

Project description

The building complex at Rämistrasse 74/76, known as the Chemical Laboratory and New Cantonal School, was built in 1908/1909 on the basis of construction plans provided by the Canton's Chief Building Engineer, Hermann Fietz. The building is registered in the inventory of listed (preserved) properties of municipal importance in the City of Zurich.

The project from Santiago Calatrava consists of integrating a six-storey library in the interior courtyard, raising the rear of the building by two storeys and roofing in the interior courtyard with a steel and glass dome.

The support structure is a typical Santiago Calatrava design, drawing on natural influences which this steel structure emphasises to the full. The main support girder can be compared with the spine in that the individual cantilevered beams welded to it are reminiscent of ribs. The building is flooded with light and the wood, steel and glass dome does not seem out of place when seen from the interior courtyard, but rather has the appearance of a fully compatible component of the building as a whole. The highlight in technical and creative terms is the hydraulically-actuated lamella sunshade.

Biography



Personal details

Name/first name	Strehler, René
Grown up and residence	Zurich, Switzerland
Date of birth	15 April 1967
Civil status	Married, 2 children

Professional activity

- 2000 - today** Building management canton Zurich, Building construction office, Building department 2
- since 1.1.2006** Manager of the department Professional Schools (concerns building activities)
- 2000-2005** Building commissioners Project leader, within all ranges in connection with the use and investment intention, considering of economical, ecological and architectural dependence and influences. Guidance of the external and internal organizations connected with the projects
- 1994 - 2000** Activity as an architect in different offices (direction of the project/construction supervision)
- 1983 - 1990** Activity as construction draughtsmen and construction supervisor

Main training and further training

- 2002 - 2003** Zurich University of Applied Sciences Winterthur, section economics and management
Post-graduate studies in marketing and management
Title as "Executive master OF Business administration"
- 1991 - 1993** Zurich University of Applied Sciences Winterthur
Training as architect
Title dipl. Architekt FH
- 1983 - 1987** Building-commercial vocational school of the city Zurich
Training as construction draughtsman

Memberships

- 2003** Swiss engineer and architect association (SIA)
2000 Swiss work federation (SWB)

Ladies and Gentlemen

Slide 1:

I am pleased to be here today to present the new library of the University of Zurich Jurisprudential Institute. My name is René Strehler and I worked as project manager for the builder, the canton of Zurich building authority, for the duration of the construction activities on 74 Rämistrasse. The renovation of the old building and the development of the library was a project for the University of Zurich Jurisprudential Institute.

Slide 2:

I have divided my presentation into the following topics: First, I will give you some historical background. I will then provide you with some information about the original occupants of the building. Third, I will describe the history of the project and, subsequently, will give you some background information on the building services. Finally, I will take you on a tour of the building and supply you with the relevant project data.

Slide 3:

This slide shows the so-called Breitingen map, which depicts the city of Zurich in 1814. You can clearly see the old city walls which were torn down in 1834.

→ The red circle indicates the area of the Schönberg rampart. This is where today's Jurisprudential Institute is located.

Slide 4:

The demolition of the old city walls represented a great opportunity for the urban development of the city of Zurich. Between 1834 and the First World War, several large public buildings were developed in the area of the former city walls. The main features of today's "education mile" became apparent. Among them is the Swiss Federal Institute of Technology (ETH) Zurich, designed by Gottfried Semper in 1864 and expanded by Gustav Guhl in 1911.

In 1914, the new main building of the university was developed by the architects Curiel and Moser. In 1842, the college preparatory high school designed by Gustav Wegmann was built, representing the first large building since the demolition of the old city walls. Finally, in 1909, the building on 74 and 76 Rämistrasse, designed by the master builder of the canton at the time, Hermann Fierz, was erected.

Slide 5:

At the end of the 19th century, room became scarce at the old college preparatory high school. It was therefore decided to construct a new building on the so-called "Wässerwiese" together with the university. This is why today the building has two entrances, one on 74 Rämistrasse with the heading "Alte Kantonsschule" (old college preparatory high school) and one on 76 Rämistrasse designated "Chemisches Laboratorium der Universität Zürich" (Chemical laboratory of the University of Zurich).

Construction started in 1906 and the building was completed in 1909. Building costs amounted to 2.4 million Swiss Francs at the time.

Slide 6:

This slide shows the building drawn in section. On the sides facing Zürichbergstrasse and Rämistrasse the building had a mansard roof, on the sides facing the gym and Schönleinstrasse it had a flat roof.

Slide 7:

This is a picture taken from the main building of the university. It shows the building on 74 Rämistrasse before the renovation took place.

Slide 8:

In 1981, the university decided to pool the jurisprudential institute in a new building between Schönleinstrasse and Rämistrasse. As this new building did not gain the required acceptance of the voters, the jurisprudential institute was granted the old building on 74 Rämistrasse. Based on the expected shortage of room on 74 Rämistrasse, it was decided to subject the house to an extensive renovation.

The number of students enrolled at the University of Zurich Jurisprudential Institute has been increasing steadily over the last few decades. While there were about 600 students in 1962, there were 2,400 students in 2003.

Slide 9:

In 1989, the master builder of the canton at the time, Paul Schatt, awarded the architect and engineer Santiago Calatrava a direct mandate based on the Stadelhofen train station that Calatrava had just completed. In some regards, the first draft differed considerably from the project carried out: First, the incorporation of the library was located on the side of Rämistrasse and the lateral entryways to the galleries were open towards the old building. The only reading spaces were the ones parallel to Rämistrasse. Also, the interior courtyard facade of the old building was obstructed on three sides.

Slide 10:

The state of the planning depicted here corresponds closely to the project approved in 1999. The galleries as well as the rear side of the galleries (the library backpack) are now strictly separated from the old building. The use of glass in the area of the cupola and the displacement of the galleries from the courtyard facade allow natural light to enter the gallery workstations from various sides. The static connection with the old building takes place on the sublevel and at the lateral access towers. The galleries are statically mounted in the lateral concrete cores and are supported by pillars on the rear side of the galleries (the library backpack).

The new building is strictly separated from the old building from an organizational point of view as well. At either end of the gallery there is the elevator, the staircase, and the access to the building services. On every story, there is one ladies' restroom and one men's restroom.

There are a total of 480 workstations, 250 of which are connected to the electricity mains and have IT access. The lighting can be switched on individually at every workstation. On the rear side of the galleries (the library backpack) there is one parlatorium each on five stories where students can meet to exchange ideas as well as one room for photocopying each on those five stories.

Altogether, a total of 5,000 running meters of books can fit in the library.

In the area of the old building facing Schönleinstrasse and the gym, an addition has been carried out where the so-called "Weissbibliothek", the workstations for Ph.D. students, and the administration of the Jurisprudential Institute can be found.

Slide 11:

Energy-efficiency and building-specific improvements

Slide 12:

About the reduction of the outside surface

Slide 13:

The roofing of the courtyard resulted in a substantial reduction of the energy reference area. As a result, energy savings have amounted to about 47 %.

Slide 14:

Exploitation of the thermal lift

Slide 15:

In summer, a large amount of light from outside enters the library through the glass cupola. Of course the light also transports heat into the building which forms a layer of heat under the cupola. If the dormer windows are opened, the air inside the building, which is hotter than the outside air, pours out of the building, drawing fresh air which is sucked in on the back of the building.

Slide 16:

This cross-section of the library shows the temperatures on an average summer day marked with colors. With an outside temperature of 27 to 28 °C, temperatures in the base area and in the top gallery will amount to about 25 and 29 °C, respectively. The fresh air fed in from outside is cooled through ground sensors via heat exchanger. I will get back to this topic later on in my presentation.

Slide 17:

Natural light

Slide 18:

The glass cupola provides a good amount of natural light during the day which results in a reduction of the use of artificial light and in a greater vividness of the room. This yields a higher room comfort level and keeps the students in touch with the outside. They see the passing of the day through the incidence of light and they feel the weather situation outside.

Slide 19:

Ground sensors

Slide 20:

Around the building, a total of 43 ground sensors have been installed at a depth of 100 meters to heat or cool the water to about 18 °C. The cooled or heated water is then passed through a heat exchanger which in turn cools or heats the outside air. This outside air is either fed directly into the library or used to feed the cooling ceilings built in on the attic story.

Slide 21:

Exploitation of rain water

Slide 22:

The rain water collected in the roof area is filtered, fed into a grey water tank, and then used for sanitation flushing.

Slide 23:

With this view, taken from the main building of the university, we will start our tour of the building. You can clearly see both the addition in the area of the rear flat roof where the administration is located and the glass cupola.

Slide 24:

This is the main facade of the old building with the entrances to the college preparatory high school and to the Institute of Chemistry in the lower and in the upper area, respectively. The facade features elements of both Neo-Baroque and Art Nouveau.

Slide 25:

This slide shows the facade as seen from the gym and from Schönleinstrasse. Thanks to the addition, the ridge height is the same for the entire building. Facing Schönleinstrasse are the so-called “Weissbibliothek” and the area reserved for Ph.D. students.

Slide 26:

The main entrance to the library is located on Schönleinstrasse. In order to reach the level of the inner story, the outside area had to be cleared away and supplemented by a staircase. The doorways correspond to the former window apertures. In the area of the staircase on this side of the building, fresh air for the library is sucked in.

Slide 27:

This slide shows the reception and the foyer of the library.

Slide 28:

The foyer acts as a “filter”. On the left and on the right, there is the passage to the old building. In the middle, there is the pulpit where the first information clerk can be found. On the left-hand side there is the entrance to the library; on the right-hand side, the exit can be found. This is where the book securing device is located. The books are still being secured with magnetic strips. On the short sides of the foyer, the rooms for the 600 lockers are situated.

Slide 29:

We are now on the ground floor of the library.

A short note on the materials used. To keep the light from being absorbed, we were careful to use mainly light materials. In the area of the escape routes, non-inflammable materials had to be mounted. This is why white natural stone was used on the ground floor and in the lateral access areas whereas wood was used in the galleries. The wood chosen is maple – Canadian maple in the area of the floor and European maple in the remaining area. This creates a pleasant room ambience.

Slide 30:

On the floor plan, the courtyard’s measurements are 22 x 34 meters and up to the ridge, it is 29 meters high.

Slide 31:

In the mezzanine, the so-called periodicals, journals to which the Jurisprudential Institute subscribes, are stored. In the front there are seats, two information desks, and eight computer information terminals

Slide 32:

On this slide you can see the staircase leading from the ground floor up to the mezzanine with the periodicals. You can clearly see how the galleries were detached from the former courtyard facade.

Slide 33:

When looking up, you can gain new and interesting perspectives. This is again the passage from the galleries to the old courtyard facade with the new skylight above.

Slide 34:

I don’t think any comments are needed for the following short film.

Slide 35:

And now a slide showing the cupola, which is mounted between the two staircase cores, and the anti-dazzle device below. The anti-dazzle device serves three purposes: the first purpose, evident

in the name, is that of preventing dazzling when the sun hits at a right angle. The device also works as a sound-absorbent element and, finally, keeps the emerging heat layer under the glass from entering the area of the library any further. As mentioned before, the opening of the ridge and eave flaps allows the hot air to pour outside.

Slide 36:

This is the view from one of the windows of the lateral staircase into the space between the gallery and the old building.

Slide 37:

This slide shows one of the “regular stories”. In the eye of the library there are the workstations and behind the students’ backs are the books. The parapet is brought up to eye level, thus conveying a certain intimacy. Bringing up the parapet makes the room look less large so that people feel safe here. Each student can connect his/her laptop to the workstation and can adjust the lighting as he/she pleases.

Slide 38:

Let us now take a look from the top gallery down. The elements of the parapet are developed to be sound-absorbent and are made up of slats assembled individually with a sound-absorbent insulation behind.

Slide 39:

View of the opposite staircase with glass elevator.

Slide 40:

The top gallery with the cupola.

Slide 41:

A detailed view of the top part of the elevator. Above it, the engine room of the anti-dazzle device is located.

Slide 42:

Passage from the gallery to the first story of the addition to the “Weissbibliothek”.

Slide 44:

Workstations in the “Weissbibliothek” facing Schönleinstrasse. These workplaces are reserved for students who do not have a laptop.

Slide 45:

Located on the second story of the addition are the workstations for Ph.D. students and, behind, the rooms for group work.

Slide 46:

View from the opposite gallery.

Slide 47:

We have now reached the area where the administration of the Jurisprudential Institute can be found. You can see an open-plan office on the top story of the addition.

Slide 48:

An outdoor shot of the cupola. You can clearly see the ventilation flaps tracing along the ridge. In the base area, there are ventilation flaps as well. Although the glass looks greenish from the outside, no negative changes of color are noticeable on the inside.

Slide 49:

We are now in the old part of the building. All of the interventions occurred during previous renovations and redevelopments were undone in the access area. We thus have the original state as of 1909, so to speak.

Slide 51:

This is what the courtyard looked like in 1999 before the renovation.

I would now like to give you some general information on the building schedule and the costs involved.

- Start of the planning work by Santiago Calatrava in 1989
- Credit of a total of 33 million Euros granted in 1999
- Start of construction in July 2000
- Inauguration of the new library in November 2004
- Credit of 10 million Euros for the redevelopment of the remaining rooms in the old building granted in April 2004
- Altogether, the Jurisprudential Institute now has a net floor area of 25,458 m² at its disposal.

Slide 52:

I want to thank you very much for giving me the opportunity to present the new library of the University of Zurich Jurisprudential Institute. I hope that you enjoyed my presentation. If you have any questions, I will be happy to answer them.

Thank you very much.