Building Site Photography 1890-1920

Architectural History Thesis Jolien Streng

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Abstract This thesis reviews photographs of Dutch building sites between 1890 and 1920. A catalogue of photographs from building sites from the archive of Het Nieuwe Instituut is compiled, in order to see what role photography played for its commissioners. Commissions were made by architects and contractors to document their work. The photographs were used for documentation and publication, but also during the design process. The professional photographers who took them would not have a consistent working relationship with one commissioner. While the technology of photography would have led to new formal conventions, the photographs also have similarities to the traditional arts (i.e. painting, drawing). Some photographs, however, lack refinement in framing, composition and contrast. The most important reasons for this were photographers' focus on documentation over aesthetics, their inexperience with the working conditions on the building site, and the developing technology of the camera. Iconographic research revealed how the photographs were used to represent change and innovation at the scale of the city, but also for materials and tools. Additionally, they display the hierarchical relationships between the labourers, architects and contractors.

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Introduction

In the Netherlands, a shift in technology took place during the second half of the nineteenth century. As a somewhat belated result of the industrial revolution, new technologies started playing an important role at Dutch building sites. Between 1890 and 1920, builders introduced new materials such as reinforced concrete, steel, and new applications of iron. A different type of technology introduced at the building site was photography. The accessibility of photography, spurred on by inventions such as dry glass plates, resulted in building site photography. Firstly this was adopted for infrastructure but later also for architectural projects (Van Venetië & Zondervan, 1989, p.8-9).

Photographs of building sites provide a new perspective on the history of photography and architecture. Images included in publications on architectural history are often either design drawings or photographs of finished buildings. Both of these image types show the building in its perfect, finished form. What if instead, images from the intermediate phase are investigated? Because they show the people, materials and machines involved, images of the construction phase can be a valuable source for research on building practice.

Research focus

Previous research on building site history used photographs as illustrations, disregarding their value as a main source of information. Photographs provide information on practices that were not textually documented during the time. Research into Dutch building practice between 1890 and 1920 mainly focuses on technological developments and their application in practice (Lintsen, 1993; Oosterhoff, 1988). The little research that has been conducted with regards to the history of photography on building sites, limits itself to short mentions (Van Venetië en Zondervan, 1989).

As there is little existing research, it is necessary to start by creating an catalogue of photographs. The subject of this study will be photographs of building sites between 1890 and 1920 from the archive of Het Nieuwe Instituut (HNI).¹ The photographic archive was previously part of the Nederlands Architectuurinstituut (Netherlands Architecture Institute), now known as HNI. Photographs in the archive were catalogued during the 1990s, resulting in a collection of archive entries from renowned photographers but also from architecture offices and construction companies (Het Nieuwe Instituut, n.d.). However, photographs have not been systematically grouped by type. In this research, all building site photographs will be grouped in a catalogue. Only new buildings will be included, as renovation or extension photographs were made within a slightly different context. Even though archives are closed at the moment due to Covid-19, there is still enough digitised material to compile a small catalogue.

The goal of this thesis is to open up a new area of research into Dutch construction history. Photographic analysis can broaden the understanding of building sites as a subject for photography, but also about photography and the representation of building sites in general. The time period of 1890 until 1920 is chosen because it is the first period in which the advanced technology of photography made it possible to take photographs at the building sites at a larger scale. Inventory and analysis of the photographs will result in an answer to the question: What was the role of photography for Dutch building sites between 1890 and 1920?

1 The images included in this thesis are of a lower resolution than those used for the analysis. Higher quality images can be found in the digital archives of HNI.

2 In referencing the photographs a distinction is made between on the one hand "figures", included in the text, and on the other hand "images", included in the catalogue. Miniature images have been included when deemed necessary for comprehension of the text.

In this research photography is the main source.² Until the twenty-first century a significantly smaller number of historians based their research on photography or images than on written documents (Burke, 2001, p.9). Since the 1990s the interest in image-based research has increased, resulting in what has been called the 'pictorial turn' (Mitchell, 1992, as cited in Burke, 2001, p. 12). Academics from the humanities see this turn as a possibility to gain insight into history that has not been described in official documents, such as the daily life of the ordinary citizen. As Burke notes, however, conducting written research into images, comes with a new set of issues (2001, p. 30-32). The historian should prevent a wrongful attribution of new meanings to the images.

The main method for research into the photographs is iconography. Iconography concerns itself with a close reading of images as to interpret their meaning. Firstly, the image is factually described, after which the different elements in this description are connected, and finally the meaning is interpreted. Additionally, iconology can be used to relate these meanings to the cultural context (Altena, 2003, p. 25). This last part is significant as the photographs were not only of importance to the artist or photographer, but also to commissioners and other viewers. To prevent fallacies in the analysis, this research focuses on the representation of building sites rather than reconstructing the reality of building sites. It is not possible to derive a 'reality' from photographs, as the histories encapsulated in photographs are constructed by the photographer (Burke, 2001, p. 21-22). Moreover, the photographs have been selected by the archive which adds another layer of subjectivity to the histories represented in them.

Reading guide

The analysis will be divided into three sub-sections. Firstly, the formal aspects of the photographs are analysed. For this analysis topics such as framing, colour, movement and information on the photographers are of importance. The question answered in this section is: What are the formal conventions of building site photographs from 1890-1920?

Secondly, the analysis focuses on the content. Examples of topics that will be discussed are on the one hand clothing, gender, composition of people and on the other hand tools, materials and machines. Resulting is an answer to the question: How was construction work represented in the building site photographs from 1890-1920?

Thirdly, the use or publication of the photographs is discussed. Only a small amount of information on this topic can be derived from the photographs themselves. For this reason the available information will be contextualised by other sources, such as journals from the time. The question answered in this section is: What was the context in which the building site photographs were used or reproduced from 1890-1920?

Chapter 1 Formal conventions

Photographic conventions influence the choice of subject matter and the manner of portrayal. The origin of existing conventions around the turn of the nineteenth century can be traced back to several causes, including the technological state of the medium, the traditional arts, the photographers and their education. Within the genre of building site photography, these causes led to certain conventions in framing and composition.

1.1 Technological development

Before investigating the photographs, it is important to understand its technological development. In 1839 the daguerreotype, or "lichtteekening" in Dutch, was introduced (Peeters, 2000, p.12). In this process silver-plated metal was used to produce very sharp images. However, a downside of the daguerreotype was that it could only produce positive images. For this reason the invention of the 1841 calotype was of importance. It used paper negatives that made production of multiple positives possible (Ackerman, 2001, p.1). Later, the paper negatives were replaced by glass negatives. These were smaller sized negatives with higher image quality (Pare, 1982, p. 13-15). At first negatives had to be coated right before exposure, but eventually prepared dry plates allowed photographers to take photographs outside of the studio and develop them later. The celluloid roll film by Eastman-Kodak, introduced in 1888, marked the start of amateur photography. Another important development was the reduction of the exposure time from hours to less than a second (Altena, 2003, p. 42). By 1890, technological developments had made photography into a versatile and accessible medium.

1.2 Photography and art

During the nineteenth century amateurs and artists developed an interest in photographing building sites. Visual representations of the building site have been made from ancient times until the present. Therefore, it was no surprise that photography would continue this tradition. Examples of these amateurs and artists are respectively Jacob Olie and George Hendrik Breitner. Both took photographs of life in Amsterdam, with Olie focusing on his interest in the built environment in his lively photographs (figure 1, Klinkenberg, 1974, p.155). Breitner captured Amsterdam in a dynamic way, not only focusing on buildings but also on the movement of people in the city. Pictures by other photographers of the same projects, such as the Berlage stock exhange, are found in the catalogue (figure 4 and image 34). Breitners' photographs also served as a basis for his paintings (figures 2 and 3; Heijbroek & Schmitz, 2014).

Art of the time relied on the same formal conventions that are usually contributed to photography. However, as argued by art historian Peter Galassi, these conventions of portraying "the mundane, the fragmentary, the seemingly uncomposed", were already present in the traditional arts before the invention of photography (1981, p. 28-29). Breitner's art is an example of this realism, including his paintings of building sites. These conventions were not present in traditional art, which was more balanced in composition and monumental in subject matter (Galassi, 1981, p. 28-29). The technical limitations of photography made it impossible to follow in the footsteps of traditional artists. Instead, photographers would share these newly arisen conventions and use them to their advantage when documenting day-to-day scenes.



Figure 2 G.H. Breitner, Construction site Raadhuisstraat in Amsterdam with steam powered pile driver, 1895-6 (?).



Figure 3 G.H. Breitner, Construction site Raadhuisstraat in Amsterdam with steam powered pile driver, 1898.





1.3 Commercial photographers

Next to more well-known amateur photographers such as Olie, the majority of building site photographs were taken by commercial photographers. In the second half of the nineteenth century only a relatively small group of people had been able to make photography their full-time profession (Rooseboom, 2006, p.119; Van Venetië & Zondervan, 1989, p.13-14). Photographers would often combine different types of work, both in- and outside of their profession. At least until 1890 commissions for construction sites took up only a marginal part of their work (Rooseboom, 2006, p. 330).

At the time there was no institution where photographers were taught, but about a third of them had studied either at an art academy or in an atelier. Others were most likely taught by experienced photographers (Rooseboom, 2006, p. 311-312). As a result, it can be stated that some formal conventions were transmitted from existing practices in art academies or ateliers. When investigating conventions in the catalogue, the photographs can be divided into two categories, distinguishable by framing and subject.

Image 90 Page 89



Image 97 Page 96



1.4 The building site as a whole

The first category consists of photographs with wide framing that show most of the building (site) at once. Within this category photographs are usually set up at eye level or from a high point of view. Some focus on the building itself, while others show the development within the context of the city. The figures in these images are not an integral part of the composition, but they do provide a sense of scale and added contrast.

Different images within one archival entry indicate that formal characteristics are related to the artistry of the photographer as well as the circumstances they worked in. Photographs such as image 90 display a balanced compositions with clear contrasts. The chaotic timber frameworks are formed into a balanced composition, owing to the framing of the walkway between two corners of the photograph. Still, in this collection there are photographs such as image 97 that are unclear in their subject. This photograph, possibly taken from a roof, has the horizon set at two

thirds of the frame. In this way, the finished roof surfaces take up a large portion of the frame, while the construction site is only shown in the borders of the image. Even though their cameras did not allow them to make balanced compositions, photographers would take these kinds of photographs develop them. These facts indicate the importance of documentation in their work.

1.5 The fragmented building site

The second category contains photographs that show parts of the work at the construction site in a closer framing. Comparable to photographs in the first category there is variation in viewpoint, in this case including eye level and lower points of view. In contrast to the first category, people can be an integral part of the composition. Other points of focus in the compositions are materials and actions.

Within this category the technical qualities of the camera are used to the photographers advantage A number of photographs such as image 109 have a very balanced composition, with carefully arranged lighting and contrast. In this image the lines of the beams and the columns and arches of the supporting walls create colliding patterns that filter the light that would otherwise be too bright. In image 4, people on either side frame the central figure who performs the most significant action. Even though there is another centred figure, he could be considered less relevant as he is out of focus.

As seen in the last category, the desire to document all works at the building site can cause unbalanced contrasts and compositions. This is shown for example in the collection of De Utrecht (image 112) and in the photographs of the stonework in the stock exchange by Cuypers. Many of these photographs are not straight and do not have the subject centred within the frame (image 68). Moreover, the people in these photographs they are often cut out of frame (image 65).

When looking at the photographs from the HNI archive, it becomes clear that they were most likely made in a commercial context. The framing and composition display an attention to both aesthetics and documentation that are likely for professional commissions. On the one hand these photographers took wide framed photographs showing the full building site. On the other hand photographs with closer framing show either the people and work or materials. Within both types the quality of photographs varies. This was most likely a result of the circumstances at the building site and wishes of the commissioner to document certain aspects. Additionally, it could be a sign of lacking education, flawed technology or it was a conscious choice made by the photographer.

Image 109 Page 108



Image 4 Page 42



Image 112 Page 111



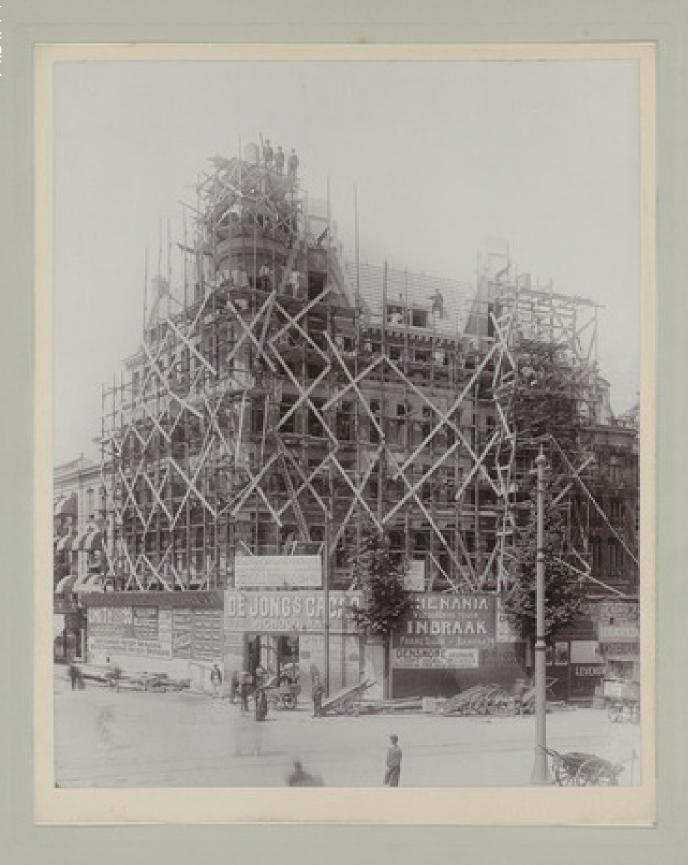


Image 113 Nicholaas Schuitvlot, Office and warehouse "De Utrecht" at the Damrak in Amsterdam, 1902-1905.

Chapter 2 Representation of construction work

Building site photographs do not only show the building itself, but also the work that was put into these buildings and how this work was organized. At the end of the nineteenth century the shift from guilds to a company structure had resulted in a new hierarchy. At the top of this hierarchy was the architect, followed by the engineer, the contractors and finally the labourers (Lintsen, 1993, p. 193). The main contractors worked on the carpentry and masonry, while their subcontractors would handle other works (Lintsen, 1993, p. 209). In spite of these changes the Dutch building sites were conservative and slow to change (Oosterhoff, 1988, p. 1). As for the materials, both traditional and new ones coexisted in the late nineteenth and early twentieth century. Custom or serial materials could now be ordered from drawings or a catalogue, and be produced in factories (Lintsen, 1993, p. 194). Consequently, the role of traditional craftsmen was reduced. With this context in mind, a selection of photographs is investigated to interpret how they represented construction work. This analysis is divided up into parts, showing the different aspects of the work represented.

2.1 The changing city

The photographs represent the building site as a space of change and modernity. The growth of cities around 1900 resulted in large-scale renewal, for example in Amsterdam. Firstly, this is represented by the possibilities new buildings can bring. Image 108 presents an empty plot of land at the Damrak in Amsterdam. One of two buildings of De Utrecht, designed by J. Staal and A. Kropholler, has already been built. However, the centre of the photograph is empty, with signs of an earlier building that has been demolished. In contrast to many photographs taken during the time, the main subject is the context in which the building will take its place rather than the building itself.

The other way in which the photographs represent the changing city, is by showing the site within the context of city life, such as image 113. This photograph was taken from street level and displays the building site of Hotel Palais Royal, designed by the same architects as De Utrecht. Similar images in the catalogue can be found at the Cuypers (image 82-84) and Berlage (image 41 and 56) stock exchanges. By showing the building site in relation to existing buildings and to day-to-day life, these photographs represent how building sites can generate renewal that affects both the people and the built environment.

2.2 Mechanization

Mechanized tools such as mortar or concrete mixers, tackles or cranes were available, but are rarely presented in the photographs. Concrete mixers were commonly used at building sites around the time. However, these mixers are not visible in any photograph. Contractors were even more conservative in taking on new technologies for transport. These were deemed too expensive, and they were only applicable for a limited amount of works. One of the few transportation tools used around the time is visible in multiple photographs: the (Weston) differential pulley. Heavy elements could be lifted and hung, resulting in a quicker assembly of the building. Photographs such as image 60 and 112 show the wooden legs, chains and pulleys (Lintsen, 1993, p.225-227).

Steam-powered machines appear for example in image 30. At the stock exchange from architect H.P. Berlage, labourers are shown fastening a rope that

Image 108 Page 107



Image 113 Page 112



Image 30 Page 54



Image 24 Page 51



Image 100 Page 100



Image 94 Page 93



3. The amount of involvement of Berlage in the project is contested. For more information see Bergeijk, 2014.

Image 10 Page 45



leads to a three-legged wooden pile driver ("Hollandse heistelling") that was steampowered by a traction engine. This type of pile driver was used from around 1860 (Lintsen, 1993, p.225-227). The buildings in the background, including Amsterdam Centraal station, and the labourers are tiny compared to the machines. In this way, the photograph is able to capture the enormous size of the works that could be achieved with new machines. The only other images with steam-powered machines are from the Jachthuis St. Hubertus, also designed by Berlage. However, the steam locomotives image 24 were a very site-specific technology. They would transport materials to and from the secluded building site (Stichting Het Nationale Park De Hoge Veluwe, 2017, p. 43). In both cases, the photographs represent how industrial machines are being introduced at the building site.

2.3 Materials

Two traditional materials, brick and timber, are present at almost all of the pictured building sites. Timber was often shown as a scaffolding material (image 92) and in roof structures (image 8). The roofs were pictured at smaller building sites, where they were already largely assembled. Bricks, now mechanically produced, are visible in walls and arches (image 35). Rather than only showing finished structures, the camera has captured the process of brick-laying. In image 100, for example, a mason is standing still, brick and trowel in hand. On the left side is a brick wall with an arch propped by a piece of timber, in the middle the same type of arch is being laid by the mason, and on the right there seems to be a formwork for a larger brick arch in place. These materials were still widely used at the time. Especially at smaller building sites, the photographs focus on the assembly of brick and timber. On the larger building sites, however, this focus shifts towards more towards innovative materials.

Around 1900, reinforced concrete had become a more established material in the Netherlands. The material is pictured in image 80: a close-framed photograph showing the reinforced concrete walls in the stock exchange by Joseph Cuypers. To produce this new material, a number of specialised Dutch companies were founded such as De Kondor (Het Nieuwe Instituut, 2000, p. 7; Oosterhoff, 1988, p. 26-27). One of the photographs produced for this company is image 94 (De Kondor, 1918-1921). In this photograph the bel étage floor of the Koloniaal Insituut, designed by J.J. van Nieukerken, is visible. A panel with the company name is noticeable behind the labourers who are tying the steel reinforcement. Similar panels are shown in other photographs (image 122). These photographs emphasize both the importance of the technologies and the companies that make them available.

A unique type of innovation in concrete is pictured in image 9 and 10. This concrete house in Santpoort was designed by engineers Henry J. Harms and George R. Small, artist Herman Hana and architect Berlage.³ It was the first fully concrete house that was cast in-situ in the Netherlands, possibly in the world (Bergeijk, 2014, p.176). The sequence of photographs shows both the cast iron formwork for the house and the concrete structure revealed from behind this formwork. When comparing it to other images of the time, it is missing traditional elements such as scaffolding and brick. Besides, these photographs do not show any work being done even though construction of the 2600 formwork pieces would have required a lot of manpower (Bergeijk, 2014, p.179, 184). The main aim of these images was to capture the material properties before they would be covered in a layer of plaster.

Several projects in the photographs apply large iron elements. Constructions of this type started appearing in the Netherlands around 1840 (Oosterhoff, 1988, p. 7). A later example are the arched trusses in the Berlage stock exchange from 1898-1903 (image 36, 37, 38 and 47). Another type are the iron floor joists (image 20, 52 and 110). These were often used from 1875, combined with timber floors or vaulted floors in brick or concrete (Oosterhoff, 1988, p. 18). In the photographs, however,

the joists are only visible before the rest of the floor was constructed.

Besides innovative materials, a remarkable appearance is made by natural stone. Thirteen photographs in the archive of the stock exchange of Cuypers show various natural stone ornaments. Other photographs include natural stone as well, but not in such an extensive manner (image 54). During the time there was a revival in the use of natural stone, made easier by modern production techniques (Lintsen, 1993, p. 217). It is unclear if these techniques were used here. Nevertheless, the fact that natural stone was only used in representative buildings demonstrates that it was a significant building material. On the white stones in image 67, codes containing letters and numbers are visible, most likely used to determine the placement of the stones. Even though the masons are sometimes proudly depicted with their products (image 66), in other occasions they are scrambling to get into frame (image 72) or not even visible until closer inspection (image 63). Hence it is probable that the masons are only in frame to keep the ornaments stable. The photographs were most likely used during the build to document the variety of materials.

Image 67 Page 76



2.4 Labour

When labourers and their work are presented in the photographs, their stances are often staged and their work is halted. An example is the group portrait with many labourers in image 102. This brick house in Warnsveld was designed by A.R. Hulshoff and A.A. Kok Remarkably, there are a lot of labourers visible on this smaller site. Eight people are on the ground level, holding several tools and building materials. One person is standing on top of the ladder, and another ten people are standing in and on the roof structure. In many photographs the labourers are presented in a similar staged way, whilst being spread over the building site as they would be when working (image 4, 106 and 107).

Occasionally labourers in the background are captured while working, for example at the warehouse Hirsch & Cie (image 119) and the houses in Arnhem (image 1) and Voorburg (image 100). All three show labourers working with traditional building materials, namely brick and timber. In image 1 the whole building site is visible, with different labourers working on the timber roof structure. A closer framing is provided in image 100, where three masons in the background are hunched over, laying bricks. As seen here, in many photographs there are only labourers working in the background of photographs.

Only in a few photographs, including image 60 and 61, the work and movement of the labourers is central to the composition. On the building site of the new stock exchange by Cuypers, labourers are hoisting up a large stone lintel with a differential pulley. As stated previously, at the time new tools for lifting heavy building elements were rarely used. This lintel was placed above a side entrance in the base of the facade on the Beursplein (figure 5). However, it could not have been as important to the architecture as the lintel above the main entrance, which would have been hoisted up in a similar manner. The ensemble of people, materials and machinery and the fact that there are two photographs of the process, make clear the aim was to document this method of assembly rather than the stonework. Additionally, this is one of the few photographs where moving figures were pictured. Motion resulted in a blurred effect. Whilst artists such as Brietner used this frequently, commercial photographers or commissioners might not have appreciated it.

Image 102 Page 102



Image 1 Page 40



Image 60 Page 72





Figure 5 Unknown photographer, Stock exchange by Cuypers in Amsterdam, 1915.

2.5 Hierarchy

Throughout the photographs, several types of workers are shown. As noted, the stock exchange by Cuypers includes stone masons with their long white coats. Other specialised types of labour shown are brick laying (image 100), the placing of reinforcement (image 94), and the construction of timber formworks (image 92). A large part of the labourers, such as the porters, diggers and those working on the pile drivers (image 21 and 25), would have been untrained (Lintsen, 1993, p. 193). Apart from the stone masons, all labourers are wearing similar, stained clothing including flat caps and wide pants, blouses or overalls.

The difference in hierarchy becomes clear when looking at the clothing worn by architects, engineers and contractors. They are wearing bowler hats or top hats and two- or three-piece suits with polished shoes and a tie or pocket watch (image 81 and 117). Additionally, these people never perform manual labour. Usually they are standing around, watching the labourers work or looking at documents.

The hierarchy that is expressed by the clothing and work, is affirmed in the stances and composition of the people in the photographs. In image 60 and 61 a suited man is standing on the same level as the labourers and is looking intently at the tackle. A detail as subtle as the fact that he has his hands on his waist, adds to the fact that he has a superior position and is not involved in a hands-on manner. In image 100 a similar contrast is visible, with the brick mason and two suited men. One of the men is standing confidently on a ledge with his hands in his pockets. The mason, for example, would have never taken the stance of the man on top. Judging by their clothing and their stances, the man in the highest position is also figuratively highest in ranks.

Image 10 Page 45 [cropped]



Just one photograph in the catalogue shows a woman being present on site (image 10). The fact that she is pictured with men such as the architect Berlage, shows that she was in some way related to the architects or engineers through her work or personal life. However, her hidden position in the corner of the window frame implies her inferior role in the process. At the time, women were generally still seen as homemakers and unable to participate in paid labour and science. In architecture there was a similar barrier for educated and uneducated women to enter the profession (Smeets-Klokgieters, 2017, p. 49-51). The absence of women in the photographs can thus be seen as a representation of the composition of the workforce

at the time.

Analysis of construction work in the photographs shows how factors such as materials, clothing, tools, and composition construct a story about the organization of the work. Both the process of construction and the relations between people are represented. Even though innovation at the building site was limited, the photographs do represent change and modernization regarding machines, tools, materials and in the city. More traditional parts that are widely represented are timber, brick and natural stone. The first two are mainly focused on at smaller building sites, where no steel or concrete was applied. Another characteristic represented is the hierarchy of work, with a clear distinction made between on the one hand labourers and on the other architects or contractors. For many photographs, the representation of the work done by both groups is staged. Labourers are sometimes shown while working when they are in the background, but rarely as central figures.

Chapter 3 Use and reproduction

In addition to the content of the photographs, information on their use is embedded in their historical context. There was a set type of commissioners and photographers involved in the production of building site photographs. Along with these commissions came certain conventions of use and reproduction, including the way photographs were printed and stored. Additionally, on some occasions photographs from the archives were used in other, more public, contexts. Examining the involved parties, the mountings of the photographs and their reproductions can provide information about the people by whom they were commissioned, produced and used.

3.1 Commissioners

Production of building site photographs was led by commissions. From the viewpoint of the photographers, these types of photographs were profitable because clients often wanted larger formats and more prints than they would for portraits (Rooseboom, 2006). One group of early commissioners were individual architects, but another important group were the government engineers. Their commissions focused on the one hand on the building sites of locks, bridges and canals, and on the other hand on demolitions of buildings. These photographs were principally aimed at documentation of past cultures or future technologies. In this way, as stated by Van Venetië & Zondervan, the government contributed to the acceptance of photography as a documentary medium (1989, p.9).

As a result, cameras started appearing more frequently at construction sites. Eventually, documenting the building process even became mandatory (Van Veen, 2016, p. 19). As reviewed in the previous chapter, building site photography from HNI reflects this development. However, there are little photographs from between 1890 and 1900, most likely due to the limited amount of material in the HNI archives. In these times the genre should have already been active, owing to the work of photographers such as Jacob Olie, Pieter Oosterhuis and Gustaaf Oosterhuis (Van Veen, 2016). Besides the photographs of the architects' own buildings, their archives include historical buildings or travel images which they used for inspiration.

Judging by the photographs found in the archive, photographers could be hired either to document a full building process or sections of it. However, many photographs do not include dates or photographers' names, which leaves only the photographs and their mountings to be analysed. As for the stock exchange by Cuypers, photographs from different stages in the building process have a similar distinctive high contrast and borders. Most likely, these were made by the same photographer. At the time, regular collaborations between the same architect and photographer were a rare occurrence (Van Venetië & Zondervan, 1989, p. 11). Differences between photographers' work is visible within projects (Stock exchange in the Berlage archive) and within the architects' archives as a whole (Stock exchange in comparison to St. Laurentiuskerk, both in the Cuypers archive). All of these photographs are of varying quality and have been mounted on differently coloured and decorated cardboard.

3.2 Mountings

A part of the photographs has been mounted on a thick paper or cardboard. With the most common method of printing during the nineteenth century, the albumen print, this cardboard was needed to prevent the thin paper from curling up (Rooseboom, 2006, p. 244). The mountings range from very simple (image 28) to highly decorative (image 112), and from small borders (image 86) to larger



Figure 7 Frederik Nienhuis, Construction site bird house in Artis Amsterdam, 1910.

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Figure 6 N.V. Vereenigde Fotobureaux, Women and children in sewing atelier, n.d.

ones suited for albums (image 21). Within the digitized collection of HNI, some mountings might have been cropped from the scan. Still, it is clear that photographs such as in image 114 but also 101 and 120 were left unmounted. These photographs were most likely printed using another, less fragile method.

3.3 Signatures

A possible way to know by whom the images were made, is to look at the signature of the photographer. Similar to the convention in art, photographers often proudly signed their work. The majority of signatures were scratched into the negatives or applied to the printed photographs or mountings (Van Venetië & Zondervan, 1989). The latter has a lesser value when determining authenticity. These signatures on the cardboard were applied as an ink stamp or as an imprint into the cardboard. Some photographers published their own photographs, but in later years they were more and more organized in publishing companies (Van Venetië & Zondervan, 1989). For this reason companies would use similar stamps to publish all of their photographs. In the larger publishing companies with multiple photographers, authorship is more difficult to establish.

Stamps from four different photographers can be found in the catalogue, confirming that photographs were taken by companies and independent photographers. For image 102 this is an ink stamp directly on the back, stating: "B.J. Hoetink; Photograaf; Warnsveld". B.J. Hoetink (1876-1960) started as an apprentice in a bakery, but later took on painting and photography. It is unknown how he was trained as photographer. Another independent photographer took image 112: "F. Nienhuis; Photograaf; Gerard Doustraat 63; Amsterdam". No previous research has been done into the practice of F. Nienhuis (1853-1918). The same goes for the final independent photographer: Cornelis 'Corn' Tettero (1865-1933). On image 6 and 7 his coloured and imprinted stamp or sticker reads "Corn Tettero. Fotograaf. Bussum. Brinklaan 55D". The stamp of the "Vereenigde Fotobureax Amsterdam" is found in two different archive entries. On the album in Berlage's archive this had the form of an imprinted stamp with logo (image 20-25), while the separate picture from the archive of... was applied with ink (image 116). The N.V. Vereenigde Fotobureaux was a publishing company established by three photographers. As recorded in the statutes, the main aims of the company were renting and trade in photographic equipment, along with photography (Rooseboom & Van Schie, 2008). They employed their own photographers but would also trade photographs from other photographers, for example selling them to magazines.

3.4 Photographers and their commissioners

Research into the photographers shows that they were also taking on commissions outside of architecture. Despite his work as a press photographer, Hoetink is now best known for his photographs of the region Twente, praised for their careful composition (Stork, 1976). Some of his photographs were used for postcards (image 103). As for Nienhuis, the archive of the municipality of Amsterdam contains four more photographs from his hand, of which two are of a tobacco auction, one is an exterior photograph of a Hogere Burgerschool and the final one is also of a building site (figure 6). The N.V. Vereenigde Fotobureaux is now best known for documenting the First World War from a Dutch perspective (Rooseboom& Van Schie, 2008). However, their subjects varied and the exact same mounting as image 20-25 can be found on photographs from other archives, such as those taken for the Dutch labour inspection (figure 7). Concluding from these differences in subjects, the building site was not the regular place of work for photographers.

The varying appearances of photographers within the architects' archives supports the idea that they would not have a regular collaboration with one

photographer. Hoetink was based in Warnsveld, the location of the building site that was pictured. Architects working from Amsterdam such as Hulshoff and Kok would hire a local photographer. Similarly, Tettero worked from Bussum where he photographed country house Pasadena for Koninklijke Fabriek F.W. Braat N.V. This was a company from Delft specialized in decorative ironwork, window frames, and heating systems.

3.5 Use and reproduction

The uses of documentary photographs were various. One possibility is the informative or commercial publication in magazines. The invention of halftone process for printing in 1882 enabled the reproduction of halftone photographs alongside text. This technique slowly started replacing wood engravings and drawings in Dutch magazines (Altena, 2003, p. 47). Contractors would use photographs in advertisements, for example figure 8. Besides, photographs of projects from the Netherlands and abroad were published in magazines such as Bouwkundig Weekblad to introduce readers to new buildings and building technologies (Lintsen 1993 p. 202). It is not a surprise that the concrete house in Santpoort was included in the 1911 issue of Architectura (figure 9 and 10). Photographs in this article are different from those in the HNI archive.

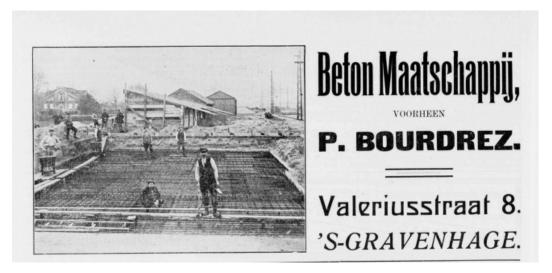


Figure 8 Beton Maatschappij, Advertisement Bouwkundig Weekblad, 1908.





Figure 9 & 10 Cast concrete house in Santpoort, Architectura, 1911.

One instance in which the HNI photographs can be found in a reproduction, are newspaper clippings ifrom the archive of Berlage. Newspaper articles would update citizens on progress made in construction, in this case the hoisting of the stock exchange bell (image 42; figure 11). More so than technichal drawings, photographs could inform regular citizens on processes at the building site. Still, photographs were only published selectively. Especially newspapers were only slowly adapting to the innovations in printing (Kester & Kleppe, 2015, p.7-8). As a result, photographs were mostly published when the building sites pictured had a large impact on the city or on building technology.





Image 42 Page 60



Figure 11 De Telegraaf, Hoisting of the stock exchange bell, 1928.

Another possibility is professional use by architects or contractors. When examining the photographs, a limited few of them confirm this hypothesis. The photograph of the house in Warnsveld has been printed twice: once as a regular print and once enlarged on a postcard (image 102 and 103). This postcard has been sent to the architects, Kok and Hulshoff. The sender is unknown, but this might be photographer Hoetink. As there is no note on the postcard besides the name of the project, the photograph was the most important here. Another confirmation comes from the sketches and measurements that are on the back of image 89 and 98, taken for De Kondor at the buildings site of the Koloniaal Instituut. In both cases the sketches correspond to the arches in the photographs. This means that the photographs were present at and utilized by the architects or contractors during the building phase.

Because of the lack of written documentation and widespread nature of archival material within the Netherlands, it is difficult to provide a clear image of the use and reproduction of photographs. The relationship between commissioner and photographer was not fixed, as architects would look for local photographers for each project. From visual analysis it can be concluded that commissions were made for the full building process or only for sections of it. Photographers working on these commissions were versatile, working for different commissioners and on various subjects. Their work would be used directly by the commissioners or might be reproduced in newspapers or magazines. Use of the photographs by commissioners was documentary and utilitarian. The question of reproduction depended on the innovative qualities and prestige of the project, not on the quality of work done by the photographer.



Figure 1 Unknown photographer, Stock Exchange Damrak, Amsterdam, 1898-1903.

Conclusion

The catalogued photographs show the development of Dutch building site photography between 1890 and 1920, made possible by the advancing technology of photography. The catalogue is a valuable source for research on building practice and photography. While written documentation is limited, the richness of information within the photographs themselves can be used in research. By visual analysis the knowledge on the subject is broadened, resulting in an answer to the question: What was the role of photography for Dutch building sites between 1890 and 1920?

The first step is investigation into the question: What are the formal conventions of building site photographs from 1890-1920? In the Netherlands, photographers took the building site as their subject both from personal interest and as a commercial venture. The images in the catalogue were most likely made by professionals. They had to work within the technical limitations of photography, which resulted in new conventions. However, their training gives reasons to expect at least some similarities with traditional art. These similarities are largest for art depicting everyday subjects in a fragmentary manner. The catalogue displays these subjects both in photographs that show the full building site, and those zooming in on parts of the work. However, the subjects were treated with varying degrees of carefulness in framing, composition and contrast. This was most likely a conscious decision for documentation over aesthetics.

Visual analysis revealed that photographs of construction work focus on several topics, resulting in an answer to the question: *How was construction work represented in the building site photographs from 1890-1920?* The photographs represent change and innovation in the city, mainly focussing on steel and concrete and to lesser extent on the mechanization of tools. Still, Dutch building practice was conservative. This reality is reflected in traditional materials, shown in the city centres and at rural building sites. Labourers who were working with these materials and tools are often halted or staged. When they are presented as central figures, they are rarely captured in motion to avoid a blurred effect. Besides the labour, relations between groups on the building site are also staged. This is done to show different professions, distinguishable by their clothing and tools. Moreover, the staged compositions represent the hierarchy on the building site, with architects and contractors in positions affirming their high rank.

The manner in which the photographs were preserved and published provides an answer to the final question: What was the context in which the building site photographs were used or reproduced from 1890-1920? The mountings of the photographs and the signatures on them affirm the assumption that professional photographers did not have a consistent working relationship with commissioners and that they worked on subjects outside of architecture. Further findings enliven the image we have of the photographers and their commissioners. The choice for a photographer was a practical one, as projects in different locations required architects to hire local photographers. As for the use of photographs, sketches on the photographs reveal the fact that they could be used as a tool during the design process. Additionally, sources from inside and outside of the HNI archive show how from 1890 onwards publication of photographs became more common. At the start, however, publication was limited to photographs with subjects that were innovative for the city or for building practice.

The primary role of photography for Dutch building sites between 1890 and 1920 was documentation. During the time building site photography was still in a starting

phase. Gradually, the amount of photographs and published material would increase, and the role of the photographs would broaden to the dispersion of information. This was meant for others in the profession and regular citizens. At the start, the technology of printing would be used mainly for societal, material and mechanical innovations. Even though this focus is reflected in the collection, the unpublished photographs were used to document a broader range of subjects. Recurring are representations of traditional materials, work and relations between architects, contractors and labourers. All these elements were captured in the photographs, documenting what would otherwise become invisible.

This goal of this paper was to open up a new area of research into Dutch construction history and photography. With the analysis of available academic and visual sources, this field of research has been outlined. However, as the amount of academic sources on this topic were limited there is still much more to discover. Further research could look more closely at different elements within the role of building site photography. An example is the reproduction of images in magazines and newspapers, as this subject was now only selectively reviewed. Besides the depth of the research, the breadth of the archival sources can also be expanded by taking a broader sample of sources from different (also analogue) archives. This would not only lead to more knowledge about construction history, but also to uncover more of these beautiful and fascinating photographs.

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- **Figure 2** Breitner, G.H. (1895-1896?). Construction site Raadhuisstraat in Amsterdam with steam powered pile driver [photograph]. https://rkd.nl/explore/images/206734
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- **Figure 11** Unknown photographer. (1928, May 26). De beursklok gaat de lucht in. *De Telegraaf*. https://zoeken.hetnieuweinstituut.nl/nl/archieven/file/110318846

Catalogue images

All catalogue images were retrieved from the digital archives of Het Nieuwe Instituut. https://zoeken.hetnieuweinstituut.nl/

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Catalogue





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1-3. Unknown photographer, House and gardeners house E.G. Duyvis, Zeist, 1912, Archive K.P.C. Bazel [BAZE_1467].

4. Unknown photographer, House Mej. Steens Zijnen, Arnhem, 1916, Archive K.P.C. Bazel [BAZE_1489].





5. Unknown photographer, House "Meentwijck" for H.N. de Fremery, Bussum, 1912, Archive K.P.C. Bazel [BAZE_1470].

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11-14. Unknown photographer, Buildings Godelindestichting, Bussum, 1919-1922, Archive K.P.C. Bazel [BAZE_1497].









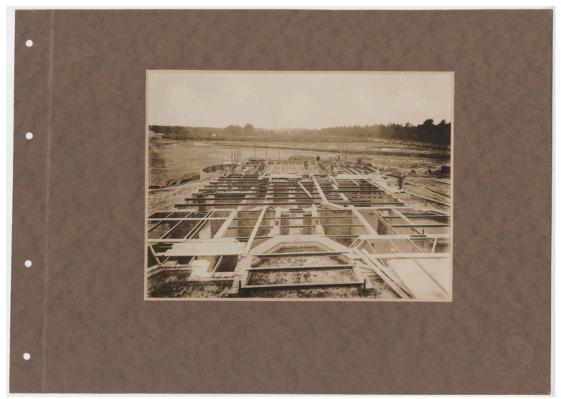


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15-19. Unknown photographer, Hunting lodge St. Hubertus, Hoenderloo, 1915-1920, Archive H.P. Berlage [BERLph1-5].

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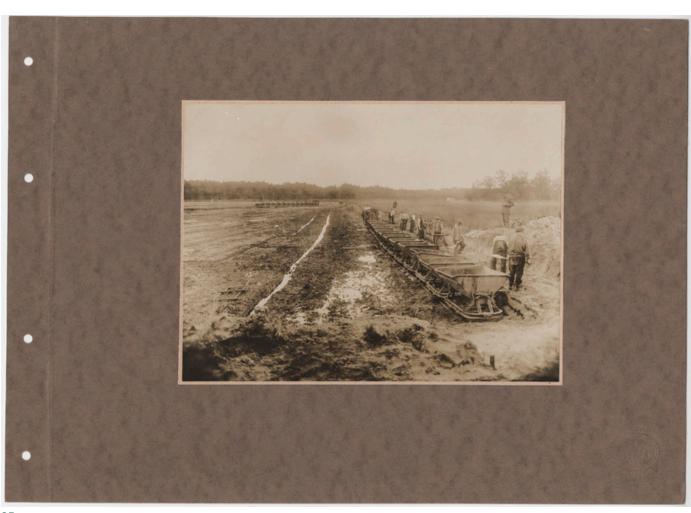


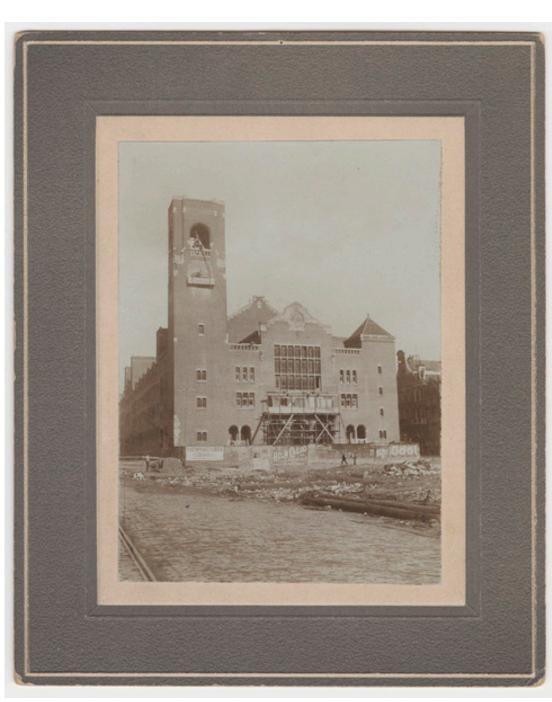














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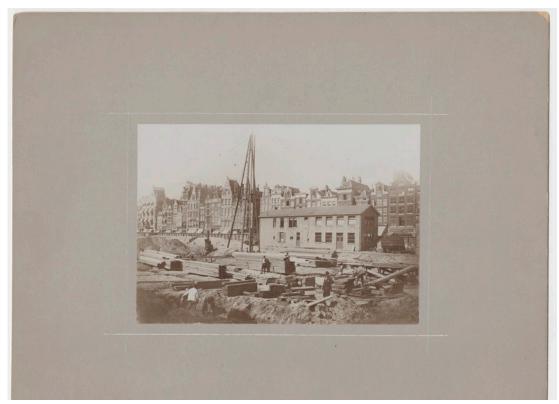










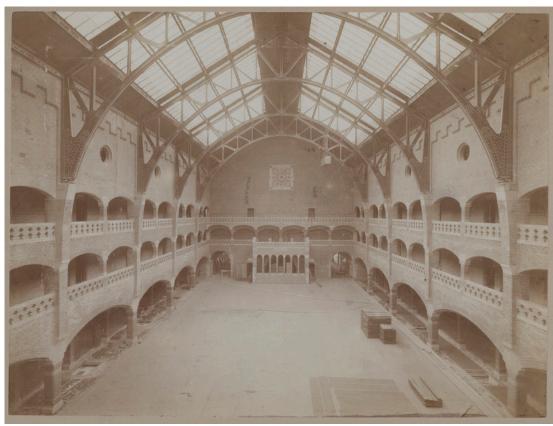


















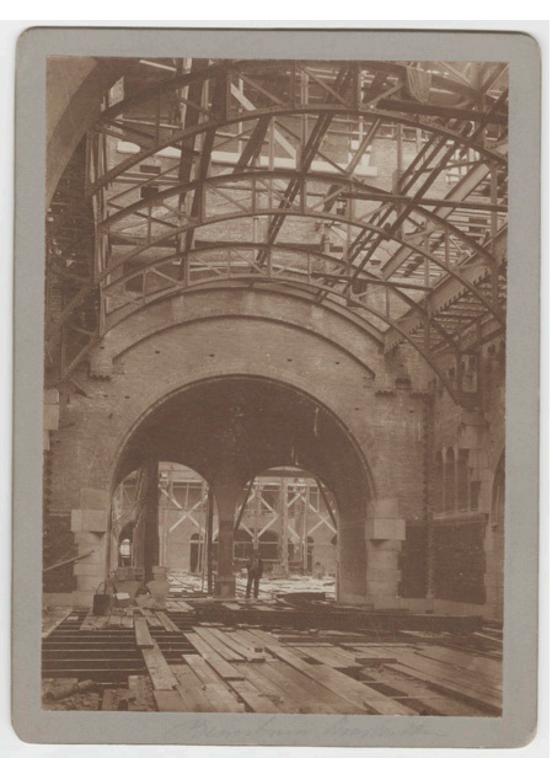










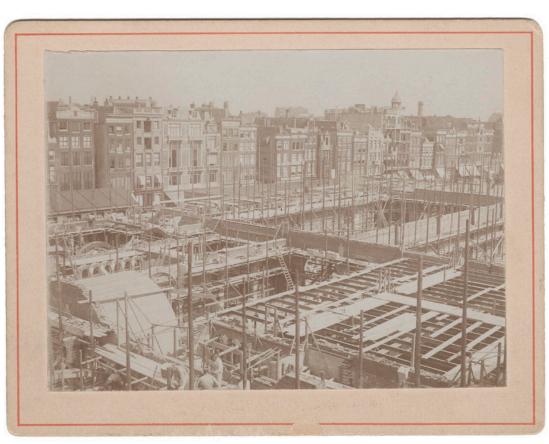


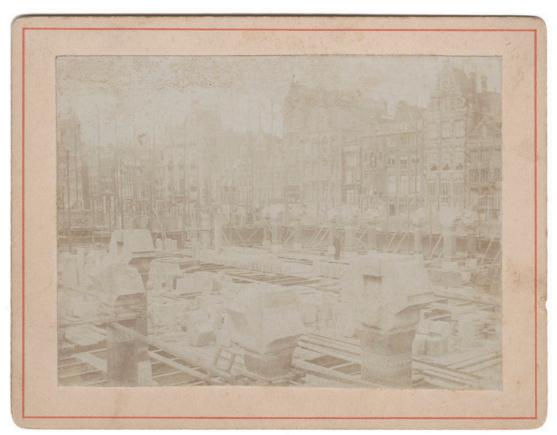








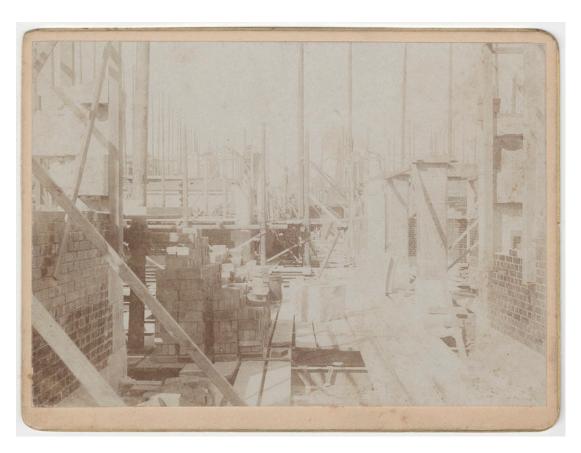






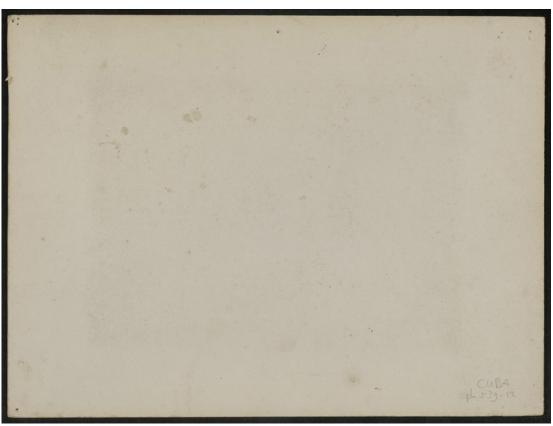






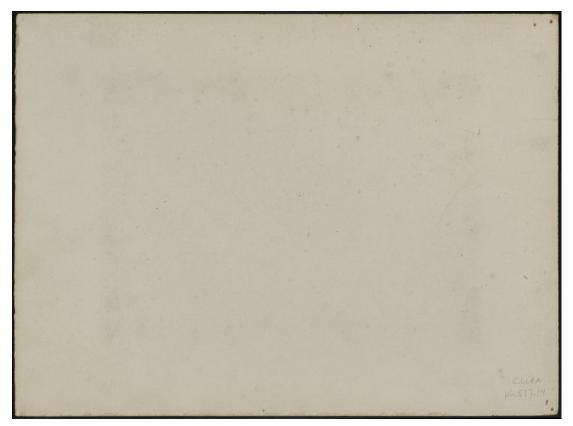


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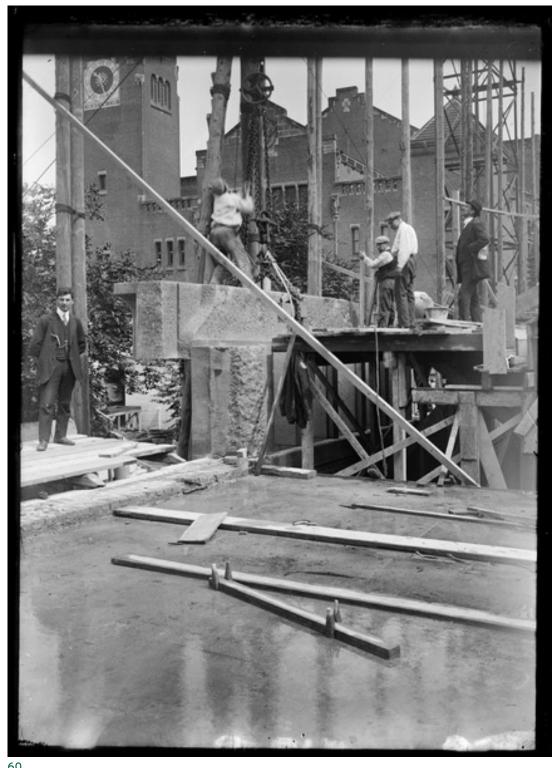




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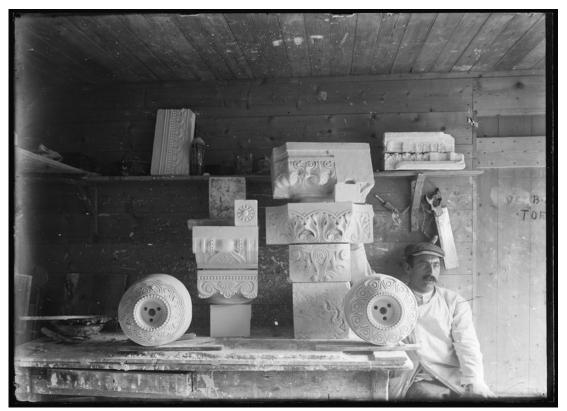


58-59. Unknown photographer, St. Laurentiuskerk with handwriting "St. Laurentiuskerk Dongen. Stand van het werk op 25-8-20", Dongen, 1920, Archive Bureau Cuypers [CUBAph537.12 and 537.14]



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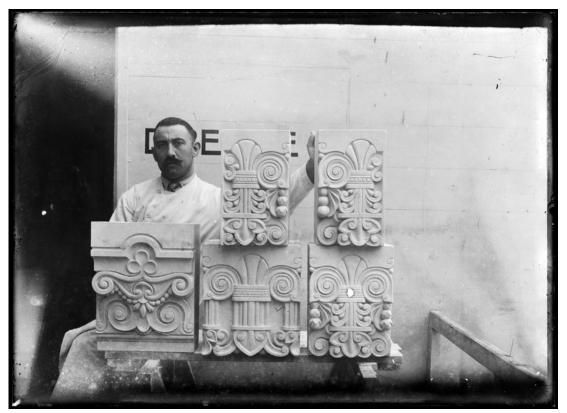


























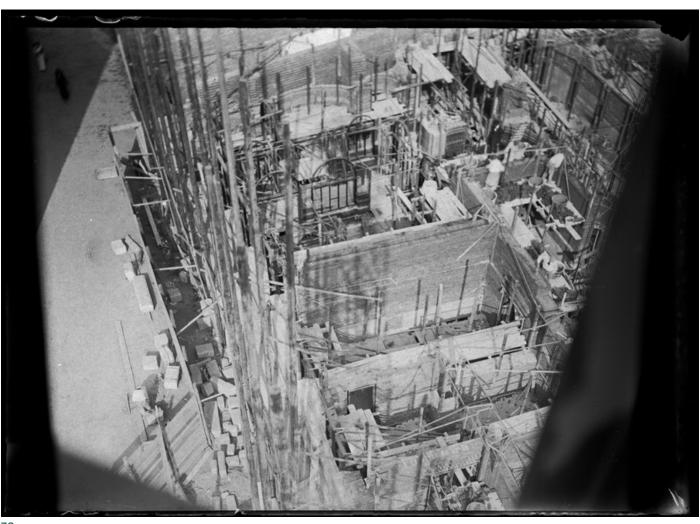


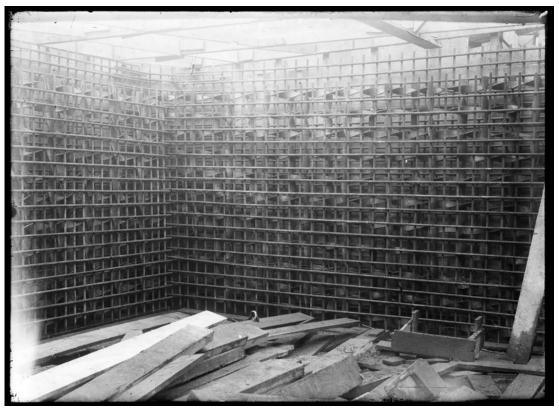










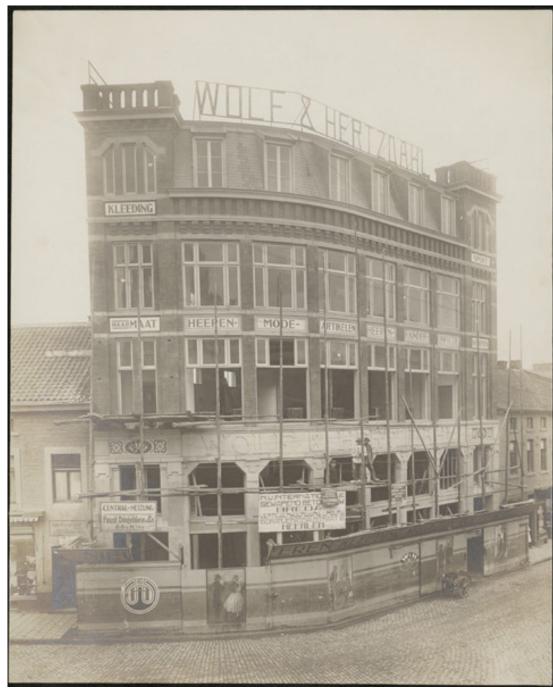








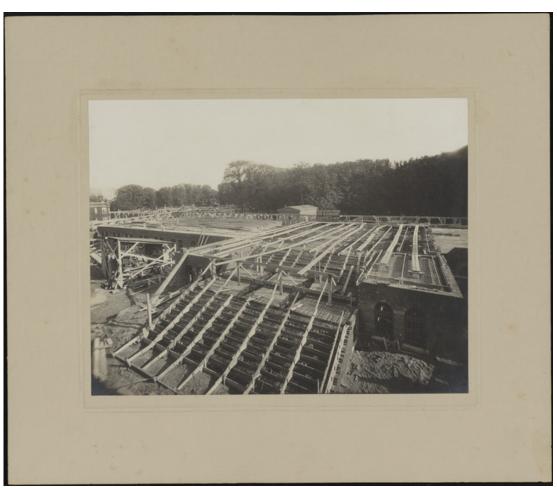


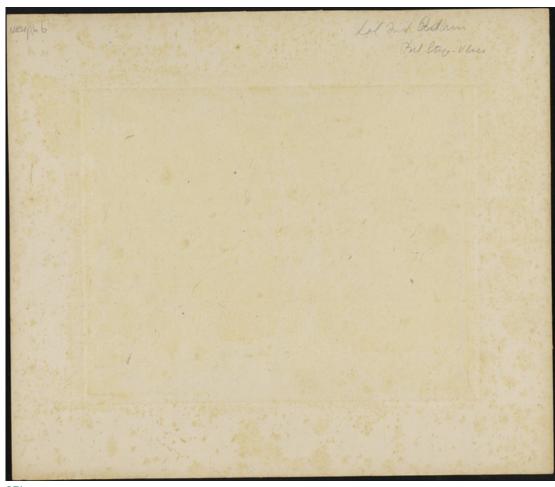


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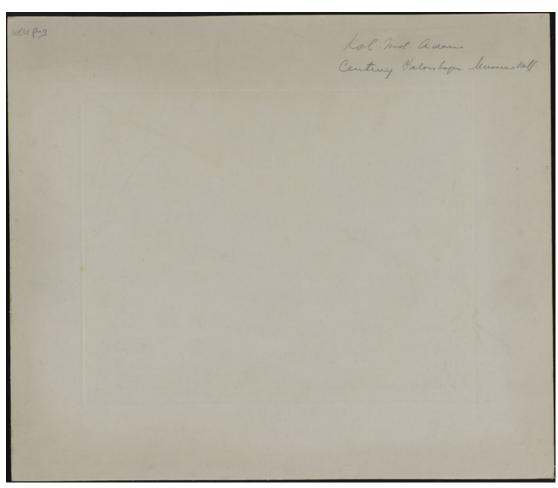








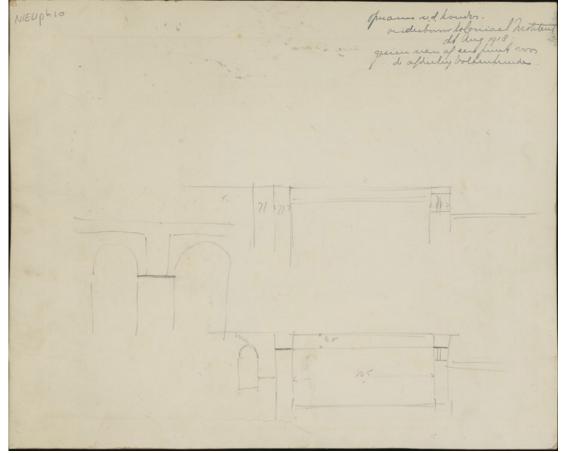
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87. Unknown photographer, Colonial Institute with handwriting "Kol-Inst. A'dam, Bel Etage-vloer", Amsterdam, 1918-1921, Archive J.J. Nieukerken [NIEUph6]

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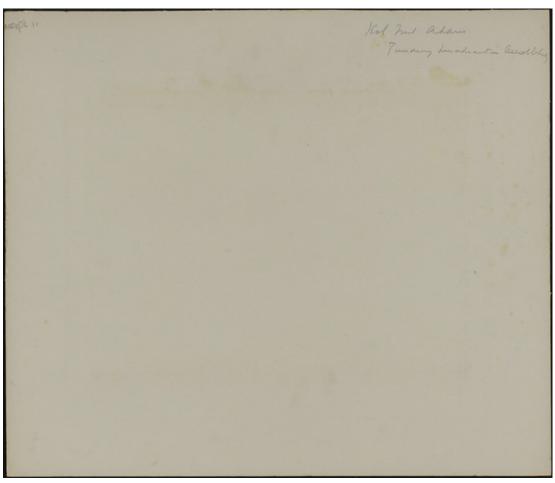




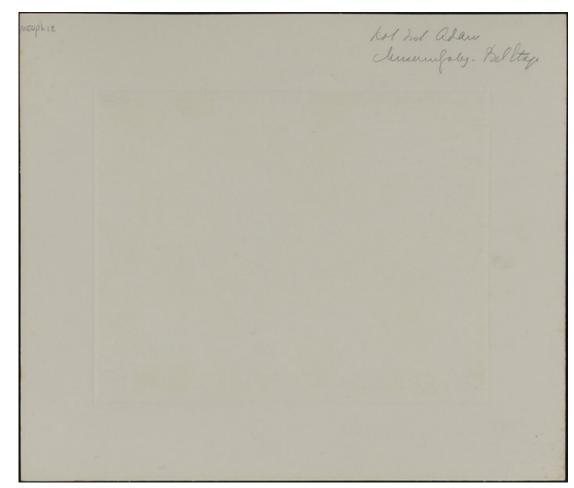
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90. Unknown photographer, Colonial Institute with handwriting "Kol-Inst. A'dam, Funderings kwadranten", Amsterdam, 1918-1921, Archive J.J. Nieukerken [NIEUph11]







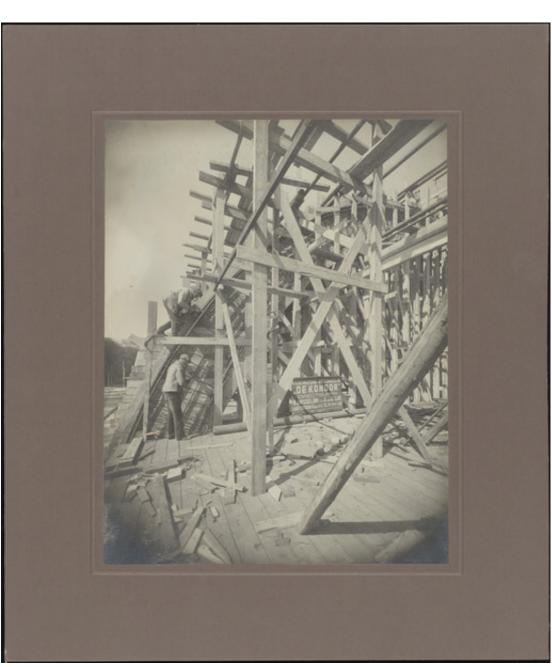


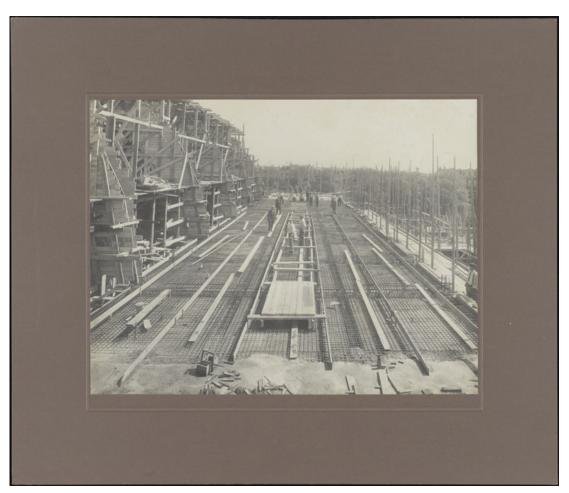
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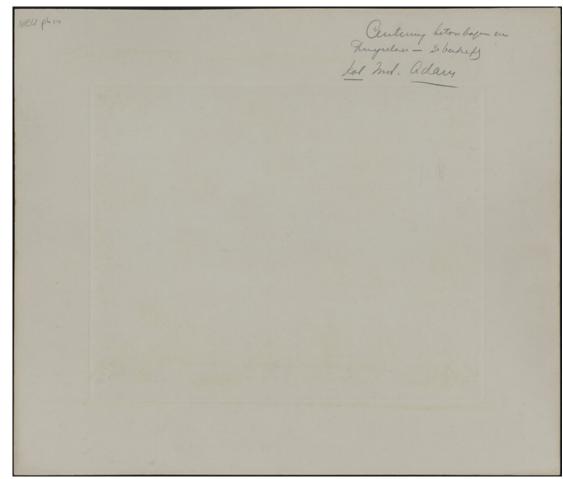
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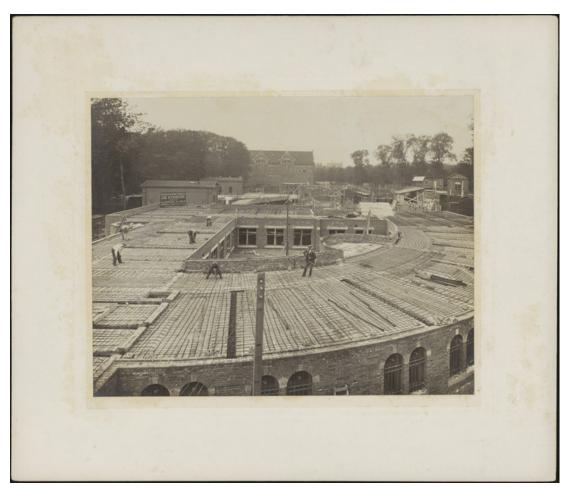




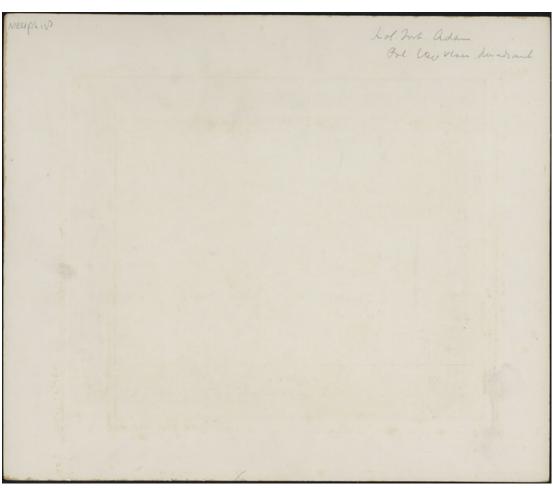


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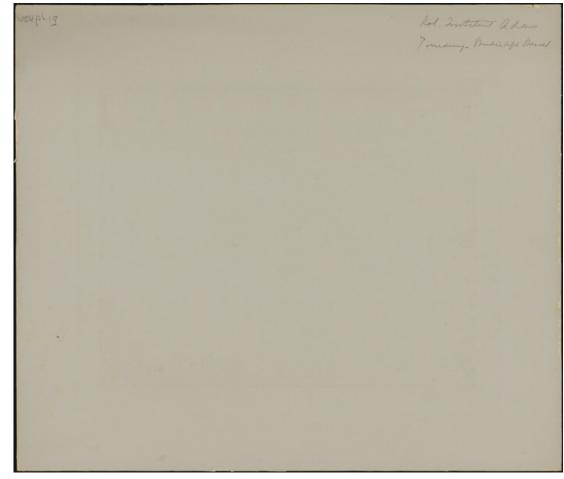
94. Unknown photographer, Colonial Institute with handwriting "Kol-Inst. A'dam, Bel-Etage vloer, kwadrant", Amsterdam, 1918-1921, Archive J.J. Nieukerken [NIEUph18]



94a



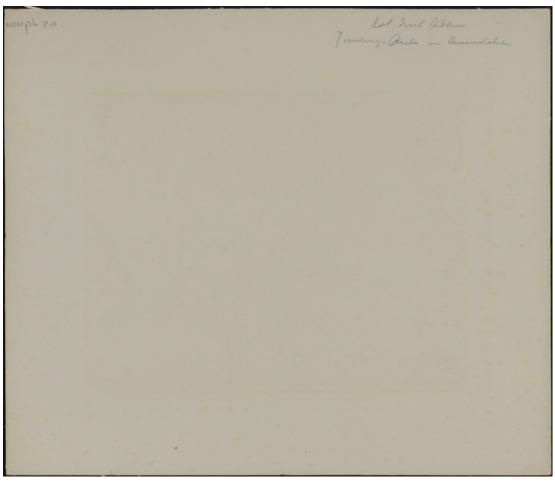




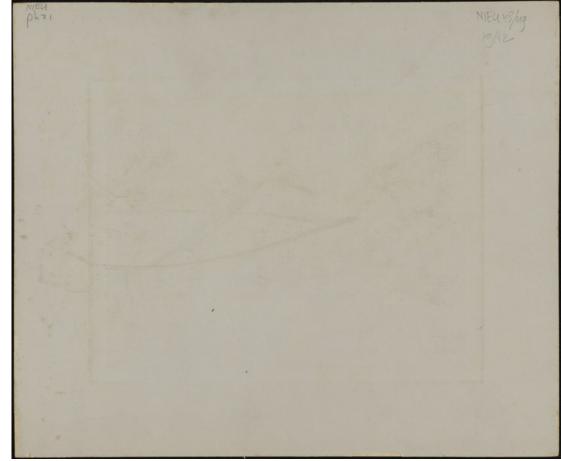
95. Unknown photographer, Colonial Institute for De Kondor with handwriting "A'dam, fundering studicafdeling", Amsterdam, 1918-1921, Archive J.J. Nieukerken [NIEUph19]

96. Unknown photographer, Colonial Institute with handwriting "Kol-Inst. A'dam, fundering Aula en lokalen", Amsterdam, 1918-1921, Archive J.J. Nieukerken [NIEU-ph20]







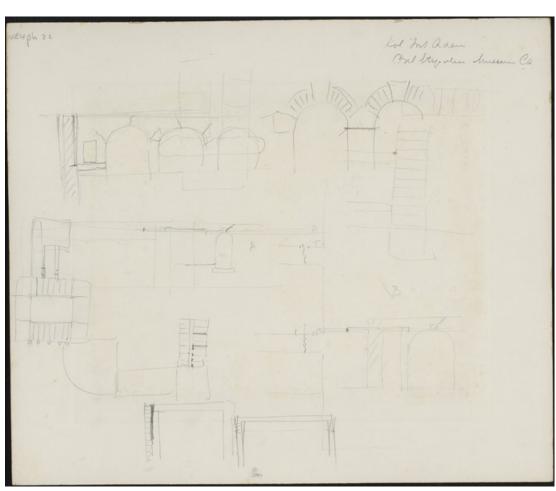


97. Unknown photographer, Colonial Institute for De Kondor with handwriting "Kol-Inst. A'dam, zicht vanuit dakraam over geheel", Amsterdam, 1918-1921, Archive J.J. Nieukerken [NIEUph21]

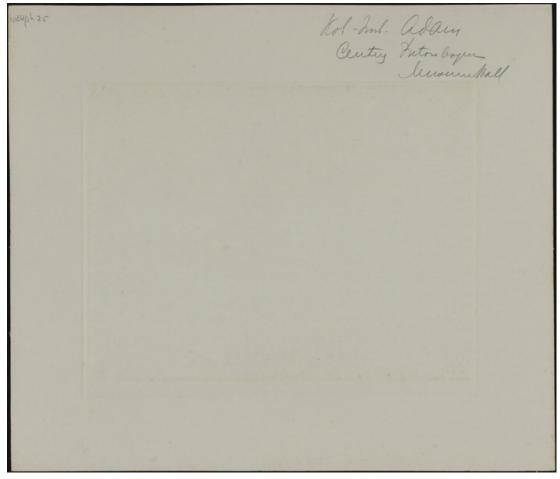
98. Unknown photographer, Colonial Institute with sketches and handwriting "Kol-Inst. A'dam, Bel-Etage-vloer museum", Amsterdam, 1918-1921, Archive J.J. Nieukerken [NIEU-ph22]



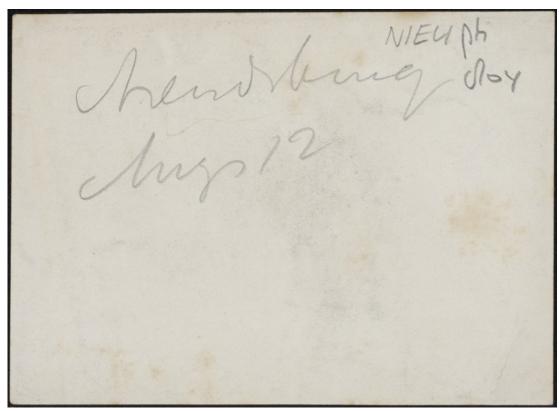
98a







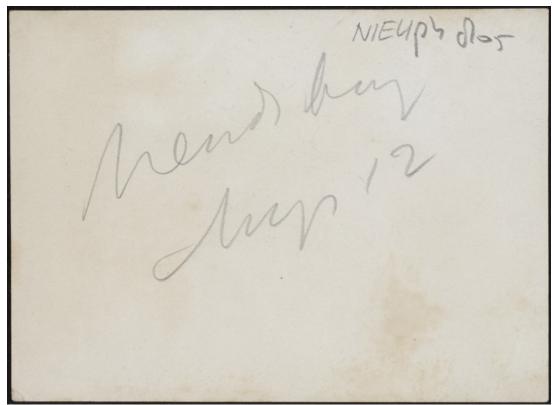
99. Unknown photographer, Colonial Institute for De Kondor with handwriting "Kol--Inst. A'dam, Betonbogen Museumhal", Amsterdam, 1918-1921, Archive J.J. Nieukerken [NIEUph25]



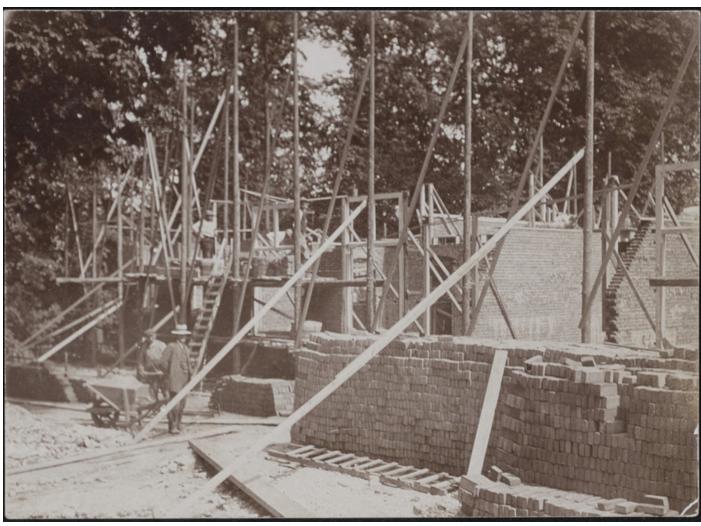
100b



100-101. Unknown photographer, Country house "Arentsburg" for family Nolthenius de Man, Voorburg, 1912, Archive J.J. Nieukerken [NIEUph804-805]



101b





102b





103b



102. B.J. Hoetink, house, with stamp "B.J. Hoetink; Photograaf; Warnsveld", Warnsveld, 1913, Archive Kok, A.A. and Kok, Y. [KOKAph1885]

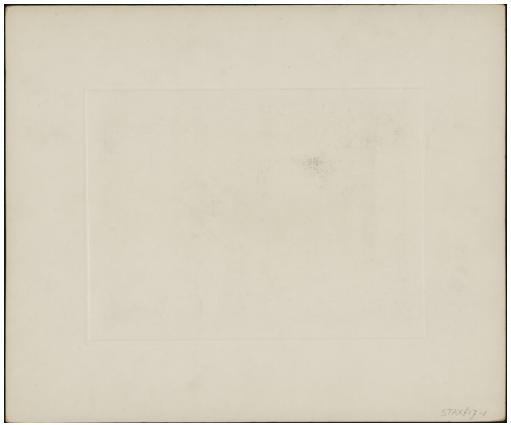
103. B.J. Hoetink, house,, with handwriting "Zutphen 21/11 '13. Warnsveld" adressed to "Den Heeren Hulshoff en Kok architecten Amsterdam Van Eeghenstraat 151", Warnsveld, 1913, Archive Kok, A.A. and Kok, Y. [KOKAph1884]



104-105. Unknown photographer, Forest keepers house (houtvesterswoning) with fire tower for life insurance company "De Utrecht", Hilvarenbeek, 1905, Archive Staal, J.F., Kropholler A.J. and Staal-Kropholler, M. [STAXpd2.3 and STAXd2]

106. Unknown photographer, Cinéma de la Monnaie (Munttheater), Singel/Kalverstraat, Amsterdam, 1910-1913, Archive Staal, J.F., Kropholler A.J. and Staal-Kropholler, M. [STAXf17]





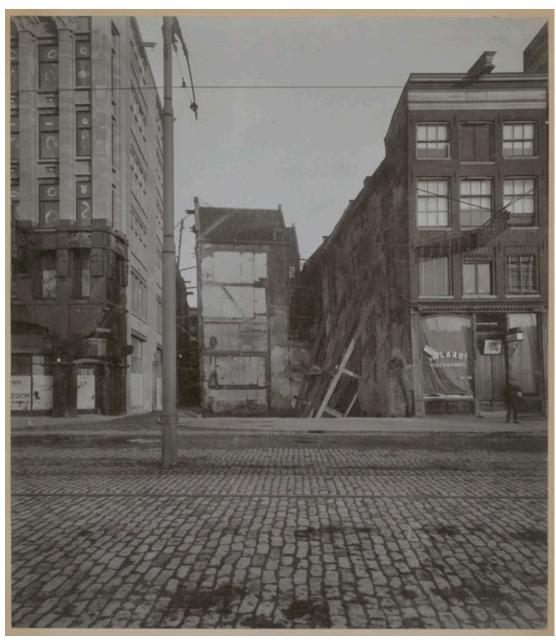
106b





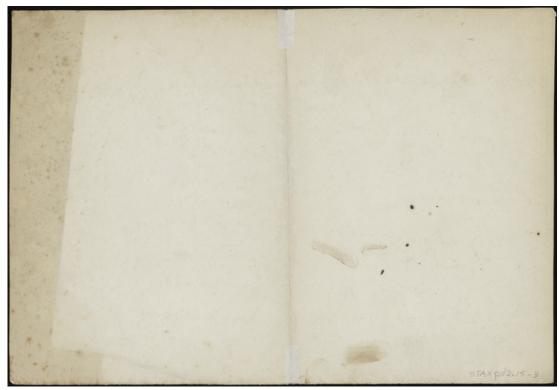
107b





107. F. Nienhuis, Office and warehouse "De Utrecht" at Damrak 26, 28-30, with stamp "F. Nienhuis; Photograaf; Gerard Doustraat 63; Amsterdam", Amsterdam, 1902-1905, Archive Staal, J.F., Kropholler A.J. and Staal-Kropholler, M. [STAXf7]

108-112. Unknown photographer, Office and warehouse "De Utrecht" at Damrak 26, 28-30, Amsterdam, 1902-1905, Archive Staal, J.F., Kropholler A.J. and Staal-Kropholler, M. [STAXpf9.10, STAXf7 and STAXpd2.15]



109b



109a





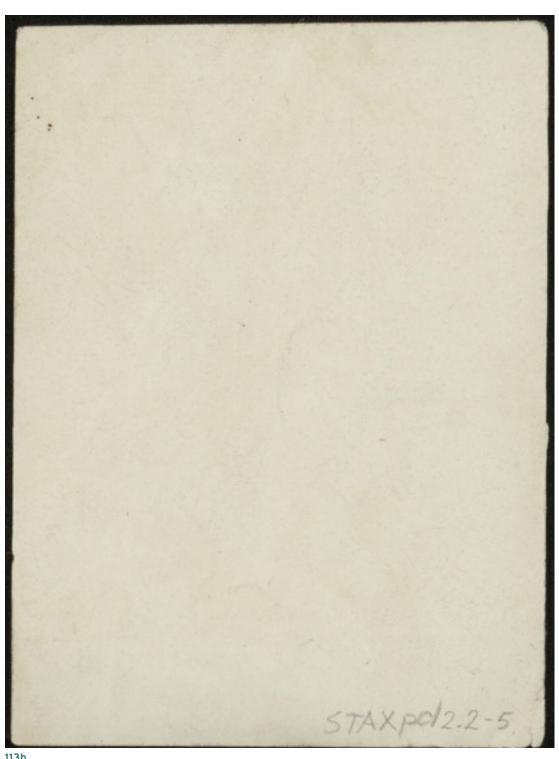






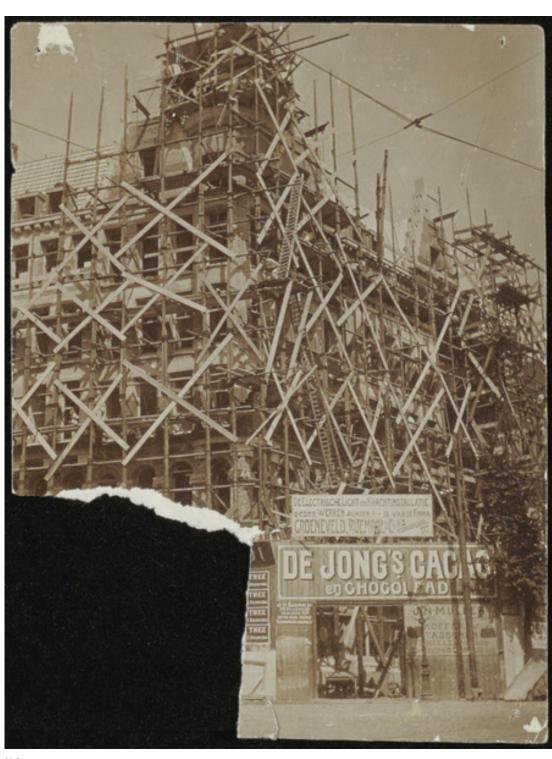
112





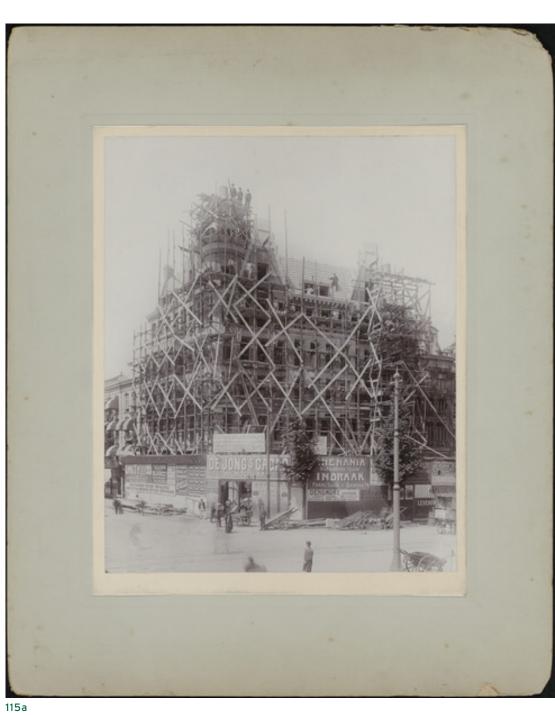
113-114. Unknown photographer, Office and warehouse "De Utrecht" at Damrak 26, 28-30, Amsterdam, 1902-1905, Archive Staal, J.F., Kropholler A.J. and Staal-Krop-holler, M. [STAXpd2.2]

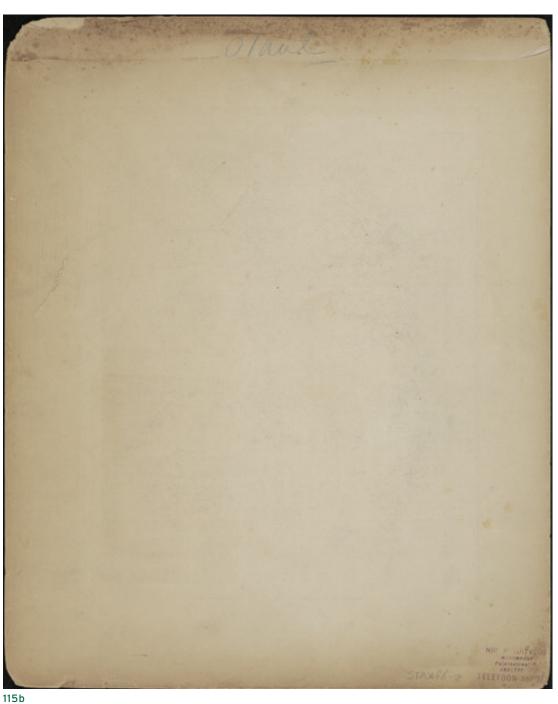
114



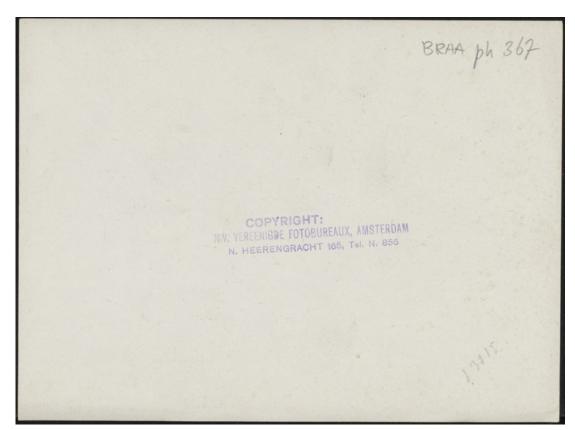


116





115. Nicolaas Schuit-vlot, Office and ware-house "De Utrecht" at Damrak 26, 28-30, with stamp "NIC Schuitvlot Photograaf Paleisstraat Amsterdam Telefoon No. 373" Amsterdam, 1902-1905, Archive Staal, J.F., Kropholler A.J. and Staal-Kropholler, M. [STAXf6]





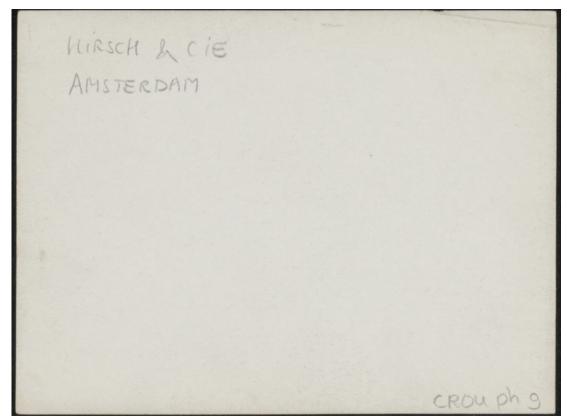


117b



116. N.V. Vereenigde Fotobureaux, Countryhouse "Pasadena", with stamp "Copyright: N.V. Vereenigde Fotobureaux, Amsterdam, N.Heerengracht 165, Tel. N. 856", Zeist, 1922, Archive Koninklijke Fabriek F.W. Braat N.V. [BRAAph367]

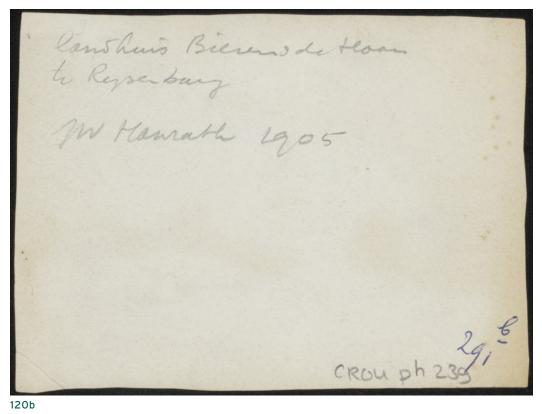
117-119. Unkown photographer, Emergency building warehouse Hirsch & Cie., Leidseplein, Amsterdam, 1910, Archive J. Crouwel [CROUph1-9]







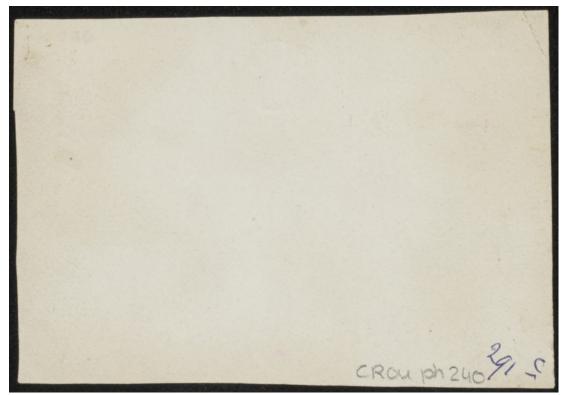




120b



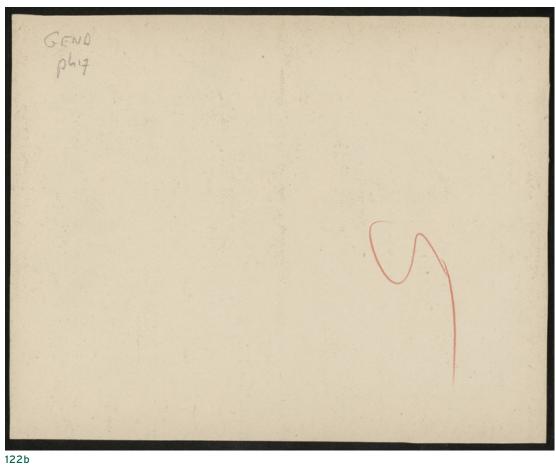
120-121. Unkown photographer, Country house Rijsenburg for dr. P. Bierens de Haan by architect J.W. Hanrath, Rijsenburg, 1905 Archive J. Crouwell [CROUph239-240].



121b







122. Unkown photo-grapher, "Drie Konin-gen", Singel 202-208 and Driekoningen-straat 2, Amsterdam, 1920-1921, Archive GEND Architectenbureau Van Gendt & Zoneni [GENDph17].