



Historic concrete buildings in The Netherlands

Conservation and re-use: actors, tasks and legislation

Project: CONSECH20

Working Package 1

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1. Introduction

The research carried out in the CONSECH20 project focusses on historic concrete buildings. Within the project, concrete is defined as *historic* when dating from the end of the 19th cent. - beginning of the 20th century until ca. 1960¹.

The **aim of this contribution** is to examine the procedures and identify the actors in the conservation, transformation and the re-use of historic concrete buildings in the Netherlands.

It should be said that the Dutch legislation concerning conservation and re-use of historic buildings does not make any difference in relation to materials and that there is no special legislation for concrete historic buildings.

Heritage buildings until 1850 and young monuments

Concrete monumental buildings are quite recent (ranging from the last decennia of the 19th century to the present day) and belong to the category of ‘Young Monuments’, which also include constructions made in traditional materials. Young monuments have received growing consideration in the last decennia (cf. Chapter 2).

Both young monuments and monuments built before 1850 are preserved according to the Dutch legislation² on the built heritage (tasks and responsibilities of actors involved are addressed in Chapter 3).

Special programs have been started to enhance the quality of the conservation and the interventions on heritage buildings (cf. Chapter 3).

The Dutch legislation on monuments and sites is explained (cf. Chapter 4).

Concrete young monuments

Concerning the interventions on concrete monuments (conservation, repair and transformation) an overview on actors, techniques and recommendation is sketched. These apply to modern concrete. An ERM (foundation for a recognized restoration standard in restoration³) commission is presently working at the development of ethical principle and technical recommendations for the preservation of historic concrete monuments (cf. Chapter 5).

The research

In order to clarify the procedures followed in the conservation and re-use of concrete monumental buildings and identify the main actors involved and their tasks,

¹ Heinemann H.A. , *Historic Concrete. From concrete repair to concrete conservation*, PhD thesis, Delft University of Technology, TU Delft, 2013

² Heritage legislation, <https://wetten.overheid.nl/BWBR0037521/2017-09-01>

³ ERM - Erkende Restauratiekwaliteit Monumentenzorg is the Dutch foundation for a recognized restoration standard in the preservation and restoration of historic buildings and sites

the Dutch legislation is examined and interviews are carried out with relevant professionals representing the various branches involved. This approach is meant to allow matching theory with practice. The aim is to better understand the actual task division and how decisions are made, and to finally contribute to the technical evaluation of the quality of the interventions (work package 2). The interviewed actors are architects, contractors, scientists, experts who develop rules and guidelines on a national basis and co-ordinators of national programmes who work in different sectors.⁴

Some results of this research will be further addressed in the cases studies part of the CONSECH20 project (cf. WP2).

Aim of this research is also to understand where improvement might be needed (cf. chapter 6).

2. The value of historic (concrete) young monuments in the Netherlands

Among the historic concrete buildings screened in this project there are national and municipal listed buildings (monuments) (cf. Chapter 4.1), but also non listed buildings, which also represent the Cultural Heritage of the country.

For a long time in the Netherlands only buildings constructed before 1850 could have the status of monuments, that is to say of listed buildings with a recognized heritage value. Only occasionally, some iconic buildings from after 1850 were given special attention. As a rule, the term ‘monuments’ characterized buildings constructed in traditional materials, which is to say brick and natural stone masonry.

An important change occurred in the late 1980’s when a Monuments Inventory Project (MIP) was carried out by the Cultural Heritage Agency of the Netherlands (RCE), focussing on Dutch buildings and town planning dating from the period between 1850 and 1940⁵. Among the buildings considered there were concrete ones. The Inventory led to the listing of a number of buildings, which gained the status of monuments.

A second Inventory, done in 2007, included buildings constructed during WWII and the reconstruction period. After this Inventory the listing of 100 buildings was proposed⁶.

In 1988, the DOCOMOMO foundation (DOcumentation COnservation MOdern Movement)⁷ was created in the Netherlands. The foundation encouraged the study and the preservation of concrete buildings worldwide. Also ICOMOS (International Council on Monuments and Sites) devoted attention to young monuments and formed a commission working on XX century heritage buildings⁸.

The attitude of architects, RCE and public towards heritage concrete buildings has changed in the last years and much interest is devoted to concrete architecture.

⁴ Actors spoken to are affiliated to: TNO, TU Delft (Architects, professors of Civil Engineering and managers of the built asset), RCE, ERM, contractors, (Restoration)Architects, Heritage Leiden and surroundings (Erfgoed Leiden en Omstreken), Monumentenwacht.

⁵ RDMZ Rijksdienst voor de Monumentenzorg, Handleiding Selectie en registratie jongere Stedebouw en Bouwkunst (1850 - 1940), 1991 RDMZ Zeist

⁶ Heinemann H.A. , *Historic Concrete*, 2013

⁷ <https://www.docomomo.nl/>

⁸ <http://www.icomos-isc20c.org/> This is the commission presently working on concrete buildings.

Interesting transformations of concrete buildings in terms of adaptive reuse have been done. The involvement of the general public, attracted by refurbished factories transformed into restaurants and cafes and other public places, has started a new attitude towards concrete buildings. Industrial buildings - not yet restored - are used for instance for wedding photography. Innovative strategies have made large concrete apartment buildings attractive for the general public⁹. In big cities this has had positive effects, like enhancing the quality of certain areas and contributing against gentrification.

3. Conservation of historic buildings: organizations, legislations and actors involved

The RCE is responsible for the policies based upon the **Heritage Legislation**, including funding regulation. In particular maintenance, restoration, transformation and demolition of monuments are ruled by the Heritage Legislation (see further). The legislation also concerns owners of monuments, who are expected to maintain their buildings in a good state. Owners of the historic concrete buildings studied may be the Central Government Real Estate Agency (Ministry for the Interior and Kingdom Relations - RVB), different foundations, private persons¹⁰, municipalities and provinces. Owners play an important role in conservation, transformation and re-use of buildings.

With respect to the way of carrying out investigations and interventions on concrete structures and in particular repair, the CUR (Centre for research and regulations)¹¹ recommendations are followed in the Netherlands. These apply to all buildings in concrete, regardless of their being historic or modern constructions.

Specific guidelines for the assessment of the state of conservation and the interventions on concrete heritage buildings are presently under development within the framework of a governmental program on the enhancement of the level of Quality and Professionalism¹² (see further).

This program was deemed necessary when a decentralization of tasks and responsibilities of the RCE resulted in a different involvement of buildings contractors, municipalities and other (private) organizations, such as Monumentenwacht¹³. These took upon themselves certain tasks and responsibilities traditionally entrusted to the RCE.

⁹ An example is the project carried out by architect Martijn Blom (Hollands Licht) leading to middle class families buy apartments in the last non-restored massive apartment building of the complex, which contributed to the upgrading of the Bijlmer area in Amsterdam, that had become quite rough.

¹⁰ Buildings officially used for living in <https://bagviewer.kadaster.nl/lvbag/bag-viewer/index.html#?geometry.x=160000&geometry.y=455000&zoomlevel=0>

¹¹ CUR - Centrum voor uitvoering research en regelgeving. The CUR is an institution for the research and the promulgation of guidelines which was founded focussing on concrete and steel.

¹² Naldini S., Hunen van M., *Guidelines for quality of interventions in built Cultural Heritage*, CRC Press / Balkema of the Taylor&Francis Group, 'Journal of Cultural Heritage Management and Sustainable Development, 2019, p. 87-93.

¹³ Naldini S., Heinemann H. A. & Hees van R. P. J., *Monumentenwacht and preventive conservation: Changes*, in 'Innovative Built Heritage Models', eds. K. van Balen & A. Vandesande, CRC Press / Balkema of the Taylor&Francis Group, Leiden 2018, 3, p. 117-124, special issue of the 'Journal of Cultural Heritage Management and Sustainable Development'

Monumentenwacht is a wide spread organisation which regularly inspects heritage buildings and support owners in performing maintenance and restoration work, according to a set of technical and ethical principles. The membership is not obligatory. The inspectors of Monumentenwacht are considered by the owners of non-iconic building as the main authority in the conservation activities. The maintenance and restoration activities of iconic buildings are usually entrusted to a team of specialists, often including Monumentenwacht¹⁴.

Contractors, owners, and municipalities¹⁵ presently play an important decision role in conservation. Architects and specialists are usually involved in conservation and re-use in the case of iconic buildings. Professionalism is deemed to be very important.

3.1 National co-operation projects on heritage conservation and re-use

The above mentioned program on Quality and Professionalism in the restoration of heritage buildings is entrusted to the ERM. The branches working in the conservation of historic buildings (e.g. architects and building contractors) develop their own guidelines for inspection and interventions, following a bottom up approach, under guidance of ERM and the supervision of an experts' commission. This means that a contractor can specialize in conservation and obtain a certification: in this case the quality of the contractor's work is also externally controlled. Interesting is to note that contractors, who do not possess a certification, can add to the specifications of their contracts that they will work according to the 'quality guidelines', or they could be asked to do so by the monument owner. ERM makes the guidelines available and easily retrievable online.

The ERM guidelines concern at present restoration of monuments in brick and stone masonry. A commission is elaborating the guidelines concerning concrete monuments. These will consider the CUR Recommendations 118¹⁶ and 119¹⁷, which are not specifically on historic concrete, and will especially focus on the maintenance of the value of historic concrete buildings.

Also Monumentenwacht was involved in the development of the ERM inspection guidelines, for which their inspection report was referred to.

The ERM terminology on damage types used in the guidelines for investigation and intervention on monuments is related to the MDCS Atlas. MDCS - Monument Diagnosis and Conservation System - can be found on the site *Monumentenkennis* (Monuments and knowledge)¹⁸. The site is supported by RCE, TU Delft and TNO (The Netherlands Organisation for applied Scientific Research).

¹⁴ Naldini S., Varst G. van de, Koning S. De, Grijp, E. van de, *Quality of restoration of monuments: the role of Monumentenwacht*, CRC Press / Balkema of the Taylor&Francis Group, 'Journal of Cultural Heritage Management and Sustainable Development, 2019, p. 87-93 accepted for publication.

Monumentenwacht is entrusted with the task of conveying results of the CONSECH20 project to owners and building contractors.

¹⁵ Klwuver, J. De, Horst, A. Van Der, Özgül, P., *Evaluatie stelsel kwaliteitsborging en stichting ERM*, DSP group rapport, Januari 2017 (available on internet)

¹⁶ CUR 118, Specialized conservation techniques – concrete repair (based on NEN-EN 1504).

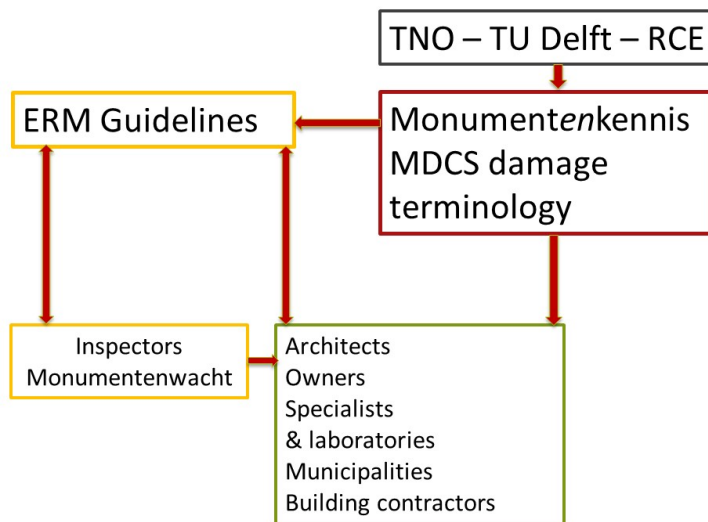
¹⁷ CUR 119, Specialized conservation techniques – filling and injection techniques, injections to fill in cracks, fissures and empty spaces in concrete (based on NEN-EN 1504).

¹⁸ <https://www.monumentenkennis.nl>

Shearing the MDCS terminology lies at the basis of a broad and complex co-operation in the Dutch heritage conservation world aiming at performing thorough interventions on monumental buildings. Contractors, architects, local authorities, advisors and researchers could take advantage from a homogenous use of terminology for a clear communication and to base hypotheses upon.

The specific terminology on concrete damage of MDCS will be implemented in the CONSEC20 project.

Quality in restoration



4. The Dutch Heritage Legislation on monuments and the situation in practice

The Dutch Heritage Legislation establishes the rules concerning interventions in monuments and financial support to owners.

For the basic maintenance of listed buildings it is not necessary to obtain any authorization. When the interventions are more consistent and heavily affect the aspect of the building, a plan needs to be made and approved by a commission, in most cases formed on account of the municipality.

With specific regard to conservation and re-use of concrete monumental buildings, the interviews with actors pointed at the fact that the commission does not include an expert of historic materials and techniques. Such an expert is asked to join the commission, only when his expertise is needed. A structural engineer is always present. This is an important aspect to be considered in the analysis of the situation in the Netherlands.

4.1 The Heritage Legislation

In 2016 the Monument legislation of 1988 was partly developed into the present Heritage legislation (now mainly concerning archaeological monuments) and will become part of the Legislation on Buildings and Sites¹⁹.

¹⁹ Legislation on buildings and sites, <https://www.omgevingsweb.nl/nieuws/de-nieuwe-erfgoedwet-wat-verandert-er-voor-monumenten>. A transition legislation is applicable until the legislation on buildings and sites will be enacted (2021).

There are different types of monuments and sites²⁰ which are dealt within the legislation:

- National listed monuments (national relevance, *Rijksmonumenten*)
- Provincial listed monuments (concerning the provinces of North Holland and Drenthe. Limburg has an independent status)
- Municipal listed monuments
- Protected city of village view (concerns places where not all buildings are monuments, but their facades determine the character of a site and need to be safeguarded)

As stated above, the RCE has changed its position within the monument conservation world and its policy and responsibilities. Decisions concerning monuments are taken by the executive board of a municipality. This is formed by the mayor and the members of the municipal executive board. The authorization on requested permits can be only given on the basis of the advice of the commission for the spatial planning. Some municipalities have ‘monument officers’, who may also give advice.

Plans for re-use and change of function of listed buildings need to be made known to the municipality and to be approved by the commission. An authorization is necessary for maintenance or restoration of buildings and sites and surely for their re-use in these cases:

- Demolish, disturb, move or in any way change of a national monument or allow repair or a type of usage which can disfigure or endanger the building.
- Demolish, disturb, move or in any way change of a municipal or provincial monument (building or archaeological finds) or allow repair or a type of usage which can disfigure or endanger the building unless these activities are in accordance with the legislation.
- Demolish a building belonging to a city or village national protected view.
- Demolish a building belonging to a city or village provincial or municipal protected view.

No authorization is necessary when:

- The interventions concern maintenance, when not including material or colour changes;
- The intervention concerns a part of a monument (located inside it), which does not have any monumental value.

If the building is protected in so far that it belongs to a protected view of a city of village, there are other norms.

Obtaining advice from the RCE is obligatory in case of (partial) demolition, large alterations, change of function demanding relevant changes to the building and reconstruction. Otherwise the RCE may give advice if asked by the municipality.

If the monument is located outside the city, it is the executive branch of the local government of a province of the Netherlands which is asked for advice.

²⁰ <https://erfgoedmonitor.nl/en/subjects/listed-monuments-and-historic-buildings;>
<https://www.monumenten.nl/soorten-monumenten/rijksmonument>

The Building Decree²¹ contains directions for new and existing buildings. A plan for the transformation of a building needs to match the requirements for the existing building and the requirements of the transformation.

4.2 Owners obligations in conservation and financial support from government

The RCE has regular and occasional financial support strategies for intervention on monumental buildings²². Financial support can be obtained by private owners for maintenance. Interviews pointed at the fact that investigations are financially supported when they are part of a large plan mainly concerning iconic buildings.

In terms of roles of the municipality, each municipality is different and may have its own procedures. In the following paragraph the case of the municipality of Leiden is presented.

Owners need to maintain their monumental buildings. For example, in the municipality of Leiden controls are carried out locally on the buildings of a whole street. If a building needs restoration, this is explained to the owner who is expected to cooperate. If he does not comply, sanctions can be applied. As a rule, when the owners get the letter explaining the necessary works to be done, 99% of the owners takes action. In a few cases the owner cannot afford to pay for the interventions and sells the building. The restoration is normally entrusted to a specialist. The commission having to assess the submitted plans of transformation / restoration comprehend an architect (also concerned with the materials), a building historian and other members; the presence of a material specialist is not standard, but can be requested. (NB. This applies to all commissions, not only to the commission of Leiden).

Even though each municipality performs surveys in a different way, the common criterion is that conservation (meaning preserving the existing) takes priority over restoration and reconstruction.

Random controls are performed to assure that contractors keep a good quality level of interventions (according to ERM guidelines). For the future, the Dutch government is planning to issue a legislation on the guarantee of quality aiming at eliminating the control task of the municipality. The owners will have to hire a good contractor and then also pay for the control of his work. This means that the contractor will have to work according to the guidelines and yet will need to be controlled by a third party.

5. Interventions on concrete buildings

Intervention on concrete old and new buildings are carried out referring to the same recommendations.

5.1 CUR recommendations and BRL

For guiding the interventions on concrete buildings the above mentioned CUR recommendations have been issued for the contractors and practical use. Other than the NEN - official Netherlands Standards Institute / Netherlands – promulgating

²¹ Bouwbesluit, <https://rijksoverheid.bouwbesluit.com/>

²² The information in this paragraph is derived from the lecture of Mark Stafleu (RCE) by the information day organized by ERM - 21 May 2019

standards²³ -, the CUR merely gives recommendations. The CUR recommendations aim at transferring theory to practice. A very important point on which attention is focussed is the difference between structural and aesthetical damage, whereby structural problems have priority upon aesthetical issues.

The foundation KOMO²⁴ controls the quality of concrete (and issues certificates). BRL²⁵ assessment guidelines are followed for evaluating interventions based on traditional methods (CUR 118) and injections (CUR 119). All these interconnected guidelines and certifications are meant for quality control of the intervention.. The development of guidelines results from the co-operation of various specialists, contractors and other final users.

In term of concrete repair, various contractors are unified under the VBR²⁶ (association of certified concrete repair firms). VABOR²⁷ is the association for concrete repair advisors.

It is important to notice that these interventions and controls concern buildings in concrete in general (old *and* modern).

5.2 Further matter for investigation and decision

Investigations are often entrusted to contractors. In case of failures or severe problems found in concrete buildings advisors and experts (from TNO or other companies) are asked for advice.

In the Netherlands there surely are contractors who are very experienced in the field of concrete buildings and possess the necessary knowledge for planning correct interventions. However, even when the interventions are technically correct, these may show shortcomings if the historical and aesthetical values of the materials are neglected²⁸.

The CONSECH20 research will include the assessment of the quality of interventions on concrete building both in technical sense and considering the monumental value of the object.

For what concerns certain interventions on concrete historic buildings a somehow *Romantic* attitude can be observed, aiming at bringing a building back to their original state. This approach may causes additional questions, as, for instance, whether and how to eliminate a paint layer added in the course of time.

As the general philosophy of the legislation on heritage conservation implies leaving a building as untouched as possible, the problem of deciding on what needs to be kept and what needs to be eliminated or substituted arises.

²³ NEN enables relevant stakeholders to meet and ensures that consensus is reached on the subject. NEN functions as an intermediary between standardization and certification.

²⁴ KOMO Quality mark for the building industry.

²⁵ BRL Beoordeling richtlijnen.

²⁶ VBR - vereniging van gecertificeerde betonreparatiebedrijven

²⁷ VABOR – association for concrete repair.

²⁸ Heinemann H.A., *Historic Concrete*, 2013

Another interesting point in restoration is whether to take into consideration the intention of the architect had when designing the building. Some buildings in fact were erected for a temporary aim, like a pavilion at an exhibition, and were not meant to exist forever.

6. Matter for further study in CONSECH20

Architects and the general public show a growing interest for concrete buildings and there is knowledge on damage and repair. This can be stated without any doubt. However, the inspection of a number of buildings and the interview of the persons (a.o. architects) working on restoration and transformation showed critical points in the process which need further attention.

The main question concerning the legislation on the interventions on monumental / historic buildings is whether and how this is followed in practice in the case of concrete buildings. The experience gained in the cases of concrete building examined until now showed the following:

- The architect makes a plan for adaptive re-use of the building considering the exterior part of the building and its immediate surroundings.
- Much attention in the discussion of the transformation (re-use) plan made by the architect is presently given to sustainable interventions (low energy consumption).
- The plan is examined by a commission where often? no specialist on conservation and materials is present, who could:
 1. assess the value of the building in terms of technical relevance of the materials and techniques used;
 2. assess the state of conservation of the materials composing the building.
- It is not yet clear what will be the difference between the CUR recommendation and RCE guidelines.

Research on these points will be further carried out in the CONSECH20 project, in the case study project, focusing on different types of intervention to concrete monumental buildings.

7. Conclusions

The Dutch monuments legislation directs the restoration and transformation of the cultural heritage in the Netherlands. Concrete (young) monuments fall under the same legislation as monuments in brick/stone masonry. The approach towards restoration and maintenance is done following technical guidelines (CUR), not specifically written for monuments. Within a broad program aiming at enhancing the quality of restoration of Dutch monuments, a commission is presently developing specific guidelines for inspections and interventions of concrete monuments. Contractors and other branches (whether 'certified' or not) will be expected to work in accordance to these guidelines. The main actors involved in the restoration and transformation of concrete monuments are owners, architects, contractors and representatives of the municipalities.