CONSERVATION - RESTORATION WORKS ON CEILING PAINTINGS IN THE BAJAMONTI - DEŠKOVIĆ PALACE

CROATIAN
CONSERVATION
INSTITUTE

introduction

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The magnificent palace of the famous 19th century mayor of Split, AntonioBajamonti, is endowed, amongst other things, with ceiling paintings on the first floor which was originally intended to be the mayor's residential quarters.

After the palace was built in the middle of the 19th century, wall paintings were added in its three salons. These paintings have been attributed to the painter Antonio Zuccaro who, during his lifetime, was a very esteemed artist who had created a series of significant artworks in the area of Dalmatia.

These preserved paintings, already damaged by the passage of time, but protected as a cultural asset, were drastically damaged in the Spring of 2003 when construction work got under way in the rooms on the second storey.

Representatives from the authorized Conservation Section of the Ministry of Culture in Split, seeing the extent to which the artworks, unique paintings in 19th century places of residence, were damaged called upon restorers in the Croatian Restoration Institute to make an assessment of the damages that had occured. At that time the Institute in its Restoration Department in Split had a Section for Wall Paintings and Mosaics with two, already very experienced restorers: Branko Matulić, as director and his associate Tonči Borovac. After a detailed investigation of the condition of the wall painting they gave a professional assessment relating to the damaged painting with proposals for a conservation-restoration undertaking to protect and renovate the ceiling paintings, while the Ministry of Culture ensured the finances for the commencement of systematic activities during 2004.

Thus began a restoration approach to an exceptionally challenging process of continuous attempts to gather all the fragments into a consolidated and restored whole.

Antonio Zuccaro's jeopardized wall paintings demanded a surgically-precise dismantlement of the painted surfaces and the use of a specific construction for returning the integral presentation of the ceiling paintings. While the said works were carried out, the team of the Department of Wall Paintings, Mosaics and Stucco, now under the leadership of Tonči Borovac, was enlarged.

Thusly the overall activities of the Croatian Restoration Institute to protect and restore wall paintings grew in strength. The largest number of these activities is conducted by the team of conservators-restorers of the Department of Wall paintings and Mosaics in Zagreb, working on approximately 36 programs a year, as well as the teams for wall painting and mosaics within the area of the Department of Restoration of the Croatian Restoration Institute in Osijek, Rijeka and Dubrovnik under the leadership of Ivan Srša.

However, within the broad range of conservation-restoration activities of the Croatian Restoration Institute that are devoted to the protection and preservation of the monumental values of wall paintings, the work done on the painted ceilings of the Bajamonti-Dešković palace stands out if measured by the complexity of the restoration process. This is why it is a good example of conscientious and persistent dedication to inventive renovation and presentation of inherited valuables.

As of now work has been completed on the most endangered and most challenging part of the ceiling painting in the most damaged salon. We expect work on the remaining two painted ceilings to be significantly less demanding and that the undertaking, considering the experience gained on this program, will be carried out in a predictable manner.

It is to be expected that the renovations that have begun on a number of segments of the Bajamonti-Dešković palace will gradually renew the harmony and the representative significance of this cultural monument.

Expressing our gratitude to all those whose contributions have helped us complete this program we express our special thanks to the Ministry of Culture of the Republic of Croatia for its support and its finding the financial means which enabled the preservation of this significant cultural asset.

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Wall Paintings in the Bajamonti–Dešković Palace in Split

dr. prof. Radoslav Tomić

The Bajamonti–Dešković palace, located in the western part of the Split waterfront, is the most representative residential building built during the middle of the 19th century in Dalmatia. This is a monumental four–storey edifice featuring a rectangular ground–plan with a narrow inner court–yard and with an eastern façade which is marked by shallow corner risalites. According to the original drawing the façade should have been broken down with pilasters having round marble incrustations. Dr. Antonio Bajamonti (1822 – 1891), the mayor of Split (1860–1880) and one of the leaders of the Dalmatian autonomist movement, had the palace built in 1857 – 1858.

According to its typological and stylistic features it can be established with certainty that plans for the palace were drawn by a Venetian architect: on occasion, conjecture had it that it was Giovanni Battista Meduna (1800 – 1880) who was hired by Bajamonti to draw up plans for the Theatre and for Prokurative. The fact that designs for the façade of the theatre show analogies with the palace lends support to this conjecture.

The house owner's apartment was on the first floor (piano nobile). It took up the entire façade side of the palace facing the waterfront and the side streets and consisted of twelve rooms with three salons the purpose of whose wall adornments, decorations, its use of variegated and luxurious materials, its portraits of ancestors, paintings, sculptures, stylized and fashionable furniture was to testify to the owner's refinement and learning and to leave a profound impression on the visitor.

The most valuable part of the interior accouterments are the wall paintings which have been preserved on the ceilings of the three salons. The painting on the ceiling of the salon in the southwestern part of the palace exemplifies the most complex iconographic program. Along its edge the rectangular surface of the ceiling is decorated with thin grey–blue and red "marbilized" fields. A frieze composed of flowers and tendrils comes next on the shorter sides of the ceiling

between which are incorporated six round medallions with monochrome painted portraits of historical and artistic figures. Amongst these one can recognize, with a great deal of probability, the portraits of the famous exemplary poets Homer and Virgil.

A large narrative composition with a series of figures within a double, gilded frame is painted in the central circle. Zeus and Hera (Jupiter and Juno) stand in the space representing the heavens. The supreme god of the antique world sits on clouds – in his hands he holds a flash of lightning painted as a bundle of flames. Alongside him is an eagle. A long black beard and long black hair cover his face, his torso is naked while a purple mantle covers the lower part of his body. Next to him Hera (Juno), crowned with a golden crown and pearls, in her hand holds a scepter while a peacock stalks in the background. A winged cupid with a laurel wreath is flying towards them. The symbolism of the painted scene is completely clear: this is an allegory on the power of love, primarily of connubial love and harmony (the same theme was painted by Annibale Caracci in the Farnese palace within the framework of a foundationally defined iconography!).

Allegories and muses, goddesses of creative inspiration, surrounded by winged cupids with laurel wreaths and leafy branches, arranged in series in a freely inventive manner which did not strictly heed iconographic rules, are depicted below these, mounted on clouds in a blue, almost transparent sky. One can make out Clio, the muse of history, depicted as a young girl with wings, a laurel wreath on her head, with a long trumpet and a plate onto which she is inscribing the centuries. Next to her is Fortuna (Fortune), a young girl with a laurel wreath on her head and a wheel that she is turning and that signifies her instability, inconstancy, mutability. The dominating figure is of Urania, the muse of astronomy. She is also a young girl with a laurel wreath dressed in a blue dress studded with stars. In her hands she holds the earth (globe) with the signs of the zodiac (Scorpio and Libra). Next to her lies a telescope. A girl holding calipers with which she is drawing a circle on paper is painted behind her. This is a representation of Geometry, one of the seven free skills.

Another four young girls, separated by winged cupids and laurel wreaths, are depicted on the other side. In the foreground one recognizes Euterpe, the muse of music, with musical instruments and notes holding a scepter in her hands and with profuse feathers in her hair. Dressed all'antica in dazzlingly colored clothes and placed in the foreground she is Urania's counterpart in the other group. Behind her are two allegories: to the left is the Allegory of painting represented as a young girl with palette and brush and alongside her the Allegory of sculpture shown as a young girl with a hammer in her hand with which she is chipping the stone bust in front of her. A young girl holding two books and a cane, probably indicating Grammar as one of the seven liberal arts, is removed towards the middle. Next to her stands a winged cupid holding a brilliant circle (mirror) in his hands which is an attribute of Truth.

Muses, free skills and allegories of art, painted in free combinations are characteristic fort the compilatory "historicist" 19th century which fearlessly used iconographic instruments, symbols and emblems and freely reached out for them.

The painting on the ceiling of the other, southeastern salon, which faces the waterfront, is composed differently. In the middle is a turquoise blue oval medallion with white tendrils onto which are fastened eight alternatingly placed smaller and somewhat larger mirrors in golden, engraved frames. A tendril with leafy ornaments and plastically pronounced shells is painted around the medallion. The most demanding are the corner, oval medallions with painted landscapes. Their frames are illusionist: they are painted with gold color, their relief ornamentation is emphasized by shading which suggests that they have been carved. A wood nymph on the shores of a lake on whose terrace a black youth is playing with a bird is painted on the medallion in the northeast corner. The terrace fence is adorned with vases holding century plants while the upright stone lion holds up the coat-of-arms. A gondola with oarsmen and passengers floats on the still water surface. The medallion in the northeast part repeats the motif of the water surface. This is surely a lake and a mountainous landscape with a castle, ruins of classical buildings and a young girl sitting on a cliff holding in her hands a lyre and notes. The

southeastern medallion modifies the theme of a landscape with a watery surface, groves, flowers and a castle. A bearded man dressed according to Renaissance fashion and a girl holding in her hands an open book sit in this landscape bearing the imprint of Romanticism. The fourth medallion depicts a landscape alongside a lake with a fountain mounted by sculptures of the water gods and with nymphs bathing.

In between are four smaller medallions. The two on the northern and southern wall depict a cartouche with a girl's head, a vase with flowers, dolphins and shells. On its eastern side the middle medallion depicts a triton shell and two sea horses (hippocampus) while its western side displays a siren and two sea horses.

In large part, the ceiling surface of the third, smaller salon on the northeast side of the first floor of the palace is painted in monochrome, grayish tones. The middle, oval medallion is filled with tendrils and volutes and supplemented with pale-purple rose flowers. Flowers, a vase, a tray and a clock appear on the broader sides of the medallion. A girl with a harp (an allegory of Music) is depicted in one of the medallions on the more narrow sides of the ceilings while the other displays a young, bearded man in Renaissance dress with a pen in his hand and papers discarded on a table. He sits in the quietude of his studiola: next to him on the table are a helmet, an inkstand and a tricolor sash while an unidentified coat-of-arms (its shield is divided into three slanting red-white-blue fields on which there are two oval fields) is painted on the tablecloth. It is possible that this is a representation of the allegory of Poetry.

The wall paintings and the palace itself date from the year 1858. According to family tradition and stylistic features they are believed to be the work of Antonio Zuccaro (San Vito Al Tagliamento, 1825 – Trieste, 1892), an Italian painter who in the second half of the 19th century made numerous works, of both private and public character, for those placing orders from Dalmatia. Zuccaro made paintings for three theatres: in 1865 in the Teatro Verdi in Zadar he made figural compositions, in the Teatro Mazzoleni (City theatre) in Šibenik he decorated the ceiling with portraits of eminent Dalmatians as he also did in the theatre which Antonio Bajamonti had built in 1859 in Split. He was supposed to also do paintings for the new theatre which the populist party had built in Split. Zuccaro was an uncommonly sought-after portraitist of city folk, nobility and of the clergy spanning the area from Zadar to Vis. He also made portraits of Bajamonti's kin and politically like-minded people from the Romagnolo and Maraosvić families as well as paintings for the salons in the Ilić palace in Split of which family Dr. Petar Ilić, a moderate Dalmatian autonomist, vice-mayor and one of Bajamonti's close friends, was a member. Zuccaro also received numerous orders for altar paintings from the islands of Dugi otok and Silba to places like Skradin, Trogir, Poljica and Hvar.

The Split painter Josip Voltolini and the Trieste painter Zebedeo Piccini are designated as possible associates, primarily as associates for doing decorative motifs. Voltolini was engaged in doing paintings for the cathedral in Đakovo. His paintings in the interior of the Kraljević house in Pučišći on the island of Brač were destroyed during World War II while Piccini painted the sanctuary of the cathedral in Skradin.

The painting in the Bajamonti-Dešković palace cannot be compared with similar works in the Dalmatia of that time. The paintings in the Dubrovnik palaces and summer houses belong to an earlier period, in Zadar bombs destroyed everything that could be painted, the interiors of Boka kotorska and Lošinj palaces were not systematically researched before being devastated so that it is still too premature for a reliable evaluation. It ought to be mentioned that during the French administration in 1807 the wall paintings in the Governor's palace in Zadar(The palace of the Governorship) were done by Giuseppe Bernardino Bison, the greatest painter of that time in Venice and Trieste. The mention of Bison's name can help us discover and establish the origins of Zuccaro's painting and explain the stylistic features of the wall paintings in Bajamonti's palace because it is possible that Zuccaro saw Bison's work in Venice, Veneto, Friuli and in Trieste, although it ought not to be overlooked that decorative painting in the interiors of palaces, villas and public spaces is an inexhaustible theme in North Italian ottocento painting. Its artistic gamut is unbelievably elastic and ranges from modest craftsmanship which uses

moulds, models and patterns to the great names who carried on the heritage of the Tiepolo family who during the 18th century were the sovereign rulers on the European stage. The themes of seascapes, landscapes lying next to lakes with willow trees, magical groves and small forests, knights and learned ladies, artists in solitude meditating, ruins of classical buildings beneath Alpine sheer rocks and peaks, century plants and roses in full bloom, deserted terraces, torrents, rushing streams, waterfalls and fountains, all of these are themes which we encounter on the paintings in Split but also in numerous cycles in the North of the Apennines, in that space where Venice was still the artistic center. In Zuccaro's painting his reliance on G. B. Bison is visible on the level of thematic choice, coloristic variants and stylistic traits: floral vignettes which he alternated in Bajamonti's palace and in the theatre in Šibenik can be compared with Bison's refined paintings of still life where subtlety is achieved through the nuancing of the airy coloristic scale and skilful painting of various flowers, fruit and fish. However, if Bison was someone on whom he could rely upon, then the numerous painters active within the triangle Venice–Udine–Trieste were direct models with whom Zuccaro in his stylistic expression was aligned with. Decorative–narrative cycles and the wall paintings that were created by Tommaso Viola (Venice, Palazzo Giovanelli) or Sebastiano Santi (Venice, Palazzo Bragadin ai Santi Giovanni e Paolo) evince a similar manner of composing narrative and decorative motifs with a plentiful use of gilding, marbleizing surfaces which are not infrequently framed by simple ornaments made of stucco. The motif of the medallion with portraits of poets and famous historical figures in general could have been seen by the masters from Split in Venice. As far as the physiognomic characteristics of the painted figures (antique gods, allegories, muses, sirens, knights, girls) are concerned they can be compared with the figures as painted by Giovanni Carlo Bevilacqua at the beginning of the 19th century in Venetian palaces and villas in their vicinity (for example, Venice, Palazzo Reale; Venice, Procuratie Vecchie; Stra, Vila Pisani).To this Romantic sensibility, in which different themes are arranged and heaped into satiated wholes and various material is in use, one has to add a complex iconography that reaches after themes from antique mythology in order to give shape to ideas and the ideology that were espoused by the person ordering the paintings and by the palace owner. The use of classical, mythological themes (Jupiter and Juno) does not only indicate Bajamonti's erudition but anchors Split and Dalmatia into the humanized space of Mediterranean (in autonomist ideology, Romanic/Italic) culture. Muses and the symbols of the different arts confirm the orderer's erudition and devotion to artistic activities. This is also confirmed by other things: by the building of the theatre and the Prokurative as well as by the erection of a monumental fountain which was initiated by Antonio Bajamonti in person.

In addition, the palace was decorated by other works of art. The floors of the salons are covered with a parquet decorated with variegated and skillfully made intarsios, the ceiling in the vestibule is decorated with simple stucco–decorations while a marble sculpture of a warrior was located in the same space. Four marble statues representing the Virtues were placed on the end cornice on the eastern, representative façade while two marble busts on pedestals were mounted above the south façade facing Šperun and the church of St. Francis. All these sculptures evince the distinctive characteristics of the Venetian art of sculpture of the late 17th and of the 18th century so that it is justifiable to assume that Dr. Antonio Bajamonti bought them in the middle of the 19th century and that they derive from some palace in Venice or from a villa in Veneto.

1. D. Kečkemet, Ante Bajamonti i Split, Split, 2007, 164–178, 207, 212.
2. K. Prijatelj, Slikarstvo u Dalmaciji 1784–1884, Split, 1989, 71–78.
3. C. Piperata, Giuseppe Bernardino Bison, Padova, 1940, 60–61, 76.
4. Neoclassico, Arte, architettura e cultura a Trieste 1790 – 1840, (editor F. Caputo), Venezia, 1990, 395–366, kat. 15.31.
5. La pittura nel Veneto, L'Ottocento 2 (editor. G. Pavanello), Milano, 2003, page. 465, f. 537, page. 476, f. 559.
6. La pittura nel Veneto, L'Ottocento 2 (ur. G. Pavanello), Milano, 2003, str. 466, f. 538.
7. La pittura nel Veneto, L'Ottocento 2 (editor G. Pavanello), Milano, 2003, page. 425, f. 478, pages. 431–433, f. 488–494.
8. Today the statue is in the City of Split Museum.
9. The four marble statues representing the Allegories and the bust (Allegory of Truth) were removed because of their dilapidated condition. One marble bust was destroyed when it fell onto the street.



CONSERVATION – RESTORATION WORKS

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the condition as found

During 2003, workers of the Split Depatrtment of the Croatian Conservation Institute, its Section for Wall Painting, Mosaics and Stucco, inspected the condition of the ceiling paintings in the Bajamonti–Dešković palace located on the Split waterfront on Franje Tuđman square in the first storey apartment of the late Liljana Dešković, born Mikačić. Painted ceilings, which were in a very bad condition, were found in two rooms whose dimensions measure 7x6 meters and in a third somewhat smaller 3x4 meters room. Very quickly and with all seriousness a feasibility study of protecting the paintings was drawn up not only on account of the large painted surface and the significance of the orderer and the artist, but primarily because of the artistic merit of the work in which narrativity and decorativeness intertwine into an integrated and representative whole belonging to the bourgeois art of the middle of the 19th century

For some time the ceiling paintings had been jeopardized by noticeable decay, especially by pronounced, perilous fractures which were accompanied by the lowering of the planes delimited by the cracks. With time the thread–lines began to snap which with the help of nails affixed the rattan screen to the level boards nailed to the wooden ceiling girders, that is to the floor of the apartment above. The weight of the detached parts of the ceiling constantly weighed down the suspension, resulting in the scattered separation of the mortar from the supporting construction to the extent of approximately more than a half of the ceiling surface. Of course, former residents of the painted rooms abundantly contributed to this state by constantly making larger or smaller interventions on the ceiling such as the fitting of electrical installations, the hammering in of various pegs and props and by numerous sporadic and, usually, unprofessional repairs of the plaster and of the painted layer. Particularly problematic damages were found on the northeastern fourth of the painting in the southwestern room where, because of the said critical separation of a large part of the ceiling from the base, a largish sag had formed which threatened that further enlargement of the fractures and peeling will occur. That was when an unprofessional and yet effective intervention, using two props fastened by long screws through the painted ceiling to the supporting girders, prevented the peeling of a large part of the painted ceiling.

This difficult condition was additionally aggravated by the disarrangement of the static elements which resulted afteer further interventions on the supporting girders of the ground floor and especially by the recent installment of a new reinforced concrete floor between and above the wooden girders on the floor above when more than 2 square meters of ceiling painting detached


concrete floor, water broke through from the upper floor causing new damages in the shape of a number of large stains that were created by the partial melting of the connective material of the painted layer. The cement liquid which poured out of the insufficiently protected moulds of the new concrete supporting consoles additionally contributed to the surface salting-outs which contributed to the general impression of it being stained. The terminating side profilation, also decorated with paintings, smoothly joined the ceiling to the walls. It was in a relatively good condition but its terminating gilded wooden laths were highly damaged. Some were missing.

Because of everything said the inevitability of having to take down the entire painted ceiling was recognized. Whatever kinds of procedures in situ such as consolidating the mortar or attempts to level the disturbed levels of some parts of the painted ceiling were not an option because static shifts on the walls did not cease. Already during this phase of the undertaking, the far-reaching correct decision was made to use a new separate self-supporting construction for the painted ceiling which would maximally keep it separate from the constant static movement on the walls and enable it to exist independently within the network of encumbering mechanical forces.

It is especially important to point out that all of this could have been avoided if had access from above, though an opening in the flooring of the upper storey, been possible. In such a manner all the unstable construction elements of the painted ceiling would have been accessible and they could have been repaired in a routine fashion. The protective procedures would have been tangibly shorter and cheaper and ultimately of higher quality because the destruction of the protective procedures would have been reduced to a minimum. But the pouring of concrete supports and floorings had forever erased this possibility. Precisely because of this the procedures that were to follow during the next five years, from the conservation-restoration viewpoint, fall under the rubric of the most complex that can appear within the framework of the profession. The team of specialists working on this particular case solved almost every kind of problem in the conservation-restoration of wall paintings.

Therefore, in order to carry out such a program of equal importance are a stable and professional leadership, a good preliminary assessment, planning and the thorough organization of all the segements of the preservation process. The guarantee of sufficient funding for the undertaking, which in the present case was ensured by the Ministry of Culture of the Republic of Croatia, is of equal weight.

research and analysis

After drawing up a feasibility study for the project, a precise operative work schedule was made and the equipment and funds necessary for carrying out this extensive and time-consuming preservation undertaking were assessed. A work-platform project was ordered and staticians were consulted. In the meantime a few hundred detached fragments and chipped-off pieces of the painted ceiling were collected, recorded and stored. The intarsio parquet on the floor was preserved with protective felt and mediapan plates. A suitable work-platform was subsequently erected in the southwestern room while the southeastern room was turned into a temporary work-shop. This finally enabled immediate access to the ceiling paintings and a close look at the real condition of the monument.

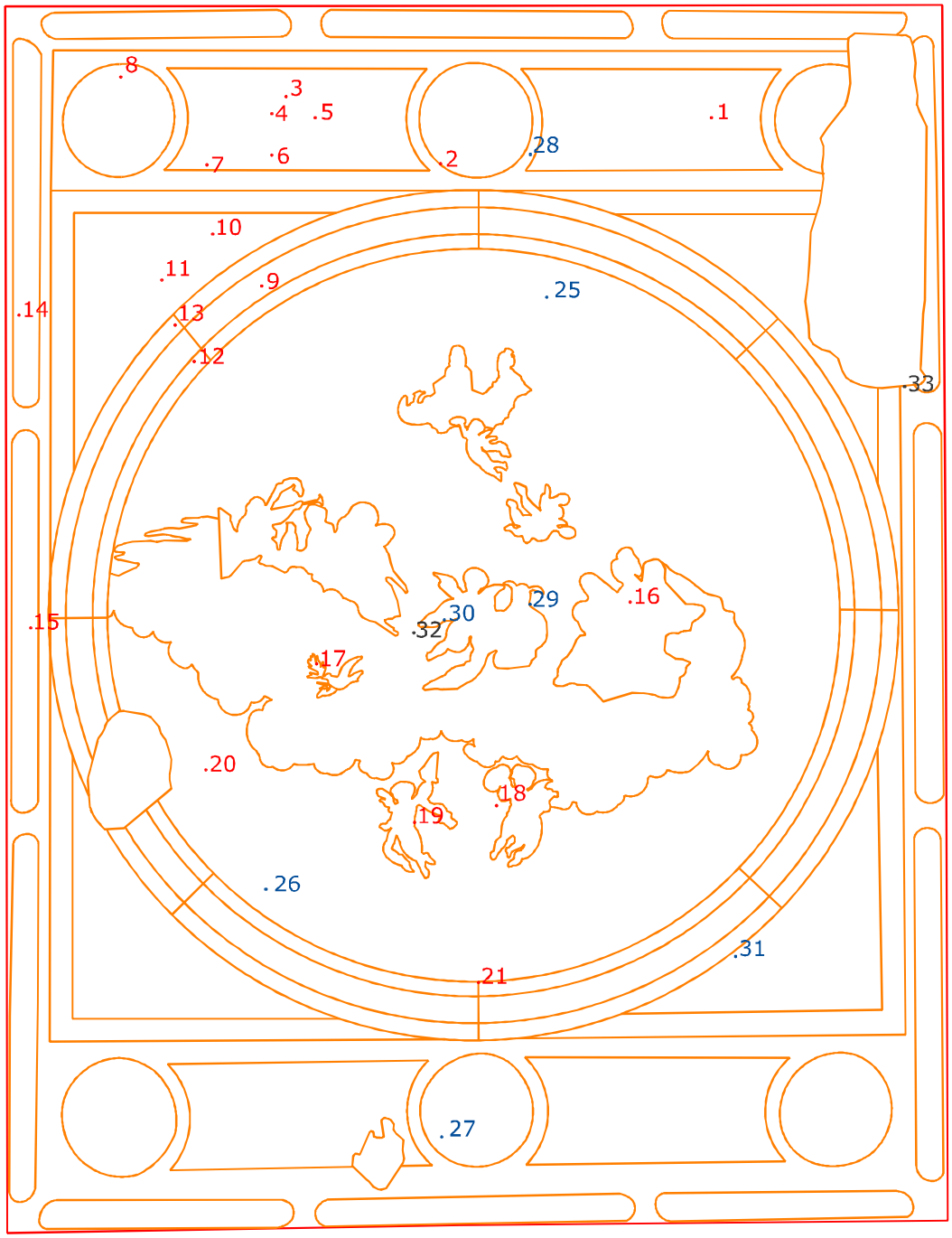
A successful carrying out of a planned conservation-restoration undertaking depends on an understanding and familiarity with the original materials and the technologies of creating the art work. The form and the state of damage as well as the causes of deterioration are assessed on the basis of knowing the composition, structure and characteristic of the material. This enables one to make the proper choice of material, of methods and techniques for conservation and preservation.

The lack of plaster in certain places and the numerous detached fragments made possible an assessment of the stratigraphy and structure of the supporting part of the painting. The support of the painting is made of two layers. The thicker and more roughly-grated layer of air hardening lime, thick at certain points up to 2,5 centimeters, was applied and pressed onto the interwoven wicker-reed armature and served as the base for the final, fine leveling calcium carbonate layer over which was spread the painted layer. At intervals of 15 centimeters the reed screen was fastened with threads and nails to the level boards hammered onto the wooden supporting girders which are laid and anchored into the supporting walls in the east-west direction at intervals of 50 to 70 cm. During the year 2004, reinforced-concrete consoles, supporting the concrete plates of the flooring of the upper floor, were poured in the spaces between the girders. This permanently disrupted the original ceiling construction, upset the statics of the wall and blocked access to the back side of the painted plaster. A detailed investigation confirmed the assessment that more than 50% of the ceiling was in a greater or lesser measure detached from the armature showing a tendency towards more deterioration. These static disturbances brought about numerous fractures, saggings, warpings and dropping off of the plaster which was, consequently, reflected in damages on the painted layer. With the passage of time, because of the accumulation of dust and soot, it became blurry. In certain places the pigment was pulverized and altered while the painted layer suffered the greatest damage during the said recent construction.

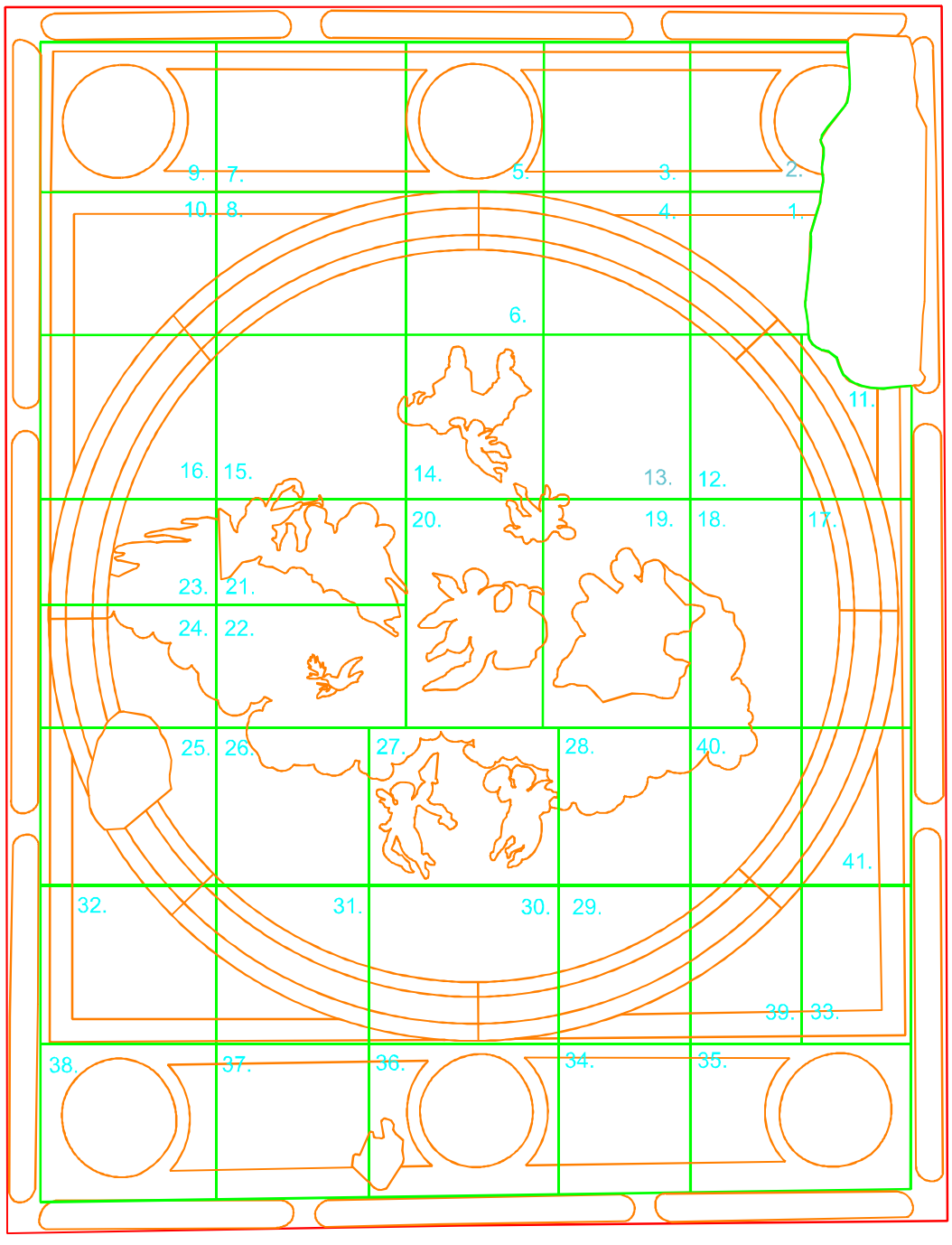
The data detected by visual observation are supplemented by physical measurements and chemical analyses carried out in the laboratory or at the site. This is why the importance of cooperation between conservationist-restorers and experts from various scientific fields has to be emphasized when processing and interpreting various kinds of data. As in other cases the analytic investigations were carried out at the Natural-Science laboratory of the Croatian Conservation Institute in Zagreb. Altogether 43 samples from the painted ceiling in the southeastern and southwestern room were taken.

documentation

As a rule, correct and thorough documentation results in the successful diagnosis of the condition of the relevant object and ultimately in the choice of most appropriate methods and techniques of conservation-restoration interventions. Thus, in this case, it was unusually important, during all preservation procedures, to devise and keep the so-called preliminary documentation which, as a rule, includes the administrative measures of keeping inventories, of registrating and of catalogueing. Of even greater importance was the so-called system documentation which contains all the necessary technical and investigative-analytical documentation. One of the first tasks of system documentation is to make a precise graphic drawing on which is recorded the condition as found but also all subsequent conservation-restoration interventions. The graphic documentation of the ceiling paintings in the Dešković palace was made by the combined method of geodesic photographing of the surrounding architectonic environs within which framework was inserted a mosaic of rectified digital photos. The photographs were taken by the Leica TCR405 total station with a laser range-finder which enables the determination of the coordinates of the points on the object itself, the precision of the measured distances ± 2 mm and the precision of measuring angles ± 5″. All the other work record documentation sheets, on which relevant restoration data during the later phases of the preservation procedures was recorded, were made and developed on the thusly-constructed model of the figurative composition of the ceiling paintings. The extensive and precise diary of the work of restoration is supplemented with numerous photographs while some parts of the undertaking were recorded by video



Graphic drawing – sempling

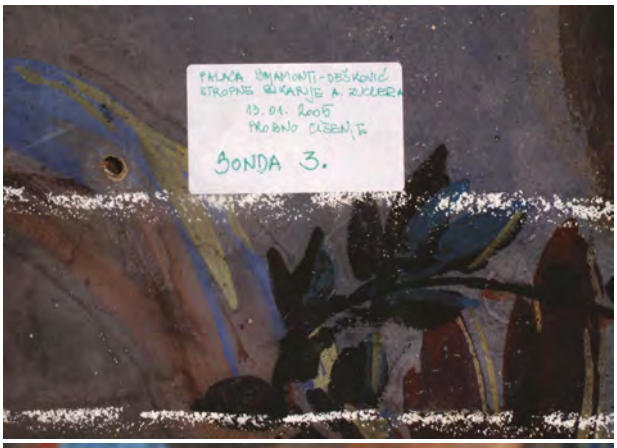


Graphic drawing –lines of the cuttings

cleaning and preserving the front – consolidation of the painted layer

Preparatory work before the dismantlement of the ceiling consisted of a number of procedures which guaranteed maximum protection for the paintings from any additional damages. For this purpose, as an initial step, the rim profiled gilded wooden laths were removed. They were documented and stored for later interventions. Before the placement of a protective armature above the painted layer, it had to be thoroughly cleaned which was done by the careful abrasive procedure using Wishab sponges. As the next step, its pre-consolidation was carried out with a 2,5% solution of Paraloid in toluene. The fixing of the armature was done with brushes so as to have on the spot control over the results of the treatment. This procedure was repeated a number of times on the pulverized parts of the painting, particularly in spaces which had a predominantly blue pigment. This procedure equalized the absorption and consistency of the painted layer and created a temporary protective film which enabled the unhindered adhesion of the protective armature across the front of the painting. All the deatched fragments were treated in the same manner.

The protective armature consisted of a layer of overlapping sheets of Japanese paper 15x15 cm large which was directly laid on the painted layer with an adhesive solution of glue in water, the ratio being 1:6. Afterwards two to three more layers of formatted gauze were laid down depending on the type and intensity of the damage on the front side of the painting. An integral and secure temporary protection of the front of the painting, which enbled the fragmentation of the ceiling, was put up through this process of glueing from beneath.



separation–dismantlement of the ceiling

A plan for cutting and detaching fragments of the ceiling was made on the prepared worksheet rendition of the paintings. Doing this one had to take account of two, frequently irreconcilable factors. The size, weight and the possibility of manipulating the fragments had to satisfy the technical criteria of the pre–planned project of taking down and returning them to the new suspension, while at the same time one had to keep in mind the adaptation of the cuttings to the figurative composition of the painting, reducing the destructiveness of the operation to a minimum. On the basis of the elaborated design, the lines of the cuttings were transferred and drawn on the front of the armature protection of the ceiling. In this manner it was divided into 43 numerized fields.

In order to simplify the stacco method, for this occasion an unfoldable metal moveable mount with a separate regulation of height on all four legs was constructed. An appropriate dependent plate whose dimensions corresponded to the individual fragment was placed on the mount. The regulation of height on four points gently supported the chosen fragment around which a precise cutting would be made along the drawn lines with an angular grinding machine, regulating the speed and the number of turns. After the cutting, by lowering the height of the mount, the fragment, after necessary interventions on its back–side, such as the snapping off of the healthy threads of the armature, would be simply separated from the corpus of the ceiling. Each fragment individually, together with its supporting plate which made possible easier transport and manipulation, was stored under the work platform. The whole process proceeded according to a precisely established lineup of separating the fragments, starting with the southeastern part of the ceiling where severe damages enabled a relatively easy start of defragmentation.

After the ceiling cover was taken down, the now wholly accessible girder construction was inspected. It was established that the leveling of the girders was not horizontal but that it drops approximately 15 cm in the east–west direction. The leveling was brought about by the forementioned hammering of boards in order for the reed screen to be set down in the most orderly manner. Thusly, on the eastern side, the gap between the layer of plaster and the supporting girders is in places more than 15 cm while on the western side the reed is fastened directly to the girders. This circumstance greatly influenced the decision to lower the entire level of the ceiling 20 cm because of the new self–supporting ceiling suspension and to conserve the original lateral profilation and leave it in the interspace.

Since the new supporting construction was anchored into the girders these were attentively inspected and no presence of parasites which could be potential causes for the destabilization of the wooden mass was detected.

Surface dust was removed with brushes and WHITE–SPIRIT to prepare the wooden surface as best as possible for the application of insect–preventing coating which was applied twice with brushes to the point of satiation. The entire procedure of conserving the wooden girders was necessary because of the impossibility of access when the ceiling would be closed and when all the segments of the painted ceiling were put back in place.

cleaning the reverse side, placing bracers, reconstructive procedures

The phase of cleaning the reverse side of the fragments inaugurated the process of preparing each individual fragment for accepting its own self-supporting back bracers. First all remants of reed armature which had been penetrated by a layer of fresh plaster were removed. Its removal clearly revealed on the reverse side the uneven structure of plaster which in places was up to 2,5 cm thick. It was necessary to level it to the uniform height of 1,5 cm by removing the "surplus" of material with chisels and serrated scrapers. The level reverse surface was impregnated by a solution of primal AC33 in water which was applied three times with a broad brush. The ratio of the solution the first time was 1:5 while the other two times the ratio was 1:3. All the collected detached fragments were treated in the same manner but by submerging them in vessels containing the solution. The reverse surface showed the general condition of the fractured plaster which had spread more or less intensively throughout the entire structure of the material. The nature and the kind of damage on the plaster varied in width, length, depth and quantity on each fragment. Everything was salvaged by filling in all the fractures and lacunas as well as by repairing the chapped rims with the help of lime mortar with a primal additive. This procedure produced the firmness and compactness of the plaster necessary for the continuation of the restoration-conservation undertaking, while each fragment was given a conserved and restored underpinning which was made ready to accept its own self-supporting reverse side braces. These were put in place in such a manner that a thin layer of epoxid pitch reinforced by glass matte and roving was aplplied to the reverse side. After the reverse side was fortified in such a mmaner it was additionally braced by polyester U-profiles (approximately h x w = 4 x 3cm in size) made of the same material and glued to the first armature layer in the same manner, preventing twisting and the possible cracking of the fragments. Thusly each detached ceiling fragment was given its own girder which maximally secured it and at the same time allowed it to be handled as an indepenedent unit. Similarly, little slots were fixed to the back side of the fragments with the help of which they would later be hung on the suspension.

preparation for retouching

Due to the uneven state in which the surfaces of the detached segments of the painted ceiling were preserved they had to be properly treated by way of a number of connected restoration actions. When the protective layers of gauze and Japanese paper, connected by glue, were taken down there was evidence in a number of zones on the ceiling of its destabilization. Traces of pigment, primarily the blue nuances of the background, were left on the Japanese paper. Such surfaces have to be fortified one more time by consolidating agents but only after all the procedures of reparation and consolidation on the layers of plaster, including intonaco , had been completed

All the damages on the surface of the painted ceiling were repaired with suitable plaster in order to produce a consistency of surface. Puttying with special plaster was done on the places of emphatic nests of pulverization, in the zones of lacunas, fractures and missing parts of the formatted plates of the ceiling painting. Before putting on plaster or putty , the fractures and lacunas have to be additionally fortified by acrylatic preparations in order to revitalize the existing destabilized plaster and to improve the adhesiveness of the newly applied layers. The surfaces treated with putty have to fit well into the general context of the texture of the original plaster. The best effects are achieved with the appropriate granulation of sand whose caliber, color and chemical composition correspond to the fillings within the finishing layers of the original mortar. The final appearance of the surface layer is defined by liquid plaster which is applied with a brush over the granulated relief of the base of the newly-applied plaster.

Damages that occur while applying the layers of plaster and putty are removed with water and special preparations, detergents and solutions. The best results are achieved through neutralization by water and the AB 57 preparation which effectively removes the foggy impurities that are left behind after basic cleaning.

The acrylatic solution isolates all the newly-applid layers in order for those surfaces to be optimally prepared for the restoration work of retouching. The acrylatic layer is highly compatible with the PARALOID base and together they form an insulating layer which will function as a protective membrane against possible harmful chemical influences brought about by the inevitable disruptions within pH-values in the lime components of the newly applied layers. The retouched painted layer lies on the insulating membrane which does not permit the risk of the said disruptions.

retouching

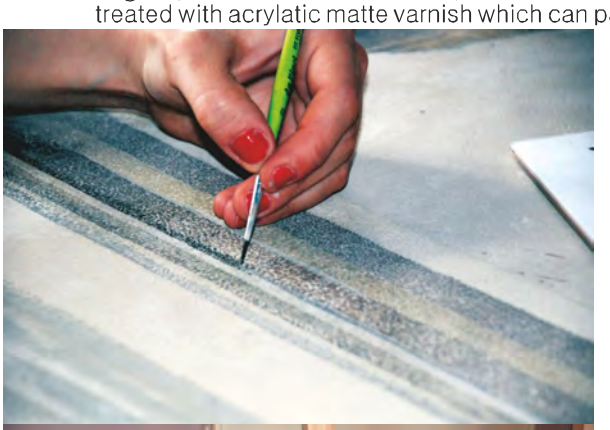
During the previous phases of restoration evident interventions on the painted layer were noted which leads to the conclusion that the ceiling painting had been at least once before previously restored. Retouching is evident especially within the central medallion which disrupted the consistency of the original texture of the intonaco and of the original brilliance of the painted surface. Fortunately, that intervention was restricted primarily to the images of the sky and clouds and did not change the original relations within the complex figural composition. This retouching was performed in the technique of oil which resulted in the significantly enhanced brilliance and the sporadic alteration of individual pigments. This in its turn indicates the problematic quality of the flax oil used as adhesive.

In these circumstances it was not easy to find the proper measure and a uniform approach to solving the problematic of the reconstruction retouching. Special MAIMERI colors for restoration were used which dry quickly and which after application have a reduced brilliance. These colors simplify the method of preparing the space under the painting, which has to be done if one is to arrive at suitable solutions to a series of demanding places in the reconstruction retouching process. These spaces under the painting are done with transparent varnish so that they resemble as much as possible the final impression of the original nuances of the painted layer. All the retouched surfaces on the segments of the detached painted ceiling were treated by the technique of dotting, which is best suitable in the context of granular textures of the original surface intonaco.

When treating the larger missing parts of the paintings a reconstruction drawing was made which was supplemted by retouching with transparently varnished underpinnings and by dotting. A measured quantity of solutions (rectified turpentine) regulated the thickness of the color for retouching which had an effect on the final matte effect of the applied retouched layer.

Retouching was applied on the entire surface of the detached plates, including the space of joints, although those places would be treated again after returning the plates to the ceiling. This was necessary in order to make uniform the tonal values which permeate the entire composition and to evade the danger of loosing the feeling for the whole of the retouched surfaces.

When the retouched surfaces dried, possible deviations in shadings, compared with the original, became visible so that, as need arose, they were given an additional finish or were treated with acrylatic matte varnish which can partially attend to the forementioned defects.



system for returning the detached segments

The uniqueness of the project of the restoration-conservation work done on the painted ceiling in the Bajamonti-Dešković palace consists in the way the detached segments of the painted ceiling were put back in place. Since there was no similar experience within the profession in our country, we had to wholly rely on our own experiences and the training of the entire team. The key problem was to solve the system of suspension and anticipate a series of technical, methodological and professional demands and doubts.

The biggest compromise was made in the form of sacrificing the original level of the painted ceiling which had to be lowered 25 cm in order to enable the implementation of a metal screen as the fundamental suspension. The metal screen was made out of special profiles of galvanized sheet metal which were anchored into the existing original supporting ceiling girders. Since we were dealing with a version of suspension which is used in building standard lowered ceilings a number of adaptations that would increase the carrying load had to be made. These adaptations had to take into account the specificities of every segment that was to be put back and the flexibility of the entire system in relation to the phenomen of static and dynamic disruptions. The mobility of the cross-wise profiles of the screen enabled a better and more precise placement of the segments prepared for putting back in place. Every segment has 3 or 4 appended placement slots made of polyester fibers, depending on the size and position of the braces on the reverse sides of the segments, which position themselves on the elements of the suspension. Precision placement is facilitated by these details of free positioning and by the mobility of the auxiliary transversal elements of the metal screen. Positioning according to height is solved in a simple manner by putting wooden lamellas of varying width underneath which gives the desired position in accord with the surrounding returned segments of the painted ceiling. The positioning of each returned part is synchronized with the basic directions of the furthermost rims which are controlled by connective points and controlling level lines with the aid of a spirit-level and a laser level.

Initially when thinking about the methodology of putting back the ceiling segments one of the proposals was screw-anchorage through the plaster of the detached segments. Additional thinking, accompanied by a series of calculations and simulated details, showed that this would be a bad solution. This manner of fastening would not withstand the tangle of static forces which would put a burden on every placement point in an unbalanced manner. This would inevitably result in the cracking of the adhesive material in the places where the joints are located. The screen of the metal suspension creates a "hovering" model which enables flexibility and the depreciation of possible uncontrolled outside influences such as blows, vibrations (earthquake), static disturbances and other unforeseen circumstances. Static and dynamic forces are evenly distributed throughout the entire surface of the returned painted ceiling and disappear without consequences, expecially in the sensitive places where the joints are located. If pressure is put only on one point the kinetic energy is again dispersed onto all the elements of the suspension, disburdening the pressure point.

returning the fragments

The positioning of the first plate, which was being returned onto the described system of the metal suspension, finally determines the leveled lines of the rims which have to entirely accord with each returned ceiling segment. The places where the polyester placement slots are to be put are the first to be marked according to the pattern of longitudinal and transversal elements of the metal suspension. The placement slots were put in place by pasting epoxid pitch and smaller pieces of polyester fiber. After these solidified (it took them two days to dry) such a piece could be put on the suspension. Precision movements with wooden lamellas finally defined the position of the returned segment. Adhesive plaster, conforming to the original one, was applied within the spaces of the joints which means that it ought to have somewhat more pronounced characteristics of firmness and elasticity in order to evade the risks of subsequent cracking and crumbling. The positioned plate was immobilized by bindings, pegs and props in order to avoid movement which would cause cracking in the adhesive mass. The dynamics of the described procedure of putting back the segments of the painted wall was limited by the existence of the placement slots (recording, placement of epoxide, drying) and by the adhesive plaster within the joints so that at most two segments could be put back at one time.

Alongside the putting back of the segments, after the third had been put in place, the treatment of the joints was simulataneously being carried out and the harmonizing of the texture of the supporting plaster, as well as the preparation of these places for retouching. Supporting plaster or liquid plaster was applied to the adhesive mortar in the joints depending on the granulation of the original parts of the intonaco. Aligning it with the original texture of the plaster was accomplished by the application of fresh plaster, by the application of liquid plaster and by interventions with different tools on the dried plaster. It was only in a few restricted places that the disrupted level in the zone of contact of the returned segments was aligned by grinding and additional puttying. This was a consequence of dilatative alterations because the segmenst were taken down with existing warps and aberrations which could not be fixed in the final variant of the returned ceiling. In a number of critical places it was impossible to sufficiently equalize and level out the discordance of two segments in the zone of contact because of the delicacy of that place within the figural composition of the central medallion. As a rule, interventions on the area of faces, hands, equipment and other parts of figural images on paintings are not made during the process of restoration. This is the reason for the visible smaller uneven spots in the smaller restricted area of the joints.

The reconstruction retouching was carried out in the same way as the retouching of the segments while they were on stands,that is by the method of dotting on exemplary, transparently varnished subfields. Before this an acrylatic layer was apllied to these treated surfaces on the area of the joints to have better insulation, to accept the painted layer of the retouching in better manner and in order to equalize the apsorbtion capability.

lateral profiling

Because of the shifting of the ceiling level in the said circumstances, the lateral profilings of the painted ceiling remain in situ conserved and restored by customary procedures. During the process of putting back the segments of the painted ceiling, lateral profiles of a simple semicircular cut 32 cm in radius were simultaneously put in place. An industrial product specifically adopted to the demands of restoration work on painted ceilings was used (the firm OKIPOR co.-Konjsko). The product consists of a styrodur core coated with silicate plaster in segments measuring 2 m, in such a manner that it complies with the main requirements of material suitable for reconstruction: small weight, simple removal (reversibility) if necessary, compatibility with other materials, easy treatment and handling and acceptable price. Along its entire length its upper part has a groove which settles on the returned ceiling segments and which after placement is filled in with adhesive material whose function is to securily connect the zone of the wall with the zone of the returned ceiling. The lower part of the profile lies on the laths in order to avoid shiftings and is directly attached to the wall with construction glue. After stiffening, the entire surface of the lateral profile is coated with two layers of liquid plaster which will at the same time serve as underpinning for reconstruction retouching. First, according to its original shade, the color which covers the background surface of the profilation was prepared. In accordance with the original sample of marbleization, two variants of red and blue-green imitation marble were reconstructed using the effects of transparent varnish forms and more emphatic accents. The reconstruction retouching was carried out with acrylatic colors keeping in mind its final effects in the sense of the shading of the colors, their necessary brilliance and steadfastness.

Decorative gilded laths were placed in the lower part of the profile following the lower rim. According to the original model new ones were made from spruce wood and prepared for gilding. All were impregnated with a number of layers of PARALOID and subsequently grinded with fine grindstone paper in order to prepare the base as best as possible for the application of bolus and mixtion. Bolus was applied in a dark red nuance in two layers. The second layer was grinded. It was finally polished and cleaned with a soft cloth. 24-hours mixtion was used and golden leaves (imitation), which we had previously formatted with a special knife into smaller pieces for easier placement, were put in place. After 24 hours the gilded surfaces were polished with absorbent-cotton wads and soft cloths, removing the residues of golden leaves. After a few days the gilding was given protective coating with two layers of copal varnish and with a patinated patina made out of an asphalt base, of copal varnish and Venetian turpentine for the purpose of diminishing the inappropriate brilliance of the gilding. Laths were put in place by pasting with acrylatic glue in order to avoid hammering in nails.

protection of the painted layer and the final presentation

After the finalizing procedures of reconstruction retouching in the areas of the joints had been done, what remains is the need to ensure the steadfastness and the homogeneity of the surface and to preventively protect the entire surface of the returned painted ceiling. This is also necessary in order to equalize the intensity of the brilliance where smaller differences arose between the difference of the original and replicated textures. Acrylatic matte lacquer produced by the renowned maker LASCAUX was used, a product that is exclusively designed for the protection of frescoes. It was watered down and was compatible with the components built into the structure of the restored layers of plaster and the painted layer. It possesses an exemplary UV protection which ought to prevent possible alterations on the colored layer. For better control, it was applied with a brush in 2 to 3 layers and after drying the effect it had on equalizing the brilliance was investigated. The entire surface looked homogenous and uniform displaying a matte effect. It does not jeopardize the structure and the texture of the base of the painted layer.

The distance from which we can observe the final results of the restoration process is restricted by the base of the scaffolding so that a true view is possible only after its removal. The anxiety arising from this ultimate view and from the new dimension of having the whole work of restoration, that lasted almost five years on an exceptionally complex and demanding project, in front of our eyes is understandable.

Without false humility we maintain that the completed project of restoring the painted ceiling can be presented for apparaisal and criticism to the public and to the profession.

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