

# Nuremberg City Library - conversion and general refurbishment



The Luitpoldhaus, erected in 1911 and reconstructed in the 1950s after having been largely destroyed, will now be refurbished. The project will merge the various library functions at this central location in Nuremberg. To this end, the buildings will also be converted and extended. The storage of manuscripts, incunabula, prints and maps from the Middle Ages requires sophisticated air-conditioned rooms. The first-known document to prove the existence of the oldest public collection of books in the German-speaking world is a library ticket dated 30th December 1370. The Ratsbibliothek was a small, legal reference library located in the Town Hall. The Nuremberg City Library is therefore the oldest municipal library in the German-speaking world. A modern, metropolitan library system was created by integrating it with the public library, which was separate at the time. The buildings up for general refurbishment are part of the group of listed buildings located in the southern part of Nuremberg's old town.



Visualisation of the new facade of Stadtbibliothek Nürnberg. With reconstruction and refurbishment the complex of buildings is to be revitalised.  
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## Building summary

<b>Project status</b>	<div style="width: 10%; background-color: #0070C0; height: 10px; display: inline-block;"></div> Projected
<b>Location</b>	90402 Nürnberg, Bayern
<b>Year of construction</b>	1911/1956
<b>Refurbished</b>	2010
<b>Building owner</b>	Stadt Nürnberg, Hochbauamt
<b>Gross floor area</b>	8,200 m <sup>2</sup>
<b>Heated net floor area</b>	6,500 m <sup>2</sup>
<b>Gross volume</b>	28,000 m <sup>3</sup>
<b>A/V ratio before refurbishment</b>	0.23 m <sup>2</sup> /m <sup>3</sup>
<b>A/V ratio after refurbishment</b>	0.30 m <sup>2</sup> /m <sup>3</sup>
<b>Key aspects</b>	Heat insulation, Optimised lighting, Ventilation + heat recovery, Active cooling, Regenerative + passive cooling, Control technology, operational management, building automation, Solar thermal energy

## Project description

A decade of wrangling about the erection and financing of a central library in Nuremberg came to an end when the City Renovation Programme was agreed in 2003. In the coming years, the large public libraries, the Central Library, the Egidienplatz Library and the Music Library will be integrated under one roof at Nuremberg's *Gewerbemuseumsplatz*.

The southern part of the old town, one of Nuremberg's socio-cultural centres with its adult education centre, various museums, cultural facilities and two large cinemas, will be enhanced thanks to the planned urban-development project.

Gradually, in the coming years, the former conservatorium, a listed building, and the Luitpoldhaus will be converted and refurbished to become the central library. The initial construction phase sees the conversion of the conservatorium into an additional wing of the City Library. The process began in autumn 2003 after the comprehensive removal of harmful substances. In future, this building will house the administration, editing and workshop departments. In the second construction phase, the Luitpoldhaus, which is currently used by the general public, will be extended and refurbished. Both construction phases should be completed by 2009.

## Refurbishment concept

Firstly, the central block of the northern building structure will be pulled down and a new intermediate construction inserted in order to improve access and to extend the open stacks area. The attic storey will also be removed and two storeys will be inserted into the building structure – this corresponds to the original cubature. These works will be rounded off by a complete structural and technical refurbishment and the addition of a new stairway.

As part of the project, consistent, energy-efficient measures will be combined with innovative building systems equipment on the shell of the building (insulation, windows). The conservation requirements in terms of temperature and air humidity in the repositories and in the reading room for Middle Age manuscripts place particular demands on the concept for the building's indoor environment. Through the use of passive effects with the aid of simulated calculations, energy consumption is to be kept to a minimum and, at the same time, the indoor environment is to be secured for the book collections.

The overall aim is to improve the indoor environment, the acoustics of the rooms and the building and the visual conditions for users and personnel.

One key focus is the aspect of moisture storage in the surfaces enclosing the rooms, as well as in the books and manuscripts, in the framework of the calculation of the daily and annual fluctuations in temperature and air humidity.

The climate requirements of the manuscript repositories and the reading room should be met, as far as possible, by passive measures including regenerative energies.

### **Energy concept**

The new collection of buildings should fall below the EnEV 2007 (German Energy Saving Ordinance) by at least 30%, in terms of primary energy requirements for new constructions and transmission heat loss. There are also plans to incorporate excellent heat insulation on the outside. There will also be heat insulation between areas with differing demands on indoor environment. Apart from that, the buildings will be massively constructed and moisture-storing materials will be used in areas with particularly high demands on indoor environment. The window areas will be selected according to their intended use: open stack and reading areas will be given large window areas, there will be no windows in the repositories, the manuscript repository and the exhibition room, the manuscript reading room will be fitted with only a few window areas.

District heating will be used to heat the buildings, which will be complemented by heat from solar collectors.

Heat will be transferred to the rooms via surface heating systems and only partially via radiators.

Cooling will occur with ground water and adiabatic cooling. Heat will be transferred via a wall and ceiling cooling system and via ventilation cooling registers.

Ventilation will occur partially via decentralised ventilation devices with heat and moisture recovery – there will be a central air conditioning unit with heat recovery, adiabatic cooling and dehumidification on an absorption basis in the manuscript reading room, in the exhibition room and in the conservatory offices.

### **Performance**

Information on this subject will become available as the project continues.

### **Optimisation measures and possibilities**

Information on this subject will become available as the project continues.

### **Construction costs and profitability**

Information on this subject will become available as the project continues.

### **Key energy data**

Measured energy consumption data (in kWh/m <sup>2</sup> a)	before refurbishment	after refurbishment
<b>Site energy for heating and domestic hot water (dhw)</b>	121.00	
<b>Total source energy</b>	181.00	

## **Nuremberg City Library**

This project is funded within the framework »Energy Optimized Building« (EnOB) by the German Federal Ministry of Economics and Technology, on the basis of a decision by the German Bundestag. Get further information at [www.enob.info](http://www.enob.info).