



Rothuizen van Doorn 't Hooft Architects Urban Planners Goes Middelburg Breda Terneuzen

# **vierkantpaars**extern #03



Historic  
Buildings



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Urban Planners  
Goes Middelburg Breda Terneuzen

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# Restoration is for the building, not for yourself.

Restoration comes naturally for Rothuizen van Doorn 't Hooft (RDH). To streamline this specialist task, we have formed the restoration team Historic Buildings, which consists of six people. These members have an affinity with our architectural heritage and the marks that history has left on it.

The restoration team has built up a wealth of experience and craftsmanship, and is acquainted with all new developments in the field of consolidation of historic buildings. These six individuals perform the usual architectural tasks, as well as offering specific services concerning historic buildings, such as surveying the structural condition or providing assistance with the monument-related permit and subsidy processes. Accurate supervision at the construction site is essential due to the irreplaceable character of the historic elements. The restoration team is regularly called on to support our colleagues with their specialist knowledge.

## Colophon

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# Historic Buildings

Over the past few years RDH has completed many restorations, adjustments, and renovations. Our basic principle has always been the conservation or restoration of the property's specific qualities. This is especially important when it comes to combining old and new elements, in which process maintaining harmony is essential. RDH has been involved in a large number of restoration and maintenance projects, including churches, city walls, fortifications, (wind)mills, water towers, and museums. In this issue of Vierkant Paars extern we will present a selection of the projects we have realised.



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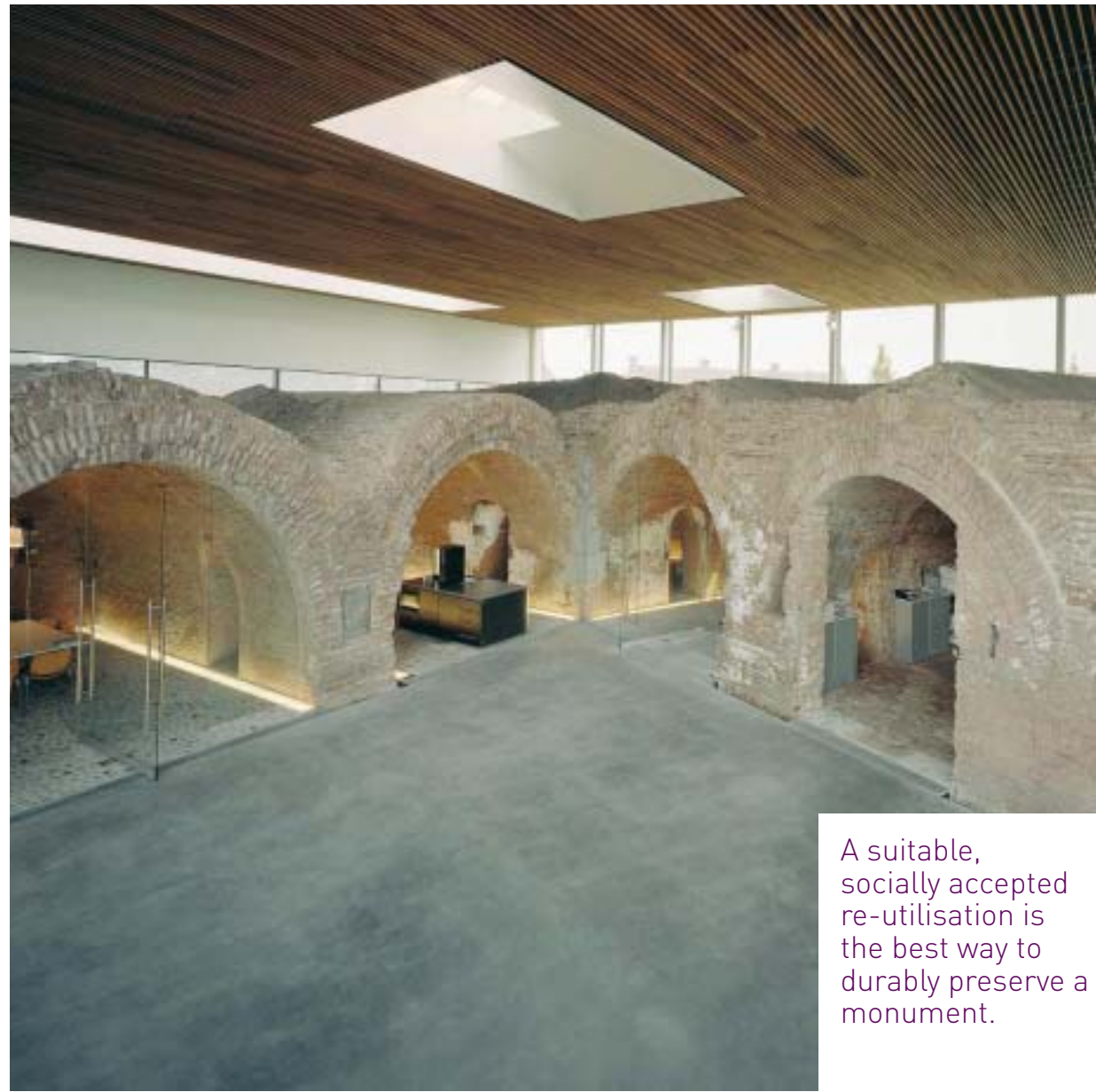


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Maintenance plans and surveys

## E.J. Brans (1956)



Erik-Jan Brans is THE restoration architect for Rothuizen van Doorn 't Hooft. He provided aesthetic and restoration-ethical counsel to the diverse projects which are discussed in this issue.



Lunet B



Hazerswoude water tower

A suitable, socially accepted re-utilisation is the best way to durably preserve a monument.



Balans 17



Nieuwdorp church

# Re-utilisation

The best guarantee for durable preservation of a monument is a proper function. Society will only consider it necessary to preserve a building or complex if it has a useful purpose.

The possible functions can differ widely in character. It may be necessary to assign monuments a very specific use in order to retain their value. Consider a church with a monumental interior, for example. In giving this building a new function it must be ensured that visitors will still be able to experience the space in the same way and that the interior elements are left intact.

On the other hand, there are plenty of monuments which can bear a radical alteration to acquire a new function. An industrial complex, for example, is primarily valuable as part of a greater whole. Many new functions could be imagined which would not damage the ensemble-effect, but could maintain this coherence or create a new one. Considerable alterations to the individual buildings may therefore be necessary and acceptable in order to allow them to fulfil the new purpose, as factory buildings are usually built to serve a specific function.

Re-utilisation can therefore be realised in various ways. The project involving Stadsschuur 2 (municipal warehouse and workspace) in Middelburg is an example of re-utilisation where an alteration in one spot enabled the addition of a new function. This largely open, late sixteenth-century building has been adapted to accommodate offices. To maintain the open space, the 'hard' facilities such as utilities, pantry and toilets, conference rooms and work stations were combined in a single clearly defined element.

Lunet B in Breda is exactly the opposite. In this case, the monument has been enclosed in a glass box and the space around it is utilised. The monument itself is largely untouched; the adjustments primarily influence how the exterior is experienced.

In the end, everything revolves around the balance between the monument and its function. Concessions are sometimes necessary to find this balance. In some cases it may not be possible to realise all of the client's wishes regarding the monument, or these wishes may conflict with the applicable legislation and regulations. In other cases it might be necessary to alter the monument more fundamentally than is desirable for a conservation point of view. But eventually, the new function will guarantee the preservation of the monument.

## **Lunet B new construction and consolidation (RDH office)**

Commissioned by  
Stadsherstel Breda  
Location Breda  
Design 2002-2004  
Construction 2005

## **Hazerswoude water tower Conversion into office space**

Commissioned by  
Hoogvliet beheer in  
Alphen aan de Rijn  
Location Hazerswoude  
Design 2000  
(original construction 1911)  
Construction 2002

## **Balans 17 Restoration and modernisation**

Commissioned by  
B.V. Monumentenbeheer  
Middelburg  
Location Middelburg  
Design 1999  
Construction 2001

## **Nieuwdorp church**

**Re-utilisation**  
Commissioned by  
Van Garderen & Dekker  
Projectontwikkeling B.V.  
Location Nieuwdorp  
Design 2002  
Construction 2005

## **Heilige Hartkerk (church)**

**Re-utilisation**  
Commissioned by  
BVR Projectontwikkeling  
Location Roosendaal  
Design 2004-2006  
Construction 2007

## **Stadsschuur (RDH office)**

**Renovation and re-utilisation**  
Commissioned by  
B.V. Monumentenbeheer  
Middelburg  
Location Middelburg  
Design 1999  
Construction 2001



Heilige Hartkerk (church)



Stadsschuur interior



Stadsschuur interior

Research into the origins of interiors resembles detective work. Each trace can lead to the solution.



Formal room De Geus publishing house



Formal room De Geus publishing house



Naaldwijk church

# Interiors

The construction of every building, including a monument, stems from the necessity to separate (interior) space from its surroundings, and to protect the interior from external influences. A building's interior is in this respect more important than its exterior.

The interiors of many monuments have been subject to dramatic changes throughout the centuries as a result of new demands placed on the building due to changes in function or taste. It is usually possible to find traces of these changes from every period by means of wide-ranging research. These could be found in the layers of paint on window sills or layers of wallpaper behind skirting-boards. The location of the walls or an unusual mix of styles around the hearth could provide background information on renovation and alterations of the interior. These strata differentiate a monument from a new building. The historic interior gives the monument its specific character and this is mirrored in its function.

The building formerly housing the Wijnaendt van Stijns Foundation (Wijnaendt van Stijnsfundatie) in Breda has been renovated and now accommodates the publishing house of De Geus. The existing interior elements were preserved and combined with elements and facilities which the building's new function necessitated. Together they form a series of formal rooms, each with their own character.

Yet it is sometimes desirable to conserve an interior as it is. It may also be preferable to 'purify' an interior by removing all of the elements which disturb the coherence. This is usually done when the interior has a great historical value or is exemplary of a certain interior style. This was the case with the Regents' Chamber in the Orphanage in Aardenburg. This late nineteenth-century interior is solely used for meetings and could therefore almost entirely be maintained in its original state.

**Stadsschuur (RDH office)**  
**Renovation and re-utilisation**  
Commissioned by  
B.V. Monumentenbeheer  
Middelburg  
Location Middelburg  
Design 1999  
Construction 2001

**De Geus Publishing House**  
**Restoration and modernisation**  
Commissioned by  
De Geus Publishing House  
Location Breda  
Design 2001/2002  
Construction 2003

**Naaldwijk church**  
**Restoration**  
Commissioned by  
Ecclesiastical authority of the  
Reformed municipality of Naaldwijk  
Location Naaldwijk  
Design 2000  
Construction 2003-2004

**Regents' Chamber in Aardenburg**  
**Restoration**  
Commissioned by  
Foundation 'Committee for the  
stewardship of the former  
St. Janshuis and  
the table goods (Dischgoederen)  
accorded to the Dutch Reformed  
Deaconate' in Aardenburg  
Location Aardenburg  
Design 1998  
Construction 1999



Regents' Chamber, Aardenburg



Gorinchem fortification wall, photo: Marcel Köppen

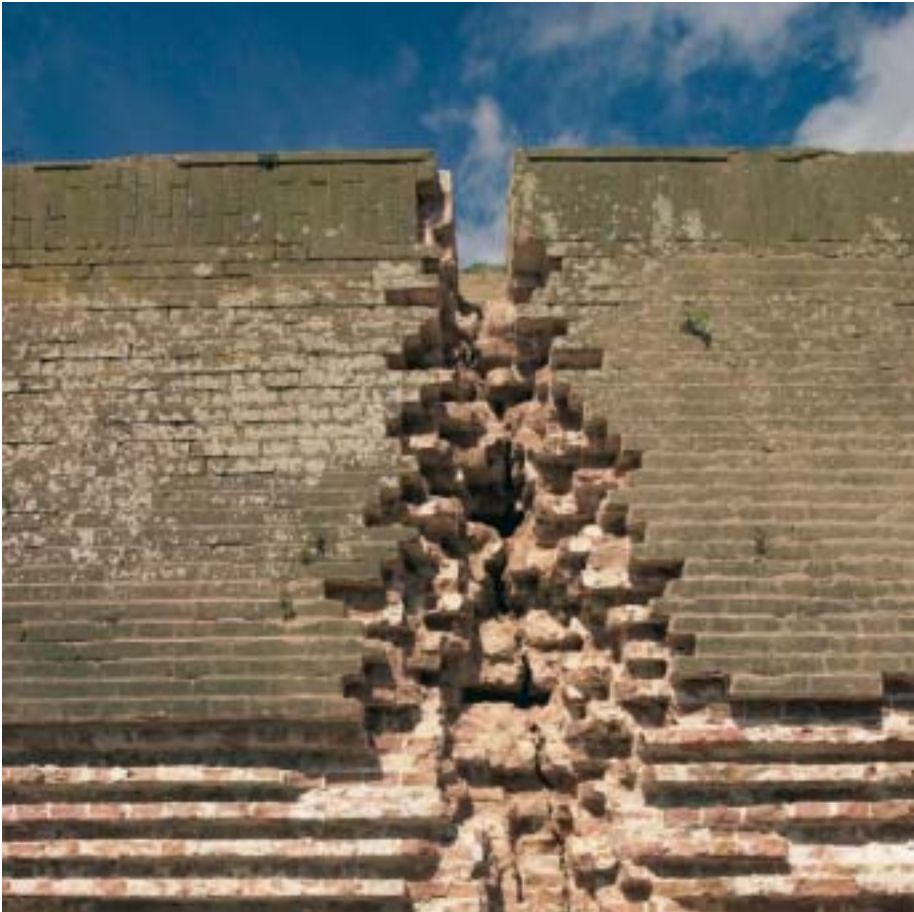


Lock powder magazine, photo: Marcel Köppen

Fortifications require a thorough analysis of the specie and brick varieties used.



Plant conservation, Gorinchem fortification wall, photo: Marcel Köppen



Repairing holes in the Gorinchem fortification wall, photo: Marcel Köppen

# Fortifications require a special approach

The restoration of the four-kilometre-long fortification wall in Gorinchem required a lot of bricks. After all, that is the main characteristic of fortifications; the long, high walls built of massive masonry.

The restoration of historic fortifications demands a special approach. Many old fortification walls were built using a combination of earthworks and masonry, with (underground) brickwork spaces. The constant damp and ground pressure cause specific problems. The fortification wall of Gorinchem is doubly special, as it still functions as a primary flood-control line, and must therefore meet modern hydrological demands. "We inventoried the mortar and brick types used", stated restoration architect Erik-Jan Brans. "Based on an analysis of the characteristics of these materials, we composed a specific recipe for mortar which is appropriate for that type of brick. We had new bricks baked especially for this project."

The revetments and embankments were then restored. Brans: "The revetments with a flood-control function had to be sturdy, yet could be allowed to crack in a controlled manner. It's better to let the cracks form in the new sections of the wall than to build a solid new wall only to have cracks appear in the historic older sections. This is because the ground will eventually settle due to the weight of the new construction."

A similar line of reasoning led to the application of a self-sacrificing layer of plaster. "The plaster will eventually deteriorate due to salt saturation, and will have to be replaced", explains Brans, "but it will have protected the underlying layer against further damage."

These fortifications contain nineteenth-century powder magazines, covered with earth. The materials used in its construction prove to be excellent for regulating humidity, if the ventilation is sufficient. We were able to bring the humidity down to an acceptable level by repairing the existing system of channels, cavity walls, and double floors.

The city wall of Zaltbommel lost its function in the sixteenth century, and is today little more than a ruin. Brans: "Consolidation, i.e. slowing down the process of deterioration, is the only solution here. There are many possible techniques appropriate for Zaltbommel. We applied several of them in our work at Lunette B in Breda". Some examples are: anchoring loose masonry with fibreglass rods, fastening loose flakes with injection techniques, and supporting the wall in places where the masonry threatens to become instable. A good blend of brick and mortar is crucial for success.

The unique vegetation found on fortification walls can have positive (protective) and negative (disintegrative) effects. "In Zaltbommel we decided to place a covering layer of clay-bottomed sods on top of the wall as a buffer against rain and frost. Time will tell whether it works or not". RDH always advises performing an ecological survey in order to preserve unique plants. In Gorinchem, parts of the masonry which supported flowering plants, but could not be maintained due to the flood-control function of the ramparts, were removed and transported to another location.

## Fortifications Restoration

Commissioned by  
City of Gorinchem  
Location Gorinchem  
Design 2002  
Construction 2003-2004



Old city map of Zaltbommel



Capponière Gorinchem fortification wall, photo: Marcel Köppen

## Embankments Re-enforcement

Commissioned by:  
Arcadis  
Location Gorinchem  
Design 1996-1998  
Construction 2000-2003

## City walls Consolidation

Commissioned by  
City of Zaltbommel  
Location Zaltbommel  
Design 2004  
Construction 2005-2010



A castle comes to life when you can see its history.

Westhove Castle, photo: Karel Tomeř



Brederode Ruins



Moermond Castle

# Castles

The role castles play in history and fairy tales excites the imagination and gives them a unique charm. Preservation of a castle therefore requires more than simple technical maintenance.

The experience of the atmosphere in a castle is one of its main attractions. To preserve this, traces of historical alterations and repairs should remain visible.

## Westhove Castle

Westhove Castle dates from the twelfth or thirteenth century. Many important historic figures have stayed there. The Sea Beggars, Dutch rebels against the Spanish king, took the castle in 1572, and much of it was then lost to fire. It was thoroughly restored in 1948 and 1977. The current owner Buitenplaats Westhove Foundation restored the castle again in 2004, converting it and the coach house into a hostel for tenant Stayokay (a youth hostel organisation). RDH prepared and supervised the restoration. They are currently preparing for the restoration of a neo-classical 'Roman' bridge, which was added to the castle in 1805.

## Ruins of Brederode

The ruins of Brederode are the remains of Brederode Castle, built between 1282 and 1292 near Santpoort-Zuid. Spanish soldiers plundered it and put it to the torch during the Dutch Revolt in 1573. The ruins eventually fell prey to advancing sand dunes. To prevent further decay, the RGD (the Government Buildings Agency) has commissioned RDH to survey the building and draw up a ten-year maintenance plan. The site must remain open to the public during the restoration.

## Moermond Castle

Moermond Castle in Renesse was begun by Costijn van Zierikzee sometime around 1229. The castle has been destroyed in battle twice, but was rebuilt both times. After the great flood of 1953, a thorough restoration in 1955 brought it back to its original condition. For the past few decades, the castle has mainly been used as a conference. In order to accommodate everyone's wishes the Moermond Castle Foundation commissioned RDH to design a modern garden room, with the stipulation that it should be recognisably contemporary.

## Ter Hooge Castle

The Ter Hooge Manor (from the early fourteenth century) is located just outside Middelburg in the direction of Koudekerke. By the middle of the eighteenth century, the castle had deteriorated so much that the owner Jan van Borssele decided to demolish it and build a new castle. This renovation gave Ter Hooge its current form, with the symmetrical towers and wings characteristic of the early eighteenth century. For the past ten years, Ter Hooge Castle has been divided into five apartments organised in a Homeowners Association. The homeowners have commissioned RDH to compose a long-term maintenance plan in order to preserve the castle in good condition.

### Westhove Castle Restoration

Commissioned by  
Buitenplaats Westhove Foundation  
Location Oostkapelle  
Design 2002  
Construction 2003-2004

### Brederode Ruins Consolidation

Commissioned by  
VROM-Rijksgebouwendienst  
Location Santpoort-Zuid  
Design  
Maintenance plan drawn up in 2005  
Construction 2006 to 2015

### Moermond Castle Expansion

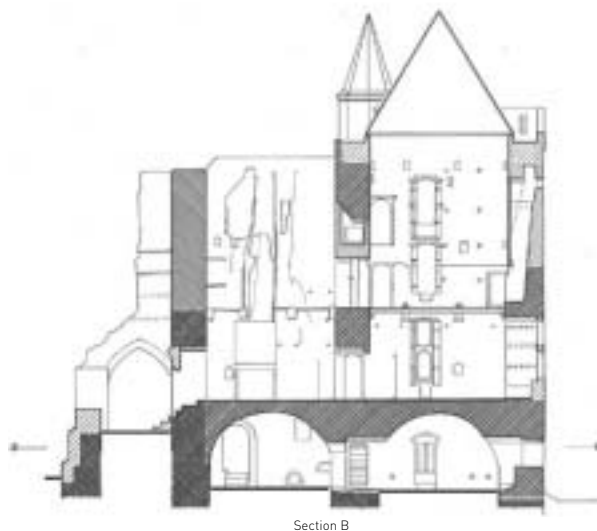
Commissioned by  
Moermond Castle Foundation  
Location Renesse  
Design 2002  
Construction 2004

### Ter Hooge Castle Long-term maintenance plan

Commissioned by  
Ter Hooge Castle Homeowners Association  
Location Middelburg  
Design 1993  
Construction 1994 to 2012



Ter Hooge Castle, photo: Niek Haak



Brederode Ruins



With the new climate control system, modern visitor facilities and a new layout, the Zeeuws Museum will be ready for the challenges of the coming decades.

Entrance to the Zeeuws Museum



Work in progress



Work in progress



Work in progress



Tapestry hall, impression: Christian Kieckens

# Zeeuws Museum

The Zeeuws Museum is one of the oldest in the Netherlands. It was founded in 1787 by the Zeeland Scientific Society. A large portion of the society's collection is still preserved in the Zeeuws Museum.

The Zeeuws Museum has been housed in the old Middelburg Abbey since 1972. The Abbey complex, located in the centre of Middelburg, also houses the administration of the Province of Zeeland, a number of churches, and the 86-metre-tall 'Lange Jan' tower.

Norbertine monks and nuns, knights, iconoclasts, master builders, Princes of Orange, and 'Beggars' of the Dutch Revolt have all left their marks during the Abbey's 850-year history. The entire complex was damaged by bombardment during the Second World War, but most of it was restored or rebuilt after the war. The Zeeuws Museum is the largest museum in the province of Zeeland, preserving the province's heritage in its expansive collection. RDH renovated its archives and offices at the request of the Province of Zeeland in the period 2000-2001.

The first designs for the renovations of the exposition rooms date from November 2002. The construction proper began in September 2005. The renovations should be almost invisible in the exposition rooms, as they are primarily directed at climate control and visitor facilities. The improvements in climate control are for the benefit of the collection; the visitors will profit from a new stairway and an elevator as well as a reception desk, coat check, café and a reading room housed in new public spaces. After the renovations the museum will also meet the most recent standards for the conservation of collections.

The renovations will be more visible on the exterior. The new entrance will open onto the Abbey square, which will also contain a terrace. This will make the museum more accessible to visitors and will give the Abbey square more vitality. The Belgian architect Christian Kieckens has designed a completely new interior for the Zeeuws Museum.

At the opening in 2007, the museum will exhibit its impressive collections of porcelain, silver, and paintings; the famous tapestries will be displayed in a whole new light. Many objects, including some from the ethnographical and folk costume collections, will be displayed for the first time. The artists Paul and Menno de Nooijer have produced a series of films especially for the museum. Visitors can use handy new video guides and beautiful exposition booklets. Famous Zeelanders will lay out their own tours through the new museum, which will also present regular temporary exhibitions on a variety of subjects.



Zeeland cap, Elisabeth van der Helm, 1991, collection: Zeeuws Museum/photo: Maarten Schets



Sketch work group Zeeuws Museum



Entrance to the Zeeuws Museum

## Zeeuws Museum Reconstruction

Commissioned by Province of Zeeland  
Location Middelburg  
Design 2002  
Construction 2005-present

## Former Archive Reconstruction

Commissioned by Province of Zeeland  
Location Middelburg  
Design 2000  
Construction 2000-2001



Huis ter Horst could only be successfully restored thanks to thorough research by a team of specialists.

Huis ter Horst



Weather vane



Detail



Restoration of balustrade



Condition before restoration

# Huis ter Horst is ready for the future

The hunting lodge “Huis ter Horst” on the Royal Estate “De Horsten” between Wassenaar and Voorschoten surprises the visitor with un-Dutch Neo-Gothic stucco decorations. These have recently been restored according to the traditions of the craft, as have the roof, the balustrade, and the mortar work. After intensive colour research, the plaster has been restored to its striking original condition.

The high point on the work (and on the lodge itself) is the restoration of the gilded weather vane, which was discovered on the ground in three pieces. Project manager/supervisor Henk Ruissen has experienced more high points on this project. “We focused our attention on the materials used for the hunting lodge, which was thoroughly rebuilt in 1863-76, leaving only the cellar in original condition.” Ruissen explains “It seemed that only the basement of the foyer was made of stone. The rest was made to resemble natural stone by applying cement mortar on brick, then decorating it with indentations and parallel chiselled grooves.”

RDH was brought in to preserve the building and for the restoration of the façades. This was crucial, as large parts of the ornament work had fallen off. Parts of the water gutters and the framework were missing, which allowed rainwater to damage the masonry. Previous repairs had left iron dowels, which had begun to expand due to the damp. Ruissen explains: “A hundred years ago, people chose to preserve the appearance of the façades, regardless of the materials used. We found pieces of wood used instead of plaster, for example.”

In co-operation with a restoration consultant from the RACM (The National Service for Archaeology, Cultural Landscape and Built Heritage), a stucco expert and an experienced restoration plasterer, we analysed the materials used. This study indicated that the stucco decorations were made from hard, fine cement mortar, combined with brick rubble. The team was able to produce similar restoration material. Ruissen: “The ornaments were probably poured into moulds and then applied to the façade. In the Netherlands we almost never see this method used. In England it is more common, so we have used the English stucco works as examples.”

At the beginning of the project, the stucco was a mouse-grey colour. A pigment analysis showed that the original covering layer had a chalky filling with poppy-seed oil, with some madder added for colour. This gave the plaster the soft pink colour which is now again displayed on the façade. The masonry also received extra attention. During previous maintenance work, the joints between the bricks had been widened with a grinder to ease application of new mortar. This irreparably damaged the fineness of the exterior brickwork. These damaged surfaces were repaired with joints made with appropriate materials. Only the northern top façade was left in original condition.

## Hunting Lodge “Huis ter Horst” Restoration

Commissioned by  
General manager  
Royal Estate “De Horsten”  
Wassenaar/Voorschoten  
Location Voorschoten  
Design 1998  
Construction 2005

## H. Ruissen (1955)



Project manager Henk Ruissen is specialised in historical properties. From initial surveys through project development to adding the final details, your project is in good hands with Henk.



The original colour was re-applied



Old damage



When we entered the wharf, it was as if we had gone a hundred years back in time; everything looked as if the men had just gone on their coffee break.

Meerman Wharf, work in progress



Hoogaars, photo: SBH



Old interior, photo: SBH

# Preserving Meerman Wharf

In July 2003, the city of Middelburg bought the Meerman Wharf in Arnemuiden for the symbolic amount of one Euro. Since then, this piece of our cultural heritage has earned the status of national monument.

On 7 November 1786, Jacob Meerman bought an existing wharf in Arnemuiden on the river Arne. The wharf contained two sheds, a so-called 'side ramp', and many tools. In its two centuries of active life – until 1986 – more than two hundred hoogaarzen were built there. Hoogaarzen are flat-bottomed fishing boats common in Zeeland.

Meerman wharf is the oldest existing wharf in Zeeland, and has remained almost unaltered since its inception. The wharf is therefore original and authentic; this goes not only for the sheds, the fire hut, the cranes and the ramps, but also for the many tools, old machines, moulds, work tables and the interior. When the sheds were sold, they looked as though the workers had been building boats the day before. Only the cobwebs showed that the hammers and chisels had been silent for almost 20 years.....

The city of Middelburg took on the project of restoring the wharf, with subsidies from the European Union, the Province of Zeeland, and the Hoogaars Preservation Foundation, which will administer the wharf when it is completed. After a thorough survey, RDH produced the drawings and specifications for the restoration. They also developed a plan for a new work shed with provisions for a machine shop, meeting rooms, and archive space.

Following the call for tenders, the contract was awarded to a contracting company, and they began the restoration in 2006. They completely dismantled the sheds, leaving only a skeleton

of ribs and joints. The contractor sorted the old building elements, such as wood, windows, doors, pot lids, and other authentic materials such as hooks and braces, for re-use in the new buildings. The origins of these materials are indicated in the construction drawings. The goal of these efforts was to maintain as much as possible of the original appearance of the wharf.

The project was completed in September 2006, including a new wagon ramp, renovated fire shed, and partial landscaping. The interiors of the buildings as well as the new shed will be completed by the Hoogaars Preservation Foundation. At the moment they are working on moorings and a quay, so that hoogaarzen, hengsten, and other flat-bottomed boats can tie off at the wharf.



situation



Mr. Meerman. photo: SBH



Old Wharf, photo: SBH

**Historic Wharf  
Meerman  
Restoration**  
Commissioned by  
City of Middelburg  
Location Arnemuiden  
Design 2005  
Construction 2006



Tervate farm



Far too often,  
a wall of  
bureaucracy  
stands between a  
historic farm and  
its new function.

# Historic Farmhouses

The historic farmhouses are important for the identity of the countryside. They display the economic development of the agrarian sector. More and more historic farmhouses are in poor condition, and recent changes in subsidy policies mean that there are fewer possibilities for restoration.

Dutch farmers have built up a tradition of innovation over the centuries. This tradition can be seen in the landscape as well as the farms; landscape, architecture and economics combine to give these farms their charm. Many of the farms that are not listed as official national monuments are still worth preserving. Many of these farms are becoming less profitable and the farmers often lack funds for maintenance. As they are losing their original functions, new ones must be found quickly, since a useful purpose is the best guarantee for the preservation of these buildings.

In the province of Zeeland subsidies are currently only available for the 148 farmhouses designated as national monuments. The other farm owners have to make do with tax deductions for maintenance (if possible) or low-interest loans (if applicable). The Year of the Farms in 2003 gave farmhouse preservation crucial social and political attention.

In order to re-utilise these buildings, the Ministry of Agriculture has initiated the Vital Countryside programme (Vitaal Platteland) to create new possibilities. Unfortunately, this programme is largely ineffective due to zoning regulations. The Province of Zeeland initiated a study into the problems of historic farm preservation in 2003. So far they have surveyed 4,795 farms in the province.

The findings were published in 2006, and resulted in the provincial policy paper Cultural History and Monuments 2007-2012. This paper lists which provincial funds will be made available in the coming years and which measures the province will take in order to preserve the province's (architectural) heritage. Farm buildings are specifically mentioned in the paper. The research showed that current and proposed laws and regulations from the various levels of government often contradict each other. This makes it difficult for farm owners to preserve their historic buildings or give them new functions.

Despite these hurdles, RDH has restored many farm buildings in recent years. These restorations often involved partial or completely new uses of the buildings. The guiding principle at RDH has always been that the new function should respect the building's historical elements and strata. This also means that in making changes to the structure as many traces of its history as possible should be preserved. These historical elements tell the farm's 'story' and are what make every farm unique.

## **Tervate farm Restoration**

Commissioned by  
Mr. L'Annee de Betrancourt  
Location Kloetinge  
Design 2003  
Construction 2003-2005

## **Duinwijk farm Restoration**

Commissioned by  
Rappard family  
Location Domburg  
Design 1999-2000  
Construction 1999-2000

## **Old Zanddijk farm Reconstruction**

Commissioned by  
Priem family  
Location Heinkenszand  
Design 2004  
Construction 2006

## **Raaphorst farm Restoration and alteration**

Commissioned by  
General manager Royal  
Estate "De Horsten"  
Wassenaar/Voorschoten  
Location Wassenaar  
Design 1998  
Construction 2003

C.M.J. de Jonge (1964)



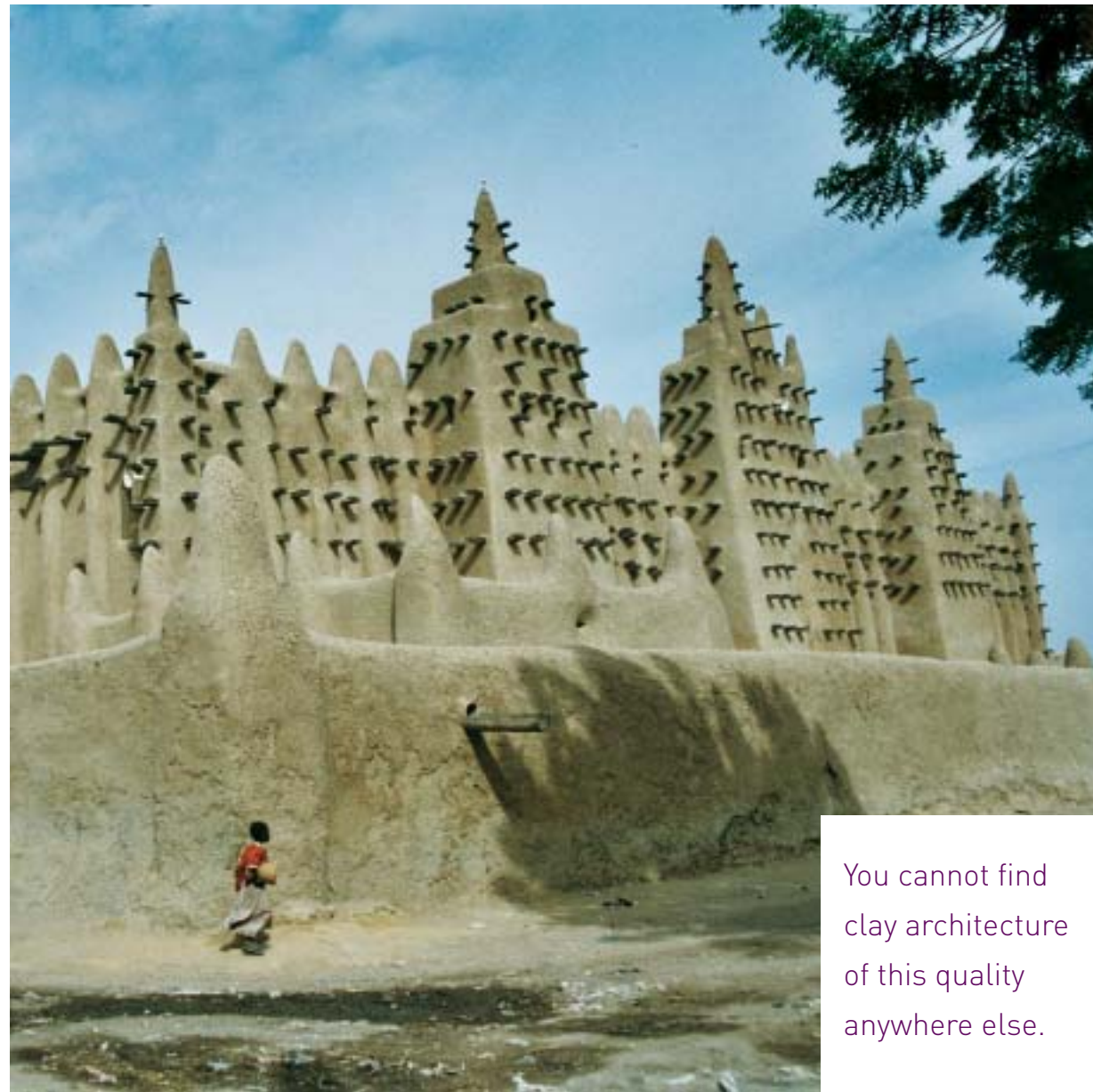
Old Zanddijk farm, condition before renovation



Raaphorst farm

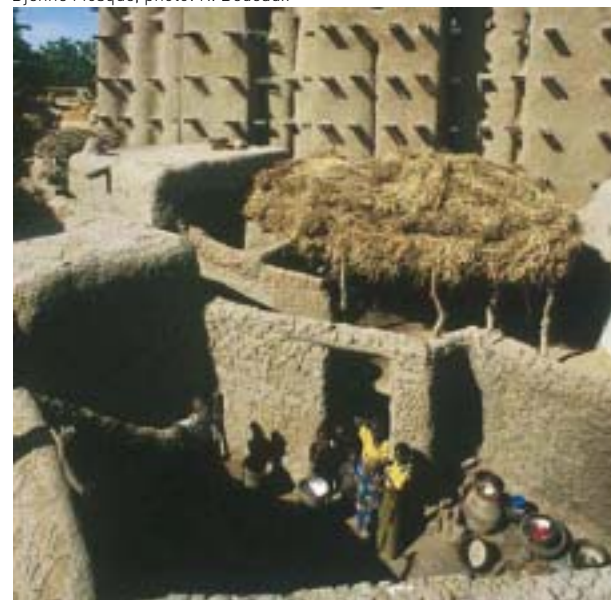


Senior project manager Kees de Jonge is responsible for the activities of the project group Historic Buildings at Rothuizen van Doorn 't Hooft. In addition, he supervises some of our more complex projects and acts as structural engineering advisor for the Zeeland Farm Foundation (Boerderijstichting Zeeland).



You cannot find clay architecture of this quality anywhere else.

Djenné Mosque, photo: R. Bedeaux



Djenné Mosque, photo: R. Bedeaux



Djenné Mosque, photo: R. van Wendel de Joode

# Monumental clay architecture restored

The beautiful city of Djenné (Mali, West Africa) is not exactly in our neighbourhood. But RDH's associate Pierre Maas can be found there at least once each year. He is the supervisor of the restoration of the spectacular clay architecture characteristic of Djenné.

"Djenné has been listed on the Unesco World Heritage List since 1988", Maas explains. "You cannot find clay architecture of this quality anywhere else in the world. The monumental architecture developed in the course of the sixteenth and seventeenth centuries. The bricks and the mortar as well as the plasterwork are made of clay. Despite this relatively vulnerable material, you can still see the original stylistic elements."

Clay must be maintained each year. Thirty years ago the local economy worsened and many people left the city. The buildings were left to deteriorate and threatened to collapse. In addition, some of the wealthier residents of Djenné preferred to build their houses of cement and kiln-fired tiles. Few people still appreciated the historic value of the clay houses, and the craftsmanship of the mason's guild had begun to deteriorate.

Maas: "In 1996 the National Museum of Ethnology in Leiden initiated an ambitious restoration plan with funds from the Ministry of Foreign Affairs. They asked me to supervise the project." Pierre Maas earned his PhD at the Technical University of Eindhoven in 1994 for his research on the clay architecture of Djenné.

Since then, around a hundred homes, grave monuments, and the monumental mosque have been restored. The second phase will also include nearby villages in the famed Pays Dogon. The second phase of this research also concentrated on the villages near Djenné, better known as the Pays Dogon.

## Unesco World Heritage Djenné and Pays Dogon Restoration

Commissioned by  
Ministry of Foreign Affairs / National Museum of Ethnology, Leiden  
Location Mali, Djenné and Pays Dogon  
Design 1998-present  
Construction 1998-present



Old-fashioned craftsmanship, photo: R. Bedeaux



Gate, photo: R. Bedeaux



Detail, photo: R. Bedeaux

## P.C.M. Maas (1960)



Architect/Partner Pierre Maas is the specialist in the restoration of clay architecture at Rothuizen van Doorn 't Hoof.



Oranjemolen (mill)

Regular maintenance can prevent deterioration.



Survey of the Sint Jan tower



Castle Ter Hooge

# Maintenance plans

A long-term maintenance plan with an annual structural inspection is the best guarantee for a monument's longevity.

At the moment, RDH is carrying out 38 long-term maintenance projects. The restoration team Historic Buildings has drawn up a maintenance plan for each of these buildings. It also supervises the annual maintenance in close co-operation with the client.

The foundation of any maintenance plan is the survey report, which describes in detail the technical condition of the building, including photographs and drawings of the structure and its details. The survey report also includes proposals for methods to restore or repair any defects found. RDH then draws up a six-year maintenance plan which, after the client's approval, is sent to the National Service for Archaeology, Cultural Landscape and Built Heritage (RACM) together with a budget proposal. Depending on the type of monumental building, the RACM can provide subsidies of between 40 and 65 percent of the applicable maintenance costs (the Brim regulation).

Following approval of the subsidy application, RDH supervises the annual maintenance, which includes estimate requests, the final on-site quality inspection and everything in between. RDH also provides an annual financial overview as well as a final financial report for the entire plan at the conclusion of the six-year maintenance cycle.

Maintenance is not cheap, and it is not unusual that it is delayed because the owner feels that the costs are too high. Unfortunately, this only exacerbates the problem. As regular maintenance is put off, the condition of the building worsens, resulting in higher costs for eventual repairs. A planned maintenance schedule will lead to long-term savings and prevents unnecessary and expensive repairs.



Monuments maintained by RDH in the province of Zeeland

# Initial Survey

Buildings with historic or cultural value are rarely in original condition. Each new generation adds its own contemporary elements.

These changes and repairs are performed by experienced craftsmen with respect for their predecessors' work. Bartjan Luteijn is such a craftsman. He possesses the broad knowledge and the necessary experience in historical construction techniques required for restorations and renovations.

A restoration always begins with an initial survey which measures the degree of deterioration of the building's various elements. This assessment is not guided by regulations, but is the result of the judgment and intuition of an experienced structural engineer. When buildings are still in use, the engineer often limits his observations to his experienced eye and his nose for defects and 'pests'. "A feeling for this work is at least as important as professional education", according to Luteijn. "When we suspect more serious defects, and estimates are not sufficient, then we have to take samples".

RDH has inspected many buildings: (wind) mills, churches, castles and houses, but also fortification walls, sluices and canal locks. The inspection method determines the quality of the survey. Inspection of masonry near the roof, for example, is more effective with a magnifying glass than with a telescope. Luteijn: "Sometimes we work from aerial work platforms, sometimes we are wearing wading boots and are up to our waists in water. That's part of the job. What's important is that we can offer quality. Sometimes that makes the survey more expensive, but it pays off down the road during the restoration."



Initial survey of the Zwarthoek sea lock

## Zwarthoek sea lock Restoration

Commissioned by Project group Zwarthoek sea sluice  
Location Westdorpe  
Design 2005  
Restoration In planning

## Sint Jan tower Restoration

Commissioned by City of Gorinchem  
Location Gorinchem  
Design 2005  
Construction 2006-2007

## Oranjemolen mill Restoration

Commissioned by City of Vlissingen  
Location Vlissingen  
Design 2006  
Construction 2007-2012

## Ter Hooge Castle Long-term maintenance plan

Commissioned by Ter Hooge Castle Homeowners Association  
Location Middelburg  
Design 1993  
Plan period 1994 to 2012

## B.J. Luteijn (1956)



Site supervisor Bartjan Luteijn is the man in the field at Rothuizen van Doorn 't Hooft. Surveys, maintenance management and supervision are his specialties.

# In Short

## RTHB in Breda

Since September 2006, the restoration team Historic Buildings has mainly been working from our office in Breda. Due to increased demand and developments in the market, the full team is present in Breda on Mondays and Fridays. Their schedule for the remainder of the week is dependent on current projects. The restoration team continues to work from the Goes office for the benefit of the clients in Zeeland.

## Communal Recognition Regulation for Architects in the Restoration Field (GEAR)

Approximately 48,000 buildings are protected as national monuments in the Netherlands. This number will increase in the coming years. Many of them are due for restoration, which requires specialist knowledge, experience, and quality. This quality must be recognised, supported and stimulated. More and more clients of restoration firms and architectural firms are demanding a functional quality assurance system and sufficient references and experience. For the past year, RDH has been a member of a group of restoration architects who are working to build a system for quality recognition which can be used as a standard for quality assurance. This group, in co-operation with the Habéon group, has created a Communal Recognition Regulation for Architects in the Restoration Field (GEAR). The next step is to begin a process for quality assurance and review. A number of restoration architects have initiated a pilot programme, and RDH has decided to apply for certification after the completion of this pilot programme.

## City Hall Museum Zierikzee

The municipality of Schouwen-Duiveland administers two museums in Zierikzee, the City Hall Museum and the Maritime Museum. Over the past fifteen years, both museums have experienced more problems in the areas of collection management and presentation. The condition of their historical collections is rapidly deteriorating and incomes from entrance fees are declining, partially because of their stale exhibits. In 2005, the municipal council decided to merge both collections into one new museum in Zierikzee's old city hall. They drew up a development plan for the period 2005-2009. At the request of the municipality, RDH has drawn up a restoration plan. RDH will renovate the depot and design a new museum in the old city hall. Commencement of work on phase 1 (depot) is planned for after the summer vacation of 2007.

## Salvage and reconstruction of the GVB Halls Amsterdam

This project is part of the complete reorganisation of the site of the former gas factory (Oostergasfabriek) in Amsterdam. RDH's expertise will be utilised for the GVB halls. These halls will house the Centre for Fine Arts, and the plan is that the current halls (four naves of various widths, in total 54x93 m deep) will be brought back to two naves of different widths of in total 27x36 m deep. These halls were initially a part of the gas factory, and were subsequently used as a depot for the (horse-drawn) trams of the Municipal Transport Company (GVB). Due to the serious soil pollution, up to six meters deep in some places, the halls have been largely demolished and will be re-built after the cleanup. RDH has surveyed, measured, and drawn the buildings and produced the plans for their demolition, salvage, and reconstruction. During the salvage, storage and reconstruction phases, RDH will supervise the project and act as outside consultant.



City Hall Museum



Salvage GVB Halls



Salvage drawing GVB Halls