Conservators, scientists and art historians worked together on the extensive analyses of the Victory Boogie Woogie, the last painting by Piet Mondrian.

On August 29, 2008 the results of this examination are presented to an international audience.
WELCOME

The *Victory Boogie Woogie*, the last and unfinished painting by Piet Mondrian (1872-1944), has been acquired by the Dutch government in 1998. The painting was acquired, in deepest secrecy, as a gift to all Dutch citizens to commemorate the transition from the guilder to the euro.

Although owned by the government the Netherlands Institute for Cultural Heritage (ICN) is the paintings’ custodian. Permanent host is the Gemeentemuseum Den Haag (‘Municipal Museum’) which has the largest collection of Mondrians in the world.

Currently this exceptional work of art has kept an entire scientific team occupied for two years. Curators, conservators and conservation scientists of the ICN, Gemeentemuseum Den Haag and a mobile laboratory team have intensely investigated the work.

During the investigation (completely visible for the public) non-destructive and mobile techniques of examining were introduced. Apart from the use of imaging and analytical techniques such as X-ray, UV-fluorescence and Infrared, a considerable amount of historical data has been collected.

The combined data shed new light on the history of the *Victory Boogie Woogie*’s creation. All these aspects of the investigation will be outlined during this symposium.

We wish you all an inspiring day and are looking forward to your share in the discussion and development of this research.

Wim van Krimpen
Director
Gemeentemuseum Den Haag

Henriëtte van der Linden
Director
Netherlands Institute for Cultural Heritage

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The Dutch Program Foundation (NPS) series Andere Tijden (‘Other Times’) will feature a documentary on the Victory Boogie Woogie on 4 September 2008.
# PROGRAMME

## Morning

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| 10.00-10.15 | Welcome  
Wim van Krimpen, director Gemeentemuseum Den Haag and  
Henriëtte van der Linden, director Netherlands Institute for Cultural Heritage |
| 10.15-10.30 | Introduction to the research project  
Maarten van Bommel, programme leader Netherlands Institute for Cultural Heritage and Hans Janssen, chief curator Gemeentemuseum Den Haag |
| 10.30-10.55 | Historical Data of Mondrian’s last Masterpiece  
Eric Domela Nieuwenhuis, curator Netherlands Institute for Cultural Heritage and Joop Joosten, dr. h.c. University of Amsterdam |
| 10.55-11.25 | The conservation history of the Victory Boogie Woogie  
Esther van Duijn, art historian and conservator, lecturer University of Amsterdam |
| 11.25-11.40 | Short break                                                             |
| 11.40-12.05 | Mondrian and the Money  
Nancy Troy, professor University of Southern California, USA |
| 12.05-12.30 | Revealing Revisions; Piet Mondrian’s ‘Transatlantic Paintings’  
Ron Spronk, professor Queen’s University, Kingston, Canada |
| 12.30-13.30 | Lunch at GEMBER                                                        |

## Afternoon

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| 13.30-14.00 | Non invasive in-situ investigations by the mobile laboratory MOLAB  
Antonio Sgamelotti, professor University of Perugia, Italy |
| 14.00-14.15 | Documentation and analysis; the use of CARTA as scientific tool  
Maarten van Bommel, programme leader Netherlands Institute for Cultural Heritage |
| 14.15-14.45 | Getting grips on composition and construction: the coloured lines  
Hans Janssen, chief curator Gemeentemuseum Den Haag |
| 14.45-15.00 | Short break                                                             |
| 15.00-15.30 | Investigating the coloured squares; looking at the spaces in between  
Madeleine Bisschoff, conservator Netherlands Institute for Cultural Heritage |
| 15.30-16.00 | The last working days of Mondrian. Evaluating the unfinished state of  
Victory Boogie Woogie  
IJsbrand Hummelen, senior scientist Netherlands Institute for Cultural Heritage |
| 16.00-17.00 | Summary and introduction to the discussion                              |
| 17.00   | Reception at GEMBER                                                    |

## Chair
Martijn van Calmthout, science journalist

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**Location symposium**
Gemeentemuseum Den Haag  
Stadhouderslaan 41  
2517 HV The Hague  
www.gemeentemuseum.nl

**Location lunch and reception**
GEMBER  
Stadhouderslaan 43  
2517 HV The Hague  
www.restaurantgember.nl
Introduction to the research project

Maarten van Bommel, programme leader Netherlands Institute for Cultural Heritage and Hans Janssen, chief curator Gemeentemuseum Den Haag

The making of Victory Boogie Woogie, the last painting of Piet Mondrian, has had a long history. Mondrian worked for about 20 months on this painting. In the last 10 months of his life it was the only painting he worked on. During that time, many changes were made.

The moment it arrived at the Gemeentemuseum Den Haag, in 1998, conservators, curators and conservation scientist were intrigued by the work. Preliminary research was done and the curators started collecting historical information on the painting. The preliminary research proved not to be easy. The painting released extremely strange and disturbing information. For example, upon its arrival in August 1998, an X-ray was taken. This X-ray was studied carefully, with the help of Michel Franken of the Rembrandt Research Project who studied at that time X-rays on a daily basis for more than twenty years already. Yet none of us could make anything of what we saw, let alone that we could bring what we saw into relation with the painted surface. The main conclusion of this preliminary research was that the painting was much more complex then we could ever imagine.

In 2006 the Netherlands Institute for Cultural Heritage and the Gemeentemuseum Den Haag decided to start a collaborative study with two main aims:

1- To increase understanding of the creation process of the painting
2- To study the condition

The painting was studied in three different sessions. Most of the practical research involved observation through a microscope to carefully study the paint surface and also underneath the paint surface when possible. In addition, we collaborated with MOLAB, a mobile laboratory available via Eu-Artech (www.Eu-Artech.org) a project funded by the European Union. With MOLAB we had the opportunity to perform non-destructive analysis. Besides, historical data were studied focusing on the creation process and the conservation history.

During this presentation we will explain the different steps in the research process that were taken the last two years.

Maarten van Bommel received his Ph.D. in analytical chemistry from Leiden University in 2002. As conservation scientist at ICN Maarten is specialised in the identification of natural and synthetic dyes. From 2005 he is appointed as programme leader Paintings; the VBW research project is part of this programme.

Over the last twenty months of his life, Mondrian worked intensively on Victory Boogie Woogie. Thanks to written sources by Mondrian and Charmion von Wiegand from the period between early 1942 and late January 1944, as well as the memoirs of Von Wiegand, Holtzman and others such as Janis and Holty, we have an idea of how the painting came into being.

Some benchmarks in the history of the creation of the painting include a sketch of the painting made by Von Wiegand in 1942, one by Mondrian made in 1943 and the two photos taken of Victory Boogie Woogie taken in his studio at 353 East 52nd Street in early 1943 and again that autumn.

The study also examines the various American exhibitions in 1942 and 1943 that Mondrian participated in, as well as the ‘All American paintings’ that Mondrian painted in New York, especially Broadway Boogie Woogie. The study concludes with an examination of the historic sources chronicling the drastic changes Mondrian made to the painting in the last nine days of his life.

Research into the conservation history of Mondrian’s Victory Boogie Woogie has yielded many interesting facts about the painting. A variety of textual sources and many photographs have made it possible to follow the life of the painting quite accurately. In the first few years the painting has been at its most vulnerable; most of the tapes were only loosely attached. They were often in danger of falling of, something that has in fact occurred a few times.

We now know almost all of the conservation treatments that the painting underwent; they took place in the years 1944, 1945, 1949, 1959, 1971, 1996 and 1998. There is a clear relation between the conservation treatments and the exhibitions the painting travelled to. If a journey was either overseas or very long, conservation treatment was almost inevitable. This relation became more and more clear to the owners, who were worried about its condition from the beginning, and the older the painting gets, the less it is allowed to travel.

Another interesting aspect relating to the conservation history is the existence of three ‘copies’ of the Victory Boogie Woogie, that have been made in the early stages of its life. One of these has in fact been very helpful as documentation during some of the conservation treatments.

During the first 2 decades of its life the painting was treated, sometimes by a professional conservator but often also by an artist. This makes it clear that conservation as a profession was still very much in development in this period.

In the presentation some of the early and very interesting photographs of the painting will be shown. They are compared with each other and with the painting in its current state. Although the painting went through a few remarkable changes, it the end we can do nothing but conclude that despite its vulnerability, the painting now seems to differ only little from the painting that we see on the earliest photographs after Mondrian’s death.
Mondrian and the Money
Nancy Troy, professor University of Southern California, USA

Mondrian’s last, unfinished painting, Troy argues, should be appreciated not only as an object of aesthetic contemplation, a work of great originality, a breakthrough as well as an endpoint in the artist’s career, but also for the debates that its controversial acquisition unleashed in The Netherlands in 1998: about public funding for the arts, elite and mass culture, abstraction and figuration, the value of modern art in comparison to that of old masters, and, indeed, the value—monetary and otherwise—of art tout court. Money and value were not new to the discussion of Victory Boogie Woogie in 1998; Troy demonstrates that they have been integral to the history of this important and extraordinarily fragile painting ever since Mondrian’s death in 1944.

Professor Nancy J. Troy teaches courses European and American art and visual culture between about 1850 and 1950 at the University of Southern California. She has recently embarked on a new book project that explores the circumstances in which Piet Mondrian’s paintings and related works of the early 1940s were displayed, described, marketed, publicized, and otherwise circulated in the months and years that followed the artist’s death in New York in 1944.

Revealing Revisions; Piet Mondrian’s ‘Transatlantic Paintings’
Ron Spronk, professor Queen’s University, Kingston, Canada

When Piet Mondrian left Europe for New York during the first years of World War II, he brought with him a group of 17 canvases, many of which were fully finished at the time, and signed and dated. After arriving in New York, Mondrian decided to revise these compositions. In 2001, an exhibition on these so-called Transatlantic Paintings was organized by the Harvard University Art Museums, co-curated by Harry Cooper and Ron Spronk, for which 11 works were examined through a wide range of technical examinations, such as X-radiography, binocular microscopy, fluorescence under ultraviolet light, and transmitted and reflected infrared light.

The results of this research significantly increased the general understanding of Mondrian’s working methods. A particularly important find was that Mondrian did not paint over the existing surfaces when he added new elements to his paintings. Instead, new lines and fields were inserted into the paint film, after the existing paint in those locations was extracted with a palette knife. This highly labourious process of cutting, scraping, and reworking points to a hitherto unexplored aspect of Mondrian’s paintings: the importance to the artist of the canvas surface as a three-dimensional object. Cooper and Spronk were awarded the 2002 College Art Association/Heritage Preservation Joint Award for Distinction in Scholarship and Conservation for the exhibition catalogue Mondrian: The Transatlantic Paintings.

The presentation Revealing Revisions; Piet Mondrian’s ‘Transatlantic Paintings’ will highlight the nature of these alterations in two of these works: Composition in Red, Blue, and Yellow (Museum of Modern Art, New York), and No. 12, (National Gallery of Canada, Ottawa). The original title of the first state of Composition in Red, Blue, and Yellow, which was completed in 1937, is partly known: II: … Blanc et rouge. It is likely that No. 12 was never brought to a completed state in Europe. Both works are now dated “37-42”, indicating the total time span that Mondrian worked on these canvases. Mondrian’s revisions to the works were mapped through extensive technical examinations, archival materials, and digital imaging. As such, the project provided a methodological model for the current research on Victory Boogie Woogie, in which Spronk is also closely involved.

Technical Art Historian Ron Spronk received his Ph.D. from Groningen University. Ron Spronk is Professor of Art History and Head of the Department of Art at Queen’s University, Kingston, Ontario. Until 2007 Spronk served as Research Curator at the Harvard University Art Museums in Cambridge, MA. He is a specialist in the technical examination of paintings, especially on Early Netherlandish paintings.
Non invasive in-situ investigations by the mobile laboratory MOLAB*
Antonio Sgamelotti, professor University of Perugia, Italy

MOLAB consists of a network of infrastructures located in Italy providing a coherent access to a set of portable equipment and related competences, for in-situ non-invasive measurements. The service is offered to European scientists and conservator/restorers through Eu-ARTECH, an I3 initiative of the 6th Framework Program of the EU (www.eu-artech.org).

In this paper, the multi-technique in-situ non-invasive approach of MOLAB has been followed for the study of the materials used for a Mondrian’s master piece the Victory Boogie Woogie, conserved at the Gemeentemuseum in Den Haag. The Mondriaan’s painting has been analyzed in the exhibition room of the Gemeentemuseum, so that visitors and the press could follow the experiment. The study was carried out using five portable spectroscopic techniques, namely X-ray fluorescence, mid-infrared reflectance spectroscopy, near infrared reflectance spectroscopy, UV-vis spectroscopy in absorption and emission and fluorescence imaging, that allowed for the identification of all the pigments used by Mondrian, the characterization of organic component, the evaluation of alteration products and finally the individuation of layer build-up. Different types of white (titanium dioxide, lead white, barium sulphate, zinc oxide and probably zinc sulphide), blue (cobalt blue and synthetic ultramarine), red (sulfoselenide cadmium red and an organic dye) and yellow (fluorescent and non-fluorescent cadmium sulphide) pigments have been identified. The signature key elements belonging to individual colours of Mondrian’s palette, in several cases, allowed for the identification of yellow or red strips under white squares by the detection of small characteristic signals of cadmium or cadmium plus selenium, respectively. These observations may prove to be relevant to curators for a better understanding of the painting’s construction and in revealing earlier phases of the artist’s composition.

* A. Sgambarotti en C. Miliani, Centre SMAArt and CNR-ISTM, c/o Universita’ di Perugia, Perugia, Italy; K. Kahrim en B.G. Brunetti, Centre SMAArt and Dipartimento di Chimica, Universita’ di Perugia, Perugia, Italy; A. Aldrovandi, Opificio delle Pietre Dure, Firenze, Italy; M.R. van Bommel en K. J. van den Berg, ICN, Amsterdam, The Netherlands; H. Janssen, Gemeentemuseum, Den Haag, The Netherlands.

Documentation and analysis, the use of CARTA as scientific tool
Maarten van Bommel, programme leader Netherlands Institute for Cultural Heritage

During the research project devoted to the Victory Boogie Woogie, many documents and data were obtained. The information can be distinguished into four different types. Overall images of the painting, such as the high resolution image of the front of the painting, images from the back of the painting, UV and X-ray images, old photographs, sketches and so on. Close up photo’s, both taken by normal cameras and cameras mounted on microscopes. Analytical data, usually presented as spectra but also the written comment and interpretation. Written data about layer build-up and the relation between the different layers.

In particular the written data were difficult to handle. Despite the fact that these data were well organised, using labels to identify paint layers and a legend with symbols to clarify the relationship between different paint layers, it remained difficult to understand and interpret this information.

To overcome this problem, we tried CARTA, a desktop mapping application developed by CARIS (www.caris.com) to manage, visualize and analyze spatial and non-spatial information. The two main questions were if it was possible to use this system for visualisation of the layer build-up, but also if this visualisation could help us to better understand how the painting was made. During the development of this application we discovered by chance that the CARTA software had an additional feature. It was quit easy to link other documents, such as photos and analytical results, to the image of the painting. It was even possible to add written information, which could then be searched.

This short presentation will demonstrate the possibilities of CARTA. At one hand the visualisation and thereby analysis of the layer build-up, which is probably only useful for this particular painting, and at other hand the use of CARTA as documentation tool which probably can have a much wider application. We were able to combine all four type of information mentioned above.

Maarten van Bommel received his Ph.D. in analytical chemistry from Leiden University in 2002. As conservation scientist at ICN Maarten is specialised in the identification of natural and synthetic dyes. From 2005 he is appointed as programme leader Paintings; the VBW research project is part of this programme.
Getting grips on composition and construction: the coloured lines
Hans Janssen, chief curator Gemeentemuseum Den Haag

History tells that Mondrian did construct his first composition of Victory Boogie Woogie in the spring of 1942 as a composition in colored lines: red, yellow and blue lines that go from border to border. A year later – after many revisions and repositionings of lines and colors - the lines in this composition were starting to break up, and the white planes between the lines were starting to give way for colored planes. By looking carefully at the painted surface, at the tacking margins and at the back of the painting and by focussing on the interfaces between the color planes, it is possible to reconstruct a general image of the way Mondrian proceeded in composing the first stages of Victory Boogie Woogie.


Investigating the coloured squares; looking at the spaces in between
Madeleine Bisschoff, conservator Netherlands Institute for Cultural Heritage

The historical visual documentation of VBW shows the change in composition from a linear design to a very complicated painting with large and smaller squares in paint, paper and tape.

During three periods of investigation the painting was studied intensively by a group of conservators. Different photographic techniques like x-ray, raking light photography and transmitted light provided a lot of information about changes in composition. Coloured squares were enlarged or over painted and some of the lines of the original linear composition seem to have been repositioned.

When starting the research of this painting, one of the questions was, whether it would be possible to unravel Mondrians work in progress by studying the paint layer. Microscopical examination of the spaces between the coloured squares and subsequent photographic recording provided a lot of information about how Mondrian went along working on this painting. For instance, traces of pencil were observed, used to outline the squares and scraping marks indicating that Mondrian removed earlier squares or lines. At the borders of the squares the layer structure could be observed, in general at least two paint layers were observed up to five in some of the blue squares. Overlaps in paint layers from one square to the other provided information about the order in which colours were applied.

After studying the assembled data, a reconstruction of the layers that have been observed was made in CARTA to help clear up some of the inconsistencies that were found.

Madeleine Bisschoff was trained as an art historian at the University of Nijmegen and studied conservation of modern art at SRAL Maastricht. She has been working as a conservator of modern paintings at the ICN from 2002 onwards.

The last working days of Mondrian. Evaluating the unfinished state of Victory Boogie Woogie
IJsbrand Hummelen, senior research conservator Netherlands Institute for Cultural Heritage

In this presentation the current state of Victory Boogie Woogie will be evaluated with an emphasis on the significance of the tapes Mondrian applied in the last days before his death. What are the changes he carried out and what is the effect of these changes? How do we interpret these changes and the realisation with tape? This question has occupied scholars and artists since Mondrian died leading to several attempts to “finish” the painting in new versions or interpretations.

Does this research project offer new perspectives in the open questions concerning the effects of the unfinished state of the painting for its presentation and reception?

IJsbrand Hummelen is senior researcher at ICN. He trained as a conservator of paintings at the Central Laboratory of research for Objects of Art and Science, later ICN, and at national institutes for conservation in Zurich and Rome. His main field of research at ICN is the development of strategies for conservation and presentation of modern and contemporary art.
USED TECHNIQUES

Outline of techniques used: imaging and analytical

Using imaging techniques certain phenomena are recorded as photographic images. They tell us about the distribution of materials like pigments or binding media over the surface of a painting. Identification of the composition of the material requires the application of analytical techniques. A spectrum of the material is produced in a selected spot of the painting. Experts are able to interpret the data. By combining imaging techniques and analytical techniques we can deduce which materials are situated where. All used techniques are non-destructive.

Imaging techniques

X-ray fluorescence (XRF) is a fluorescence technique. Atoms get into a higher energy state by the absorption of X-rays. They loose this extra energy by the emission of X-rays with wavelengths characteristic for the elements present. This radiation is recorded in the form of a spectrum from which mainly inorganic elements can be identified. Therefore this technique is particularly suitable for the identification of pigments.

Fibre optics Fourier Transform Infrared spectroscopy (FT-IR): Fourier Transform signifies a certain mathematical operation of the measuring results. Infrared spectroscopy gives information about the structure of the molecule under study; it enables the identification of both organic materials like binding media, adhesive tape and glues and inorganic materials like salts and pigments.

Fibre optics Visual – Near Infrared spectrometry (VIS-NIR): This system can be operated both as a colorimeter for colour measurements and as a spectrometer for the visible and near infrared part of the electromagnetic spectrum. The equipment measures the degree of absorption of the radiation sent to the painting. The technique is mostly used for the identification of pigments and for establishing the distribution of these pigments over the painting.

High performance liquid chromatography (HPLC - PDA) is a method for separating and detecting components. It is mainly used for the identification of natural and synthetic pigments, dyes, sugars, etc.

Gas chromatography and Mass spectrometry (GC-MS) is a method in which a mixture can be separated after which their mass spectrum will be recorded. Since this mass spectrum is highly specific, it is a strong tools for the identification of organic components, such as varnishes and binding media.

Stereo Microscopy is used in various ways to take a closer look at the surface of paintings (up to 40 – 100x original size). With the use of a stereo microscope, the paint surface can be studied in depth. Also minute samples can be taken from a painted object and enlarged up to a 1200x their original size. It enables us to examine the paint layer stratigraphy and determine (an)organic materials such as pigments, binding media, etc.

Scanning Electron Microscope with Energy Dispersive X-Ray Detector (SEM-EDX) is used for examining the topography and composition of materials. It also enables micro-analysis of the surface. It shows a spectrum of the various components of the examined material and can therefore be used to detect the chemical elements in the examined materials. Enlargement of samples up to 300,000 times the original size.

Analysys techniques

Analytical techniques

Fibre optics UV-VIS fluorescence: UV light and visual light are used in this technique. The complete spectrum of the fluorescent radiation is measured and recorded. It is possible to identify materials using reference spectra of pure compounds. This technique is particularly suitable for organic materials like glues and binding media.

X-ray fluorescence spectrometry (XRF) is a fluorescence technique. Atoms get into a higher energy state by the absorption of X-rays. They loose this extra energy by the emission of X-rays with wavelengths characteristic for the elements present. This radiation is recorded in the form of a spectrum from which mainly inorganic elements can be identified. Therefore this technique is particularly suitable for the identification of pigments.

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