

THF-Concept (Overview)

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BACKGROUND

The Project:

We are a team of five students from three Universities located in three different countries (see title page) and have the assignment to create a viable concept for the future of Berlin's Tempelhof Airport, which is supposed to close after Berlin's new centralized BBI airport has opened its gates (2011). The project is supported by G.A.R.S. (German Aviation Research Society) and NACO, a Dutch airport planning and consultancy firm. Preliminary results as well as the final concept are presented at several international workshops and symposia. We have the opportunity to publish the final paper at Ashgate (an English aviation publisher) depending on the results and quality of our report.

The study is predominately based on literature research and interviews. Nevertheless, own computations, new research and the development of a different concept creates new perspectives. By interviewing professionals in the field of aviation business we are able to validate the feasibility of our concept.

Some concepts have already been studied and researched. One study is conducted by ICAT (Interessengemeinschaft City-Airport Tempelhof) and focuses on the development of a full airport. Another study, created by Mr. Brunnert, an architect, is using THF as city terminal for BBI and connects the airports via an old industrial railway system. A third known study was developed by a landscape architecture company, namely "Voigt Landschaftsarchitekten" in cooperation with Professor B. Albers from Berlin. This study suggests using the huge airfield as park and construct housing facilities around the field.

In our study, we include some of the thoughts developed in the other concepts. But our study is more than a mixture of three above mentioned approaches. We have studied the possible needs of Berlin and the borough of Tempelhof-Schöneberg, and taking a market-oriented approach we would like to go one step beyond the current thoughts about this special airport. We want to develop a place of aviation, cultural and business grounded within Berlin's reality of today and tomorrow. We do not want to neglect the hard facts (e.g. Berlin's difficult real estate market) and the cost of this airport. We propose to make this airport and attractive area with a usage that safeguards THF also for future generations. We would like to show, step by step, how Tempelhof Airport in the capital of one of Europe's strongest economies can continue to be a point of lively history.

The Situation:

(1) Airport System:

Berlin's airport landscape consists of three airports; Tegel Airport (*TXL*), Tempelhof Airport (*THF*) and Schönefeld Airport (*SXF*). Each airport fulfills its own role in the airport system, which is owned by the City of Berlin, the state of Brandenburg and the German government. *TXL*, the largest and most important airport of Berlin, mostly serves the full-service clients with international connections while *THF* as city-airport supplies more business flights and General Aviation (*GA*) with domestic and continental flights. *SXF* at the brink of Berlin has developed well over the last years and is the second largest airport of Berlin. This impressive development in Air Total Movements (*ATM*) and Passenger per Year (*PAX*) was mainly due to the strong gain in air traffic demand come in line with the development of Low Cost Carriers (*LCC*). Therefore, *SXF* could partially be seen as a *LCC*-airport. In 2011, The *SXF* will be expanded to the new Berlin Brandenburg International Airport.

(2) The City

After the reunification of Germany and therewith the end of the cold war, Berlin became the new capital of the united Germany. Several governmental institutions moved to the new capital and therewith started to create a new town center for governmental administration. General demand was also rising in these times. The growing demand was driven by very high consumer expectations as well as all the new shopping incentives the consumers suddenly had. This overall impulse led to a considerably strong growth in investments. Especially the real estate market faced a strong impulse. At the end of the 1990's it became obvious that the most part of these expectations have been too high. This was because East Berlin's industries, now under free market conditions, mainly realized a fast bankruptcy. Also governmental institutions had to improve their efficiency and stopped to create new places. Further, important industries had already been located somewhere else in Germany and Europe. After the reunification some industries (especially production) were willing to invest in the former eastern part of Germany. But as they observed strong increases in real wages they became

afraid of moving and some of these companies jumped over the eastern part of Germany direct to Eastern Europe countries like Hungary, Czech Republic, The Baltic states and others. For that reasons, Berlin realized a sharp increase in unemployment rates while bearing the heavy burden of the establishment of a new capital with all corresponding costs. In economic terms, Berlin stayed one of the worse developed parts of Germany. But over the last years, a development in new industries was observable. These industries are:

- Bio Technology
- Telecommunication
- Media
- City Services

Considering cultural aspects, Berlin can be stated as the most active city within Germany. Also for this reason, the city realized a strong increase in tourist inflows over the last years. Moreover, due to the dynamic and open minded society, Berlin also became a magnet for many foreigners. And the city also holds another worthy position; it is the city of education with 6 universities 12 universities of applied science, 10 universities of cooperative education and 4 adult education centers.

The Airport Developments:

While TXL and SXF faced a strong increase in traffic, THF stayed clearly underdeveloped. In the recent years, TXL and SXF became even more and more congested. The degree of congestion made extensions on TXL necessary. But at the end of 2005 as well as in the beginning of 2006 THF realized a strong increase in traffic as well. This could be due to the congestion of the other airports. Nevertheless, THF produced high losses over the last years and is alleged unprofitable at all.

→ For graphical depiction see appendix A

Various Reasons:

THF can be assumed as underdeveloped since the traffic there can not keep up with the traffic at TXL and SXF and annual losses of about €14 million and € 9 million in 2004 and 2005, respectively, have been observed. There are several reasons for such traffic and financial figures. First of all, the – for today's aircrafts – too short runway was a reason for big airlines like Lufthansa to replace their locations to other Berlin airports. Therewith, the importance of THF within the airport system shrank and air traffic declined. Nevertheless, the runway with its 2094 meters is long enough to serve B717-200, B737-600 and A319 aircrafts that are commonly used by LCC. Secondly, the huge building, which was built as an airport and for serving the function of being a place of social life (exhibitions, air shows, parades,...), is not nearly filled. A big part of the building, which is one of the biggest in the world, is not occupied but has to be maintained. Therefore, an enormous gap between expanses and revenues has yawned over the recent years.

When thinking about reasons for such developments, we run into problems. THF could be a suitable LCC airport for high class LCC clients that are willing to pay the location premium. Also a specialization on business flights and GA that can gain from the inner-city location and would have shorter landing and starting distances comes in mind when thinking about THF's perspectives within Berlin's airport system. But these segments are not concentrated at THF to a sufficient degree. Business jets, GA and LCC also fly from and to other Berlin airports. Why Tempelhof Airport Berlin is that underperformed as it is can only partially be answered with such physical arguments. A reason can rather be found in a decision which was made in the mid 1990's.

The Political Decision:

In the mid 1990s, the time of cataclysmic developments in the "new" capital of Germany, the state of Germany in cooperation with the city of Berlin decided to establish a huge single-airport which is able to cope with the needs of a developing European mega-city; this is the BBI airport. Unfortunately, the city's development was not able to live up to the high expectations. Nevertheless, the decision, once made, was not changeable anymore. The political authorities, and likewise the operators of the airport, began to displace the traffic to TXL and further to SXF in order to close the THF and afterwards TXL airport as well. This seems only to be consequent; because the expectation investors

have evolved as they decided to invest in the construction of the BBI should nearly be fulfilled by the government of repute. Otherwise, Berlin would show again that the city is not the suitable place for high expectations. To arrange a place of prosper outlooks for a further development, the appropriate parties decided to establish a one-airport landscape. The concentration of all air traffic to one centralized point should induce a strong cluster effect which has impacts on the complete region. Again a big thought. The less degree of competition realized by a one-airport policy will have its implication on the earning structure of the airport authority that is its own regulator coevally. This fact is implied by economic theory.

In summary; the bad performance of the THF airport occurred partially due to an accepted mismanagement of an airport which lays about 4km (2.5 miles) afar from the town center and governmental district of Germany's capital. Further, the Airport shows a fantastic, unique and historic face that is memorable for long times and can be assumed as trade mark. For those reasons, THF has the capability of becoming a busy airport within Berlin's airport system again. Yes, Tempelhof Airport Berlin has the potential of being not only a landmark but also being a "brand-mark" of Berlin, worldwide known. Such a special reputation is exactly what airport constructors nowadays want to create at modern airports and what we want to create too. (diversification going along with airport competition and more flexible airline choices).

The Political Question:

Even if THF will be closed as Airport, the complete structure will stay in the property of the government of Germany and has to be maintained. The expansive maintenance is obligatory because the structure stays under legal protection as landmark. At the moment, neither a high share of the building is occupied by well paying tenants nor the situation in Berlin does guarantee a prosper developing at the real estate market within the next years. Strengthening, the senate of Berlin estimated stimulations on the real estate market of the districts in Berlin's "Ring", next to the town centers, to be probable for not before 2020. For these reasons, the political authorities are looking for post-usage or after-closure concepts (*Nachnutzungskonzepte*) for the structure of THF. At the end of 2005 for example, the Federal Office of Construction and Regional Development (BBR) requested professional studies about post-usage concepts for THF under the scenario of a closed airport and under the scenario with some remaining air traffic.

In our mind, a well sounded concept, firstly, has to fit in Berlin's economic and cultural actualities. Secondly, the concept has to be able to be financed under free market conditions. Private investments are necessary because the state of Berlin as well as Germany are encumbered and have to consolidate their public budgets rapidly. Further, the concept has to attract investors today but have to be open for future developments and trends. Only some small adjustments on the structure and the landscape should be stressed in order to create an attractive locality for today's usage, to respect the legal obligations, to act economic-minded and to conserve the land for the 2020+ future. Last but not least, the airport function of the THF building has to be sustained because this function makes a huge building in the middle of Germany's capital unique and avoid investors' substitution thoughts by this way.

CONCEPT

Philosophy:

Not only because the building of the Tempelhof airport is protected as landmark it is obvious, THF is a place of the German 1930's, is a place of something in the past, is a place of history. It was the English architect Lord Norman Foster who stated:

"Tempelhof is the mother of all airports."

By this, he mend that THF was the first airport who had all the functions, facilities and also a building as well as an inter-modal access that are typical for modern airports. We do not want to show that THF can operate as a modern airport operates. This thought can easily be rejected just by the comparison of the length of the runways of typical modern airports and THF. But what we can prove is that the Tempelhof airport is able to realize a development which is also typical for modern airports; the shift from aviation to non-aviation activities. In our THF-concept we will illustrate that the THF's building is best suitable for a place of social gathering; a function, it was build for.

Concept design (in headwords):

- Concept is focused on non-aviation activities.
- We recommend implementing a WTC-concept. (establishment of a well managed building with a specialization on a certain industry or a special field of economic activity)
- There are several industries of particular interest. (New economy, public institutions, entertainment, film). Combinations of these industries have to be thought through.
- Our further research will be concentrated on the film and media industry. Interviews and readings will be stressed to get deeper insights. This particular industry is most suitable for the local facilities. Why?

The Film & Media (and Fashion) Center:

- The special character of THF offers a kind of marketable image for an industry which is interested in showing up uniqueness instead of copying modern trends.
- This industry is one of the few industries that are historically located in Berlin (Babelsberg) and has the potential to growth (Bollywood).
- Berlin is the culture metropolis of Germany and has an accredited position at least within Europe.
- This industry needs the attention of a big audience. Originally, THF was build for a huge amount of air-show spectators. The facilities can also be best apt for visitors of film productions.
- The "Berlinale", after the Oscar-award, shall be deemed to be the second important event of the film industry worldwide. This fact has developed not more than few years ago and is an indication for an acknowledged reputation of Berlin's endeavors in cultural affairs.
- At the times of the Berlinale-event, the movie stars and related persons can directly fly in and out.
- The huge hangars that are included in the building can be served direct from the buildings (see PowerPoint presentation) and can be used closed and opened to the huge apron. Therefore, the hangars offer a lot of opportunities for the film production (especially for stages, stage production and studios).
- In Tempelhof-Schöneberg live many old artists, peoples of letters as well as movie stars. They are from interest if it comes to attracting potential customers for cafés, restaurants and other cultural offers.
- This industry gives us the opportunity to combine a high class clientele with the cultural environment of Berlin.
- THF can offer:
 - Sufficient space for stages and related activities (hangar and apron)
 - Flexible offices (15m² to over 1000m²)
 - High class offices with stunning perspectives over the square to Berlin or over the huge green airfield.
 - Inexpensive and flexible offices for entrepreneurs who are willing to pay just a medium rent but enjoying the geographical vicinity to professional persons and companies.
 - Parking Facilities, Lounge, Hotel, restaurant, bar, old- fashion cinema (already existent), theatre (already existent)
 - THF-park connected with the park in the north-east of THF (also for movie making)
 - Unique atmosphere
 - Closeness to the town center
- The film industry offers the welcome possibility to combine the specialized WTC-concept with a second approach we want to implement, a social gathering place.

A Social Place:

- At the present time, Tempelhof-Schöneberg is a borough of Berlin where the inhabitants and visitors can relax and regain their strengths for next day's business. THF's geographical position is situated between the eastern and the western town-center of the city and just a stones throw afar (4km, 5km). The airport is well connected to the public transportation system (underground and metro "Ringbahn"), the freeway and main roads to and out of the city.
- Currently, the region around the airport does not offer many attractions for the citizens and visitors. Especially, the square in front of the airport definitely looks underdeveloped and directs potentially interested people straight to other locations.
- To break-through the current situation and enrich the complete concept, we want to open a good deal of the area for the public. In order to attract interested people, we recommend rearranging the square in front of the building to connect this area with the "Platz der Luftbrücke". A car-free zone offers possibilities like week-markets, public football shows (Weltmeisterschaft) and other activities like relaxing in cafés or bars. These activities can be used to direct the people in the building to show them the old airport in its new design.
- The establishment of interesting museums (aviation, air bridge (already there), American-German cooperation, film, arts) and exhibition centers will deepen the historic character and will attract tourists to THF. By showing contrasts, a modern design of this facilities would underline the history between the 1930's and today. In addition, organized trips to other historical airports in Europe like Paris-Le Bourget or Speke Airport Liverpool can attract aviation interested tourists and offers a lot of further options for the development of special museum concepts.
- We advise locating a university of arts or, more specialized, a university of movie and film arts in one of the representative buildings. The attracted students will enrich the atmosphere and will bring life in the area of THF. The facilities we have are more than adequate for a university or other education centers. THF can accommodate the complete range of functions such a institution needs; class rooms, entrance hall, library, research facilities, buildings for technical equipment, cafés, space for stages, dormitory (already existent) and more.
- The university can benefit from the related industry in the neighborhood and vice versa. This principal is known as knowledge-cluster and reflects an observable trend in Europe's education center development. Especially the inexpensive offices we can offer allegorize an invitation for students and other entrepreneurs to hive off their own small companies. The established film industry contrariwise can profit from research-join-ventures, knowledge-spill-over effects and the nearness of a rich assortment of subcontractors and not at least from unhesitant students for supernumeraries-jobs. The university can have a more applied education, which is important in this segment by inviting professionals for guest lectures and founding-out research cooperation programs with adjacent companies.
- A kindergarten is already existent and reflects an important function within the social – and the business approach. We rearrange the kindergarten to another location, which offers a green environment and a shorter distance to the sport facilities.
- A retail area (supermarket, bookstore, haircutter, clothes and fashion shops, apothecary ...) is also part of the social concept and has to be located in the heard; the main building of THF. For business people, students and visitors and for the citizens of Tempelhof-Schöneberg a shopping mile in an old atmosphere will offer a new attraction. Also clients from the surrounding suburbs can be interested in this attraction since the location of THF is easy and quick to reach. In spite of connectivity, a precondition for becoming a famous location for shopping is the availability of parking space. To ensure the availability, we develop a parking concept.
- For the retail area, several rearrangements in the building have to be conducted (see PowerPoint presentation).
- A fitness area is a well sounded addition to the flat hotel, the apartments and the student dormitory (see housing). To relax after a busy day, it is a trendy method to do sports in the fitness studio or jog a round in the THF-park. In a higher level of one of the main buildings THF already have a basketball hall which have been installed by the US-Army. This facility is equipped with a glass roof and can be best used for a sport studio.

Housing:

- A hotel, a flat hotel and some apartments have to be arranged in the building. These arrangements will be mainly used by busy peoples who visit the city only for short appointments and have to stay for just a night and by peoples who are in Berlin for the wife of a project or negotiation and want to pause in a private atmosphere for some more periods. These clients profit from the short distances to all town-center locations and can enjoy all advantages the THF-airport-city provides.
- Apartments can be owned by companies that want to have living space in the capital of Germany available for their activities at the face. Also some citizens of Berlin can take up the opportunity to life in an exclusive environment with the direct vicinity of a special cultural surrounding.
- THF can offer:
 - Quick reaching (opportunity costs)
 - Appropriated space for a hotel, a flat hotel and flats
 - Space for luxury apartments with a view over the Berlin and the airfield
 - A plenty of sport facilities including a pool and a park (already existent)
 - Cultural life
 - Retail opportunities
 - A business airport
- The parking concept has also to be applied on the needs of these clients.
- The housing facilities have to be developed step by step according to demand expansion.

The Business Airport of Berlin:

- Because of the future existence of the BBI airport, we consider the PAX and ATM in the most optimistic scenario as slightly decreasing at THF. The traffic definitely will concentrate at Berlin's new airport. The BBI will be build for about 20 Million passengers a year. Several forecasts estimated a PAX of over 20 Mio. PAX in 2011, the year of the completion of BBI. Probably, BBI can handle the surplus PAX. But in the long run, additional extensions have to be approved (or monopolistic behavior).
- With an additional airport, the BBI can operate more efficient. This is the case since all the small aircrafts will not disturb the fleet-mix of the sub-hub airport and render an easier coordination possible. THF's specialization on its comparative advantage will save its customers at least one hour of travel time to the city and back to the airport. Further, THF can provide the airlines with preferred times since it has not to deal with fixed schedules for intercontinental – or other international flights. THF can also guarantee more flexibility for short-timed changes in private time tables or for urgent flights (like medical transfers).
- This THF-future concept regards the THF as exclusive city airport for Business flights, General Aviation and other small aircraft movements. Within this concept, we develop an airport which is designed for a time-sensitive clientele. This clientele esteems a private atmosphere as high as flexibility and individual services. Such services will never be fully satisfied by a large airport. The THF, Berlin's city-airport, can provide all the services and flexibilities the clients would like to have. Of course, we have to consider the occurring costs, but the addressed clients will be willing to pay for certain premium for the exclusive services of Berlin's city-airport. (lower price elasticity of demand)
- The costs for the terminal and the airport operation are that high that a cost coverage only by small business flights is unlikely, also if we take fee increases and a concentration of Berlin's business-flight segment at THF in consideration. For that reason we going to relocate the terminal from the main building in a more suitable part of the building; the "wings" of the building (see PowerPoint presentation). This segment of the structure offers the possibility to create a very personal atmosphere and an efficient passenger management in the same time. The distance between the entrance zone and the apron in the "wings" for example is extraordinary short and guarantees a very short check-in time for the busy passenger.
- We propose to outsource the small terminals in the "wings" directly to the airline operators or to a professional airport operator. The airline operators can own their own dedicated terminal or join in a shared terminal ownership, according to their size, purchasing power

and management strategy. This step creates the opportunity for the airlines to build up their own images by designing an individual styled terminal (interior). For the THF management, the outsourcing-strategy implies a direct reduction of maintenance costs, because the airlines will be responsible for such activities for the negotiated rent-period.

- Security check-in facilities can be shared by several airlines in order to facilitate a high utilization and reduce average costs (see PowerPoint presentation).
- The aviation related central infrastructure has to be provided by the THF-operator or by an external airport operator who is more specialized and able to manage the airport efficient.
- The airport operator has to cover the infrastructure costs. Since these costs are cross-financed by non-aviation revenues in many cases and such non-aviation revenues, probably, will not be generated to a sufficient degree at the airport business of THF, we have to develop a finance strategy. The small amount of revenues from non-aviation activities in THF's aviation section is probable since the dedicated terminals are small and the average duration of busy passengers' stay within the building will be relatively short. This presumption is supported by the fact that business passengers in general generate less non-aviation revenues than full-service-holiday passengers or low-cost-city tourists and the fact that the retail area is separated from the terminals.
- For a graphical impression of the airport-concept please see the PowerPoint presentation.

Summary

In the mid 90's, a time of strong overthrows and high expectations within Germany, the political authorities of Berlin decided to establish a single sub-hub airport in Berlin; the BBI. With the opening of the BBI, two of the current airports of Berlin should close their gates. TXL will be closed because the provided capacity is too high just for holding it as reserve. THF is also designated to be closed but offers a unique city location and can be used as Berlin's city-business airport. This usage will enhance the fleet mix situation at BBI and supplies the businessman with a service that reflects enrichment in Berlin's service accouterment. Berlin's position as modern service and business metropolis will profit from the existence of a city-airport, especially in the long run. Nowadays, Berlin is a city of culture, education, public administration, diplomacy, arts, fashion, bio technologies, telecommunication and media. The city has the potential to develop these industries.

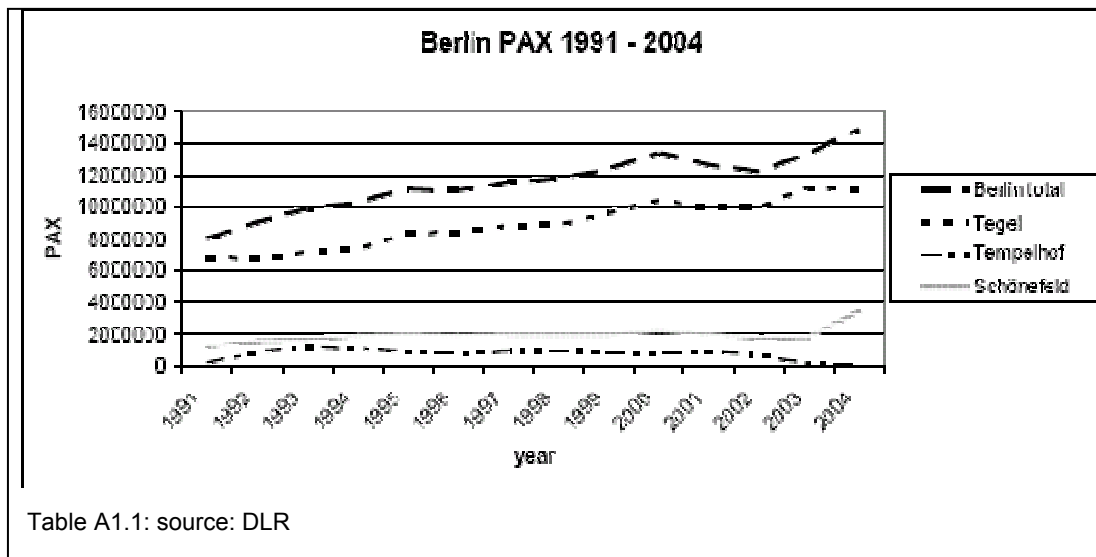
At the moment the THF airport operates under losses and ATM and PAX are probable to decrease with the opening of BBI. The building, one of the biggest in the world, with its 150,000m² available office space and 300,000m² overall space is virtually empty. The complete structure seems to be in a good state but looks absolute underperformed for today's circumstances. This fact seems to be the result from a mismanagement of an airport, which is more than just an airfield with a terminal.

A fitting concept has to increase the attractiveness of a huge building in order to make THF profitable. Since the awkward circumstances on Berlin's real estate market are foreseen to improve in a range around 2020 (Ring-zone), the appropriated strategy has to show opportunities for today and tomorrow but has also to make a note of future expansion needs.

Our Tempelhof Airport concept sees a future for the complete building in creating a well managed business cluster at THF. The film & media industry can be a sounding partner since the construction can offer special facilities this industry normally needs and because of the fact that this industry is historical located in Berlin. The cultural surrounding of Berlin offers the base for the future growth of this international business. In order to attract cultural life to the THF, we recommend establishing a university for film, media or arts at THF. The university in combination with cultural facilities will bring the initial mass to the building. In the next steps, a retail center, and housing facilities and of course the airport will press the developments ahead. In the long run, the gaps between the buildings in the town center will be closed. After this, the "Ring-Zone" of Berlin will profit from increasing demand. THF will offer sufficient space to drive the developments further. The World-Trade-Center concept at THF will become more interesting for companies of international range. Especially due to the connectivity, the short travel times and therewith the less transaction costs the building is best suitable for international businesses and diplomacy. In addition, the impressive architecture of the construction can be developed to a "brand-mark" of Berlin, worldwide known in the business flight class. Nevertheless, to use the great potential that the THF has is recommendable to combine the ambition of market the building to its highest value and use it as cultural hotspot. By this strategy, the THF can develop well as CITY-AIRPORT / AIRPORT-CITY within a metropolis of Europe.

Appendix

(A1) Traffic Developments

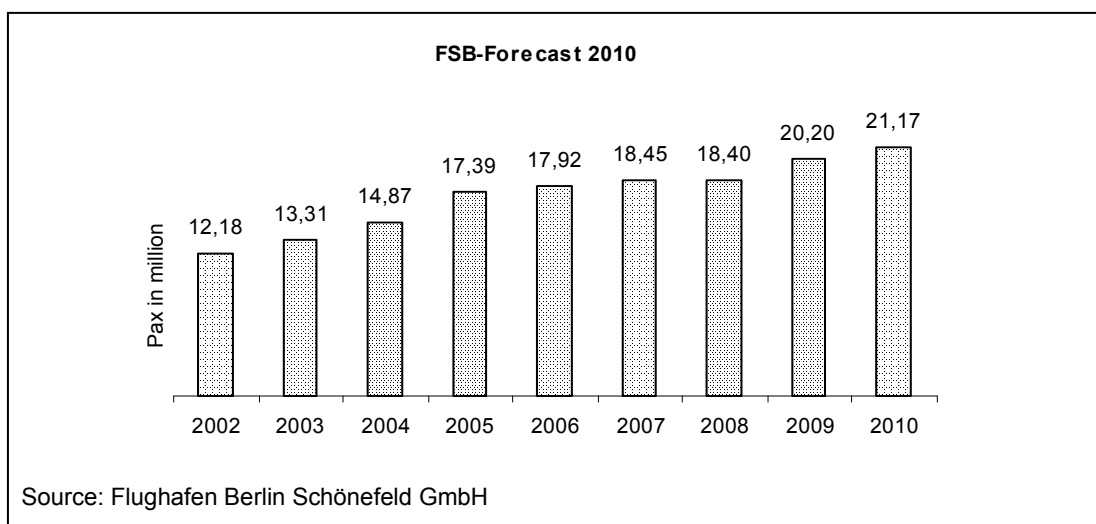


PAX January – June 2005

	Tempelhof	Tegel	Schönefeld	Berlin Total
2005	0.28 Mil	6.6 Mil	2.7 Mil	9.6 Mil
2004	0.26 Mil	6.3 Mil	1.7 Mil	8.2 Mil
Change	+ 8.9 %	+ 4.4 %	+ 63.1 %	+16.4 %

Table A1.2: source: Business News Berlin Airports issue 2

(A2) Traffic Forecast (by the Flughafen Berlin Schönefeld GmbH)

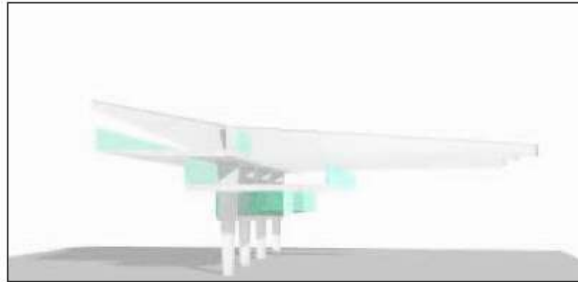


(B) Available Concepts**(B1) ICAT Concept**

ICAT Interessengemeinschaft Tempelhof e.V.
Flughafen Tempelhof
12101 Berlin
Germany

Flughafen Tempelhof
Ausblicke

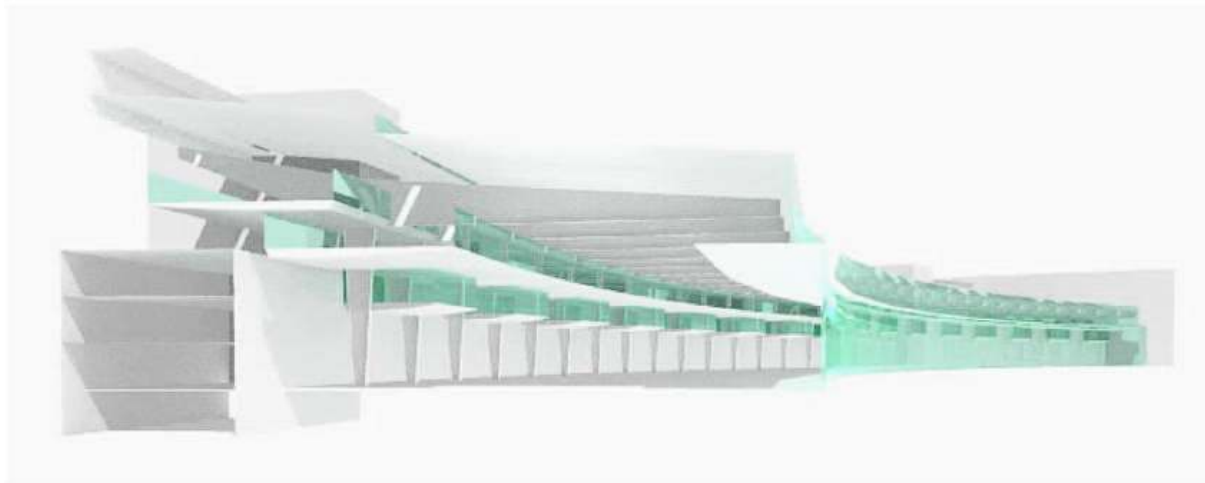
Struktur- / Nutzungs-
potenziale Hangars



THF

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Flughafen Tempelhof, D-12101 Berlin
Tel.: 030-6951 3317
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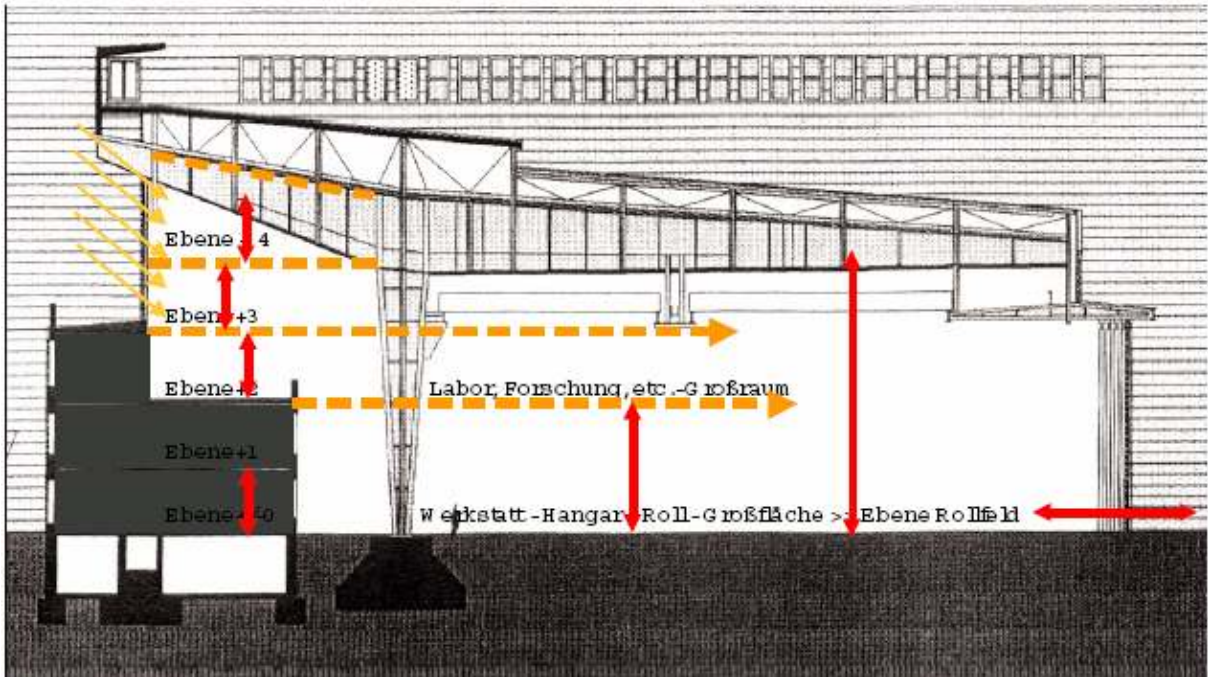
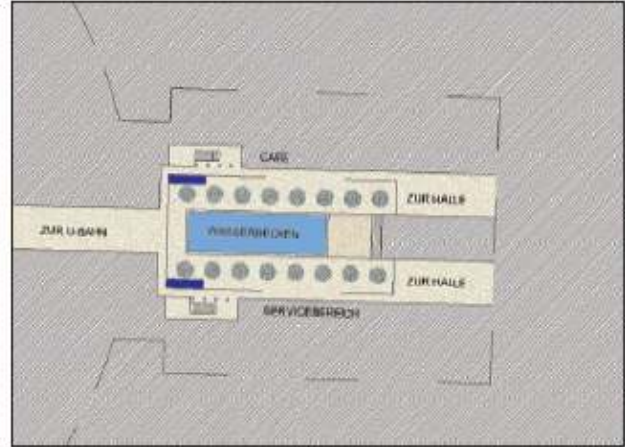
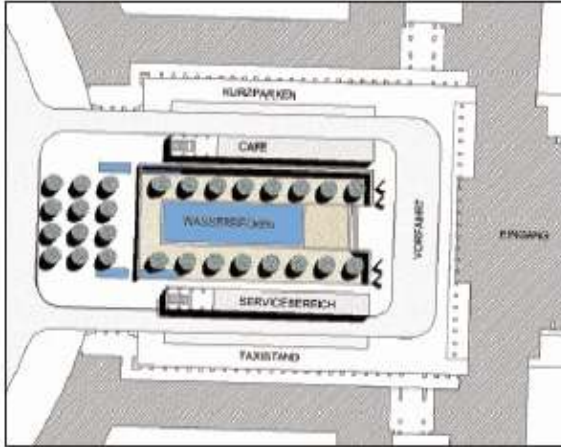
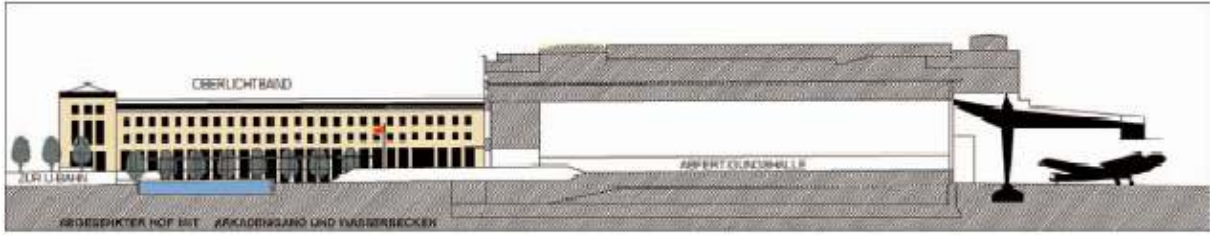
5.1



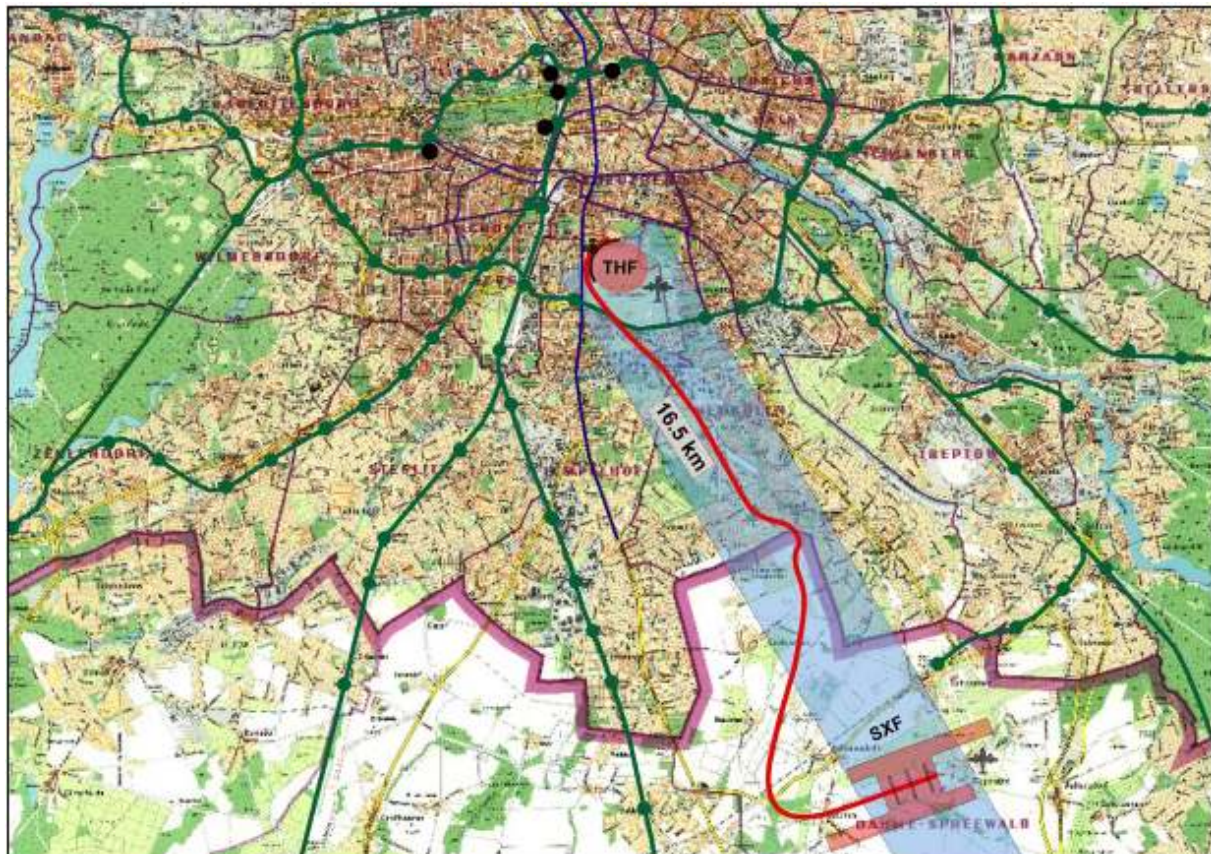
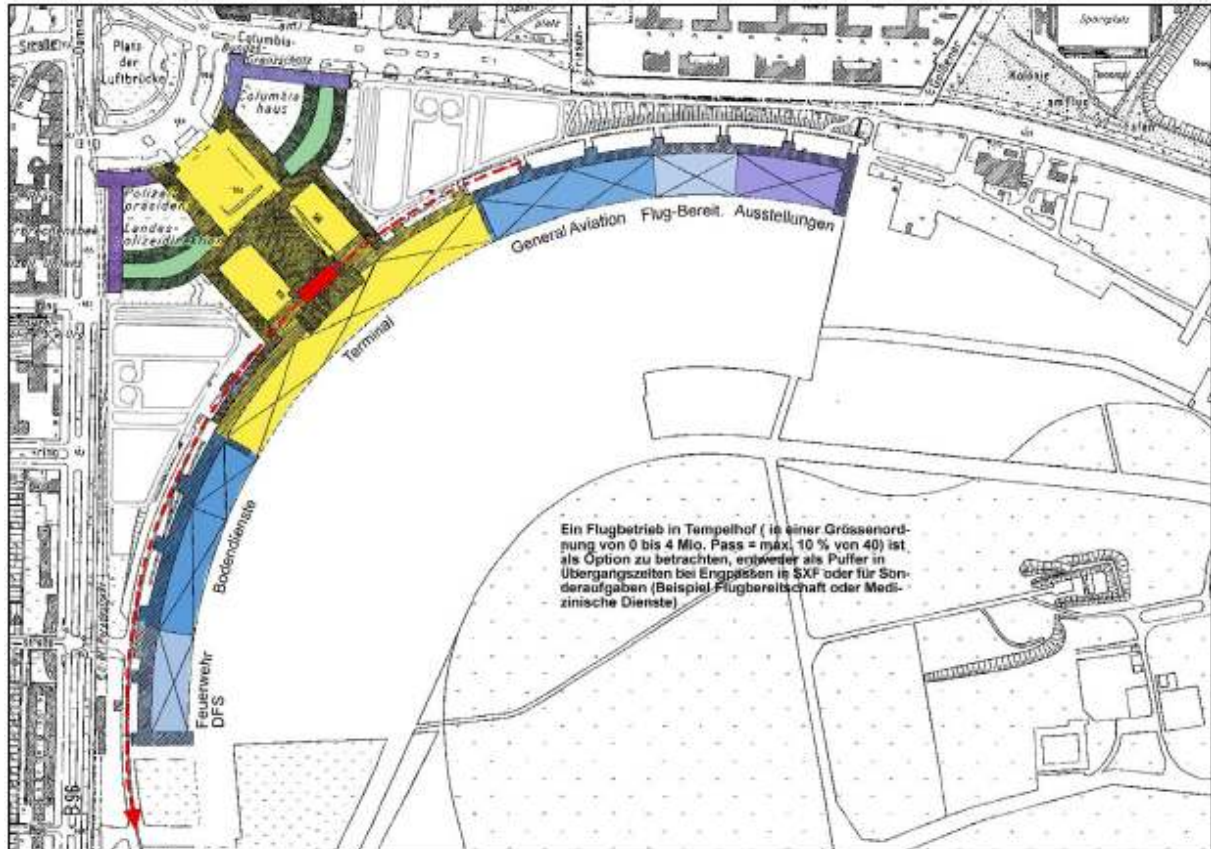
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(B 2) Brunnert Concept
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