



3 Continue with Cuypers Renovation of the Rijksmuseum

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The selection of architects for the new Rijksmuseum took place in 2000. The intention was to split the task in three and to select three architects: a chief architect, a restoration architect and an architect for the Atelier Building on Hobbemastraat. For government commissions of this magnitude a European tender procedure is mandatory. Around the turn of the century, the Rijksgebouwendienst (Government Buildings Agency; Rgd) was handling some 20 such procedures a year, in all of which the Chief Government Architect played a key role. To avoid having to make repeated expensive and time-consuming public announcements, the Rgd made do with an annual call for architects to submit their documentation. For each project a preliminary selection was made from this documentation database, and then an invited competition was held in order to arrive at a final choice. This procedure was also followed for the Rijksmuseum. In March 2000 Chief Government Architect Wytze Patijn, in consultation with the Rgd, the Ministry of Education, Culture and Science and the Rijksmuseum, came up with a list of 17 potential chief architects, including five foreign firms.¹ The long list for the restoration architect contained just five names, all of whom were eventually approached.²

In the summer of 2000 it became clear that the next Chief Government Architect would be Jo Coenen. Although he was not due to take up his position until 30 November, he was involved in the choice of architects before then, seeing that he would be heading the assessment committee. The shortlist that emerged in the autumn of that year was based on Patijn's preparatory work, supplemented by Coenen's suggestions. Coenen argued in favour of architects with empathy for the historical context. In this regard, the exchange of faxes between the Chief Government Architect's office and Coenen concerning the list of candidates for the Atelier Building makes for interesting reading. Coenen felt that the only architects being considered were what he called 'conflict architects' and he wanted a completely different list.³ The tender for the Atelier Building was accordingly postponed, with the commission later being awarded privately to the chief architect.⁴ Coenen's use of the term 'conflict architects' made it quite clear what type of approach he had in mind: no contrast between old and new, rather a fusion.⁵ This called for architects capable of empathizing with the Dutch monument, in effect assimilating it and then transforming and recasting it in such a way that it acquired new élan, both in terms of its design and in its technical elaboration.

The candidates who were sounded out for the position of chief architect in September were drawn from Patijn's list: Hubert-Jan Henket, Erik Knippers, the Spaniard Rafael Moneo, the Frenchman Paul Chemetov and the Swiss Peter Zumthor. After consulting with museum director Ronald de Leeuw, Moneo's name was removed. Zumthor disappeared from the list because he failed to respond, whereupon Patijn added Cees Dam's name. At Coenen's prompting the list was augmented with four more names: the Italian Francesco Venezia, Austrian Heinz Tesar, the Spaniards Cruz y Ortiz arquitectos and Rem Koolhaas. De Leeuw vetoed Koolhaas, no doubt fearing a radical design.⁶ Thus there remained seven architects. They were experienced architects, all but one middle-aged men. The exception was Erik Knippers, just 37 years-old at the time. Early in Patijn's term as Chief

Government Architect, Knippers had won an invited competition for the extension of the Parliament building on the historically charged 'Plein' in The Hague. Hubert-Jan Henket (b. 1940) could hardly be omitted, if only because of his extension of the Teylers Museum in Haarlem. Cees Dam (b. 1932) had not built any museums, but Patijn had dealt with him in relation to the archives building in Middelburg. Dam brought his son Diederik (b. 1966) on board. Paul Chemetov (b. 1928) had made a name for himself with the Grande Galerie de l'Évolution du Muséum national d'Histoire naturelle in Paris. The architects added to list at Coenen's behest had an affinity for building in a historical context. Francesco Venezia (b. 1944) had built the Gibellina Vecchia museum in Sicily, around the ruins of the Palazzo di Lorenzo. Heinz Tesar (b. 1939) had designed the Haus am Zwinger in Dresden and been involved in the renovation of the Museumsinsel in Berlin. Antonio Cruz (b. 1948) and Antonio Ortiz (b. 1947) were from Seville, where they had built extensively in the historical centre. They had also designed the Maritime Museum in Cadiz.

Invited Competition

On 28 November, Coenen, by now Chief Government Architect, sent the seven firms the brief for the invited design competition.⁷ The task was to come up with a future vision for the Rijksmuseum. Four guiding principles were provided: 1) restoration of the spatial structure of the museum in line with Cuypers' concept but with a contemporary ambience; 2) amelioration of the museum's accessibility and circulation structure; 3) restoration of the original interior finish in so far as compatible with the museum's public functions; 4) development of a proposal for the garden and the museum's relationship with its surroundings. These guiding principles were quite prescriptive, in particular with regard to the decision to restore Cuypers' structure and to reinstate some of the interior finish. The precise intention of this last point was not entirely clear, however. In Cuypers' interior, the internal finish, decorations, paintings and building fragments coalesced in a *Gesamtkunstwerk* in which the distinction between building and collection ceased to exist. It was left to the architects to interpret the mottos 'Back to Cuypers' and 'Continue with Cuypers'. The practical challenge for the architects was to solve the problem of the entrance and circulation. Obviously, the intervention would need to cater to the wide-ranging requirements of the mass public, contemporary presentation techniques, climate control and security. The competition phase, however, was primarily about finding the most suitable architect. The architects were asked to produce a sketch model of the entrance zone and design proposals for four spaces in the museum.⁸

In March 2001, four months after the distribution of the brief, the architects presented their visions for the Rijksmuseum. Seated opposite them was the assessment committee, consisting of Jo Coenen, Ronald de Leeuw, former Amsterdam mayor Schelto Patijn, the director of the Rijksdienst voor de Monumentenzorg (Government Agency for the Preservation of Historic Buildings; RDMZ) Fons Asselbergs, representing the State Secretary for Culture and, as independent member, writer and journalist Max van Rooy.⁹ The committee's task was to come to a decision based on eight evaluation criteria: respect for Cuypers, the museum's operating conditions, the urban context, financial constraints, architectural quality, originality, finish and proposed use of materials and energy consumption. A technical committee advised the evaluation committee on the implementational aspects of the various plans.¹⁰ The commission was to be awarded to the architect who, in tendering jargon, submitted the 'most economically advantageous offer',

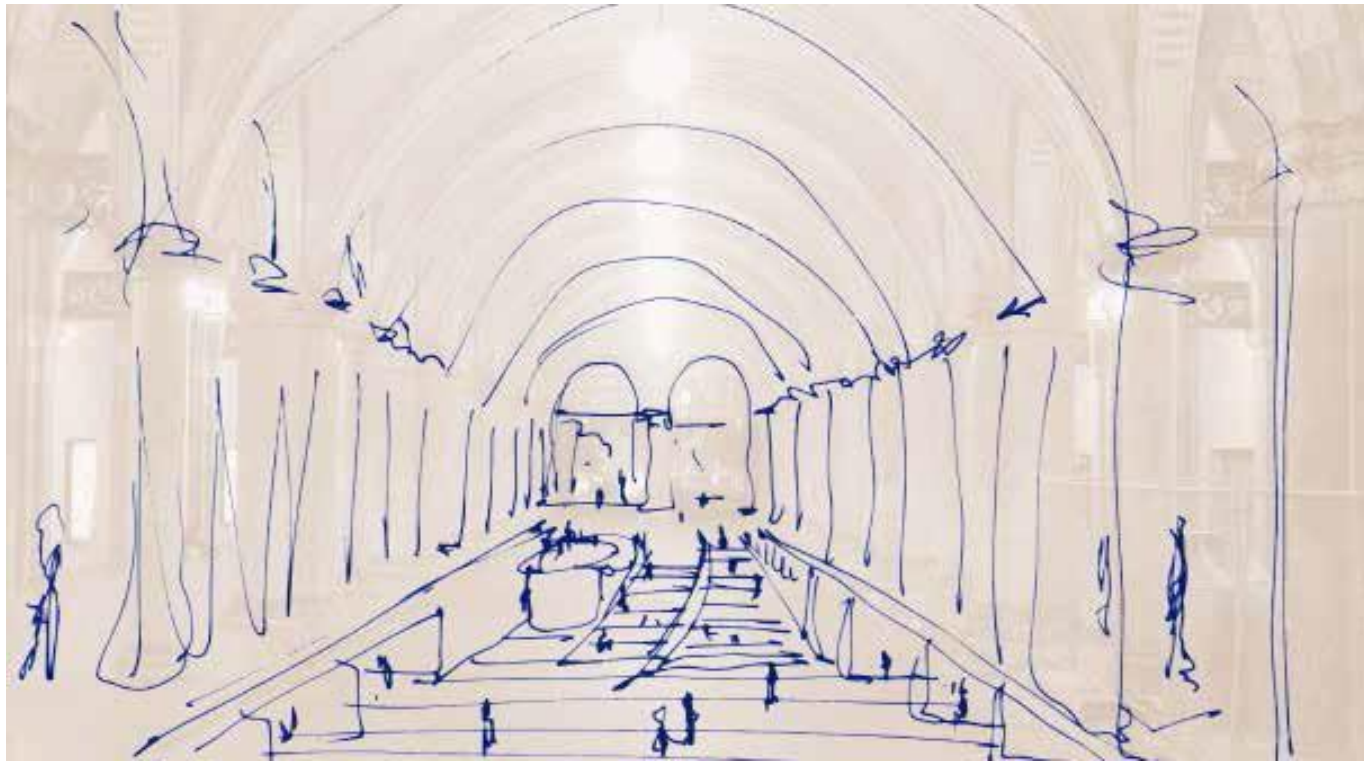
although architectural quality was to be the decisive factor. That rider gave the committee the leeway to put aside the score sheets with part-scores and allow the architect's heart to speak.

During the discussions that followed a marathon of seven concept presentations, question-and-answer sessions and 'interludes', the three Dutch entries fell by the wayside. The reason given was that although the 'Continue with Cuypers' notion was evident in their treatment of the existing fabric, they fell short when it came to the request to look at the current functioning of museum from the viewpoint of Cuypers while exercising 'maximum care, restraint and calmness'. The Dutch architects' additions were too free and contrastive. The committee was of the unanimous opinion that 'the extent of their interventions inside and outside the contours of the building . . . were perceived to be too drastic and/or inappropriate'.¹¹ A week later, at the start of the next round of deliberations, Tesar's proposal foundered for the same reason. When Venezia was subsequently disqualified because his proposal for a Grand Palais on Museumplein exceeded the brief, only two plans remained. Doubts arose over Chemetov's plan because of his notion of opening up the blind recesses on the main floor and putting a huge media screen in the courtyard. The idea for a continuous basement underneath the courtyards also looked to be technically unfeasible.¹² Which left just Cruz y Ortiz. This did not mean that it was a negative choice. The evaluation committee spoke in superlatives about the resolution of the entrance, the design for the courtyards and the 'refined and restrained subtlety of their intervention and the extremely appealing proposal for a superb pavilion'.¹³

Cruz y Ortiz's Vision

According to Cruz y Ortiz, the original ambition to build the Rijksmuseum as a gateway to the urban expansion areas had meant that the museum function was from the very outset subordinate to the urban design gesture.¹⁴ The arched passageway divides the building in two, resulting in double entrances and main staircases. The architects saw it as a challenge to eliminate that divide while retaining the passageway. Cuypers' building would finally acquire a satisfactory layout with the aid of techniques that had not existed a century earlier. In essence, Cruz y Ortiz's plan consisted of two interventions: the lowering of the central passageway and the clearing, lowering and below-grade connection of the two courtyards to create one big entrance hall (3.01, 3.02, 3.05, 3.06). This sunken plaza had space for ticket sales, information desks, the museum shop and café-restaurant. The lowered passageway provided access to the entrance hall from either Stadhouderskade or Museumplein, thereby removing the distinction between the front and rear of the museum. The passageway would become the central entrance while continuing to function as a pedestrian/cycle route. However, the architects doubted whether the bicycle traffic in the passageway (as laid down in the guiding principles) was appropriate on busy days. They consequently suggested an alternative cycle path through the garden, which could even become a permanent solution for bicycle traffic. They did not think it was necessary to entirely close off the passageway for bicycle traffic.

The main route through the museum was a continuous, chronological presentation from the entrance in the west courtyard, past the Middle Ages at the bottom of the west wing, ascending to the Golden Age on the main floor and then descending via the east wing to the twentieth century and finally ending up at the restaurant and shop in the east courtyard. Stairwells and lifts could be used to cut off parts of the route or to facilitate a quick tour of the Gallery of Honour and the



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3.1 Sketch of the lowered entrance area in the central passageway, Cruzy Ortiz 2001.

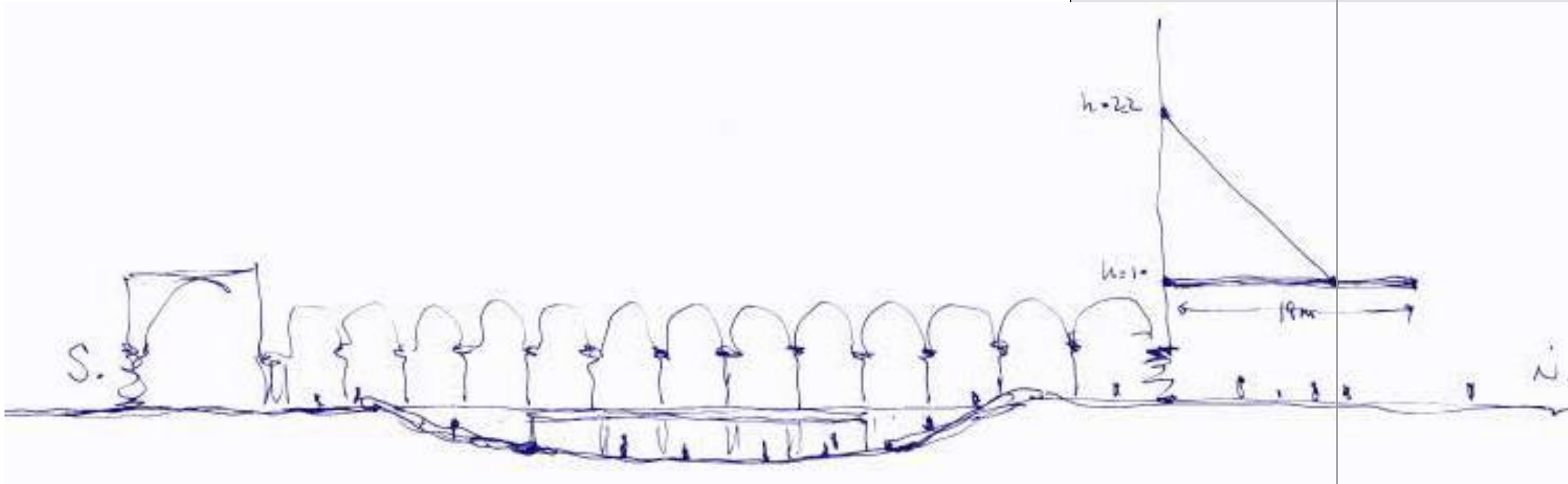
3.2 Longitudinal sketch of the central passageway with the connection between the lowered courtyards beneath it. A glass awning has been added on the city side.

Intervention

3.3 Impression of the glass awning attached to the front façade.

3.4 Proposal for toning down the bright colours in the interior.

3.5 Model of the lowered courtyards and the entrance in the central passageway.

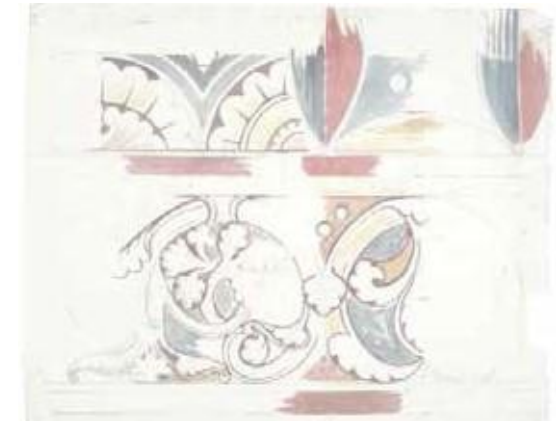
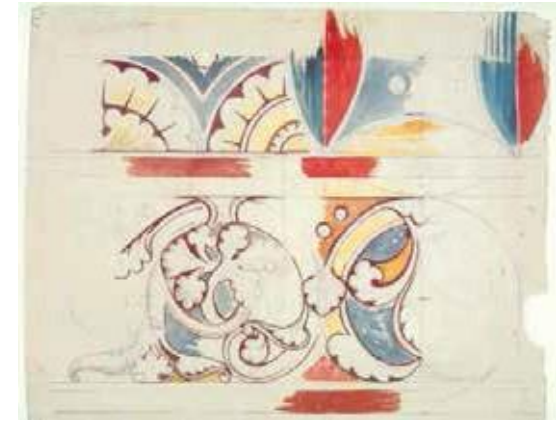


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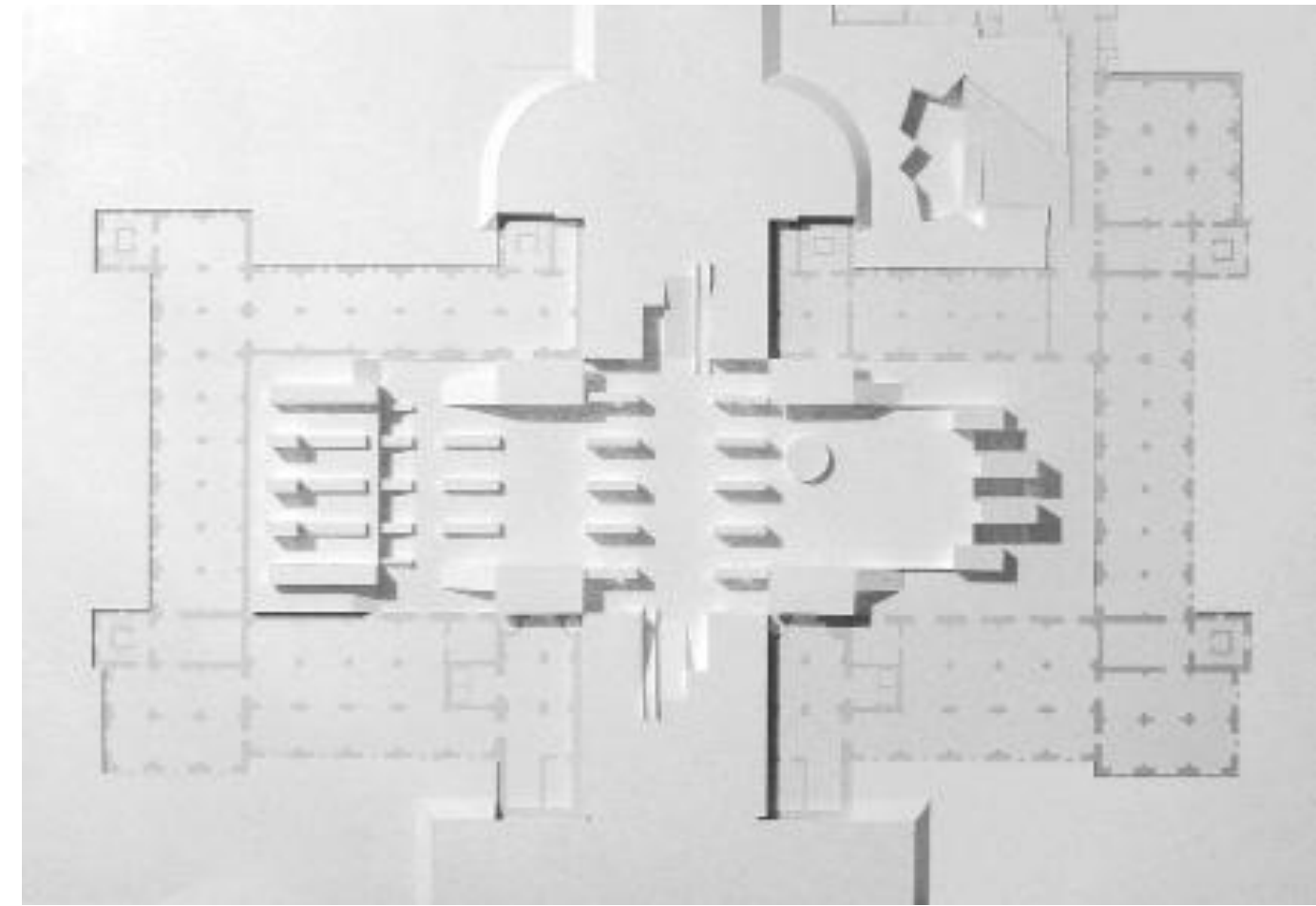
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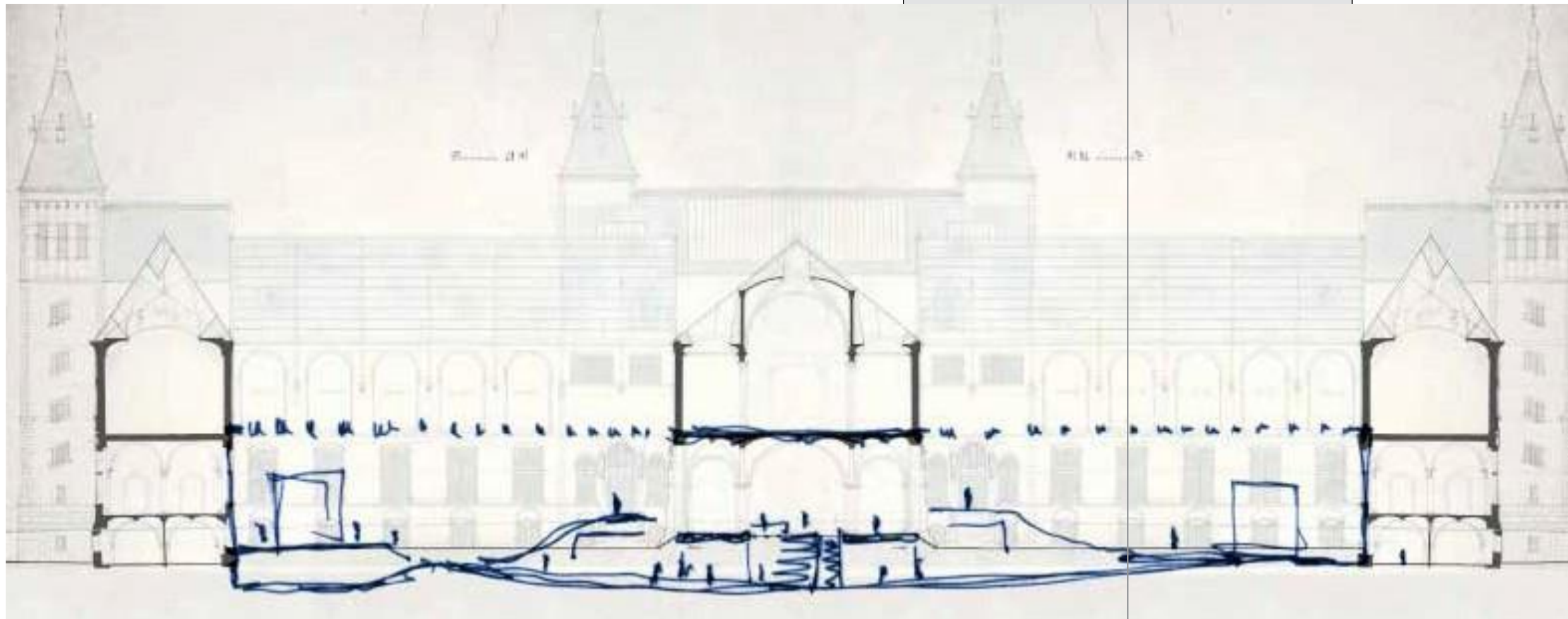
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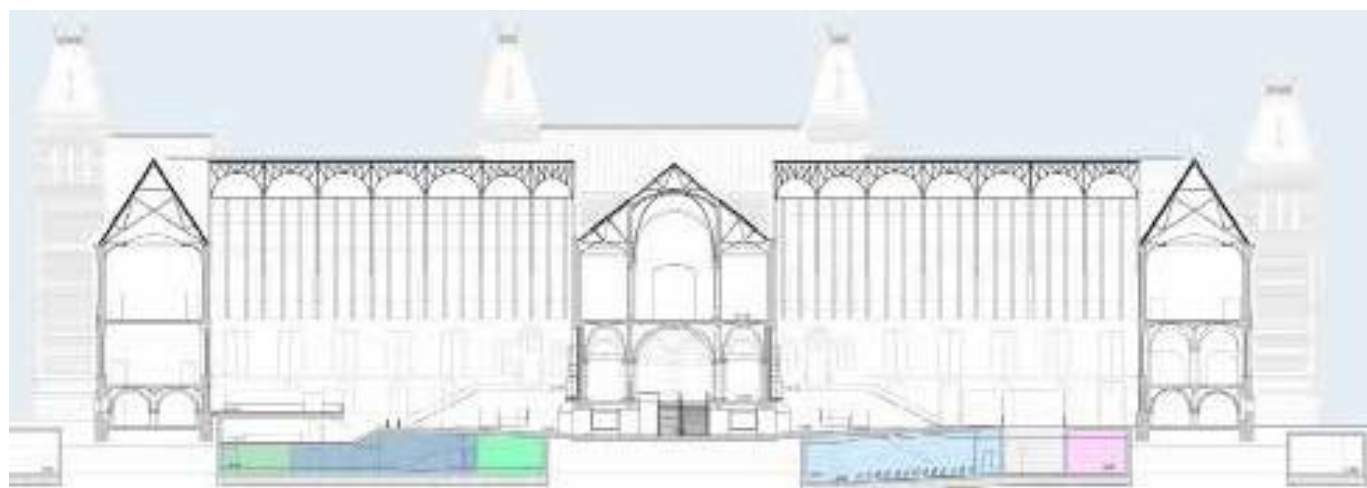
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3.6 Sketch of the walking routes between the entrance, the courtyards and the museum galleries.

3.7 Auditorium and service areas beneath the lowered courtyards.



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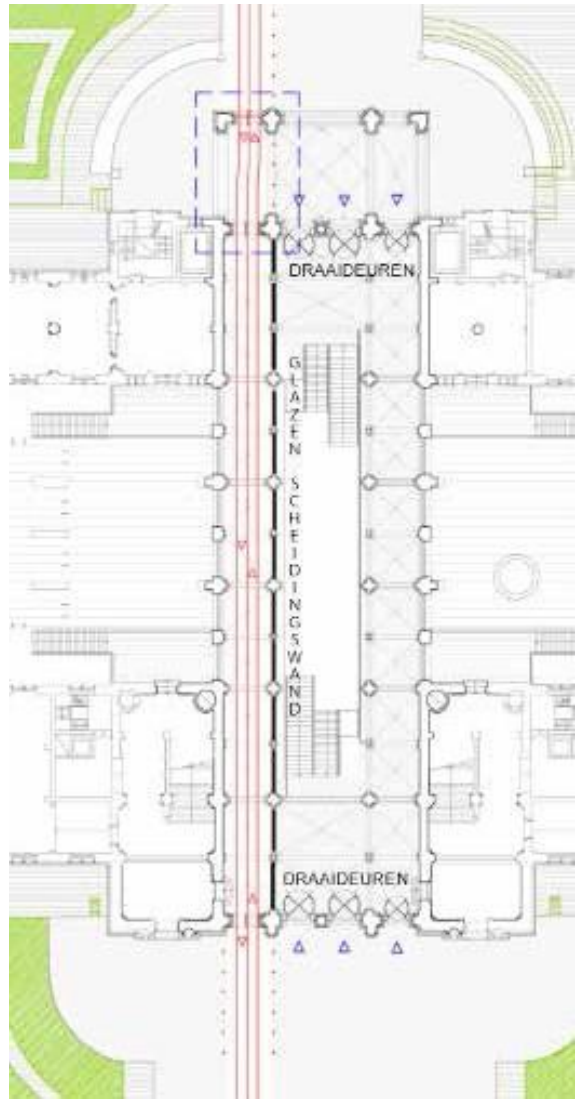
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Night Watch Gallery. The decision to use the main building almost entirely as exhibition space meant that the offices, storerooms and supporting functions would have to move to neighbouring buildings or disappear from Amsterdam altogether. Three additions completed the ensemble: an awning on Stadhouderskade, the Asian Pavilion between the main building and the South Wing, and a basement below the courtyards containing an auditorium, educational spaces and service areas (3.03, 3.07, 3.17-3.21). There was no plan for the garden. The architects wanted to restore Cuypers' decorations in some places, but in muted colours so that they would not compete with the collection. For the sake of the acoustics they suggested carpet woven with the pattern of Cuypers' mosaic floors. For the courtyards they designed huge crystal chandeliers to filter the daylight and to give the entrance hall a ceiling and a sense of coherence (3.29-3.32). The assessment committee spoke (unanimously) of a lucid concept that resolved the logistical problems of the Rijksmuseum and delivered a fine entrance. The Asian Pavilion was regarded as a stroke of genius. The only ideas rejected by the committee were those for carpet in the galleries and an awning on Stadhouderskade.¹⁵ Since the committee did not consider these elements essential to the design, it assumed that good alternatives could be found at a later date. It is unclear why the idea of hanging a huge awning on the main facade did not attract the same judgement as many other interventions, namely that 'inside and outside the contours of the building . . . [they] were perceived to be too drastic and/or inappropriate'. Of the plans regarding Cuypers' interior, all that remained was the suggestion to tone down the bright colours and for the rest to make the galleries as light as possible (3.04).

Preliminary Design

Cruz y Ortiz was not unknown in the Netherlands. The firm had previously built housing schemes on Java Island in Amsterdam (1994-1996) and on the Céramique site in Maastricht (1999-2001). The firm's nomination as chief architect of the Rijksmuseum on 4 April 2001 brought the architects into contact with what was for them an as yet largely unknown side of Dutch culture, namely social decision-making. This required a period of 'familiarization' with the Dutch reality of multiple clients, numerous committees, the institutions and other interested parties – each with a seat at the table and their own views on the project.¹⁶ Years later Antonio Ortiz commented ruefully: 'I think you call that "Polder-model".'¹⁷ A week after their nomination Cruz y Ortiz joined in the selection of the restoration architect. This commission went to Van Hoogetest Architecten. Although it was already laid down that this firm would be answerable to the chief architect, what shape that collaboration would take and what tasks and responsibilities it would entail was at that moment still unclear. In February 2002, Cruz y Ortiz completed an integration study that had looked at how all the various wishes for the new Rijksmuseum could be incorporated into the design plan. One of the conclusions was that the Study Centre did not belong in the former library and should be housed elsewhere on the site. In May that year there followed the choice of consultants for structural design (Arcadis), building physics (Arup Madrid and DGMR) and building services (Arup Madrid and Van Heugten).¹⁸ Their contribution to the design was to be considerable, given the huge challenges with respect to underground construction and building services.

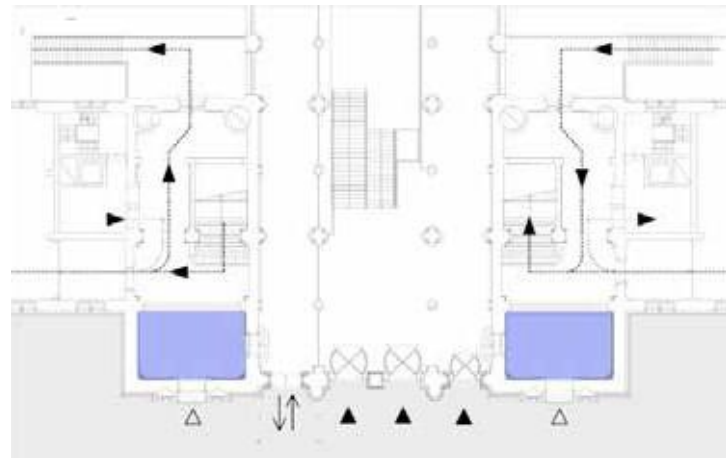
From November 2001 to December 2002, Cruz y Ortiz worked on the Preliminary Design (PD). Such a design establishes the broad outlines of a construction plan, which are then worked out in detail in the Final Design (FD). In the PD the plan for



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3.08-10 Entrance area designs by Cruz y Ortiz from the PD, 2002.

3.11 The PD features a continuous glass wall separating the bicycle path and entrance area.

3.12 Modified version of the entrance design, 2005. Here there is no longer a sunken entrance in the central passageway; instead, revolving doors provide entrance to the museum. This is the version that was ultimately used.

3.13-14 Visualization by Cruz y Ortiz, used by Wim Pijbes and Liesbeth van der Pol from 2008 onwards in an attempt to win sufficient support for the original entrance area concept.



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the Rijksmuseum was spelled out, for example with respect to layout and square metres, building services, constructional approach, heritage restoration and architecture.¹⁹ The original concept remained essentially intact: a central entrance in the passageway with stairs to the sunken entrance hall (3.05). There was a new solution involving cables and ducting in an underground services tunnel around the main building, from where the entire building could be serviced via vertical shafts. One striking addition was the Study Centre, a tower over 30 m high next to the main building, between the director's villa and the Teekenschool (Drawing School, now National Print Room) (3.23-3.28). This tower was intended to become an important node, with access to the engine rooms and the energy centre in the basement, the staff entrance on the ground floor and on the floors above reading rooms and a library tower. The building was conceived in concrete, with large windows and a cladding of Swiss limestone. This was later changed to a Portuguese limestone whose bluish cast complements the Belgian Blue limestone of the historic building.

In the elaboration of the passageway, the cycle path remained in the open air, but the entrance zone and the footpath were incorporated into the building. The result was that behind both façades a revolving door was placed in three of the four archways and, along the entire length of the passageway, the cycle path was screened by a glass wall (3.08-3.11). To make it possible to access the various routes from the entrance hall through the museum galleries, and to solve the problem of emergency exits, lifts and stairs were added. This resulted in two galleries on the main floor being reduced by one bay.²⁰ The chronological arrangement, which pursued a serpentine course through the building, would present an interrelated display of art, applied art and history. The two attic spaces on the north side were reserved for study collections, with thematic displays of ceramics, textiles, ship models and arms. Autonomous sections of the collection were housed in separate buildings, such as the so-called Asian Pavilion and the former Teekenschool. The South Wing was designated for temporary exhibitions, printing and photography. The former library became a reading room and café and was incorporated into the museum route.

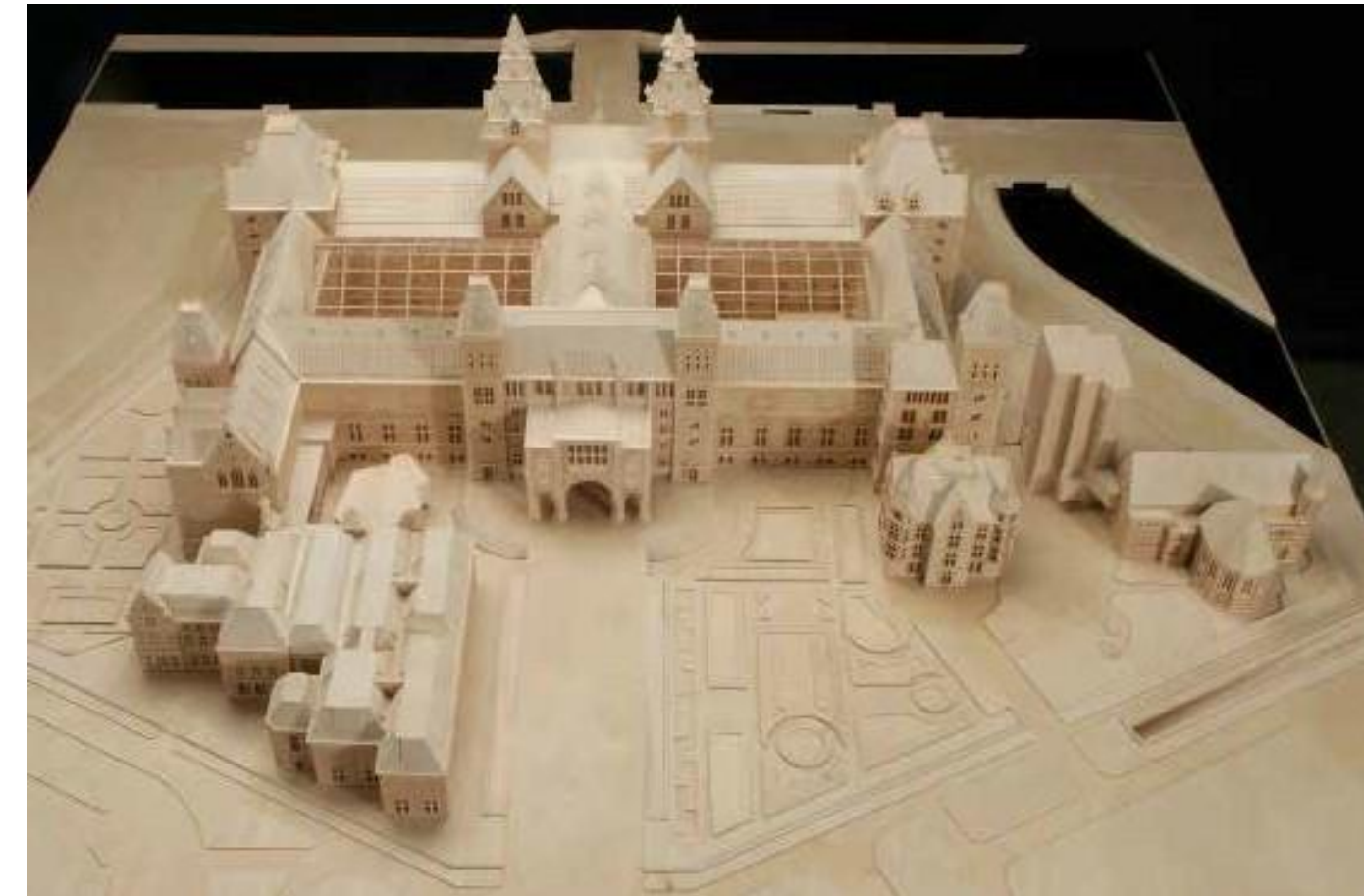
Cruz y Ortiz's PD contained one rigorous modification with respect to the museum interior: raised parquet floors concealing pipes and air ducts and double walls for acoustics and climate control. This would change the appearance of the galleries and the detailing of doors, windows, columns and stairs would need to be adapted accordingly.²¹ The museum also wanted to block a lot of windows in order to gain additional exhibition space and to protect the collection from too much daylight. Where possible the architects tried to retain daylight in the museum to provide orientation towards the courtyards and the city. The external space around the museum was dealt with in summary fashion in the PD. Cruz y Ortiz projected the new buildings of the Asian Pavilion and the Study Centre on the site of the bicycle sheds and car park. Since Cuypers' time various extensions had been built on Museumplein and together they formed a picturesque silhouette. The new volumes fitted into this picture. The firm was keen to tidy up and redesign the gardens, but first wanted to know for certain whether or not a cycle path would be routed here as an alternative to the passageway. Only then, too, would the possibilities for the forecourt on Stadshouderskade become clear.

Remarkably, both Cruz y Ortiz and Van Hoogevest drew up their own restoration criteria during the PD phase. Cruz y Ortiz voiced their preference for preservation of the architectural configuration (volumes and spaces), the typology and the heritage value, at least so long as it did not impede the functional organization. In concrete terms this amounted to the restoration of the spatial layout and the

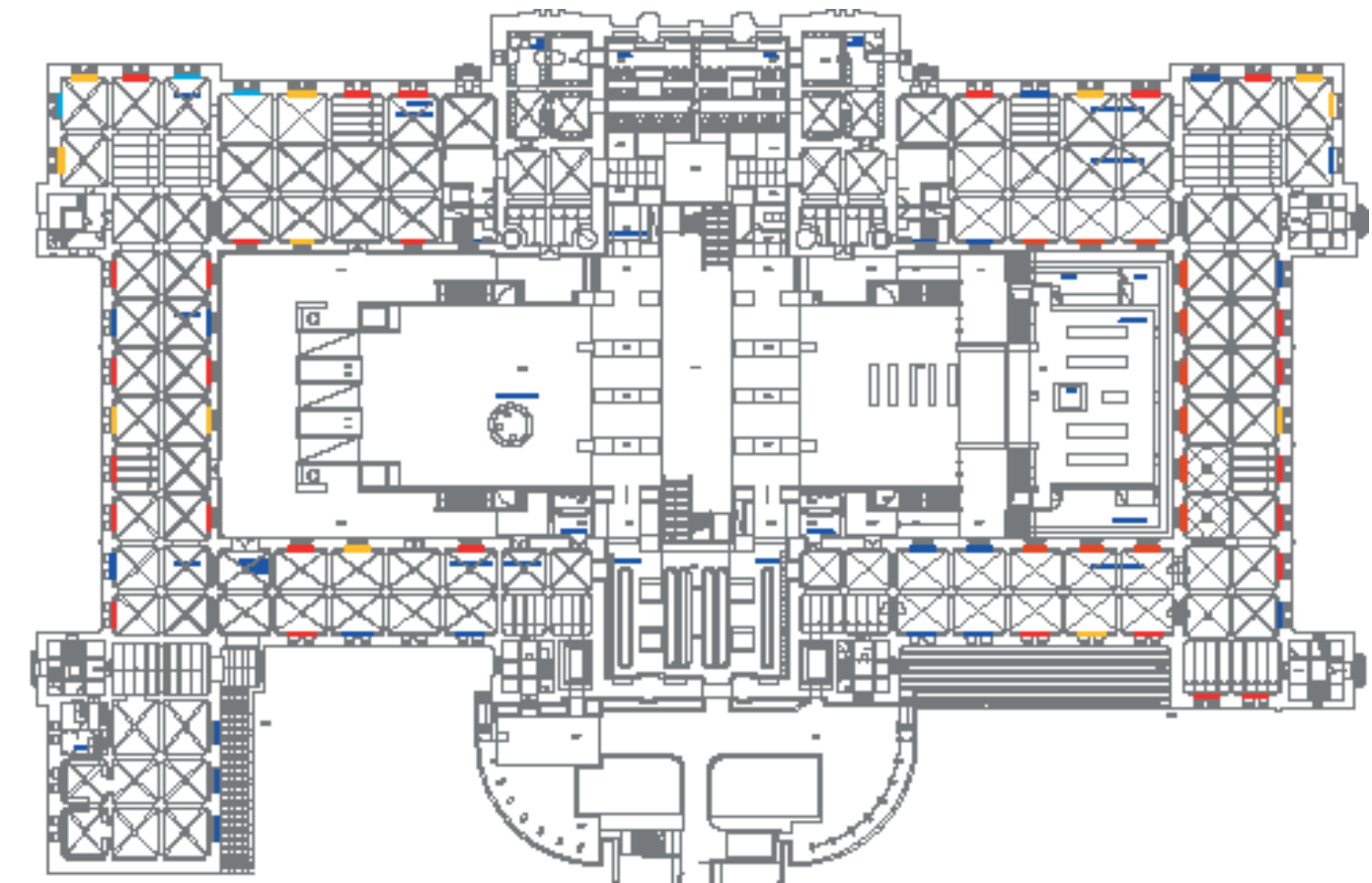
3.15 Model of the Cruz y Ortiz competition design (2004), with the Asian Pavilion and the Study Centre added to the ensemble.

3.16 Plan for window openings, Cruz y Ortiz 2004.

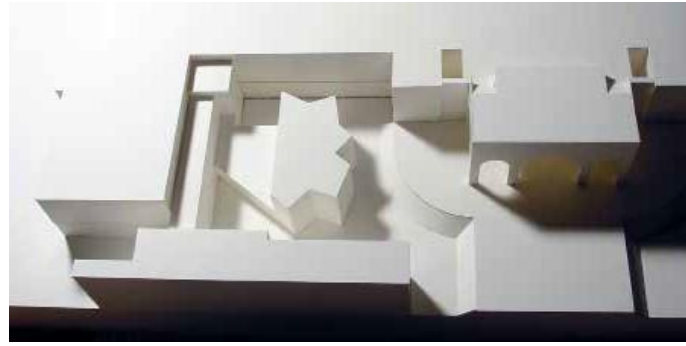
- closed window — always
- closed window — not reversible
- closed window — not easily reversible
- closed window — easily reversible
- open window
- translucent window level



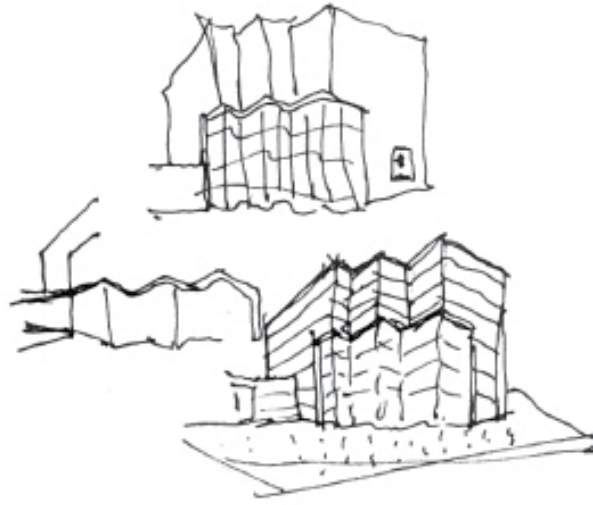
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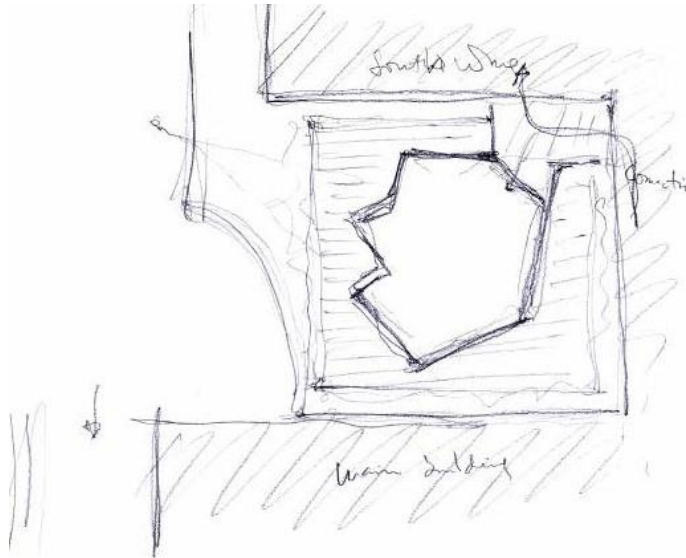
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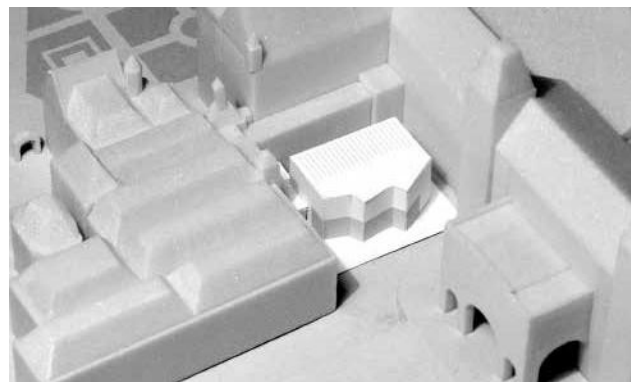
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3.17-21 Stages in the design of the Asian Pavilion, 2001-2004.

3.22 The completed Asian Pavilion.

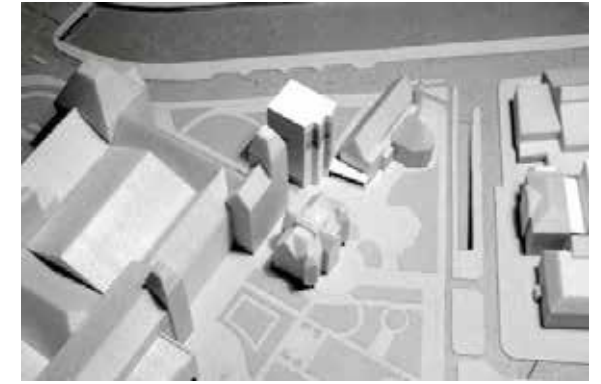
3.23-28 Design and integration studies for the Entrance Building, previously called the Study Centre, with successively smaller building volumes, 2002-2013.



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reinstatement of Cuypers' decorations in the entrance hall, the main stairwells, the library and the Aduard Chapel. In the architects' own words:

Regarding the first floor, the Front Hall should be the main space to be restored, so we are not thinking in restoring the 'Gallery of honour and Nachtwacht-zaal as well decorated in the same atmosphere' and we have some doubts regarding the 'Partly reconstruction of paintings in the upper zone of the rooms', so far those proposals might disturb the explained vision for restoration and the Rijksmuseum exposition layout.²²

That Cruz y Ortiz's restoration criteria were based on their architectural outlook, is clear from the explanatory text:

In the other spaces inside the building we should not find 'reminders of colours', considered as archaeological remains. We think that the conservation criteria of the colours in the basement and intermediate floor must follow the museum's criteria and the exhibition's point of view. We insist upon the idea that the original colour grade would be excessive. No 'patch' interventions will be done in any case (it means, no singular spots on the walls will be kept or restored).²³

With this firm pronouncement on the treatment of the historical substance of the museum, the architects underscored the way they intended to approach the national monument: in an architectural rather than an archaeological or building-historical manner. In the basic design they approached the existing monument with maximum sensitivity and succeeded in reconstructing Cuypers' spatial layout and adapting it to the requirements of large crowds of visitors and a controlled climate. At the same time, within this overall design they took the liberty of creating an almost modernist, dazzling light interior – as the ideal decor for the works of art. The history of the building was to be allowed to resonate in a highly measured way, as long as this did not disturb the tranquillity and serenity of the museum galleries.

Reaction to the Preliminary Design

The PD was submitted for comment to parties directly involved in the new Rijksmuseum and to external advisory bodies such as the Commissie voor Welstand en Monumenten in Amsterdam (Design Review Board) and RDMZ. Reactions were generally positive with regards to the solution for the entrance and the courtyards, but there was also a sense of unease about the treatment of the conservation aspects and the interior. Broadly speaking, the commentary focused on the Study Centre, the glass walls in the passageway and the restoration plan. Welstand and RDMZ queried the utility, necessity and appearance of the Study Centre, given the visual impact of this volume on the ensemble.²⁴ The passageway attracted criticism for the combination of the entrance zone with a cycle path, and the consequences it entailed. Asselbergs, for example, thought it a poor idea to block three of the four archways with turnstiles because it disrupted the symmetrical façade arrangement.²⁵ Coenen objected to the long glass wall in the passageway.²⁶ Both men wanted to move the cycle path and integrate the passageway completely with the museum – as previously conceived by Hans Ruijssenaars in his urban 'foyer' idea. Welstand's opinion was diametrically opposed to this: 'The envisaged changes in the passageway are in its view a travesty of the propagated public character, which is all but lost.'²⁷

The comments about the restoration plan focused on the lack of building archaeological research and of any substantiated statement regarding the essence of the historic building. The restoration plan was in fact a derivative of the museum

3.29-32 Designs for the chandeliers over the courtyards. The original design for two special models, both in crystal.

3.33-34 More detailed version of the chandelier design.

3.35 One of the two final identical chandeliers.



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concept, climate control and space requirements. Asselbergs, for example, felt that too little thought had been given to the reinstatement of the original decor: 'That the "Continue with Cuypers" motto should now be interpreted chiefly as the restoration of the structure, plus decorations in one or two rooms, is an unacceptable principle as far as I'm concerned.'²⁸ Asselbergs thought that the decorations were part of the original architecture and that the restoration plan should also take account of the significance of the Rijksmuseum as a monument of national identity. These aspects were not mentioned at all in the PD. De Leeuw stressed that the museum wanted maximum flexibility in the galleries, but was also keen to pass the original building on to future generations.²⁹ He therefore suggested restoring Cuypers' interior in the non-museum spaces, such as the Great Hall, staircases, corner towers and courtyards. He also wanted to restore the Aduard Chapel as part of the display devoted to the nineteenth century. He went even further and argued for the restoration of the high point of Cuypers' interior – the sequence Great Hall, Gallery of Honour and Night Watch Gallery – as an art object in itself.³⁰ Antonio Cruz's initial reaction to this 'Cuypers cathedral' was not necessarily negative, but he wasn't overly enthusiastic, either.³¹ Coenen wanted to suspend judgement on this idea and deal with it in relation to a concept for the entire interior, which was as yet insufficiently spelled out.³² Programme director Bart van der Pot had different concerns about the restoration plan. He had flagged a cost overrun and wanted no uncertainty regarding similar discoveries in later stages. His preference was for a decision to restore one or two sections of the building to be taken now and to leave it at that.³³ This served to introduce cost as a restoration criterion, which strengthened Cruz y Ortiz's approach. The architects objected to the incidental display of historical fragments and were only prepared to give Cuypers' interior pride of place where this did not compromise the museum display. In fact, there were already signs here of the compromise arrived at later, whereby, in addition to the non-museum parts of the building, the Night Watch Gallery and the top of the Gallery of Honour were restored or reconstructed, and building traces and other decorations elsewhere in the building largely disappeared.

The Final Design

The first part of the FD was completed in October 2004, preceded two months earlier by 'Intervention and restoration criteria'.³⁴ The FD combined the views of the chief architect and the restoration architect, with those of Cruz y Ortiz prevailing.³⁵ According to Antonio Ortiz, the proposal could be encapsulated in five principles: renovate (not restore), the museum is never finished, new designs for new functions, balance between architecture and exhibition, and an integrated design instead of a patchwork.³⁶ These principles gave the necessary scope to renovate the museum in detail while giving it a sense of coherence. Typical of the architectural approach was the decision, regardless of the magnitude of the change, not to cling obstinately to reinstating the old form. The architects strove for new architectural quality, based on their interpretation of the building.

Compared with the PD, some minor changes had been introduced. The height of the Study Centre was slightly reduced for the sake of the silhouette of the ensemble. The chandeliers in the courtyards changed from crystal to aluminium with perforated MDF with sound absorbent material, 'a moderately spectacular touch' (3.29-3.35).³⁷ The café in the library disappeared. The architects proposed keeping more windows open than the museum had requested (3.16).³⁸ In the galleries they wanted to conjure a contemporary experience of the historical space through the use of light and colour. The most striking aspect of the FD was what

3.36 pages 120-121: The Rijksmuseum complex viewed from the south during the final stage of construction.

was missing: the elaboration of the passageway. Since the city council had vetoed the plan, the architects could only wait for new guidelines from the council.³⁹

In the FD the intervention in the main building was described as the reinstatement of the 'original architecture', interpreted as 'the original space and the original connections between different spaces'.⁴⁰ The proposal to strip the museum of building traces and fragments was underpinned with historical arguments. The remnants of the 'Nederlandsch Historisch Museum' (Netherlands Historical Museum) in particular were dismissed as historically and artistically inaccurate. For example, Cuypers had set up columns in the museum as an example of church architecture. The FD explained in meticulous detail that they had no structural meaning, did not fit in the structural grid and were absent from the foundation drawings.⁴¹ Once unmasked as kitsch, the conclusion was that they did not belong to the architecture and should be removed.

However, in general, we call into question the value of replicas of architectural elements that exist elsewhere. The fact that time has gone by since these replicas in the museum were built does not necessarily mean that they have any additional monumental value than that of being mere replicas.⁴²

Only the Aduard Chapel in a corner tower of the ground floor would be retained, as a relic of an outmoded museum concept. The Great Hall and the Night Watch Gallery would be restored as an art object. For the sake of continuity between the two rooms, it was proposed that the paintings on the frieze, the capitals and the pilasters in the intervening Gallery of Honour be reconstructed.

From Final Design to Construction Plan

At around the same time that the first phase of the FD appeared in October 2004, Mels Crouwel was installed as the new Chief Government Architect. His reaction to the FD was positive and included the recommendation to stick with the architectural concept for the passageway.⁴³ Crouwel only wanted to be involved in a few implementation aspects, such as the climate separation in the passageway, the insulation of the external façades and the design of new windows. The intervention design was as good as complete, with the exception of the passageway. When the Oud-Zuid district council passed the Ruimtelijk Afwegingskader Rijksmuseum (Rijksmuseum Spatial Evaluation Framework) in 2005, the city's wishes with regard to the passageway were established: retention of the cycle route and permanent public accessibility.⁴⁴ The design had already been modified accordingly.⁴⁵ The passageway remained intact and accessible across its entire width. The climate separation shifted to the wall between the passageway and the courtyards, where the museum entrances with revolving doors, stairs and lifts would be located to either side of the passageway. Instead of entering via the passageway, visitors would descend to the entrance area in the courtyards (3.12).

The elaboration of the entrance zone cleared the way for the finalizing of the building application, which was duly completed in March 2006.⁴⁶ The most important modification from this final design phase was the reduction of the towering Study Centre to a subordinate volume next to the Teekenschool (3.28).⁴⁷ After earlier critical remarks about the tower's impact on the ensemble and under pressure from The Hague, the project office was evidently not willing to take the risk that this new building might further delay the construction work. The reading rooms, the offices and the flue gas exhaust moved to another part of the museum complex.⁴⁸ The new section henceforth designated the Entrance Building, contained only entrances for the staff, deliveries, the energy centre, the multidisciplinary educational centre, (underground) storerooms, reading rooms and the National Print Room.



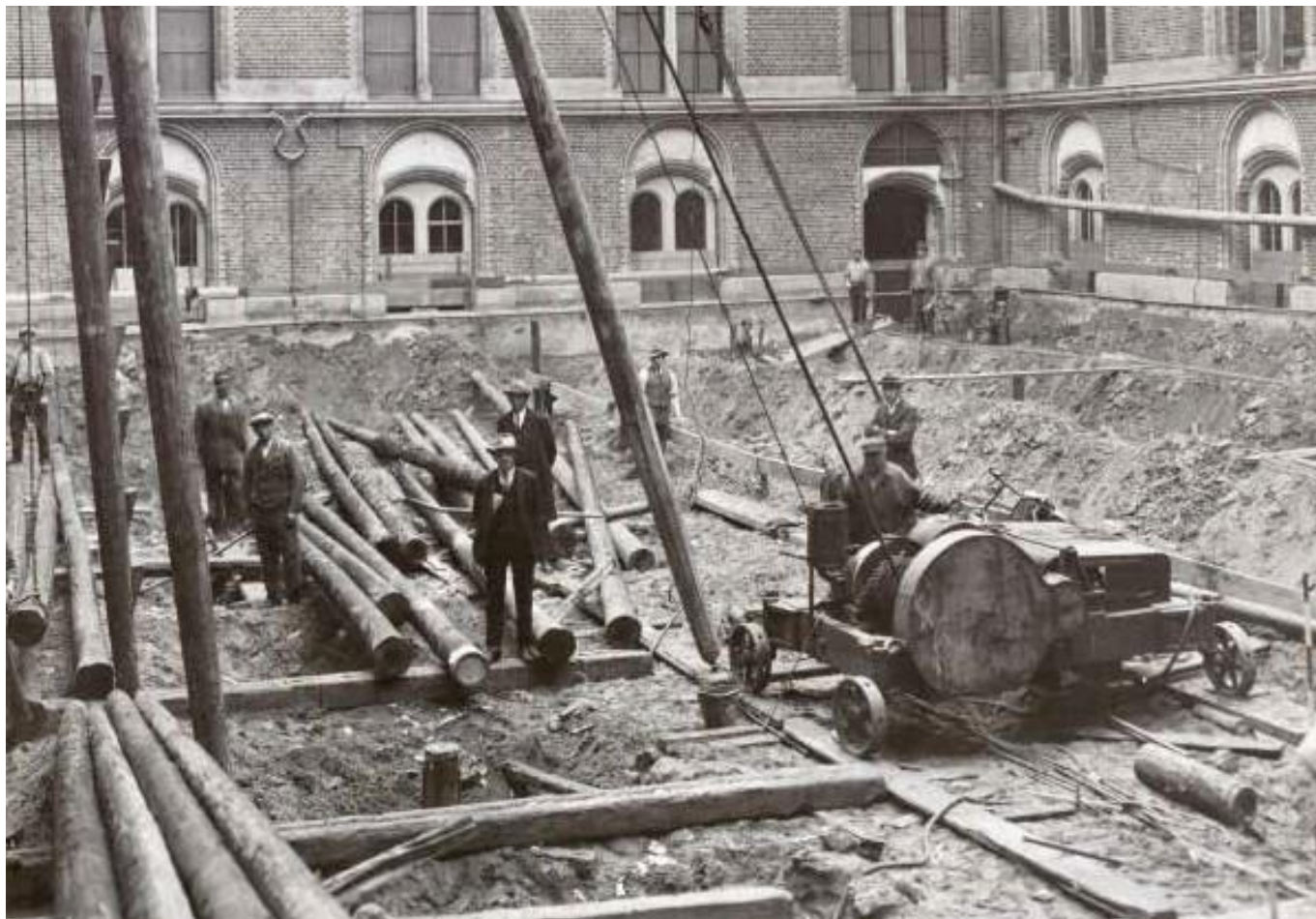


At the end of 2007, with the structure of the courtyard basements already in place, all the necessary permits for the intervention were granted. Yet even after this some changes took place, partly owing to the influence of the interior architect, Jean-Michel Wilmotte (chosen in 2004) and the arrival of a new museum director, Wim Pijbes, in 2008.

For example, more windows in the main building were blocked up, the Aduard Chapel disappeared behind false walls, Cuypers' three 'pastiche' columns survived the intervention, the colour grey made its appearance in the museum galleries and the chronological presentation according to the 'serpentine model' made way for an 'elective model' in which the display was tailored to the spatial characteristics of the floor concerned. But the attempt by Pijbes and the next Chief Government Architect, Liesbeth van der Pol, to return to the original idea for the entrance zone in the passageway came to naught (3.13, 3.14).⁴⁹ The construction process was so far advanced meanwhile that there was neither time nor money for new modifications.

The evolution of the design for the new Rijksmuseum reveals very clearly how the Spanish architects introduced a distinction in Cuypers' legacy, based on an architectural and aesthetic interpretation of the historic building. The structural shell and the exterior were interpreted as heritage architecture. Important decorations, such as those in the Aduard Chapel, the library, the Great Hall and the Night Watch Gallery were designated 'art' and restored or reconstructed. In this way, to quote Antonio Cruz, 85 per cent of Cuypers was restored.⁵⁰

The remaining building traces, such as building fragments and paintings, were labelled imitation and thus by implication deemed unfit for a top contemporary museum. In 2004, Antonio Cruz wrote despondently to the Programme Board that a historical analysis drawn up by Van Hoogevest on the basis of building archaeological research conducted by the Rgd was imbued with a nostalgic sensibility that approbation should be reserved for the situation in 1885. A high heritage value was accorded to every individual element from that period: 'This report is potentially dangerous because it could be deployed at any moment against our design.'⁵¹ It was by splitting Cuypers' legacy into art and kitsch, that Cruz y Ortiz created space for its architecture. With light walls, wooden floors, newly designed windows and doors, the firm tried to bring tranquillity and coherence into the museum after over a century of cacophony and clutter. In the design, Cruz y Ortiz resolved the logistics of millions of visitors and the complicated building services technology by means of the grand gesture of the atrium and the building services tunnel. In the implementation, old and new were continuously being interwoven in every detail. The replacement of the windows, for example, was seized on to reinstate Cuypers' dimensions and profiles and en passant to integrate the brass grilles of the climate control system. Putting the building services in the floors and walls made it possible to remove the false ceilings and reveal the vaulting once more. In the end it did not prove necessary to raise the floors, except in the basements. The false walls required for air conditioning and acoustics were individually detailed to ensure an optimal match with the mouldings and coves. Cruz y Ortiz' ambition to make a serene gesture and bring light into the interior was constantly under pressure throughout the protracted process and the endless consultations with interested parties. Gradually, the design adjusted to Dutch reality. The passageway did not become a foyer or a ramp to the entrance forecourt, but a meeting of city and museum. In many places the design lost colour and texture. Meanwhile, the ensemble – of city and building, shell and collection, and of Cuypers and Cruz y Ortiz – grew.



C.1 Driving piles in the courtyard, 1929.

C.01



C.2 Pouring concrete underwater in the east courtyard with assistance from divers, November 2006.

C.02

The new main entrance and the conversion of the courtyards into an underground atrium are essential features of the design for the new Rijksmuseum. During construction, they presented a formidable civil engineering challenge. The courtyards had to be excavated and connected underground without damage to the building and its foundations. Furthermore, the excavation had to be very deep, because an additional underground level was to be created beneath the new atrium for services such as the auditorium, the kitchen of the grand café and the toilets. The museum also had to be adapted to present-day climate control and security standards, which presented another difficulty for the builders. The many bulky technical systems, cables, pipes, conduits and ducts had to be hidden from visitors wherever possible. The plan even involved clearing out the physical plant areas in the souterrain to make them available for public purposes. Again, the solution was mainly to work underground, encircling the main building with a tunnel for technical services, known as the Energy Ring. From outside the museum, it now seems as though the renovation has changed very little. In reality, an immense underground complex now underlies, intersects and surrounds the main building. This has freed up almost the entire historic complex for the display of the collection.

The courtyards were excavated to a depth of 7 m below Amsterdam Ordnance Datum (NAP) and more than 8 m below the street level of the central passageway. The building was found to have settled 10 to 15 cm since its opening in 1885. The historic structure is in almost constant motion, partly owing to differences between summer and winter temperatures. Because the subsurface is not uniform, there were and are different degrees of settlement. Nonetheless, the old foundations had held up very well through their many decades of use. The Norway spruce piles under the main buildings (approximately 8,000 in number) were almost completely intact, and hardly any significant cracking was found in the building's walls. The original load-bearing construction of the museum had been oversized, and this had had its benefits.

To avoid major problems with the existing foundation, the construction of the new underground levels had to be approached carefully. If the excavation in the courtyards had begun without any special precautions, then drainage would have been necessary in the foundation pit. But this would have placed the wood foundation piles at risk of drying out, a situation that could lead to significant settlement. The alternative was wet excavation. First, sheetpile walls were driven deep into the ground next to the existing foundations and the wooden foundation piles. The method used did not cause vibrations. Then 468 new foundation piles were driven for the new floors and walls of the atrium. To avoid damage to the museum, concrete screw injection piles were used. This procedure involves drilling a hole in the ground, installing a steel pile, and encasing it in injected grout, a mixture of cement and water that blends with the soil. Only after the completion of the foundations were the underground areas excavated. During excavation, the pit was filled with water. This maintained a constant water table and prevented groundwater pressure from breaking open the bottom of the pit. A layer of underwater concrete was poured as a work floor at 7 m below NAP. When it hardened, it created a watertight basin consisting of the work floor and the steel sheetpile walls. Divers checked whether all the connections and joints really were watertight and removed deposits of sludge. The basin was then drained; the piles prevent it from floating upwards. The underground levels are attached to the main building by a flexible structure that allows the two to move independently without cracking or doing damage to the foundations. A layer of sand was poured into the dry foundation pit before the structural floors and walls were built.

One particularly impressive stage of the underground construction work was the construction of a passage between the excavated courtyards underneath the Rijksmuseum's central passageway. The old brick and concrete foundation had to be replaced by a much narrower one so that construction workers could pass directly from one underground courtyard to the other. The passageway remained in place during this stage, and all possible measures were taken to prevent damage such as cracking and settlement. First, foundation piles were driven around the existing foundations. These supported the passageway during construction. Then horizontal holes were drilled under the columns and walls of the passageway. These holes were filled with steel sections encased in a concrete mixture. Horizontal steel needle beams were inserted between the steel sections and the foundation piles. These beams were fitted with cross beams and jacks that could be adjusted with great precision. While the passageway was supported by this corset of steel sections, the old foundations were demolished and replaced by new ones.

The Energy Ring was constructed by the same method as the basements beneath the courtyards. This tunnel, 3.5 m high on the inside, encircles the building and passes under the courtyards between two sheetpile walls. The innermost ring of sheetpile walls turns the main building into a kind of polder, shielded from the high water table around it. This requires constant regulation by means of water pumps. A subsurface irrigation system in the museum garden allows water to be pumped in from the canal in times of drought. This prevents the wooden foundations from drying out. The reverse is also possible: the water table in the miniature polder can be lowered when surrounding water levels are high by pumping filtered water back into the canal.

Unlike in Cuypers' day, the feasibility of the underground structures and new foundations was painstakingly calculated before they were built. The main load-bearing construction is no longer extremely oversized; the boggy Amsterdam soil can be expected to conform, for the time being, to the logic of the design. The mini-polder combines a variety of advanced construction and foundation techniques. This will make future changes and additions a greater challenge than ever.



C.03

C.03 Pressing the sheet piling prior to excavation of the east courtyard, June 2006.



C.04

C.04 The underwater excavation of the east courtyard. A temporary work platform was constructed on a temporary foundation for this purpose, September 2006.



C.05

C.05 Pouring concrete underwater in the east courtyard; divers checking connections and joints, November 2006.



C.06

C.06 Pouring a layer of sand onto the hardened underwater concrete at the lowest point after draining the east courtyard, December 2006.



C.07

C.7 Pouring the new concrete sub-floor over the sand layer in the west courtyard, view from above, February 2007.



C.08

C.8 View of the west courtyard from above; the new cellar has been completed. The sheetpiling is still clearly visible, 2008.



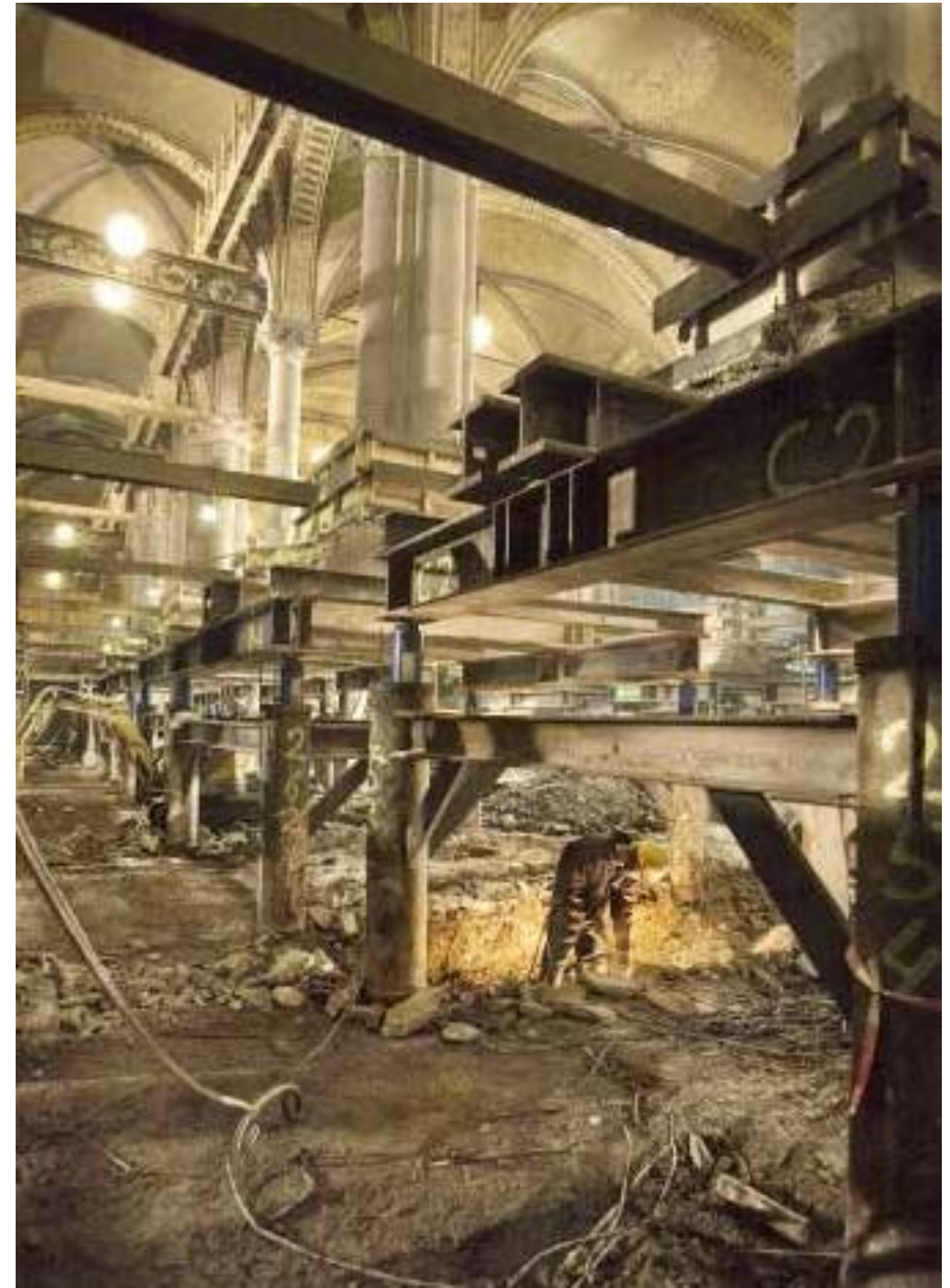
C.09

C.9 Demolishing the floor in the central passageway through the Rijksmuseum. The steel sections encased in concrete in the current foundation are clearly visible, held in place by jacks while the foundation is demolished, September 2009



C.10

C.10 The foundation of the central passageway is demolished, leaving the Gallery of Honour 'suspended' on top of the temporary foundation and jacks, February 2010.



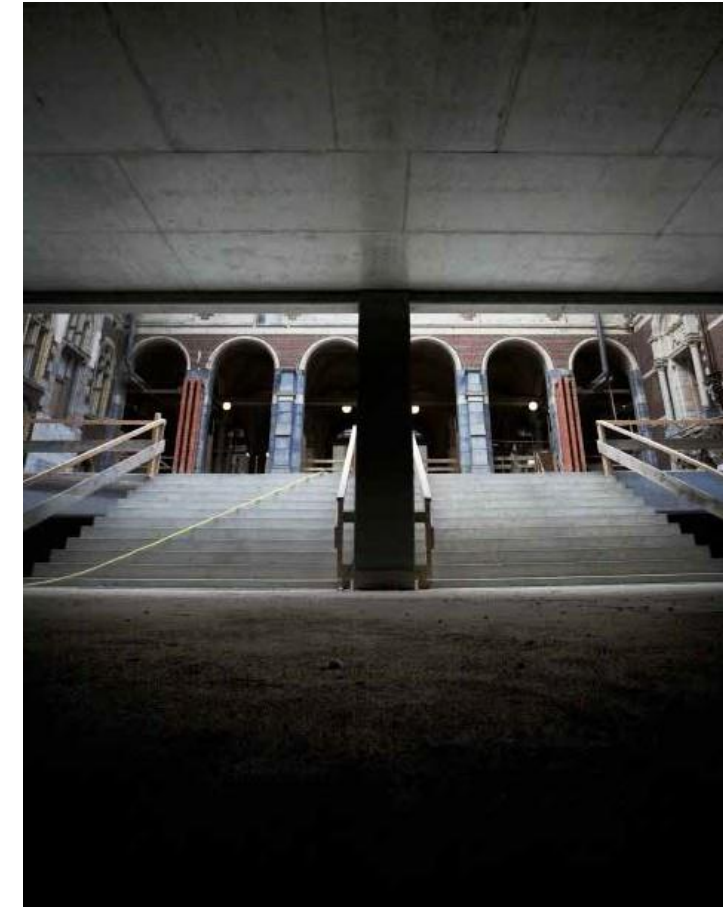
C.11

C.11 The foundation of the central passageway is demolished; the blue jacks are clearly visible, February 2010.



C.12

C.12 The deepest point under the courtyards is reached.



C.13

C.13-14 Concrete structure under the east courtyard.



C.14



C.15

C.15 Excavation for the construction of the Energy Ring on the streetside (east) of the Rijksmuseum, June 2009.



C.16

C.16 Work on the energy centre on the east side of the Rijksmuseum, under the future Entrance Building, March 2010.



C.17

C.17 Work on the energy centre under the future Entrance Building; the ducts in the sheetpile wall are clearly visible, March 2010.