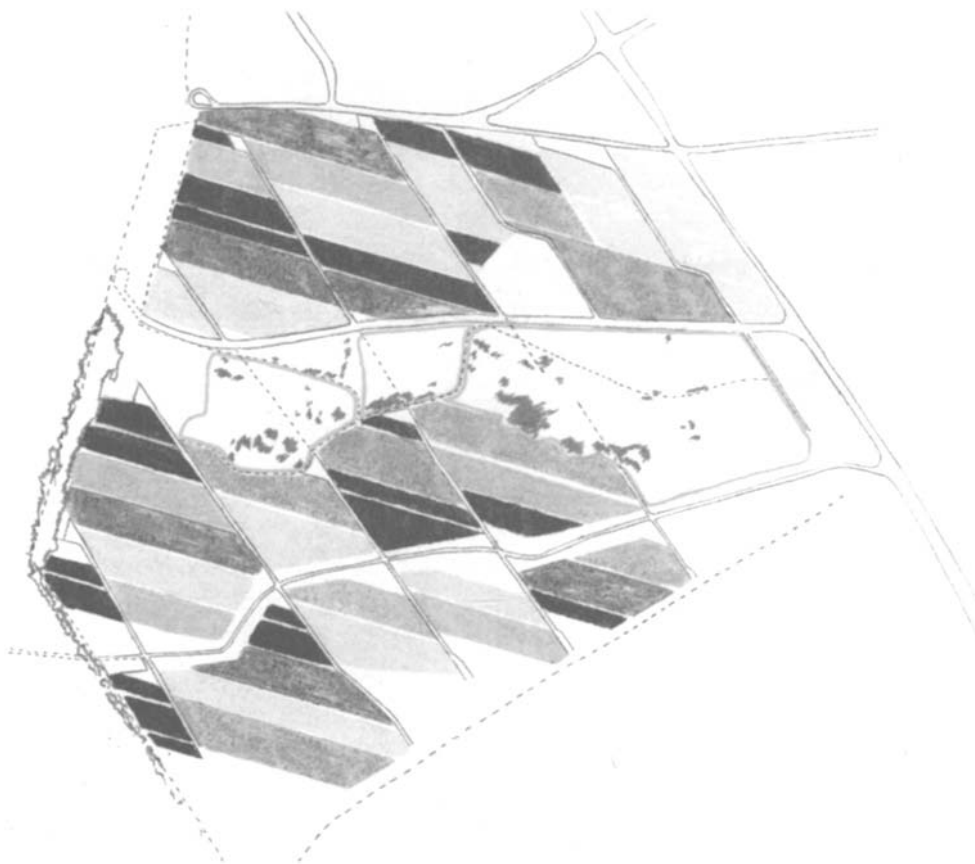
The landscape of the Lichterfelde Süd site can be read as a number of more or less parallel territories stretching from east to west, roughly perpendicular to the territory of the railways along the west edge of the site [Figs. 11a, 11b]. Curiously, the directionality of this strip system is at a skew with the directionality of the former agricultural order inherent in the street patterns surrounding the site. In the north, along the Reamur Straße, the boundary to the Thermometer Siedlung, there is the area of more or less unplanned light industrial sheds and yards originating from the Russian barracks built after the war. To the south of this area is a dense grove of birch trees stretching from the eastern edge of the site (Osdorfer Straße) halfway into the site with distinct north and south edges. Along its south perimeter, a field path continues towards the railway line on the western edge of the site. Between this field path and the American Road, a large low-lying

10 The areas of ecological importance will give the area a unique character
 a A small mound of silvergrass, identified in one of the ecological reports commissioned by the Berlin Senate
 b A large open wild meadowland reaching across the centre of the site from east to west. Note the heavy concrete military road (now known as the American Road) near the south-east end of this meadowland



11a

11 The landscape can be read as a number of parallel territories stretching east/west roughly perpendicular to the railways on the west edge
 a Early design sketch layout of fields and roads
 b Sketch of final layout



11b

open grassland contains ecologically rare and sensitive biotopes. To the south of the American Road (as we call it), is the rough land, the former military topography where contamination can be expected. To the south of that territory, in the triangle of the former Berlin Wall, is another forest of birch trees arranged in three east/west parallel strips [Fig. 12].

It is this east/west territorial order of the site

landscape that has generated the directionality of the infrastructure field pattern. Overlaid onto the east/west field pattern in a north-west/south-east direction is the system of *Flurstrassen*, the former agricultural field roads, providing access to the new fields along their short ends. The skew tangent of these roads provides characteristic entrance spaces to the building fields, where the corner community services are located. The overlay of these two



12 Competition site plan (original is 3 × 2 metres, drawn at scale 1:1000). The overlay of the geometries of the eighteenth-century strip field pattern and their access roads provides the main formal element of the plan

geometries is the principal formal element in the scheme.

The field edges

The design provides three types of edge conditions to the fields: rows of tall poplar trees; gabion walls made from demolition material that will in time be overgrown with vegetation; and linear shallow ditches (swales) [Figs. 13a, 13b, 13c, 13d]. Along these field edges, footpaths and bicycle paths run by the gardens of the buildings, away from the noise, creating a network of routes connecting the entire new cityscape. One can imagine these infrastructural elements forming the edges of the fields as lines of a musical score in which building structures are inscribed [Fig. 14].

The swales form the basis of the surface water drainage of the site (S.E.P.A., 1997). At the moment, rainwater seeps away naturally down to the water table. We think it important that any design for the site should consider retaining this regime. As the site is developed in time, large areas will be covered (streets, sidewalks, roofs). Diverting the rainwater

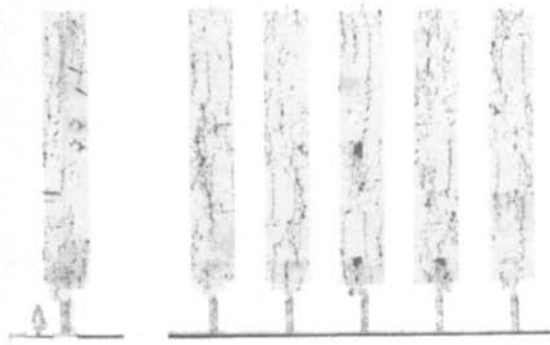
directly from these areas into the sewerage system of Berlin would change the region's drainage characteristics and could cause flooding of rivers or detrimentally change the existing habitat of the forests.

The use of linear seeping ditches of about 40cm depth and 300cm width (swales) will establish drainage conditions similar to existing ones. Surface water drained from paved areas will be led through oil filters before entering the swales. Surface water collected in the swales will seep slowly into the sandy grounds allowing the water table to remain at current levels. Swales are a common agricultural element in this region.

During periods of high rainfall, the amount of water staying on the surface may be more than the amount that seeps into the ground. In this case the water is kept in the swales and local flooding can be avoided. In order to prevent extreme flooding, the swales will be connected and their overflows directed towards collecting ponds in open parts of the site. The occasional moisture of the swales promotes the growth of reeds and other types of moist plants. As the



13a



13b



13c



13d

13 The design provides three edge conditions to the fields

a Plan showing the three edge types located according to local conditions:

- 1 rows of tall poplar trees (textured strips)
- 2 low gabion walls (solid lines)
- 3 linear shallow ditches or swales (double dashed lines)

b Long rows of tall poplar trees are a common agricultural windbreak in this region

c 3 metre high gabion wall

d Swale

14 In response to the competition requirement for a *Swarzplan* (a figure/ground plan of buildings on the site), this concept drawing demonstrated the principle of a high variety of architectures inscribed on the site like notes on a musical score



14

majority of the site is sandy below the surface, water will not remain stagnant on the surface and flies and midges will not become a problem. The use of swales is an economical and ecological drainage management strategy – significantly cheaper than the installation of a conventional piped drainage system.

The surfaces of the fields

Before building construction begins, the few areas of the site with contaminated ground could undergo a field-by-field treatment – either by removing contaminated soil, or by cultivating purification plants, or by treatment with microbes. Empty fields

could be used temporarily for storage of topsoil from other fields and serve as a resource for landscaping work elsewhere or for the production of green fertilizer (e.g. cheap comfrey). When the subgrade is exposed, fields could be protected by a special kind of grass. Generally, each building field will display its specific characteristics – with one type of grass for dry sandy soil, and another for fertile soil rich in compost. Dry grass, wild grass meadows and lawn will form a patchwork of grass types.

In a similar way, the space made by trees and forests will be specific to field types. For example, the fields used for the ‘urban villas’ could be enriched by a variety of fruit trees while the fields with ‘tree houses’ are located in existing birch groves provided with additional birches as required [Fig. 15]. The design of the hard field surfaces will also vary according to field type – asphalt, hogging, reinforced grass, etc. The intention is to achieve a patchwork, a kind of agrarian landscape, not an optimized general solution.

The road infrastructure

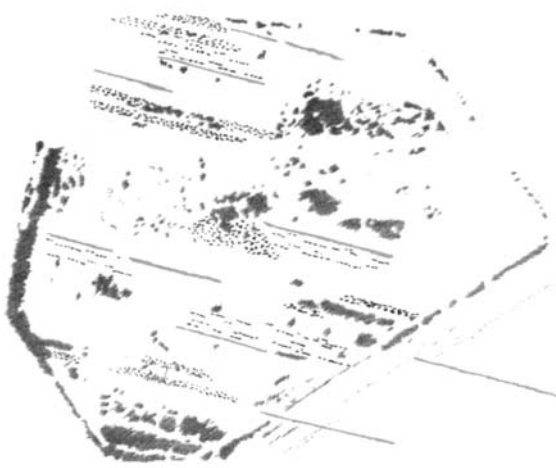
There are four orders of roads. Osdorfer Straße, running along the east edge of the site, is a regional road connecting the open country south of Berlin to Lichterfelde and Berlin Steglitz as part of a system of urban motorways. It is the only access road to the site. From Osdorfer Straße, the design provides two ‘land roads’ (as we call them), running west along the landscape territories of the site described above, towards the railway line. These are the ‘American Road’ in the south, and the ‘Heath Road’, in the north [Fig. 16]. The Reamur Straße along the northern edge of the site, the Heath Road and the American Road are connected with a road along the railway. Some form of limited access for public

transport buses, emergency vehicles, handicapped drivers and delivery vehicles is under consideration for the Railway Road with the intention of discouraging extensive private traffic on the site. A simplified form of the former agricultural road pattern, the ‘field roads’ running north-west/south-east, branches off the two main land roads accessing the pattern of fields. The smallest order of roads are called ‘Wohnstrassen’ (neighbourhood streets) located on the fields, providing access and parking to the buildings. They are private, whereas all the other roads are public.

The use of the military road is under extensive scrutiny by the developers who fear that it may be unattractive [Fig. 17a]. We have suggested that it could be seen as a special type of road running in its meandering course, a bit like a river, between stretches of straight embankments of earth, with bicycle and footpaths on top [Fig. 17b]. The embankment material would come from the excavation necessary to build the Heath Road and the banks formed so that car traffic would be invisible from the open ecological grassland [Fig. 17c]. We refer to both roads as ‘valley roads’ in an attempt to create for Lichterfelde a road space typology (land roads) [Fig. 17d] different from the streets in central Berlin which tend to be traditional European city typologies. The new services for the American Road could be laid beside it – this might be more economical than building a new road.

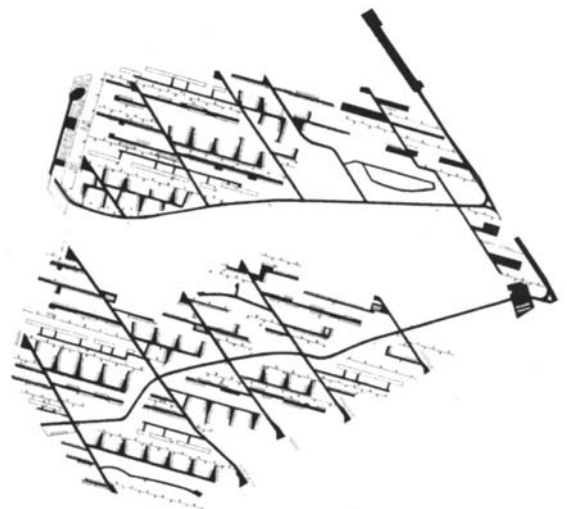
The Wohnmenü

In Lichterfelde Süd we propose the concept of a *Wohnmenü*. This is a catalogue of housing field types each with identifiable building types: individual free-standing houses among trees; hedge buildings;



15

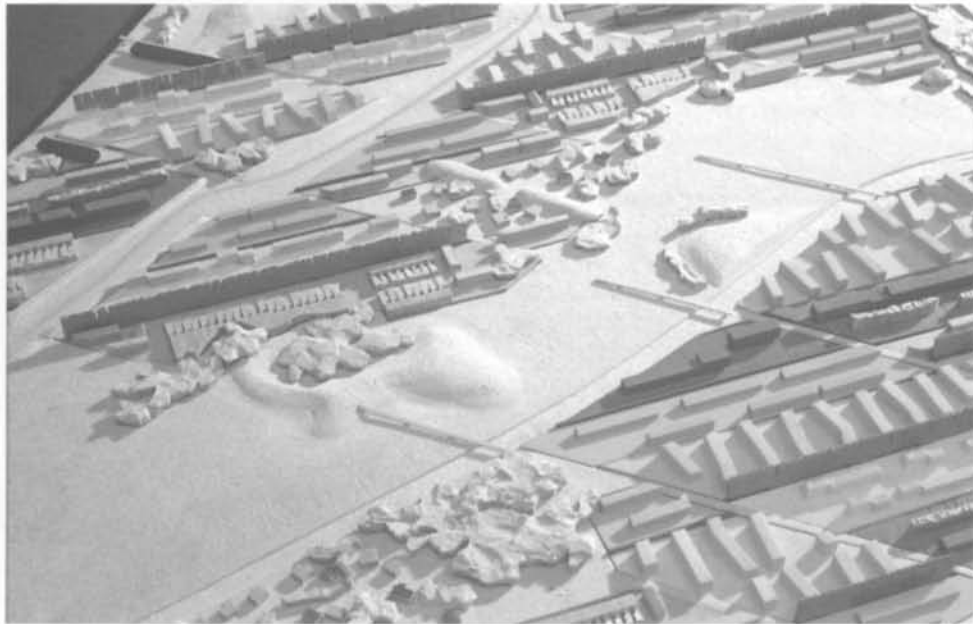
15 Plan of existing trees with rows of poplars and new field trees according to specific field types



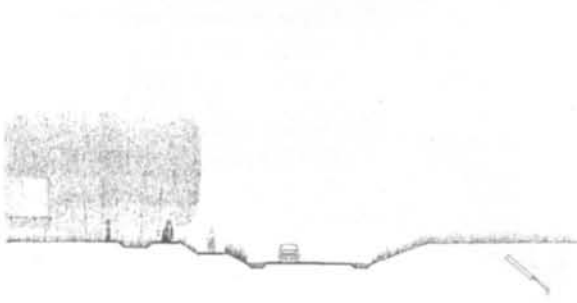
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16 Plan showing ‘land roads’, ‘field roads’, and ‘Wohnstrassen’ (neighbourhood streets) with their various configurations for parking according to field types

17 The use of the old 'American' military road is under intense scrutiny
 a Competition model looking southward. The large meadowland in the centre is bounded on its northern edge by the 'Heath Road' partially excavated to allow small jetty-like bridges to cross over the grassland for pedestrians and cyclists. The 'American Road' follows its existing route, with long straight stretches and gentle curves
 b 'American Road' section with long embankments for cyclists and pedestrians, forming a wide valley-like meandering road space
 c Competition model showing the 'American Road' with its long embankments as it winds between the housing fields
 d 'Heath Road' section with embankments for cyclists and pedestrians on the sides of an excavated valley-like road space



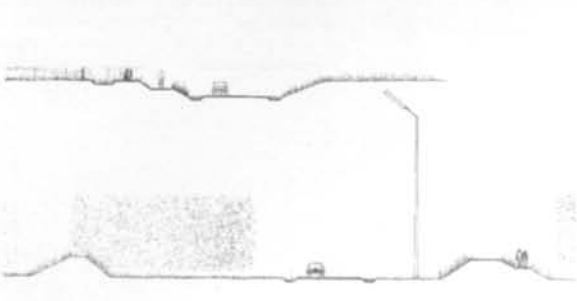
17a



17b



17c



17d

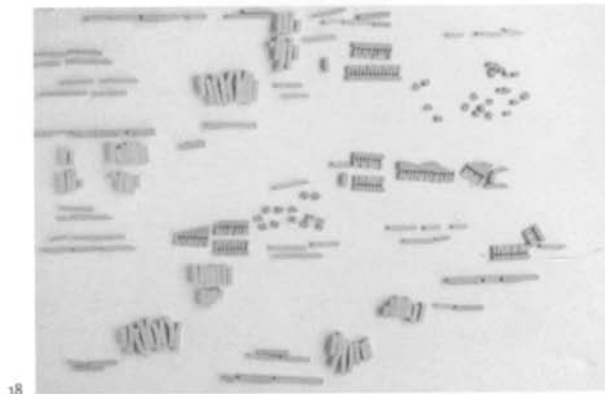
bridge buildings; mews houses; urban villas; patio houses; urban stitch buildings; row houses [Fig. 18]. Specific names indicate an urban role or a landscape condition. These designs are being critically reviewed and supplemented by new types in response to continuing changes in economic conditions. The idea of a menu is to offer a diversity of dwelling forms associated with the main landscape characteristics of the site, interpreted by different architects and built gradually over time. The structure of the housing fields has the potential of creating strong neighbourhoods.

Most of the residential units have two or three floors. In the case of the hedge houses there are four floors. The buildings are not higher than the existing tree groups on the site, nor will there be a large height difference between the multi-storey buildings and the smaller houses. In all cases there is a strong relationship between the immediate and larger landscapes. The majority of houses have gardens, shared or private. Every apartment or house has been assigned one parking space. The majority of dwellings will have an additional space with separate private access: this could be used as a student's room, a studio, a workshop, a single apartment for the grandmother or the grown-up son or daughter. The dwellings are mostly designed as compact units of about 120m² average floor area.

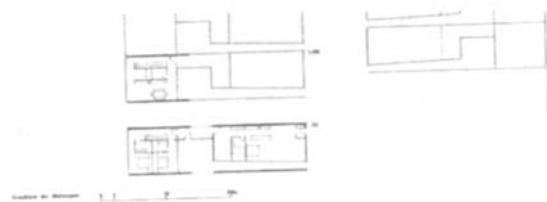
The *Wohnmenü* includes:

The field of urban stitch buildings

Urban stitch buildings are positioned across the field offering views to adjacent fields north and south



18



20

[Fig. 19]. The open space between the buildings is used alternately for access and parking or as a common or private garden area. Stitch buildings are terraces of deep plan three-storey houses. In a post competition design development, an option of attached wide frontage houses is being considered for these buildings.

The field of patio houses

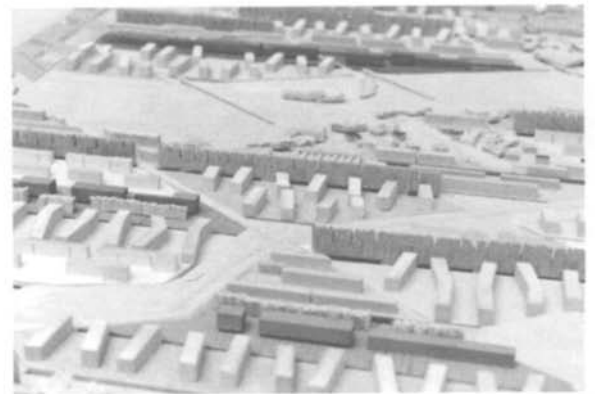
This is a carpet of high density, low rise atrium houses. Individual houses have a single- and a double-storey part. Each has a private patio and a green roof garden option. At the end of the field, adjacent to the road, two- and three-storey buildings surround an open space similar to a farmyard, connecting the carpet of patio houses to the *Stadtlandschaft*. These buildings may be used as dwellings and for local community functions [Fig. 20].

The field of row houses with private gardens

The row houses form long lines of two-storey terraced houses with private gardens on the south side. A wide frontage type is also now being proposed as an option for these houses.

The field of urban villas (apartment villas)

This is a type for people who do want the responsibility of maintaining a private garden and would prefer a two or three bedroom apartment to a house. These are relatively small buildings with only three or four dwellings per floor and not more than three to four floor levels [Fig. 21a]. The plan arrangement of the apartments is similar to that in

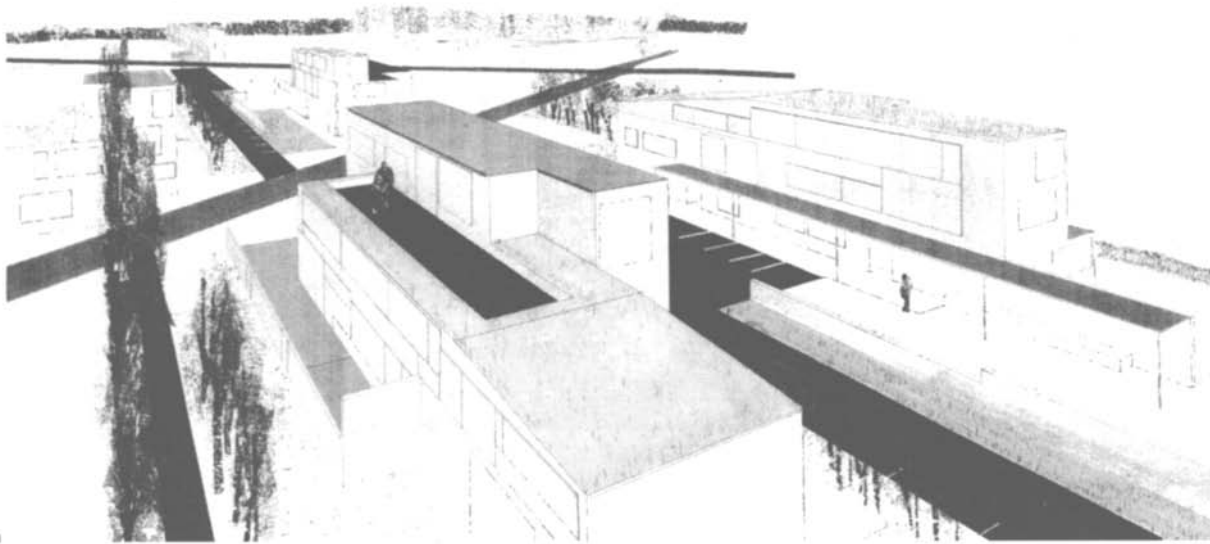


19

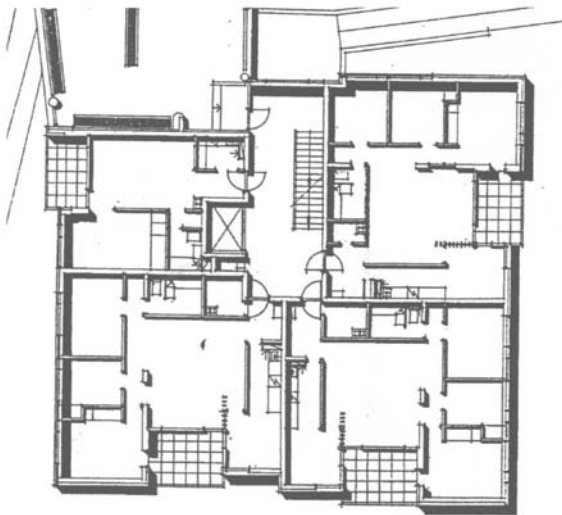
18 A *Wohnmenü* of housing fields each with its specific building type is proposed. Here, some of these are laid out during construction of the competition model

19 Deep plan, three-storey terrace 'stitch buildings' with intervening north/south open spaces alternatively for access and private gardens can be seen in this model

20 High-density/low-rise carpet of patio houses, generic plan and section



21a



21b



21 'Urban villas' are relatively small three- or four-storey buildings with three or four dwellings per floor arranged with a large living room surrounded on three sides by smaller rooms (as in 21b)
a The grounds of the

field and the form of the buildings are of the same order. The buildings grow out of the structure of the field
b Plan showing a cluster of four apartments in Alvar Aalto's Hansaviertel Housing, Berlin, 1957

22 'Tree houses' are small two-storey detached houses scattered in the existing birch forests. Generic plan and section



22

the Hansaviertel in Berlin designed by Alvar Aalto (1955-57), with a large living room similar to a courtyard surrounded on three sides by smaller rooms [Fig. 21b].

The field of tree houses

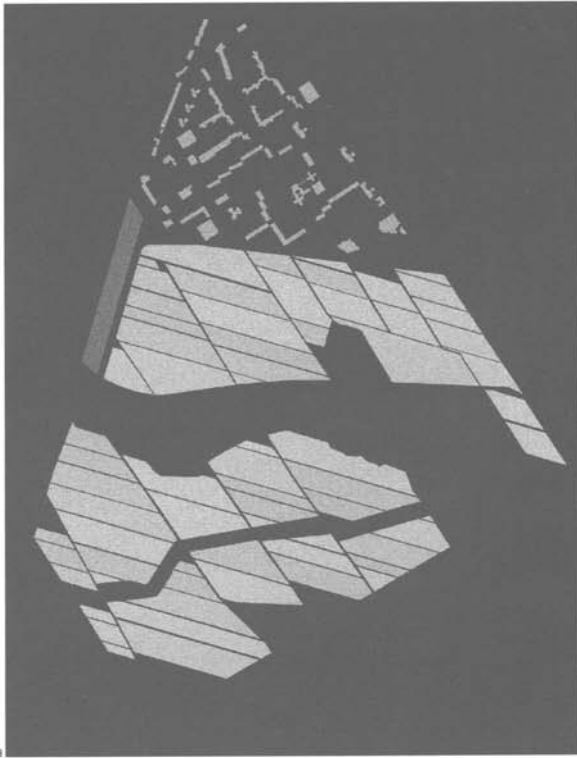
One- or two-storey detached houses are scattered among existing groves of birch trees. This type could be designed as timber framed buildings standing on stilts over uneven sloping ground. They could possibly be built by their owners with minimum disturbance to the forest ecology [Fig. 22].

The field of mews houses

A mews is a small lane with two- or three-storey attached houses and workshop buildings on either side.

Groin buildings

The groin buildings are situated on the southern edge of the site facing the future Teltow Regional Park. They articulate the transition from Lichterfelde Süd to this open flat landscape similar to the groins at a beach. They are three to four storeys high and could be mixed use buildings.



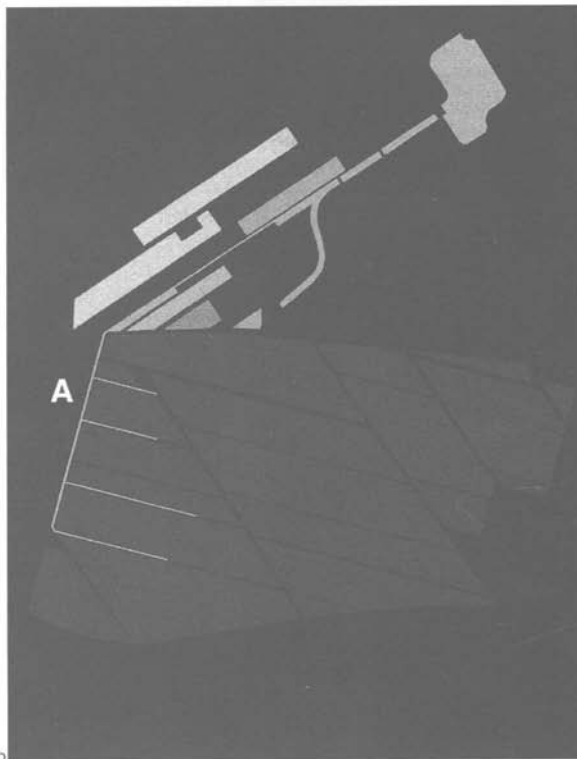
23a

23 The link to the existing Thermometer Siedlung to the north has been the subject of intense study
 a Proposed field pattern and layout of Thermometer Estate to the north
 b Proposed ground spaces of the Thermometer Estate, based on its existing structure, giving a generous public connection to the new suburban railway station (A)

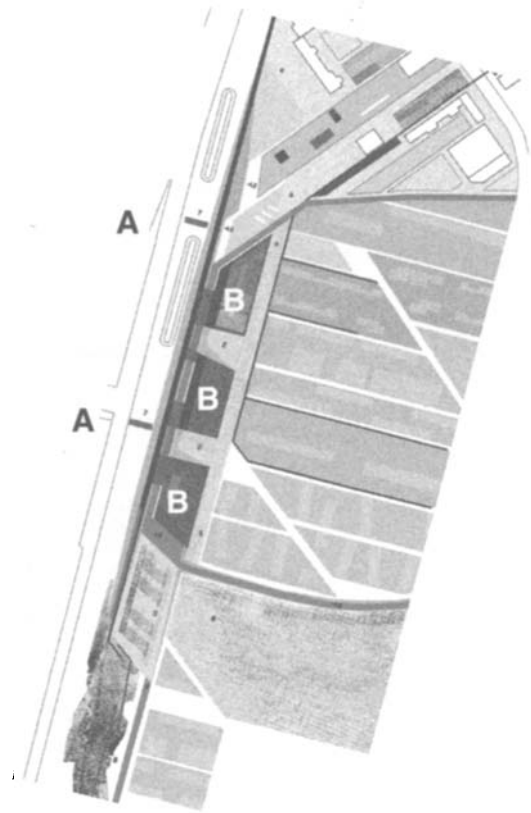
25 The Lichterfelde project is a step towards understanding how architectural potential can be designed through the creation of architectural infrastructures
 a At a large scale, the structure of the orchard at Brikettfabrik Witznitz, near Leipzig, Germany (Architecture Research Unit with Florian Beigel Architects and others, 1996), forms the basic plot

pattern for a carpet of patio houses
 b At the scale of the building element, the curtain wall glazing rails in the modernized housing at Harlow Bishopsfield (Florian Beigel and Architecture Research Unit, 1994) allow the possibility of a play of elements
 c Hedgerows, roads and groves of trees form the landscape infrastructures in the English landscape – complete at every stage of development and with the potential to delight

24 The route into the open landscape from the new station
 a Regional Centre plan showing a long gently sloping embankment building (B) along the north-west edge of the site, connected to the station (A)
 b Cross section of Regional Centre



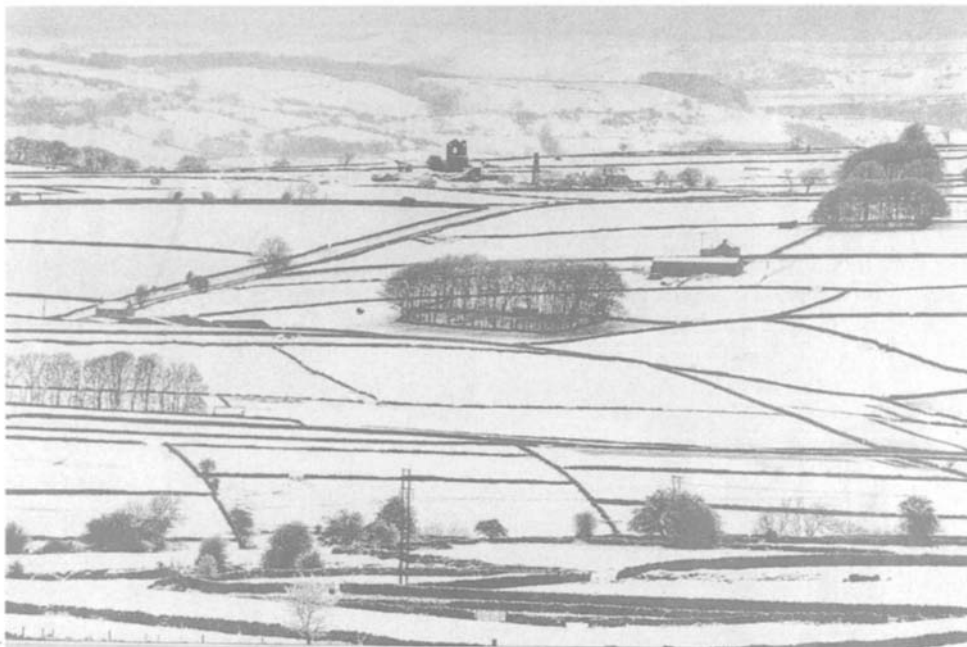
23b



24a



24b



The fields of light industrial buildings at Osdorfer Straße

As an option, these buildings could be designed as an industrial hotel comparable to Dominique Perrault's *hôtel industriel* on the periphery of Paris, an industrial apartment building with restaurant and car park (Perrault, D., 1994).

Urban relationships to the Thermometer Siedlung and to the S-Bahn station

The competition jury correctly criticized our winning design as not giving sufficient consideration to the urban relationship of the Thermometer Siedlung with Lichterfelde Süd. In response, we have developed ideas for the reprogramming and resurfacing of the grounds between the high rise buildings of the Thermometer Siedlung and have made studies about how this new ground pattern might meet the field pattern of Lichterfelde Süd along the Reamur Straße and connect to the railways and the station forecourt [Figs. 23a, 23b].

The route into the open landscape from Lichterfelde Süd station

A series of four gently sloping embankment buildings provides protection from the noise of the

trains and forms a new horizon in the landscape at the five metre level along the railways on the eastern side of the site [Figs. 24a, 24b]. These buildings form a large public sloping surface between the north and south underpasses leading to the S-Bahn station platforms and can be built in phases. Public facilities such as a small supermarket, a privately financed swimming hall, bowling alley, sports and fitness halls, and the other commercial amenities you often find next to suburban railway stations can be accommodated under this sloping artificial topography. The embankment buildings are designed with grass roofs. Along their bottom edge where the large sloping surface meets the natural ground, a green promenade originating in the Thermometer Siedlung passes the station forecourt leading along a gabion wall in the wooded territory south of the embankment buildings. This wall provides a continuous noise protection barrier from the railway. You can continue walking or riding a bicycle through the linear void in the landscape where the former Berlin Wall stood (now unfortunately broken up by a new civic planting scheme), into the large open expanse of the future Teltow Regional Park to the south of the site.

Architectural infrastructures

We see the Lichtenfelde project as a step towards understanding how *architectural potential* can be designed. It is not so much the completeness of an architectural artifact or proposal that is of interest here. The idea of the raw shell and its spatial condition continues to fascinate us. The words 'raw shell' have a wider meaning here, referring to structures of varying architectural scales, embodying the essence, the implicit nature of an architectural space. We call these architectural infrastructures. They suggest ideas for developing and inhabiting the project, probably unknown at the time of design.

The design of a table comes to mind. It should be designed with potential. It could be a social attractor, gathering people around it, a platform to stand on, a house for a child to huddle under, a table to dine on, to write on, to present things on, to make things on, to reflect on. It should have the potential for use and meaning which one hasn't necessarily thought about when designing it. At the larger scale, an example of such a structure with potential is the now partially completed 'garden of mining' on the site of the former Brikettfabrik Witznitz (Beigel, F. and Christou, P., 1996). There, the earth works and the horticultural field serve as a public garden for the local apprentices' educational establishment and for the citizens of the local town. The structure of the orchard is designed in such a way that it forms the

basic plot pattern for the future carpet of patio houses on that field – attracting potential site owners [Fig. 25a]. At the scale of the building element, the curtain wall glazing rails of the modernized houses in Bishopsfield, Harlow (Beigel, F. and Christou, P., 1995) are another example for an architectural infrastructure. They resemble shelves or rails that are fixed to the party walls of the building. These shelves permit a free arrangement of the various curtain elements of the facade. A variety of sheets of glass rest on them like pictures of different sizes and character. They allow the possibility of play [Fig. 25b].

'Each thing is the infrastructure to the next' (Alonso, P., 1989). In Lichtenfelde the selected reading of the site is the largest infrastructural scale: the fields and their edges are an infrastructure originating from this reading. Building types might be built as raw shells giving scope for individual inhabitation preferences. The furniture might also be understood as infrastructural – Maarten van Severen is a designer who approaches furniture production in this way (Zanco, F., 1994).

Lichtenfelde is not a landscape design project and it is not an urban design project. It is an infrastructural architectural project. We like infrastructures, because they are essential, can be shared and stir one's imagination. The project appears complete as each level of infrastructural scale is realized. The potential for delight is given [Fig. 25c].

Notes

'Time architecture' was the title given to a conversation between David Kohn and Florian Beigel published in *Scroope: Cambridge Architecture Journal*, 1998, pp. 49–56.

1. *Stadtlandschaft*, or city landscape, is a term that is extremely important to the work of the German architect Hans Scharoun. See Beigel, F. (1996). 'Exteriors into interiors, Hans Scharoun's idea of *Stadtlandschaften*' in *Korean Architects*, no. 141, May 1996, pp. 118–125.
2. A biotope is a smaller division of a habitat characterized by a high degree of uniformity in its environmental conditions and in its plant and animal life.

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The competition

Stage 1 began in September 1997 with 40 participants: 33 selected from practice submissions plus seven invited teams; 14 teams progressed to Stage 2 which began in January 1998. It was judged in June 1998.

- 1st prize Florian Beigel + Architecture Research Unit, University of North London with Arup Environmental, London
- 2nd prize Daniel Libeskind, Berlin
- 3rd prize Ernst Mayr, Architekt, Vienna

The competition was organized and funded by:

- EIM Eisenbahnmobilien Management GmbH and HABERENT Grundstücks GmbH in consultation with: Senatsverwaltung für Bauen, Wohnen und Verkehr Senatsverwaltung für

Stadtentwicklung, Umweltschutz und Technologie, dem Bezirksamt Steglitz von Berlin and GSW Gemeinnützige Siedlungs- und Wohnungsbaugesellschaft Berlin GmbH

Architectural competition judges:

Prof. Heike Büttner, architect, Berlin
 Prof. Barbara Jakubeit, architect, Berlin, Senate and Building Director
 Prof. Peter Kulka, architect, Dresden
 Prof. Albert Speer, architect, Frankfurt
 Prof. Thomas Sieverts, urban planner, Bonn
 Prof. Luigi Snozzi, architect, Locarno
 Karl Thomanek, landscape architect, Berlin

Specialist competition judges in other fields:

Dirk Grosse-Wödemann, EIM Eisenbahnmobilien Management GmbH
 Maximilian Hagen, HABERENT Grundstücks GmbH
 Klaus-Ulrich Keller, West Projekt & Consult GmbH
 Norbert Kopp, Baustadtrat, Bezirk Steglitz

Dr. Hans Stimmann, Staatssekretär, Senatsverwaltung für Stadtentwicklung, Umweltschutz und Technologie
 Guido Zielke, Bundesministerium für Raumordnung, Bauwesen und Städtebau

Credits

Competition stage 1 design team:
 Architecture Research Unit, University of North London
 (Florian Beigel, Eva Benito, Philip Christou, Thomeu Esteva, Mehrnoosh Khadivi, Marta Bayona Mas, Adrienne du Mesnil and Alberto Sanchez)
 with
 Arup Environmental, London
 (David Ellis, landscape architect; Dermot Scanlon, traffic planning)

Competition stage 2 design team:
 Architecture Research Unit, UNL
 (Peter Beard, Florian Beigel, Philip Christou, Matthias Härtel, Sven Katzke, Mareike Lamm, Marta Bayona Mas, Rafael Belaguer Montaner and Mariana Plana Ponte)
 with
 Arup Environmental, London

(Richard Bickers, hydrologist; Ahmed Bouariche, traffic planning; David Ellis, landscape architect; Ginny Hyde, ecologist; Claire Matthews, landscape architect; Dermot Scanlon, traffic planner; and Lorna Walker, environmental engineer)

Illustration credits

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 Competition organizers 4, 6, 9.
 Oeffentliche Kunstsammlung Basel, Kunstmuseum (photograph: Martin Bühler) 2.
 Philip Misselwitz 7a and b.

Biography

Florian Beigel is Professor of Architecture at the University of North London, where Philip Christou also teaches. They are both members of the Architecture Research Unit which is directed by Beigel.