

Studio Sergison
Spring Semester 2014

Low-rise, high-density 6

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Aerial view of Biel/Bienne



Introduction



This semester we will be embarking on the sixth and last instalment of our investigations of low-rise, high-density urbanism and the manner in which it can contribute to meet the need to develop the contemporary European city. In this instance we will be considering the Swiss city of Biel/Bienne.

Biel/Bienne has been undergoing significant changes in its urban structure. While it is not a large city, its favourable geographical position within Switzerland creates both the need and the opportunity for large-scale growth. A number of projects that are currently at an early planning stage or under construction will radically change the structure and status of this city.

The large area we have chosen for our work this semester lies between the railway station and the lake. Historically the area was vacant, as it was frequently flooded; the corrective measures taken to control the level of the lake between 1868 and 1891, 1939 and again between 1962 and 1973 eventually solved this problem. The site is well known to Swiss people as it hosted part of Expo.02, the sixth Swiss national exposition in 2002. In recent years the area has been subject to test planning studies and offers great potential for growth and expansion in the near future.

Our work will investigate strategies for developing this area by employing the courtyard building type. The emphasis of your work will be on normative, predominantly housing programmes.

As in the past, a number of experts and authorities on the issues we will be considering this semester will support the studio.

View towards the lake

The need to deal with changing housing requirements and population growth is a significant challenge for many European cities. In the context of Switzerland, this is a very real factor affecting the two largest cities, Zurich and Geneva, which are today planning for future expansion as a result of a number of positive conditions notably economic stability and employment growth.

Biel/Bienne is located at the threshold of the German and French speaking parts of Switzerland, a point that is made clearly in the dual name of the city. It is also very favourably located in relation to the transport infrastructure: Zurich, Basel and Lausanne are a little over 1 hour away by train, Geneva 1 hour and 20 minutes, and Bern only 25 minutes. Improvements to the existing highway system currently underway will also significantly improve travel times by road.

The area we will be studying this semester lies between the railway station and lake and holds the greatest opportunity for growth in the city. Historically the area was prone to flooding, although the corrective measures taken to control the level of the lake mitigated this problem. The site has recently been the subject of a programme of study and test planning.

It is our contention that the European city should always look for opportunities for growth by pursuing strategies of densification and consolidation before considering expanding its surface area. The site selected conforms to this criterion and its strong link to the railway station and lakeside aspect make it an ideal location for densification.

This semester our attention will be focused on the possibility of creating a large new city neighbourhood through what is arguably the preferred residential building typology in historical terms: the courtyard block. We will consider how this solution can meet contemporary needs and question the means by which it might differ from its eighteenth, nineteenth and twentieth century predecessors.



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1
Düsselstrasse Düsseldorf
Thomas Struth, 1979

2
Sommerstrasse Düsseldorf
Thomas Struth, 1980

3
Stephanienstrasse Düsseldorf
Thomas Struth, 1976

4
Rue aux Laines, Brussels
Thomas Struth, 1980

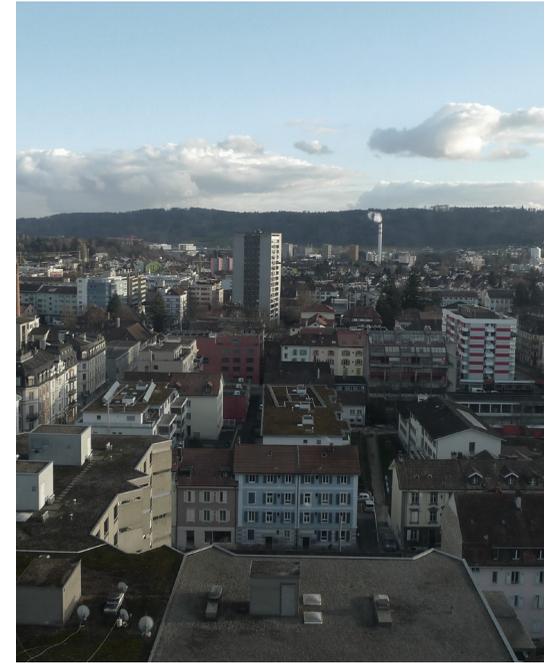
5
Palmerston Place, Edinburgh
Thomas Struth, 1985



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6

- 1 Place General-Guisan
- 2 Historic city center
- 3 Place Centrale
- 4 Historic city center
- 5 View from the tower of the congress centre
- 6 Rue d'Aarberg

Biel/Bienne is located on the border of two geographical regions: to the north-west lies the Jura mountain range; to the south-east the Seeland plain, dominated by the three lakes of Biel, Neuchâtel and Morat. The city also lies on the language boundary between the French and the German speaking parts of Switzerland and is the largest bilingual town in the country. This location on a geographical and linguistic border affords it an important mediating role and has contributed to the formation of the cultural and political development of the town.

The oldest part of Biel is located on a small limestone elevation that was created by a spring from the Jura hillside. Remains indicate that in Roman times it was a place of worship for the god Belenus, which is where the name "Biel" stems from. The first explicit mentioning of Biel is in a legal document from 1142, which recorded that the convent of Bellelay owned a vineyard "apum Belnam", that is, in Biel.

In 1225, the bishop of Basle built a castle on the limestone elevation referred to earlier, in order back up his claim to the region and as a counterweight to Count Fenis-Neuenburg-Nidau's castle in neighbouring Nidau, constructed in 1196. Subsequently, a small settlement consisting of a church, a marketplace and a surrounding row of houses developed at the foot of the castle. Today, this early structure is still visible.

In the thirteenth century the town extended towards the north-east. Two new streets were built; the wider Obergasse that functioned as a market street, and the smaller Untergasse. The surrounding vineyards and various crafts, mainly tanning and goldsmithing, dominated the economy of the medieval town. Around the middle of the fourteenth century the ring wall was extended towards the south-east, thereby doubling the size of the town, although around this time a fire completely destroyed the castle and the surrounding town.

From the fifteenth century onwards the town encouraged building with less flammable materials. Tiled roofs, stone structures and half-timbered buildings became more common. New public buildings were constructed; various guild houses and inns, and in 1530 the town hall.

Between the seventeenth and eighteenth century the houses in the old town were continuously enlarged and adapted to the needs of their inhabitants. Characteristic of this time are plastered baroque facades with limestone bases, large windows, and door and window frames of yellow Hautrive stone.

Biel between 1800 and 2008

1
1800: The extension of the town is the same as in the Middle Ages. Biel has 2 000 inhabitants. Nidau is intersected by small canals.

2
1857: 5 900 inhabitants. New streets and the first railway tracks are built.

3
1890: The first river engineering (Juragewässerkorrektur) is conducted. Biel extends to the south and has 16 000 inhabitants.

4
1925: The station is moved further to the south. The surrounding communes are incorporated. Biel has 35 000 inhabitants

5
1938: Biel and Nidau grow together. At the edge of the city new garden-city like quarters emerge. 41 000 inhabitants

6
1965: The edges of the city get denser. The first section of the motorway to Bern is built. Biel has around 60 000 inhabitants.

7
1981: Phase of stagnation. The agglomerations grow further while the population of the town declines to 52 000.

8
2008: The motorway to Solothurn has been built. The new boat harbour and the lido have changed the shore line. Biel/Bienne has 50'500 inhabitants.

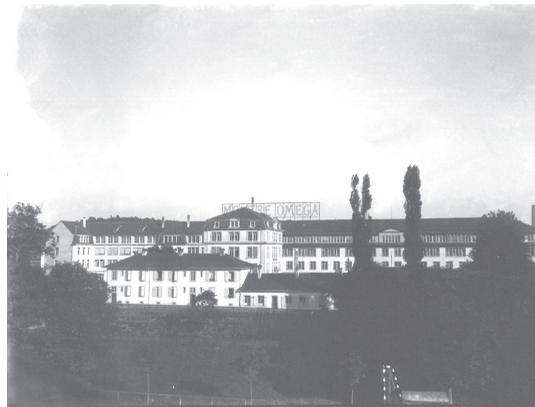




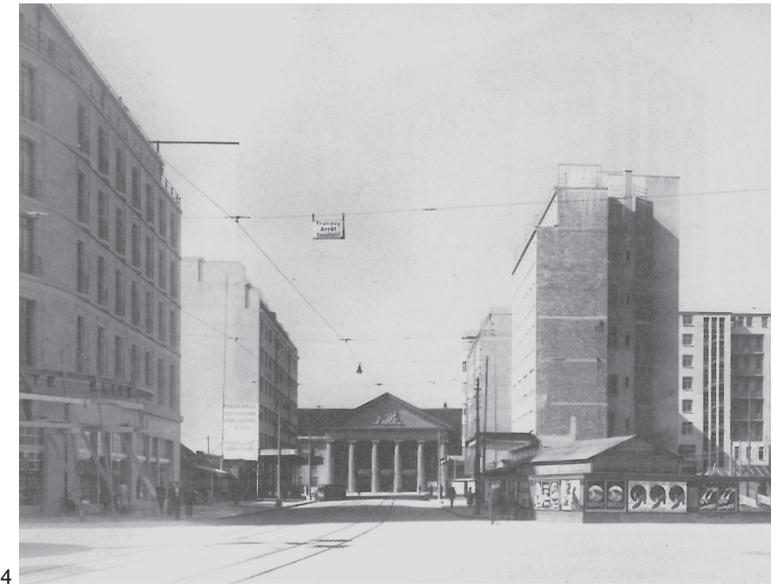
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1
1801: Biel before it's rapid growth: view towards the south.

2
1890 View towards the Neustadtquartier

3
Omega factory: The watch industry is characteristic of Biel.

4
1931: View towards the new station. The Volkshaus by Eduard Lanz is under construction.

5
1960s: New congress house by Max Schlup.

6
1930: Nidaugasse

The land between the town and the lake was traditionally used as farmland. In the eighteenth century the navigable waters of the river Schüss facilitated a gradual process of industrialisation. A brick manufacturer, a quarry and a limestone kiln were established. Thanks to the availability of hydraulic power, spinning and weaving mills were established.

In the middle of the nineteenth century the town managed to establish a watchmaking industry through the granting of fiscal benefits. This led to rapid economic prosperity and the ensuing vast population growth. Today's bilingual character is in part due to the immigration of a large number of French speaking watchmakers from the Jura at that time.

Until the nineteenth century, the town had remained confined to the borders of the original mediaeval settlement, but within then the town walls were removed, and the plain between the mediaeval centre and the lake was drained by canalising the river Schüss. This allowed the settled area to rapidly expand towards the south. In 1857 the first train station was constructed on the plain. To the north of the town, on the flanks of the Jura, numerous villas were built.

Due to the continuing threat of floods, larger scale river engineering was conducted between 1868 and 1891. This radically altered the shoreline of the lake. The neighbouring town of Nidau, which had previously been intersected by small canals became essentially landlocked. The construction of the Lyss-Biel train line in 1854 made it necessary to move the train station further to the south.

By incorporating the surrounding communes of Vingelz (1900), Bözingen (1917) and Madretsch und Mett (1920) the commune of Biel reached its current extension. The population grew to reach 35'000 inhabitants.

In the spirit of the time, an urban design competition suggested the garden city as a model for the further development of the town. This was partially implemented in communal housing projects on the outskirts of the city.

Economic difficulties during the First World War were attenuated by the establishment of a factory for the production of explosives, but the watch industry remained the town's main economic pillar. The world financial crisis of the interwar period created great difficulties for Biel. The social democratic council attempted to replace lost jobs and stabilise the struggling economy, by diversifying the economic basis. Urban development also continued during this time, focusing on the relocation of the train station to its current position.

With the post-war period came economic prosperity and a building boom. In the mid-Sixties, Biel's population peaked at 65'000 inhabitants. The programme for urban development was no longer limited to the perimeter block, but embraced the modernist vision of the high-rise building set in a park. Biel's congress centre is representative of this era, designed by Max Schlup, one of the most eminent and influential members of the Solothurn School, planned it.

The building boom ended with the oil crisis of 1973. The watch industry was severely hit and Biel entered a period of stagnation, which lasted until the turn of the century. The number of inhabitants decreased rapidly, from 65'000 in the mid-sixties to 49'000 in the year 2000.

The careful and sustainable policies of the town council since the mid-Nineties, the Swiss National Exhibition (Expo) in 2002 and the restructuring of the economic basis of the city have had a positive effect. The watch industry has recovered and the economy has further diversified. Biomedical and micro engineering (both profiting from the clock industry knowledge base) and the communications industry have become important economic sectors.

The city has implemented a policy to block the sale of publicly owned land to private investors, but offers long leases for 50 to 100 years. This allows the town to maintain its influence on how the land is developed. Furthermore, it secures a steady flow of capital that is used to buy further land, for the restoration of public buildings and for the development of public space.

The Swiss National Exhibition in 2002 accelerated the upswing of Biel. Forcing the public authorities, planners and developers to cooperate, thereby leading to the very rapid development of the city.

In 2004, Biel was awarded the Wakkerpreis, a prestigious prize awarded annually for high quality city development.

This new boom continues today, and has led to an 11% population increase in the last fourteen years. Biel/Bienne now has 55'000 inhabitants. One of the downsides of this boom is the rising cost of housing and the loss of informal spaces in the town centre.

Urban development focuses on four areas: to the east of the city is the Bözingerfeld (an area that mainly supports industrial companies and sports activity), in the centre the area of Gurzelen (home to the Swatch group as well as new housing) and the Esplanade (a project for a new town centre with housing, offices and shopping). South-west of the centre is the station/lake area. Here, the focus for development lies in connecting the town to the lake. To promote this, various measures have been taken: by 2026 the area will have direct access to the nearby motorways and a tramline is planned, as well as a project for the reorganization of the station square, which will help to make the area more accessible.

A campus for the local university of applied sciences will be built and service industries will be established close to the station. A new quarter (known as Agglolac) is planned directly by the lake, in close cooperation with the neighbouring commune of Nidau.



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The first component of the work to be undertaken this semester requires you to develop a strategy plan. This can be understood as a typological and massing study. The principal tool to assist you in this exercise will be a 1:500 model. This will be made collectively and should encompass an area of the city that is wider than the immediate site in which your work is situated.

We ask you to begin by exploring a number of solutions that would ensure that the site could be developed to a reasonably high density with courtyard blocks. Each study or option you propose should be recorded photographically and then critically appraised and tested in terms of the density it yields. This, in turn, should be further developed, refined or discarded accordingly.

This work should be understood as an iterative process that will begin to develop the idea for the project you will be working on throughout the semester. Our study trip to Biel/Bienne should be used as an opportunity to understand the scale and existing urban structure of the city.

A lecture will be offered to introduce this piece of work.



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1-6
site photographs



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pages 18 and 19
Aerial view of Biel/Bienne from Magglingen

Second exercise: Survey

In this studio we hold the position that invention is a necessary ambition in architecture, but it rarely emerges by spontaneous intuition. Architects can generally develop a truly unique proposal only after many years of study and reflection. It is questionable if true originality can be achieved in view of the wealth of examples in the history of architecture.

To help you understand the task that you are attending to this semester we would like you to undertake a survey of one of a number of courtyard buildings we have selected. We ask you to do this because we believe that by knowing more profoundly the qualities that can be encountered in an existing building you will be able to develop a relationship to what exist rather than believe that it is possible to invent spontaneously. The information recorded in your survey work should be drawn upon and referred to throughout the semester. You should consider its potential for informing your work later on.

Your work should consider the plan organisation of a block. You should be able to describe it clearly and analytically employing diagrams where necessary. You should concentrate on understanding the quality and arrangement of a facade drawing upon a measured survey of an existing series of elevations. This will require you to look very carefully at buildings, making sketches and taking photographs as a way of recording existing conditions. We would also ask you to make a precise photographic portrait that conveys the atmosphere of the buildings and the manner in which they are situated in the city. You might also make a photographic portrait of an internal space and record the relationship the building's interior has with the city outside. In this instance we are taking responsibility for the choice of courtyard buildings.

A lecture will be offered to introduce this piece of work.



1 Baumgartnerhäuser, Dachsfelderstrasse, Basel, Paul Hosch and Hans Hindermann, 1929-30

2 Case popolari, Quartiere 'Alla fontana', Milan, Enrico Agostino Griffini and Giovanni Manfredi, 1927-1930

3 Complesso di edifici d'abitazione Ca' Brutta, Milan, Pier Fausto Barelli, Vittorino Colonnese and Giovanni Muzio, 1919-1922

4 Primo quartiere popolare della Società Umanitaria, Milan, Giovanni Broglio, 1905-1906

5 Medieval courtyard, Gerechtigkeitsgasse 44, Bern, architect unknown

6 Housing and office buildings Warteck Brewery, Basel, Diener & Diener, 1992-1996

7 Courtyard block, Anwendstrasse/Schreinerstrasse/Stauffacherstrasse/Engelstrasse, Zurich, architect unknown, ca. 1900

Third exercise: Building concept

The results of these previous studies should now be reappraised and drawn upon to produce the next instalment of this semester's work. We would now like you to develop a more precise concept for a cluster of courtyard blocks and the relationships they have to one another and to the wider context. The principal tool we ask you to employ is a 1:100 study or sketch model which should include an appropriate amount of context. This is really the beginning of the key piece of work you will be producing this semester. We are interested in the qualities of the buildings you design and the way they are expressed through the organisation of the facades.

Your work should concentrate on the critical appraisal and further refinement of your earlier studies. While the model will be the main piece of work, we expect your project to be developed with study plans, elevations, sections and sketches. It is also important that you measure the density of your proposal.

Model studies



Fourth exercise: Atmosphere/Image

The next piece of work you will need to undertake requires you to produce two images. No specific graphic technique is prescribed, although you should be able to explain why the technique you choose is appropriate.

These images should represent the atmosphere and the presence of your building. One of the images should depict the exterior of the building and its relationship with the existing urban tissue and the site of the project within the city and its immediate context. The other image should represent the interior of a block and its qualities as a partly public, partly private space.

A lecture will be offered to introduce this piece of work.



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1
Perspective by Benjamin Jansen

2
Perspective by Matthew Bailey
and Vitor Pessoa

3
Perspective by Zeno Cattani

4
Perspective by Charlotte
Viarouge and Raul Vasvari



4

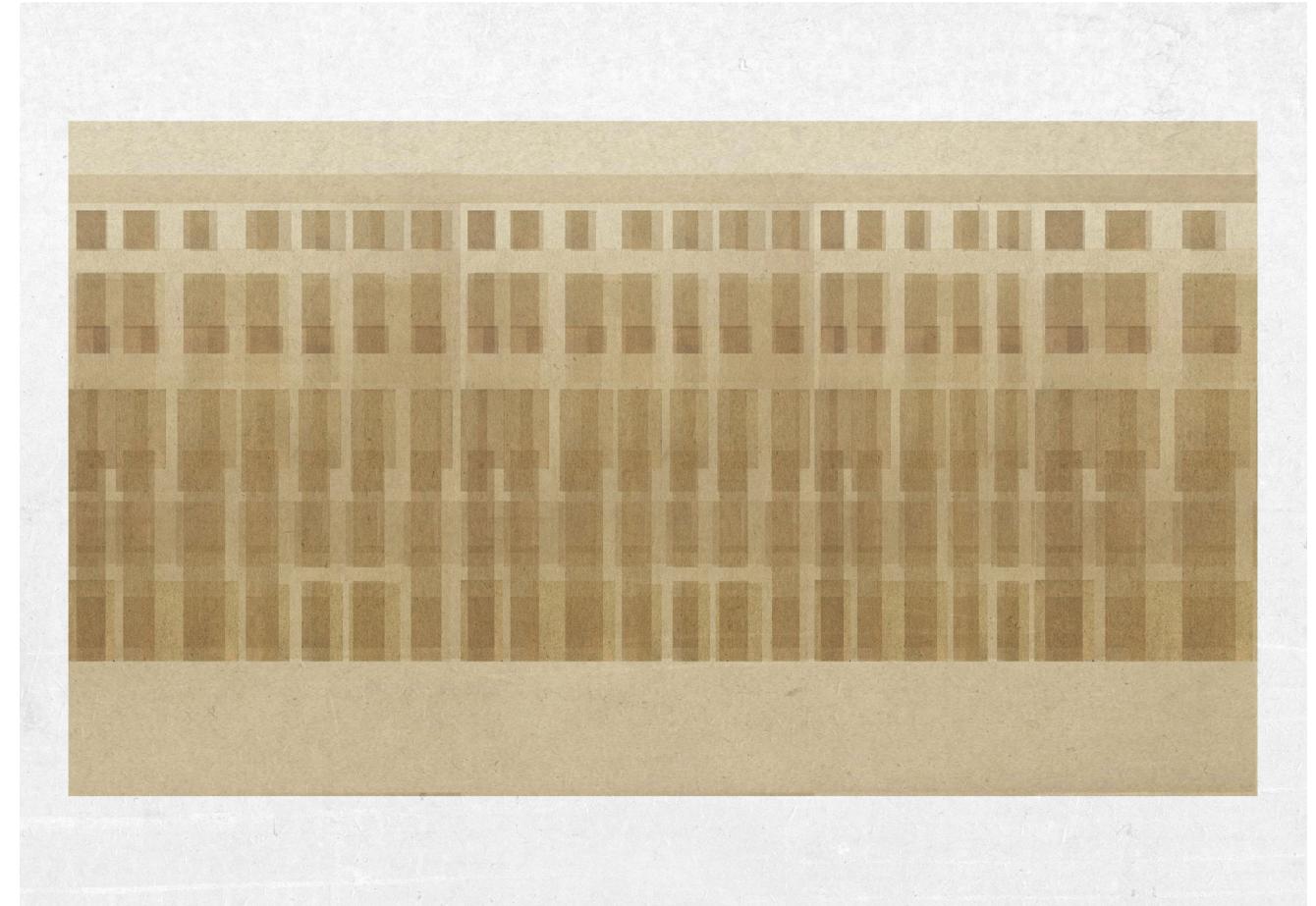
Fifth exercise: Facade concept

At this stage in the semester you should already have developed a rudimentary understanding of your project in plan and section, and we now ask you to develop and test your ideas for building facades within the framework of the strategy plan you have developed.

The facades of your buildings should be drawn at 1:100 (as unwrapped elevations) and translated into three dimensional models.

This piece of work should be undertaken with a clear concept of the image of your building in mind. What materials is the building made from? What is your attitude to the arrangement of window openings? How does the building meet the ground and how is the top of the building resolved? There are numerous additional questions you should be asking yourself about the facade of your building.

A seminar will be given to assist you in understanding this exercise.



Development of a facade concept, drawing by Matthew Bailey and Vitor Pessoa

With the emergence of a convincing set of ideas for your buildings you will need to produce a careful set of drawings of some of the facades you have developed. Additionally a number of sections should be produced, all at a scale of 1:100.

This semester less emphasis has been placed on the study of plans, although they should be drawn at a scale of 1:200 and should provide a rudimentary indication of how vertical circulation is organised, where entrances are placed and how they are arranged, some indication of the distribution of apartments (although not exhaustively studied in plan). Consideration should be given to notions of apartment repetition and variation and other programmes that might be introduced, especially on the ground floor.

A landscape plan should be produced at a scale of 1:200 indicating an approach to the landscape surfaces, hard and soft elements and general sense of public realm.

The main piece of work should be the making of a final version of a 1:100 model of all or a large part of the area of your strategy plan. This should be made giving careful consideration to the material choices you make. Two more 'atmospheric' perspectives should be produced of the final version of your project.

Finally you should prepare a Pdf or Powerpoint presentation of your project. This should be understood as an important tool for presenting your project at the final review. It should explain the development of your work and the strategy you propose.



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1-3
Final reviews SS 2013

| Date | Event | Details | Assignments |
|----------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|
| 20 February | Studio introduction | | |
| 21 February | Studio briefing | Jonathan Sergison (JS) presents studio, spring semester and text seminar Lecture by SM on Surveying a Building | Allocation of survey sites and texts |
| 22-23 February | Survey exercise | Trip to allocated survey sites, survey studies | Survey drawings |
| 27-28 February | Review of survey drawings Text seminar with Micha Bandini and Irina Davidovici | Introduction to sites and site models Lecture by Corinne Weber (CW) on Biel/Bienne | Start 1:500 site model Start survey models |
| 6-7 March | Review of survey models first urban ideas | Study trip briefing | complete site model survey model 1:500 model studies |
| 13-15 March | Study trip to Biel | See separate programme for detailed information | |
| 20-21 March | Tutorials | First ideas of urban strategy Lecture by SM/CW on perspectives | 1:500 model studies |
| 27-28 March | Review | Review of Perspectives Review of urban strategy | 1:500 model studies Perspectives |
| 3-4 April | Tutorials | Lecture by JS on courtyard blocks | 1:200 model studies Perspectives |
| 11 April | Intermediate review | Project reviews with guest critics | Ideas for a strategy plan 1:500 model 1:200 model studies Ideas of facades (model studies) Perspectives |
| 17-18 April | Review | Review of 1:200 model studies and elevation studies | 1: 200 model studies Facade models |

| Date | Event | Details | Assignments |
|-------------|----------------|------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 24-25 April | Easter Holiday | | |
| 2 May | Review | Review of sections, elevations and ground floor/ landscape plans | Elevation/section studies 1:200 landscape plan |
| 8-9 May | Tutorials | Review of projects | Start final model |
| 15-16 May | Tutorials | Discussion on final models | |
| 22-23 May | Tutorials | Review of final drawings and perspectives | Final model Prepare pdf presentation |
| 28-29 May | Final review | Project reviews with invited guest critics | 1:500 model 1:200 model Final model (scale to be agreed) 1:200 ground floor/landsc.plans 1:100 facades and sections Perspectives Pdf presentation |

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- Eine Stadt brich auf. Wie Biel sich am eigenen Schopf aus dem Sumpf zieht
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