



CATHEDRAL OF SAINT BARBARA IN KUTNÁ HORA

BARBORSKÁ UL., KUTNÁ HORA

INVESTOR/ CLIENT: CÍRKEV ŘÍMSKOKATOLICKÁ –
ARCIDĚKANSTVÍ KUTNÁ HORA

CONTRACTOR: GEMA ART GROUP A.S.

IMPLEMENTATION: 07/2003–11/2012



The church of Saint Barbara is one of the most precious Gothic and neo-Gothic monuments in the Czech lands. Some experts consider the Church to be one of the most original late Gothic cathedrals in Central Europe. The aim of the project was to preserve and to restore this Gothic monument listed as a UNESCO World Heritage Cultural site.

The company GEMA ART GROUP a.s. has during the past nine years carried out restorations and architectural work at this site, employing highly skilled craftsmen and artisans. The company participated in all five phases of the restoration project which took place between 2003 and 2012 and considers the work to be one of its most prestigious commissions, both in scope and the demand on expertise, and because of the unique historic and cultural significance of this monument. The history of the building goes back to 1388. In the initial stage the church was conceived as a five-nave structure with a high choir surrounded by radial chapels in the style of French cathedrals. Jan Parléř, son of the famous architect of St. Vitus cathedral in Prague, took part in the building work. Another distinguished architect involved in the construction of the church of St. Barbara between the years 1512 and 1532 was Matěj Rejsek. During this time the triforium, the window wall of the choir, the cross-ribbed vaulting and the buttressing system were all finished. The building underwent changes in its concept under the famous architect Benedikt Rejt, whose designs were realized in the years between 1512 and 1532. The next significant stage in the history of the church dates back to the arrival of the Jesuit Order in 1626. During this time the church underwent a Baroque makeover. After the dissolution of the Jesuit Order in 1773 the church gradually fell into disrepair and only between the years 1884 and 1905 was any significant maintenance work carried out. Serious efforts to renovate and reconstruct the monument were made during this time and under the direction of architects Josef Mocker and Ludvík Lábler the buttressing system, parts of the stone work and the frescoes were all restored.

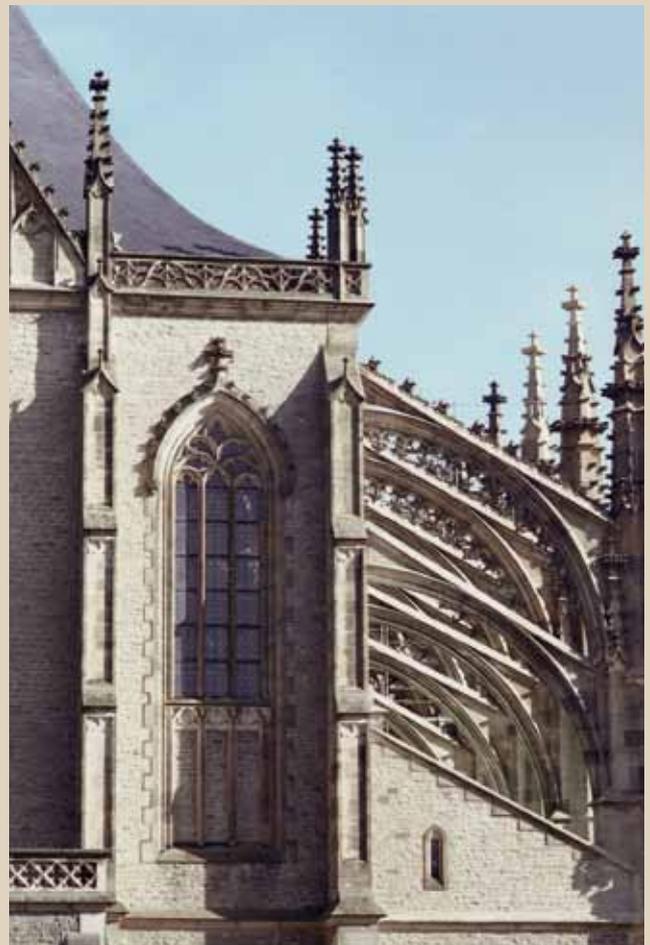
Since 1905 no major building work has been undertaken and it was only in the 1990s that the necessity of urgent restoration and reconstruction of the church was finally acknowledged. From the year 2003 extensive restoration and building work on the monument has been carried out under the management of the company GEMA ART GROUP a.s.



Overall view of the Cathedral of Saint Barbara



Overall view of the altar



Buttressing system - after restoration



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RESTORATION OF THE STONE AND PLASTER CASING

The masonry bore signs of damage such as missing pointing mortar between the stone blocks, cracks, loss of stone mass, gypsum crusts and pollution by moss and lichen.

The stone was first mechanically rid of dirt and organic matter by water steam jet. Gypsum crusts were eliminated by hand using scalpels and abrasives. At some points the crust was up to 3 mm deep. The interstices where the pointing had crumbled away were re-pointed using more flexible lime mortar. As a preventive measure against further stone loss, some parts of the masonry were injected with a special fortifying substance. After cleaning and re-pointing, localized colour retouching was carried out to achieve visual uniformity of the building.





Overall view of the facade – after reconstruction



The stone casing – destruction of the stone



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SECURING OF THE BUTTRESSING SYSTEM

The main aim here was to remedy the precarious state of the support system. Some buttressing was in danger of actual collapse. After consultations with experts in structural analysis the decision was taken to fix the stone with rustproof pegs and individual blocks of the arches were returned to acceptable positions using pulleys and tows. In the case of one of the arches on the north side of the church it was necessary to undertake the complex task of replacing a whole part of the arch with a new one. The bases of some of the flying buttresses were also damaged by stone corrosion and the relevant parts were secured with a sealer.

Ornamental parts of the support system (especially the flower bouquets) were often in a critical state and had to be replaced by copies made from Mušlov limestone, imported from Austria. The corrosion and decayed condition of the stone were caused by the use of Hořice sandstone.





Gothic pinnacle – before restoration



Gothic pinnacle – imitation



Detail of pinnacles – destruction



Buttressing system – buttresses and arches



Securing of buttressing system



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RESTORATION OF THE STONE COMPONENTS

While restoring the stone components of the Church of St Barbara's exterior, priority was given to restoration of the parts in a critical state, to conservation of the authentic Gothic elements and to treatment of the stone surface. Gothic originals such as maskarons under the main cornice of one of the aisles as well as the 19th century copies of gargoyles and statues were restored. The last remaining Gothic gargoyle was removed, deposited in a lapidarium and replaced by an exact copy. The surface of the stone was cleaned of organic matter such as moss and lichen and of gypsum crust. Missing and irretrievably decayed stones were in-filled or replaced. As a preventative measure a strengthening substance was inserted into the stone.

Stone parts of the interior were also given specialist treatment. The stone surface was found to be covered by dust deposits and in some parts of the church by gypsum crusts, especially in places penetrated by rain water in the ceiling area and the gallery of the triforium. Some stone elements such as keystones, vaulting ribs and the six-petal ribbed vault over the presbytery had not suffered significant damage. Substantially worse off were the interior window sills, some column capitals and parts of the chancel arch. The stone was cleaned using small brushes and a water steam jet and subsequently locally fortified with a special solution. In some parts the stone was re-pointed using lime mortar. Parts seriously damaged by rain water were treated with a hydrophobic agent.



Stone elements of the stained glass – after restoration



Stone belcher – before restoration



Stone elements – before restoration



Stone elements – after restoration



Stone elements – before restoration



Stone elements – after restoration



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RESTORATION OF THE CHURCH ROOF

GEMA ART GROUP a.s. also took part in the building work connected with the reconstruction of the roof covering.

Original slate tiles had to be removed and replaced by new ones, which had to be in a colour and shape consistent with the original material. The removed covering was conserved and deposited in the church's lapidarium. Apart from replacement of the slate tiles the underlying roof structure was repaired, as well as the roof hatches, the inter-roof guttering and the grids for catching roof debris. Restoration work was also carried out on roof ridges and finial points. Roof edges were metal plated with copper.





The church roof - after reconstruction



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RESTORATION OF THE STAINED GLASS

The stained glass in question consisted of hexagonal panes, some clear and some painted with figurative motives. The glass was in poor shape, the glaziers putty considerably worn and in places missing. The lead beading was corroded and the joints cracked, which caused the loosening of some of the glass panes. As a result of long-term exposure to dampness and air pollution there was a loss of glass and paint coverage.

Prior to restoration detailed photo documentation was carried out and accurate stencils made, which were used to manufacture exact copies of the damaged glass. To create the authentic uneven surface, drawn sheet glass was used. The panes were put into new lead beading and sealed with powdered chalk. The painted glass panes originating from the years 1913 to 1916 were retouched by paint burnishing. To preserve the glass, a special coating was applied to it.

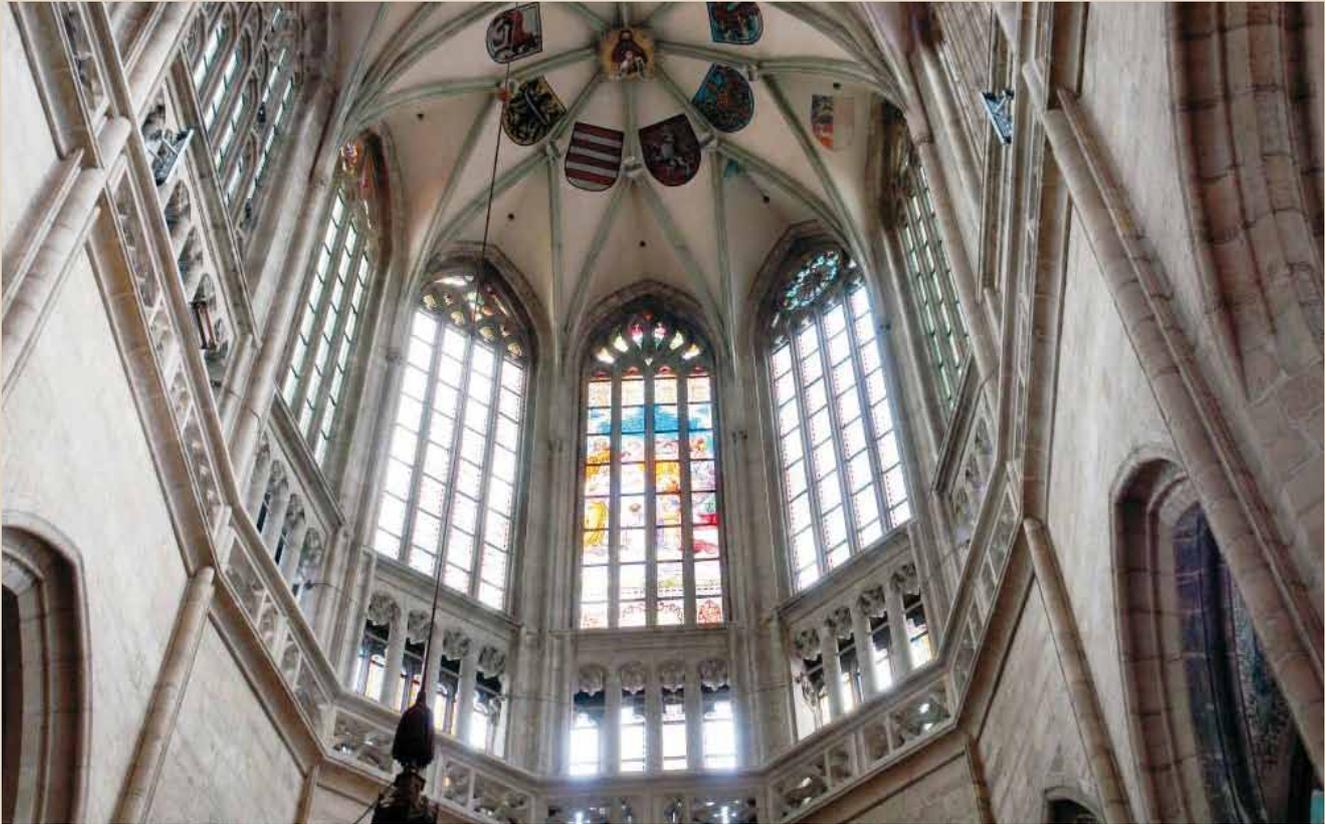




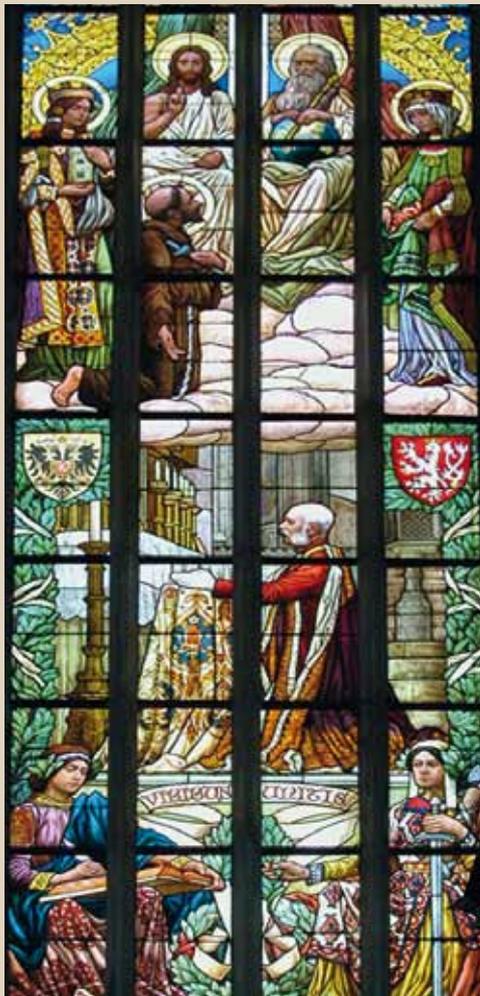
Detail of stained glass in the chapel



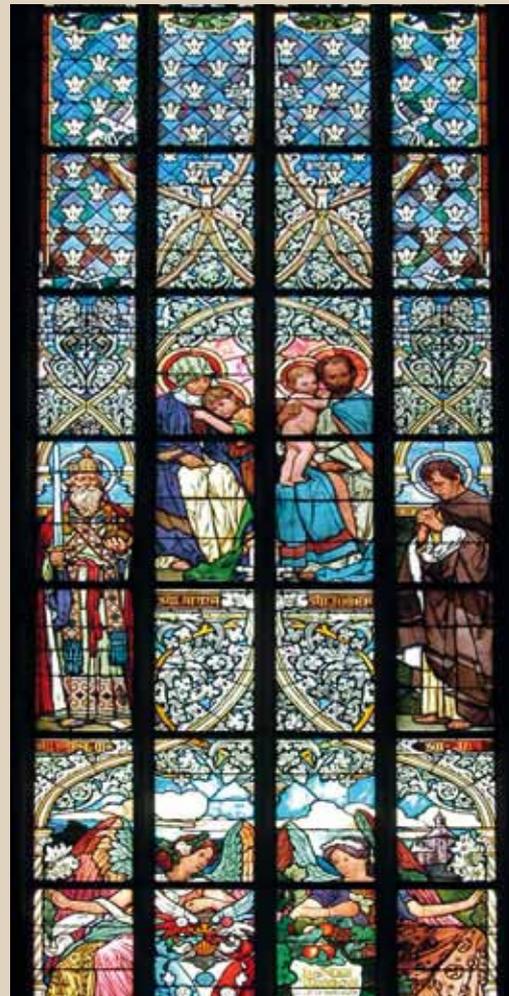
Changing of stained glass - work in progress



Overall view of the stained glass



Stained glass – Franz Joseph I. of Austria



Stained glass – after restoration



Stained glass – work in progress



Historical windows – after restoration



Detail of historical window – after restoration