



## Contributions to the Study of the Flemish Primitives

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CENTRE FOR THE STUDY OF THE FLEMISH PRIMITIVES

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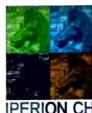
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# THE GHENT ALTARPIECE

RESEARCH AND CONSERVATION OF THE EXTERIOR

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# Introduction

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## THE GHENT ALTARPIECE: 1986–2010

In 1986, the *Ghent Altarpiece*, the world-famous masterpiece by Hubert and Jan van Eyck, was moved from its original location, the Vijd Chapel in the Cathedral of St Bavo, to a metal-and-glass cage in the baptismal chapel or Villa Chapel, north of the main western entrance to the same church. This relocation was first and foremost the result of safety concerns at the time and was further judged necessary in response to the increasing numbers of tourists visiting Ghent and its most precious artistic treasure. Due to its restricted size, the Vijd Chapel was no longer considered appropriate to safely exhibit and protect the altarpiece. The historical value of a major work of art still kept in its original location needed to be sacrificed with an eye to preventive conservation.

With the Villa Chapel's concrete reinforcement, bulletproof glass and the barrier formed by the cage between the polyptych and the visitors, it was deemed that every imaginable danger had been anticipated. The chapel had been transformed invisibly into a shellproof bunker with 30 mm-thick glass walls meant to protect the panels from theft and damage by vandalism.

However, the new presentation in the reinforced cage had serious drawbacks that were either not foreseen by the commission responsible for the reinstallation or simply regarded as unavoidable and taken for granted. The most noticeable disadvantage was that the polyptych was henceforth fixed and could not be shown alternately in its closed and opened positions. Visitors had to walk around the cage to see the reverses of the wings of the opened altarpiece, whose visibility left to be desired due to inadequate illumination and the shallowness of the viewing space. Moreover, the unity between the scenes on the exterior wings – not only the *Annunciation*, but also the row of prophets and sybils, as well as the donors kneeling before the two grisaille saints John – was lost. And finally, the visual impact of opening the altarpiece to reveal its essential iconological meaning, the salvation of mankind, could no longer be experienced by the viewer.

The housing of the altarpiece in the cage also introduced new conservation problems. The main problem resided in the lack of follow-up of the initial installation, resulting in the fluctuations in environmental conditions. The lighting system with large intense spotlights replacing the original conservation-grade lamps resulted in uneven illumination of the altarpiece. The heat emitted by the lamps and the fluctuations in temperature caused by their being switched on and off daily were



detrimental to the varnish and paint layers, especially of the panels of the lower register.

The electrical system itself implied a serious risk: in case of a fire due to a short circuit, the altarpiece would have been trapped in its cage. It would have taken at least six hours for trained art handlers to dismantle the altarpiece and clear the cage panel by panel from the cage through a backdoor. Another problem was the protective glass of the cage. At the time of installation, unbreakable glass of the required size and thickness existed only in a slightly greenish tint, which disturbed the chromatic balance of the painting.

The most important problem of the cage, however, was its lack of adequate environmental control. Fluctuations in relative humidity and temperature were often unacceptable for panel paintings. Indeed, after a routine periodic inspection in April 2008, Monumentenwacht Oost-Vlaanderen – the East Flanders Monument Inspection – reported serious concerns about the state of conservation of the *Ghent Altarpiece* and judged the climate conditions within the cage highly inadequate.<sup>1</sup> It was concluded that these conditions required urgent intervention so as to avoid serious conservation problems.

The Churchwardens of the Cathedral called upon KIK-IRPA, the federal Royal Institute for Cultural Heritage, to perform a follow-up inspection. The KIK-IRPA houses a considerable amount of documentation on the *Ghent Altarpiece*: its founder, the chemist and ‘Monument Man’ Paul Coremans, organized a pioneering photographic campaign of the paintings after their return from the salt mines of Altaussee in 1945. He also oversaw the interdisciplinary conservation and research project of the altarpiece which took place in 1950–51 and was followed by regular inspections of the condition of the panels until 1986. This dossier served as a basis for understanding the evolution of their state of conservation.

The Churchwardens simultaneously sought advice from experts in technical examination and conservation and from representatives of Flemish institutions active in the documentation and preservation of cultural heritage. In this way, an ad hoc advisory board was created to obtain critical advice on a broad range of issues in regard to art conservation and cultural heritage management. Later, in 2009, these meetings would be formalized in a standing *Adviescomité* (Advisory Committee).

KIK-IRPA disclosed the results of its follow-up inspection in a meeting on 23 May 2008, confirming the concerns from Monumentenwacht Oost-Vlaanderen.<sup>2</sup> The climate conditions in the metal-and-glass box were indeed considered inadequate for panel paintings, which are very sensitive to changes in relative humidity. Areas of tenting and lifting paint were observed, particularly in the modern copy of the *Just Judges*. The report concluded that a broader, more thorough examination of the individual panels of the altarpiece was needed, for which purpose the polyptych had to be disassembled. It was deemed particularly important for the wooden supports of the individual panels to be inspected.<sup>3</sup>

An examination of the individual, disassembled panels would allow for urgent conservation treatments, such as the securing of lifting paint and the freeing of locked cradle members. The main goal of this examination was to determine if this initial treatment was sufficient or whether a full restoration of the polyptych had become necessary. At that time, it was also recognized that the dismantling of the altarpiece



provided a unique opportunity for a thorough campaign of photographic and technical documentation, which had not been performed since 1986. The Cathedral invited KIK-IRPA to submit a budget for an examination and documentation project, in the awareness that provincial or regional administrations did not have programmes in place for such preventative, investigative treatments.

## PRELIMINARY RESEARCH AND URGENT CONSERVATION

The preliminary research and urgent conservation treatment was supported by the *Panel Paintings Initiative* (PPI), a grant programme of the Getty Foundation in Los Angeles, for a project that proposed to combine three key activities: the examination of the altarpiece's structural condition, the necessary urgent conservation treatment, and a broad campaign of technical examination and documentation. This project, entitled *Lasting Support: an interdisciplinary research project to assess the structural condition of the Ghent Altarpiece*, ran from April 2010 through June 2011 and was directed by Prof. Anne van Grevenstein (University Amsterdam) and Prof. Ron Spronk (Queen's University, Kingston, Ontario, Canada).<sup>4</sup>

The urgent conservation itself took place in the Villa Chapel in St Bavo's Cathedral, where the public could follow the work from behind a glass enclosure. The dismantling of the altarpiece was coordinated by Jean-Albert Glatigny and performed by the art handler Mobull, aided by a team of junior panel conservators from the Getty PPI project. A team from KIK-IRPA and the Royal Museums of Fine Arts in Brussels examined the paint surface of each panel. Gathering and sharing information, removing surface dirt, and consolidating paint layers were the main objectives of this first period of investigation into the complex layer structure of the *Ghent Altarpiece*. In a second phase, the team removed small areas of varnish to evaluate their relative solubility with Gwendoline Fife from the Stichting Restauratie Atelier Limburg (SRAL) and took samples on cotton swabs for analysis by Steven Saverwijns (KIK-IRPA) and Henk van Keulen from the Instituut Collectie Nederland (ICN, now part of RCE (Rijksdienst voor het Cultureel Erfgoed), the Cultural Heritage Agency of the Netherlands in Amsterdam.

The dismantling of the altarpiece provided a unique opportunity for a comprehensive campaign of technical examination and documentation. All individual panels were documented with high-resolution macrophotography in visible and infrared light, and with infrared reflectography. These images, together with the X-radiographs that KIK-IRPA had made in 1986, would later result, under the direction of Ron Spronk, in the website *Closer to Van Eyck: Rediscovering the Ghent Altarpiece*.<sup>5</sup> This site enables fast, easy access to these multitudinous and very large files, and allows for unusually precise study of these documents in correlation to each other. *Closer to Van Eyck* not only quickly developed into an indispensable tool for the restoration team but is being accessed continuously by scholars and the general public worldwide.

As the conservation progresses, the website is being augmented with images made both during and after treatment as well as with relevant reports and other documents. Meanwhile, other works by Jan van Eyck and his workshop are being examined and documented with the same scientific imaging techniques. This new documentation



is being added to *Closer to Van Eyck*, converting the website into a crucial reference for comparative research on the complete oeuvre of Jan van Eyck and his workshop. The project, called VERONA (acronym for 'Van Eyck Research in Open Access') is directed by Bart Fransen, head of the Centre for the Study of the Flemish Primitives at KIK-IRPA and supported by the Belgian Federal Science Policy, BELSPO, and Bruges Museums.

In conjunction with *Lasting Support*, the climate conditions in the glass cage of the Villa Chapel were studied in a collaborative effort of the Getty Conservation Institute (represented by the late Shin Maekawa), the Klimaatnetwerk Vlaanderen/Nederland (Climate Network of Flanders and the Netherlands), KIK-IRPA, and Ghent University (research group of Prof. Arnold Janssen).<sup>6</sup>

During *Lasting Support*, it has become increasingly clear that the great complexity of the various paint layers, varnishes, and interventions from the past made a thorough diagnosis of the original build-up impossible. The microscopic examination and the data provided by technical imaging and paint-sample analysis did not offer sufficient information to treat larger areas of the painted surface, with all the differences in interpretation that the varying historical backgrounds of the panels would imply.

In the final report of *Lasting Support*, based on the large documentation gathered during this preliminary project, the conclusion was reached that a more ambitious conservation project of the entire *Ghent Altarpiece* had become indispensable.<sup>7</sup> After approval from all stakeholders and authorities involved, the conclusions of *Lasting Support* were used to formulate a tender for a new comprehensive conservation/restoration campaign.

## FINANCING THE CONSERVATION/RESTORATION PROJECT AND RELATED RESEARCH

The *Ghent Altarpiece* is listed officially as an essential major work of Flemish cultural heritage, and as such it is protected by the *Topstukken decreet* (Flemish Decree on essential movable works of cultural heritage) and listed as a 'Flemish Monument immovable by destination', associated with the Cathedral. Therefore, the conservation/restoration project is subsidized up to 80% by the Flemish Government (both the departments of Cultural Heritage and Immovable Heritage). The commissioner, who is responsible for the remaining 20% receives a subvention from the Baillet Latour Fund (Leuven). These subventions cover the personnel costs, infrastructure of the studio, and disposables, but no scientific research nor additional operating expenditure (scientific dissemination and publication), equipment or sub-contracting.

The Research Fund of Ghent University (UGent) granted a *Geconcerteerde Onderzoeksactie* (GOA, Concerted Research Action) for the project, entitled 'Archaeometrical Research of The Ghent Altarpiece' (2012–18, chairs: Professors Peter Vandenaabeele, Archaeometry; Luc Moens, Analytical Chemistry; Maximiliaan Martens, Art History). The project was geared towards both applied research in support of the conservation and fundamental research triggered by issues raised by the conservation project (such as the development of Raman spectroscopic scanning or the application of novel trace element detection techniques). This grant covered personnel costs for 5 PhD's, the acquisition of a Hirox digital microscope with 3D imaging and 2D/3D



measurement capabilities and a dedicated stand for microscopic research on the panels, designed by em. Prof. Jaap Boon (UAmsterdam). Four PhD-students worked on Raman spectrometric and XR-fluorescence-applications, while besides her duties as a paintings conservator and research coordinator within the conservation team, H  l  ne Dubois prepared a PhD dissertation on the material history of the *Ghent Altarpiece*, a section of which is included in the present publication. In conjunction with this project, the research groups of Prof. Aleksandra Pi  zurica (UGent), in collaboration with Prof. Ann Doods (Vrije Universiteit Brussel) and Prof. Ingrid Daubechies (Duke University), and other partners in the project, developed image processing tools with deep learning methods for automated detection of cracks and damage and inpainting.<sup>8</sup>

Meanwhile, paint samples taken during the previous restoration campaign under the direction of Prof. Paul Coremans in 1950–51, were also re-examined with modern analytical techniques at KIK–IRPA through a research project financed by BELSPO (Action 1, MO/39/011), and directed by Dr Jana Sanyova (2012–16).

The Research group of Professors Koen Janssens and Geert Van der Snickt (AXES, University of Antwerp) made MA-XRF scans of the panels, which allow imaging the spatial distribution of chemical elements. This analytical method, coupled with the analysis of new paint samples at KIK-IRPA proved to be crucial to characterize the overpaint and the state of preservation of the underlying original paint layers. This enlightening work aimed at a progressive insight in the condition of the panels was supported by the Gieskes-Strijbis Fund (Wassenaar, the Netherlands; 2014–18).

## SETTING UP THE CONSERVATION/RESTORATION PROJECT

In order not to deprive the larger public of one of the most admired cultural treasures in Flanders for many years to come, it was decided in agreement with the commissioner, the Churchwardens of St Bavo's, that the treatment would take place at a publicly accessible space in Ghent. Eventually an agreement was reached with the Museum of Fine Arts (MSK Ghent), where one of the larger exhibition spaces was transformed into a conservation studio. Through a large window the public would be able to follow the progress of the works.

Informing and involving the general public as a recognized stakeholder has been an important mission from the very beginning of the project. Other large conservation projects have stirred considerable commotion and even controversy when the final results were shown to the public, often after many years. The project leaders were well aware that information on several aspects of the conservation and restoration treatment helped the understanding and recognition of care for cultural heritage. Therefore, the on-site coordinator of the project, conservator Bart Devolder, was charged with meeting the public monthly to provide information and answer their questions.

Another important endeavour to inform the public on a permanent basis was the initiative of the Department of Culture of the Province of Eastern Flanders to mount an exhibition on the material history of the *Ghent Altarpiece* in its exhibition space Caermersklooster, the former cloister of the Carmelites in Ghent from 2012 to early 2018. This exhibition and changing sections focusing on specific themes: 'From Tree Trunk to Altarpiece', 'A Miraculous Garden: Flora on the Ghent Altarpiece', 'Mystic

Music', and finally 'restoration/ REVELATION: the exterior wings of the Ghent Altarpiece', were accompanied with trilingual booklets written in an accessible style.<sup>9</sup>

An imperative of the tender was that the project would be split up in three phases of eighteen months each: (1) the exterior wings (the focus of the present volume); (2) the upper register of the opened altarpiece; and (3) the lower register of the opened position. This way, during the whole process, estimated to last five years, one third of the altarpiece would be treated in front of the public, while two thirds would remain accessible in the Villa Chapel of the Cathedral. It was later decided to switch phases 2 and 3 for practical reasons.

The tender further stipulated the removal of the varnish layers applied after the previous restoration of 1950–51, consolidation of flaking paint, minimal retouching, and revarnishing, as well as a structural conservation treatment of the supports and a restricted treatment of the original frames. Charged with the project, KIK-IRPA constituted a team of eight painting conservators for the first phase: Livia Depuydt-Elbaum (head of the team); Bart Devolder (on-site coordinator, spokesperson); H  l  ne Dubois (research and international commission coordinator), Nathalie Laqu  re, Claire Mehagnoul, Marie Postec, Fran  oise Rosier, Griet Steyaert); panel specialist Jean-Albert Glatiny; and two conservators responsible for the treatment of the polychromy of the frames, Anne-Sophie Augustyniak and Laure Mortiaux. As the first phase consisted of the treatment of the eight panels of the exterior wings, each painting conservator was assigned one particular panel. Most members of this team collaborated as authors on essays in the present volume. As the reader will notice, the observations and ideas that the conservators continuously exchanged among each other and with other team members, based on the personal experience with 'their panel', was instrumental in the progressive understanding of the object and the decision-making process of the treatment, or at least in formulating well-argued proposals to the different committees.

## MANAGEMENT STRUCTURE

A project of this scope needs a management structure that incorporates the necessary checks and balances. Prof. Anne van Grevenstein, who advised the churchwardens on the conservation during phase 1, devised a structure of supporting, advising and controlling commissions. This structure consists of the following committees:

- Steering Committee (*Stuurgroep*): acts as the board that follows the daily progress, guarantees smooth collaboration among all stakeholders, decides on the logistics and takes initiatives for obtaining additional funding. It is chaired by Bressers Architects, the architectural firm responsible for the restoration of the Cathedral of St Bavo, of which the conservation/restoration of the *Ghent Altarpiece* is part. Its members are the main stakeholders.<sup>10</sup>
- Advisory Committee (*Adviescomit  *): the assembly of all stakeholders, also chaired by Bressers Architects. It acts on advice from the Steering Committee, the International Advisory Commission and third parties.



- Site Monitoring Committee (*Opvolgingscommissie*): gathers the representatives of the funding authorities officially mandated to follow up on the works according to the tender.
- International Advisory Commission: assembles a large number of Van Eyck and early Netherlandish painting experts (conservators, museum curators, academics, researchers in conservation science). It has an advisory role in the decision-making process of each major step in the treatment based on concrete proposals formulated by the conservation team.

Besides these commissions, some working groups were formed that concentrate on specific issues: art history, communication, education, relocation, scientific research, technical imaging and web application. They consist mainly of members of the commissions listed above.

## STATE OF RESEARCH AFTER PHASE 1

The present volume describes the work performed during phase 1 of the conservation/restoration treatment of the exterior panels and their original frames, as well as aspects of scientific and scholarly research. During removal of the youngest (post 1951) varnish layers and – subsequently, for the most part – of the older layers of varnish that had not been removed during the 1950–51 treatment, large areas of later overpaint, estimated to cover about 70% of the entire surface of the exterior wings, were discovered. Although nineteenth-century interventions were positively expected, no one could have anticipated that the altarpiece had already been thoroughly reworked in the sixteenth and all subsequent centuries. While it is true that written documents of old campaigns had been known for a long time, including the reference to Jan van Scorel and Lancelot Blondeel, who were called to Ghent to ‘clean’ Van Eyck’s work in 1550, now, for the first time, material evidence has been found that can be cross-linked with those often nebulous archival and literary texts. That most of the areas of overpaint concealed considerably well-preserved original layers was a spectacular surprise that attracted international media attention.

Notwithstanding numerous intrusions into the material integrity of the original frames throughout the past centuries, the rediscovery of the original stone imitation was an amazing revelation too. This polychromy on silver leaf was preserved well enough to justify its restoration.

It goes without saying that with these findings much new knowledge has been accumulated: established views on the interpretation of the stratigraphic build-up of the *Ghent Altarpiece* have to be revised considerably, while new insight is gained into the original Eyckian technique and a much more nuanced view can be established on the altarpiece’s material history. All this is treated in a detailed fashion in the following chapters.

These discoveries were world news, but they delayed the works considerably. As mentioned earlier, each phase was initially estimated to last eighteen months. However, phase 1 alone took four years to complete. This implied the need for drastically revising and renegotiating the budget.

On behalf of the whole team we would like to express our deepest gratitude to the International Advisory Commission for their immense support and for taking clear and courageous stands in the decision-making towards a thorough conservation and restoration treatment. We also thank the other commissions for endorsing time and again their well-argued professional advice. Our great appreciation goes out to the commissioner, the Churchwardens of St Bavo's Cathedral for taking the final decisions to allow revealing Van Eyck's splendour, and in doing so, often setting aside pressing short-term concerns for long-term durable results. Last, but not in the least, we are grateful to the financing institutions that made it all happen. We all are looking forward to the next steps in this adventure, or to quote Noah Charney in *The Guardian*: "The fact that such a wealth of information has been revealed by the restoration of just one-third of the altarpiece is making many wonder what might be further revealed."<sup>11</sup>

Fig. 1. Meeting of the International Expert Committee on 28 May 2018 in Ghent





## NOTES

- 1 Veerle Meul, Hilde De Smet and Anne-Cathérine Olbrechts. 'Inspectierapport 40393/2008/I', Ghent: Saint Bavo Cathedral, 2008. Unpublished report, Monumentenwacht Oost-Vlaanderen. The date of the inspection was 3 April 2008.
- 2 Livia Depuydt and H el ene Dubois, 'Verslag van de conditie controle van Het Lam Gods, Gent, Sint Baafskathedraal, 3 april 2008', KIK-IRPA, Brussels, May 2008 (File 2008.09837).
- 3 The eight panels that formed the two wing sections were originally all painted on both front and back, but six of these panels and their frames had been sawn through their thickness in Berlin in the late nineteenth century, and cradles were applied to the reverses to strengthen the resulting very thin supports. These (now twelve) panels were housed back to back, their cradles out of sight, within the metal auxiliary frame that was created during the 1950–51 restoration.
- 4 Project reports can be downloaded at <http://closertovaneyck.kikirpa.be/#home/sub=documents>.
- 5 The website application was the result of a collaboration of several institutions and individuals; see <http://closertovaneyck.kikirpa.be/-home/sub=wcredits>.
- 6 De Backer, Janssens, Steeman et al. 2018, pp. 168–172.
- 7 Anne van Grevenstein and Ron Spronk, 'Lasting Support. An interdisciplinary research project to assess the structural condition of the Ghent Altarpiece. Final project report', October 9, 2011, p. 11, based on Anne van Grevenstein et al., 'Conservatie en materieel onderzoek van het Retabel van het Lam Gods, Gent, Sint-Baafskathedraal. Deel I: Verslag van het onderzoek naar de materi ele conditie en van de urgente conservatiebehandeling (april tot november 2010)', 2011.
- 8 Pizurica et al. 2015.
- 9 Born, Martens 2013; Van Grevenstein-Kruse 2015; Van Crombrugge, Van den Bremt 2016; Royal Institute for Cultural Heritage 2016.
- 10 For names of this and other commissions and working groups, see <http://closertovaneyck.kikirpa.be/ghentaltpiece/#home/sub=credits>.
- 11 *The Guardian*, 12 October 2016.