The Heritage & Architecture section focuses on the design projects of the built heritage. Heritage is interpreted in a broad sense and is separate from a particular object’s or ensemble’s monument status. In all design projects in an existing context, the past will play a more or less important role. The Heritage & Architecture section focuses first of all on those design projects in which the past will strongly determine the further development. In other words: the section focuses on the highest divisions of the built heritage.
Introduction

This booklet gives a concise overview of publications, congress papers, books and (peer reviewed) articles in the field of *Heritage and Architecture* over the year 2015.

The section Heritage & Architecture deals with the built environment in terms of conservation, refurbishment and re-use. At the basis stands the heritage triangle Design - Cultural Value - Technology.

In total this section includes four chairs and 25 employees. In teaching we focus on the design projects of the built heritage. Heritage is interpreted in a broad sense and is separate from a particular object’s or ensemble’s monument status. In research we focus on all aspects of conservation, refurbishment and re-use.

With this overview we want to inform you what occupies us and also how we, together with institutions like RCE and TNO, try to support the conservation, restoration and revitalization of our historical buildings within their historical context.

October 2016,

Dr.ir. Hielkje Zijlstra, section leader Heritage & Architecture

Prof.ir. Rob van Hees, Chair of Heritage and Technology
Prof.ir. Wessel de Jonge, Chair of Heritage and Design
Prof.dr. Marieke Kuipers, Chair of Cultural Heritage
Contents

Introduction 1
Contents 3
Le livre de la chaux. L’utilisation de la chaux comme liant pour mortiers de
construction et de jointement de l’origine a nos jours 7
   Koen van Balen, Bert van Bommel, Rob van Hees, Michiel van Hunen,
   Jeroen van Rhijn & Matth van Rooeden

Schade-atlas vergroot kennis over restauratietechnieken 8
   Interview with Rob van Hees and Marjan Hammersma by Edo Beerda

Modified nanolimes dispersion: structure and colloidal stability 10
   Giovanni Borsoi, Rob van Hees, Barbara Lubelli, Laura Colla, Laura Fedele,
   Patricia Tomasin, Rosario Veiga & Antonio Santos Silva

Nanolime deposition in Maastricht limestone: back-migration or
accumulation at the absorption surface? 11
   Giovanni Borsoi, Rob van Hees, Barbara Lubelli, Rosario Veiga &
   Antonio Santos Silva

Effect of solvent on transport of nanolimes within limestones:
how to improve in-depth deposition 13
   Giovanni Borsoi, Barbara Lubelli, Rob van Hees, Rosario Veiga, Antonio
   Santos Silva, Laura Colla, Laura Fedele & Patricia Tomasin

Understanding the transport of nanolime consolidants within
Maastricht limestone 15
   Giovanni Borsoi, Barbara Lubelli, Rob van Hees, Rosario Veiga & Antonio
   Santos Silva

Always seeking common ground. Karel Bakker’s contribution to
World Heritage in Africa 17
   Nicholas Clarke

The Memory Box 18
   Nicholas Clarke
Futures for a collective past. The South African after-life of the European Architectural Heritage year of 1975
Nicholas Clarke

Re-centring Tshwane. Urban heritage for a resilient capital
Nicholas Clarke & Marieke Kuipers (eds.)

Using modifiers to mitigate salt crystallization damage in porous building materials: an optical microscopy study of borax and sodium sulfate
Sanne Granneman, Barbara Lubelli, Rob van Hees & Noushine Shahidzadeh

Enhancing self-healing of mortars by built-in crystallization inhibitors
Sanne Granneman, Rob van Hees & Barbara Lubelli

Achtergronden en doel van de programmatische samenwerking
MonumentenKennis
Rob van Hees, Timo Nijland & Jan van ‘t Hof

The importance of a Monumentenwacht system - the situation in North-Brabant
Rob van Hees, Silvia Naldini & Timo Nijland

De Werkspoorhallen op Oostenburg: Verleden - heden - toekomst.
Frank Koopman, Han Michel, Job Roos, Sara Stroux & Wido Quist

Pionieren in Pretoria. Inspirerende ideeëns voor herbestemming van gedeeld erfgoed
Marieke Kuipers

De wisselende waardering van Dudoks erfgoed
Marieke Kuipers

Book review on Joan Melchior van der Meij, architect. Pionier van de Amsterdamse School by Michiel Kruidenier and Paul Smeets
Marieke Kuipers

Dutch Conversions in Conservation. The European Architectural Heritage Year and its Aftermath in the Netherlands
Marieke Kuipers

A new method for making artificially weathered stone specimens for testing of conservation treatments
Barbara Lubelli, Rob van Hees, Timo Nijland & Jan Bolhuis

Waarom gaat tufsteen kapot?
Barbara Lubelli, Timo Nijland & Hendrik Jan Tolboom
The transformation of the Rijksmuseum Amsterdam
  Paul Meurs & Marie-Thérèse van Thoor

MDCS - A new system for the diagnosis of damage to monuments
  Silvia Naldini

Jan Benthem: The metro and railway stations are public spaces which belong to the entire city
  *Interview by Ivan Nevzgodin*

Wini Maas: To invest in the social housing is to invest in the city
  *Interview by Ivan Nevzgodin*

Sunlight in the search for a new Russian architecture in the 1920s-1930s
  Ivan Nevzgodin

The Netherlands: Architecture and Fine Arts
  Ivan Nevzgodin

The use of Tithonian oolitic limestones from the Lorainne, especially Morley, in construction and restoration in the Netherlands, 1840-1960
  Timo Nijland, Wim Dubelaar & Wido Quist

J.A. van der Kloes (1845-1935). A Professional biography of the first Dutch professor in building materials
  Wido Quist

Inleiding. Het werk van Dudok: 100 jaar betekenis
  Wido Quist, Harriën van Dijk & Maartje van Meer

Nieuw leven voor oude kerken
  Alexander de Ridder

The Stratified Significance of a Historic Façade as a Basis for a more Durable Conservation Approach
  Nathalie Van Roy, Koen Van Balen, Els Verstrynge & Silvia Naldini

‘Kein Ästhetisches Heil, ausser im Alterswert?’ Lessons from the German Debate on Reconstruction
  Sara Stroux

Heritage & Architecture & KYOTO Design Lab.
  Hielkje Zijlstra, Paul Meurs, Marie-Therese van Thoor, Alexander de Ridder & Sara Stroux

Other academic activities
Le livre de la chaux. L’utilisation de la chaux comme liant pour mortiers de construction et de jointement de l’origine à nos jours

Koen van Balen, Bert van Bommel, Rob van Hees, Michiel van Hunen, Jeroen van Rhijn & Matth van Rooden

Cet ouvrage qui a déjà connu un succès certain dans sa version néerlandaise (Kalkboek. Het gebruik van kalk als bindmiddel voor metsel- en voegmortels in verleden en heden), traite de la mise en œuvre d’un groupe précis et spécifique de mortiers de maçonnerie et de jointoiement: les mortiers de chaux. Bien qu’il aborde également certaines techniques anciennes de construction, il est surtout consacré aux techniques de restauration actuelles. L’ouvrage d’origine a été complété par un chapitre sur les fours à chaux en Wallonie.

Full reference
Balen, K. van, Bommel, B. van, Hees, R.P.J. van, Hunen, M. van, Rhijn, J. van, & Rooden, M. van, Le livre de la chaux. L’utilisation de la chaux comme liant pour mortiers de construction et de jointement de l’origine à nos jours, 2015, Namur, Institut du Patrimoine wallon (book, 247 pp).
Schade-atlas vergroot kennis over restauratietechnieken

Interview with Rob van Hees and Marjan Hammersma by Edo Beerda

Materiaalkennis over monumenten is binnenkort te vinden in één, vrij toegankelijke database. De Rijksdienst voor het Cultureel Erfgoed (RCE), TNO en TU Delft ontsluiten daarvoor samen een schat aan informatie voor restauratieaannemers en -architecten.

Dit jaar al brengt het samenwerkingsverband MonumentenKennis een digitale schade-atlas voor monumenten uit. De samenwerking moet alle beschikbare bestaande en nieuwe kennis ontsluiten over materialen in oude en jonge monumenten. “Bestaande kennisnetwerken van de TU Delft, RCE en TNO worden op deze manier aan elkaar geklonken”, zegt Marjan Hammersma, directeur-generaal Cultuur en Media van het ministerie van OCW. Haar ministerie ondersteunt het initiatief met een subsidie van 550.000 euro.


“Bij een recente kerkrestauratie constateerden we dat een vijftiende-eeuws natuurstenen kapiteel met vocht- en zoutschade bij een eerdere restauratie op een verkeerde manier was ontzout en geconserveerd. Resultaat: extra schade in plaats van een oplossing. En het geld is weggegooid.” Koppeling van de TNO-kennis over aantastingsprocessen aan de RCE-praktijkervaring met restauraties van monumenten moet dergelijke onnodige schades gaan voorkomen.

Een door TNO uit te voeren onderzoek naar degradatie van tufsteen, opgezet vanuit MonumentenKennis, gaat ook voor besparingen zorgen, verwacht Van Hees. Laboratoriumproeven moeten uitwijzen waarom tufsteen in monumenten soms extreem snel degradeert. De veronderstelling is dat het alleen om specifieke blokken gaat, terwijl het overgrote deel nog steeds in goede staat is. Wanneer die hypothese juist blijkt, is een gerichte aanpak mogelijk. Van Hees: “In plaats van complete vervanging van alle tufsteen kun je volstaan met vervanging van die
specifieke delen. Bij een groot monument betekent dat een investering van pakweg 100.000 euro in plaats van miljoenen.”

De digitale schade-atlas is in nog in de maak. Behalve oorspronkelijke materialen komen ook in het verleden gebruikt conserveringsmaterialen aan bod. De digitale atlas zou ook kunnen helpen bij de inventarisatie van aardbevingsschade aan monumenten.

De samenwerking van de Rijksdienst voor het Cultureel Erfgoed, TNO en TU Delft zorgt in de erfgoedzorg voor een verbinding van praktijk, beleid en wetenschap. Doel is een einde maken aan de versnippering van kennis. De rijkssubsidie geldt voor vier jaar, waarna het kenniscentrum op eigen benen moet staan.

Full reference
Modified nanolimes dispersion: structure and colloidal stability

Giovanni Borsoi, Rob van Hees, Barbara Lubelli, Laura Colla, Laura Fedele, Patricia Tomasin, Rosario Veiga & Antonio Santos Silva

Full reference
Nanolime deposition in Maastricht limestone: back-migration or accumulation at the absorption surface?

Giovanni Borsoi, Rob van Hees, Barbara Lubelli, Rosario Veiga & Antonio Santos Silva

The development of nanomaterials is growing exponentially in the last decade. New discoveries and their applications have taken place in different fields, such as electronics, chemistry, biology and physics. Some innovative nanoproducts have become available also for the conservation of cultural heritage (e.g. nano-Ca(OH)2, nano-SiO2, nano-TiO2, CNTs, etc.), showing interesting potentialities and advantages. However, there are also drawbacks.

Extensive literature is available on nanolimes, i.e. colloidal alcoholic dispersions of Ca(OH)2 nanoparticles, which are promising materials for the consolidation of lime-based plasters and calcareous stone, often present in ancient masonry structures. Nanolimes have several advantages such as high stability, fast carbonation rate and good chemical and physical compatibility with calcareous stone and lime-based plasters. However, in comparison to other existing consolidant products, like TEOS-based (Tetraethylorthosilicate), the penetration depth of nanolime is often limited, which may consequently result in a low effectiveness.

The research presented in this paper aimed at understanding the penetration and deposition process of nanolime when applied in Maastricht limestone, a soft, highly porous substrate, widely used in the Dutch and Belgian provinces of Limburg. This research focused on the nanolime transport process to clarify whether nanolime is able to penetrate and deposit in depth in the material or if it simply accumulates.
near the surface. In order to investigate the distribution and particle size of nanolime deposited in the stone, next to simple phenolphthalein tests, optical microscopy, AFM and SEM-EDS were used. On the basis of the obtained results, the transport and deposition of a commercial nanolime in Maastricht limestone has been elucidated. The comprehension of the nanolime transport mechanism (penetration and distribution) within the treated material is crucial for improving the effectiveness of this consolidation treatment.

Full reference
Effect of solvent on transport of nanolimes within limestones: how to improve in-depth deposition

Giovanni Borsoi, Barbara Lubelli, Rob van Hees, Rosario Veiga, Antonio Santos Silva, Laura Colla, Laura Fedele & Patricia Tomasin

Consolidation treatment is a common practice in the field of conservation. However, when considering calcareous materials, there is a lack of efficient and durable consolidants. Colloidal dispersions of Ca(OH)$_2$ nanoparticles, commonly known as nanolimes, can effectively recover the superficial loss of cohesion. However, they do not always guarantee in-depth mass consolidation. The aim of this paper is to give directions for improving in-depth deposition of nanolime dispersions when applied on limestone. A conceptual model, correlating the drying rate and the kinetic stability of nanolimes dispersed in different solvents, to the porosity of the limestone to be treated, is conceived. This model can help to select a suitable nanolime solvent depending on the substrate. Nanolimes were synthetized and dispersed in different solvents (ethanol, isopropanol, butanol and water). The morphology and size of the lime nanoparticles were studied by dynamic light scattering (DLS) and scanning electron microscopy (SEM-EDS). The kinetic stability of the nanolime was assessed by Uv–vis spectroscopy. The porosity of the limestones were determined by mercury intrusion porosimetry (MIP), measuring as well their moisture transport properties. The model was validated by applying the different nanolimes to two limestones with very coarse (Maastricht limestone) and...
very fine porosity (Migné limestone). The absorption and drying kinetics and the deposition of the nanolimes within the treated limestones were investigated by phenolphthalein test, optical microscopy and SEM-EDS analysis. The results show that, as suggested by the model, less stable dispersions (as obtained by higher boiling point solvents e.g. butanol) are more suitable for coarse-pore limestones, while for fine limestones, more stable nanolime dispersions (as obtained by low boiling point solvents e.g. ethanol) should be preferred. Suggestions are given for further improvement and fine tuning of the nanolimes.

**Full reference**

Novel nanomaterials, such as nanosilica or nano-titanium oxide, have been developed in the last decade for the conservation of the built heritage. Among nanomaterials, nanolimes have acquired a considerable relevance due to their potentialities as consolidant product. The so-called nanolimes, colloidal dispersions of calcium hydroxide nanoparticles in alcohols, have been successfully applied as pre-consolidants on frescos and paper, and their use has later been extended to plasters, renders and stone. Nanolimes have better potentialities compared to conventional inorganic consolidants based on limewater (e.g. faster carbonation rate and higher calcium hydroxide concentration). Moreover, nanolimes are considered more compatible with CaCO$_3$-based substrates than alkoxy silanes (e.g. TEOS), the most widely used consolidant products. Nanolimes can guarantee the recovery of the superficial cohesion of degraded materials. However, when a mass consolidation is required, like in the case of decayed stone, nanolimes show some limitations. One of the problems is caused by nanolime accumulation at or just beneath the surface of the treated material. In order to solve this problem, the transport mechanism of nanolime within porous materials, as stone or renders, should first be better understood. Commercial nanolimes were applied on Maastricht limestone, a high-porosity yellowish limestone, used in the
Netherlands and Belgium as traditional building material. The absorption and drying behaviour of nanolime in this lime-stone was measured and nanolime deposition in the stone was studied by optical and scanning electron microscopy. The results show that nanolime transport is strictly related to the properties of the solvent. The alcoholic solvent guarantees a stable dispersion that penetrates in depth in the material, but is partially back-transported to surface. The high volatility of the solvent and the high stability of the dispersion favour the partial back-migration of lime nanoparticles to the surface during drying.

Full reference:
Always seeking common ground. Karel Bakker’s contribution to World Heritage in Africa

Nicholas Clarke

South African architect and internationally respected built heritage specialist, Professor Karel Bakker passed away in November 2014. A special issue of Architecture SA, the official journal of the South African Institute of Architects, was published in honour of his contribution to architectural educational, South African architecture and his role on the international heritage arena. On request a researched essay, outlining Prof Bakker’s role as specialist advisor for the International Council for Monuments and Sites (ICOMOS) and UNESCO World Heritage was composed. This essay not only presents the achievements of the man in the field, but also comments on his personal approach, which can be summed up as always seeking common ground.

Full reference
The Memory Box

Nicholas Clarke

South African cities face a huge challenge in rectifying their spatial segregation, a heritage of apartheid racial spatial practices. One of the means employed by South African cities to bridge the spatial divide between the cities and former dormitory townships, is the introduction of Bus Rapid Transit (BRT) systems. This system has a large physical presence in historic inner cities due to the way that the way that this system has been engineered for South Africa. This essay evaluates the BRT system as introduced in Pretoria, the capital of South Africa and establishes, that, despite good intentions, for instance the use of architectural competitions to develop appropriate architectural languages for BRT stations, the impact remains ever present.

Full reference
Futures for a collective past. The South African after-life of the European Architectural Heritage year of 1975

Nicholas Clarke

Close cultural ties have historically existed between the Netherlands and South African Afrikaners – decedents of mostly Dutch seventeenth century settlers – who share a built legacy. One would therefore expect seeing a marked local South African impact by the European Architectural Heritage Year of 1975 as Amsterdam hosted the event. However the first project application of the Declaration of Amsterdam in South Africa only came after the year 2000. This essay explores the reception of the European Heritage Year of 1975 in South Africa by presenting the aforementioned historic ties, the breakdown in relationships during the Apartheid years, and the reconciliation between these two nations after the South African transition to democracy in 1994. After the normalising of relationships the Netherlands re-entered the South African conservation arena, bringing their Integrated Conservation expertise. This cooperation continues today through the Shared Heritage Programme of the Cultural Heritage Agency of the Netherlands through which a much-needed application of the principles of the Declaration of Amsterdam is changing conservation perspectives in South Africa. The essay presents the intricate shared Dutch-South African history, explores the extent of knowledge of the 1975 European Architectural Heritage Year in South Africa at the time and presents recent and currently on-going shared projects that find their basis in the Declaration of Amsterdam.

Full reference
Re-centring Tshwane. Urban heritage for a resilient capital

Nicholas Clarke & Marieke Kuipers (eds.)

The urban core of today’s Tshwane Metropolitan Municipality, marked by Church Square and the surrounding area, is without any doubt a place of great historic significance and not only for South Africa. Its origin dates back to the 1850s, when the Boers founded Pretoria as a kerkplaats on the plains in the Apies River Valley. It was the capital of the Zuid-Afrikaansche Republiek (ZAR) until the latter’s demise through its surrender to the occupying British forces in 1902. Afterwards, the town remained the administrative capital of the successive regimes in South Africa, and over time it prospered and grew into a large metropolis. While Church Square might still form the geographic centre of the capital, it has become less central in socio-economic terms. From a socio-cultural and functional perspective, new investigations of the potential for reuse and redevelopment of abandoned heritage sites are urgently needed so as to again turn the heart of the city into a lively place for Tshwane’s citizens and, possibly, tourists. In other words, the current challenge is to ‘re-centre the City’, however contradictory this may sound.

Three culturally important heritage resources, Church Square, the Old Synagogue and the Old Government Printing Works, formed the focus of an investigative student design laboratory, the Re-Centring Tshwane Lab. The Lab was undertaken in 2014 by the Department of Architecture at the University of Pretoria, supported by the Cultural Heritage Agency of the Netherlands, the University of Pretoria’s Capital Cities Programme and Delft University of Technology. This introduction sketches the general context of the project.
Full references


Using modifiers to mitigate salt crystallization damage in porous building materials: an optical microscopy study of borax and sodium sulfate

Sanne Granneman, Barbara Lubelli, Rob van Hees & Noushine Shahidzadeh

Crystallization of soluble salts in porous building materials is a ubiquitous problem, and a threat to the preservation of our monumental buildings. Lime-based mortars, commonly used in historic masonry, are especially prone to salt damage due to their low mechanical strength. The deterioration such as scaling and crumbling, is due to the pressure induced by the growing salt crystals from supersaturated solution inside pores. So far, none of the existing solutions to improve the resistance of mortars to salt damage by changing their properties (e.g., using stronger binders or modifying water transport by the use of water-repellents) has been completely successful.

In recent years, research has been undertaken aiming at influencing the crystallization behaviour by adding modifiers to the mortars instead of modifying the material properties. The modifiers could prevent nucleation (inhibitors), promote nucleation of a certain crystal polymorph (promoters) and/or modify the
habit of the crystals (habit modifiers). In this way, salt crystallization can be promoted rather at the surface of the material (efflorescence) than in the pores (crypto-florescence). This might eventually result in a reduction of the damage.

We have investigated the effectiveness of borax (\( \text{Na}_2\text{B}_4\text{O}_7\cdot10\text{H}_2\text{O} \)) as modifier of sodium sulfate, one of the most deleterious salts in buildings. The impact of different borax concentrations on conductivity and wetting properties of sodium sulfate solutions was measured using a Metrohm conductivity probe and the KRUSM apparatus. Furthermore, using direct imaging and optical microscopy, the nucleation, growth and crystallization pattern of sodium sulfate solutions in the presence of borax were followed in evaporating droplets on glass plates, at controlled temperature and relative humidity. The results were compared with the crystallization dynamics of each of the pure components (i.e., \( \text{Na}_2\text{SO}_4 \) and borax). Additionally, borax and sodium sulfate were crystallized consecutively (simulation of the situation in a mortar, where borax will already be present when salts enter the material), to observe any differences compared to experiments on mixtures. Our results show that the addition of borax increases the wetting properties of the salt solution (lower contact angle). The improvement of the spreading properties of the solution leads to a higher evaporation rate, which in turn promotes efflorescence. Furthermore, our experiments show how the addition of borax to sodium sulfate leads to changes in crystal morphology in comparison with pure salt solution.

**Full reference**
Enhancing self-healing of mortars by built-in crystallization inhibitors

Sanne Granneman, Rob van Hees & Barbara Lubelli

Damage due to salt crystallization is a ubiquitous problem in porous building materials. Crystallizing salts can cause severe damage to building materials. Especially lime-based mortars, which are often found in historic buildings, are prone to salt damage due to their pore size distribution and limited mechanical strength. Renovation costs for replacing or repairing materials affected by salt crystallization damage are considerable. Existing solutions, such as cement-based salt-resistant plasters with mixed-in water-repellent additives, generally have a low compatibility with the existing materials. Where the current methods are based on increasing the strength of the material or on limiting the ingress of (salt laden) water into the porous material, our method is to tackle the problem at its base, by modifying the crystallization of the salts. By influencing the crystallization process with special chemicals, so called crystallization modifiers, salt crystallization on the surface of the material instead of in the pores or at a lower supersaturation level is favoured. Both are factors which limit crystallization damage. By mixing-in the crystallization modifiers in a lime-based mortar before its application, a smart self-healing (restoration) product can be made which will act at the moment the salts are expected to cause damage, i.e. at the onset of crystallization. Our proposed method could therefore result in a longer service-life of buildings and, consequently, in lower restoration costs.

Full reference
Achtergronden en doel van de programmatische samenwerking MonumentenKennis

Rob van Hees, Timo Nijland & Jan van ‘t Hof

Het instandhouden van monumenten, historische binnensteden en cultuurlandschap dient een groot maatschappelijk belang: de leefbaarheid van steden, maar ook zaken als sociale veiligheid en culturele identiteit worden er in grote mate door bepaald. Welzijn en welbevinden van mensen in stedelijke gebieden worden er door vergroot. De belangrijke waarde van monumenten in de (stedelijke) gebiedsontwikkeling wordt steeds meer onderkend. Aan de instandhouding van monumenten wordt veel publiek geld besteed. En tegelijk gaat er nog regelmatig iets mis.

Om deze redenen zijn de Rijksdienst voor het Cultureel Erfgoed, TNO en de TU Delft per 1 januari 2015 een programmatische samenwerking gestart rond kennisopbouw, -beheer en -overdracht rond de instandhouding van gebouwd cultureel erfgoed.

De drie partners zijn hierin complementair. De RCE richt zich primair op het beter laten functioneren van de erfgoedzorg in Nederland. Zij doet dat onder andere door praktijk, beleid en wetenschap te verbinden. TNO heeft vanouds expertise rond aantastingsprocessen en innovatieve materialen, zowel in grote meer fundamentele onderzoeksprojecten als bij praktisch advies op de steiger, en ontwikkelt verder een belangrijk instrument voor kennisverspreiding, het beslissingondersteunende systeem MDCS (Monumenten Diagnose & Conserverings Systeem). De TU Delft heeft met de leerstoel ‘Heritage & Technology’ (Conserveringstechnieken van Gebouwen) een belangrijke rol in zowel het
onderzoek (door middel van promovendi) als in de kennisoverdracht aan de toekomstige restauratie-architect en de ambitie om bij te dragen aan instandhoudingsaspecten van de belangrijke ontwerpopgave van hergebruik en herbestemming.

Binnen de samenwerking worden de verschillende expertises op het gebied van instandhouding van gebouwd erfgoed gebundeld en wordt de kennis voor het veld ontsloten. De vraagstukken worden benaderd vanuit wetenschappelijk onderzoek (TU Delft), toegepaste wetenschappen (TNO) en praktijkervaring en vanuit het beleid (RCE) om zo uitdagingen integraal en kwalitatief hoogwaardig te beantwoorden. Hierdoor wil MonumentenKennis wezenlijk bijdragen aan de conservering en restauratie van oud en recent gebouwd cultureel erfgoed, met in achtneming van het complexe spanningsveld tussen historische materialen, context en hedendaagse (her)bestemming.

De samenwerking Monument en Kennis is in eerste instantie aangegaan voor de periode 2015-2018, met steun van het Ministerie van OCW. De activiteiten zullen zich in deze periode in hoofdzaak richten op kennisontsluiting, op natuursteen en op moderne bouwmaterialen.

**Full reference**

Hees, R.P.J. van, Nijland, T.G., & Hof, J. van ’t, ‘Achtergronden en doel van de programmatische samenwerking MonumentenKennis.’ In: T. Nijland (eds), *syllabus symposium Monumentenkennis*, 9 december 2015, p. 3-8
The importance of a Monumentenwacht system - the situation in North-Brabant

Rob van Hees, Silvia Naldini & Timo Nijland

The question ‘What is the importance of a Monumentenwacht system (monument watch)’ is a very current issue. Do the activities of Monumentenwacht (often abbreviated MW in this report) contribute to better and more cost-effective preservation of our built cultural heritage? In order to answer this question, research has been conducted whereby the focus lay on identifying the consequences for monument preservation of the failure and damage mechanisms that can influence the state of conservation of a monument. Then, the activities of MW were examined in terms of their influence on these consequences. Might the processes have a lesser impact thanks to MW? Besides an analysis of the so-called failure mechanisms, direct consideration was given to the manner of operation of a team of inspectors, and interviews were conducted with representatives of several relevant parties in this field: an owner of a historical monument, an architect, a representative of a quality assurance foundation, a representative of the government, a restoration contractor and an insurance company.

The research into ‘The importance of MW’ is carried out by TNO and TU Delft at the assignment of Monumentenwacht Noord-Brabant (MW North-Brabant).

This research does not strive to express the importance of Monumentenwacht in exact financial numbers. This would entail looking at the cost of MW consultation, followed by maintenance or intervention based on the advice on the one hand, compared to different degrees of intervention, varying from doing nothing to complete restoration on the other.

Besides the obvious fact that regular (preventive) maintenance is certainly cheaper than facing the consequences of doing nothing (a rolling stone gathers no moss), see [1], such a calculation would exhibit an extremely large margin. It does not seem farfetched to suggest that the costs over 20 to 30 years during which no activity has been done could very well be 10 times higher than those for systematic inspection followed by maintenance at the right moment.
It is to be expected that some defects, if not tended to, can easily lead to an exponential growth of the reparation cost due to consequential damage of other parts of the construction, with a corresponding loss of heritage value.

Therefore, based on the practical problems that MW faces, a so-called Failure Mode and Effect Analysis (FMEA) was carried out.

Several historic monuments that are regularly inspected by MW were visited. An interesting aspect was that the inspected historic monuments included two comparable buildings, whereby in one case the advice of MW was followed, and in the other it was not.

This report includes the following aspects in succession:
- Monumentenwacht North-Brabant and a questionnaire amongst inspectors;
- The Failure Mode and Effect Analysis;
- Student research;
- Accompanying the MW inspectors;
- Interviews with the “field”;
- Conclusions.

Full reference
Hees, R.P.J. van, Naldini, S., & Nijland, T.G., *The importance of a Monumentenwacht system - the situation in North-Brabant*, Delft, 2015, 74 pp
Dit rapport is de uitwerking van de gezamenlijke opdracht van Stadgenoot en Stadsdeel Centrum door de sectie Heritage & Architecture van de Faculteit Bouwkunde van de TU Delft, in het verlengde van de ‘reflectie’. De opdrachtgevers formuleerden het doel van het onderzoek als volgt: “Doel van het onderzoek is te onderzoeken of behoud van de erfgoedwaarde van de hallen mogelijk is, bezien in relatie tot de gehele gebiedsontwikkeling en in het bijzonder gelet op de financiële gevolgen voor de grondexploitatie, de gevolgen voor het woningprogramma (met name voor het aantal woningen en de bijbehorende financieringscategorie) en de gevolgen voor de stedenbouwkundige kwaliteit.”

De Werkspoorhallen (Stelplaats 3) hebben een grote historische betekenis, erfgoedwaarde én ontwikkelpotentie. Behoud van de hallen of een groot deel van de hallen is mogelijk bij een ontwikkelgerichte benadering van deze erfgoedopgave. Hiervoor zijn vijf ideeënschetsen gemaakt. Een aantal realistische varianten voor het behoud van de Werkspoorhallen dient zich daarbij aan. Essentiële erfgoedwaarden kunnen worden meegenomen naar de volgende tijdlaag van Oostenburg. De hallen zullen dan bovendien sterk gaan bijdragen aan de toonzetting van een nieuw, specifiek Amsterdams woon- en werkmilieu.

Bij behoud staat het erfgoedaspect voorop. Vanzelfsprekend kan bij behoud op de hallenlocatie minder programma worden gerealiseerd dan de 19.000 m² bij sloop en nieuwbouw. Dit verlies kan voor een deel elders in het plangebied worden gecompenseerd. Indicatie van het verschil: tenminste 1.500 m² (plancapaciteit deelgebied VOC-kade: 75.000 m²). Behoud introduceert extra kwaliteiten op de schaal van het hele gebied. De exploitatie kan eveneens op dit hogere schaalniveau worden beoordeeld.

**Full reference**

Pionieren in Pretoria. Inspirerende ideeën voor herbestemming van gedeeld erfgoed

Marieke Kuipers

Het Kerkplein van Pretoria is de Zuid-Afrikaanse tegenhanger van de Dam in Amsterdam. De plaatsnaam en ontstaansgeschiedenis gaan terug tot de tijd van de Voortrekkers (Boeren), onder wie voorman Andries Pretorius. In 1860 kreeg de Boeren-nederzetting de status van hoofdstad van de als onafhankelijke staat erkende Zuid-Afrikaanske Republiek (ZAR). De pioniersplaats is ontwikkeld op een orthogonaal stramien rondom de open centrale ruimte die nu bekend is als Kerkplein. Rond 1890 zijn hier de statige bestuursgebouwen verrezen waarvoor toenmalig president bewust de Nederlandse architect Sytze Wierda (en anderen) had aangetrokken: de Raadzaal en het Paleis van Justitie. Deze en andere ‘Hollands’ vormgegeven gebouwen, die grotendeels uit de levensperiode van de Nederlandse koningin Wilhelmina (1880-1962) stammen, gleden als voorbeelden van 'Wilhelmiense' architectuur om hiermee het gedeelde erfgoed met Nederland aan te geven. Bij wijze van denk- en ontwerp-oefening verkende een groep Bouwkundestudenten van de universiteit van Pretoria diverse mogelijkheden voor herbestemming. De uitdaging was om een maatschappelijke programmering te ontwikkelen en rekening te houden met de door henzelf geanalyseerde erfgoedwaarden. De studenten hebben hun ontwerpen uitgebreid gepresenteerd in de ‘Wilhelmiense’ Bosmanstraatse Grootkerk (1903-1905, Van Rijssse, Kraan en Weijers). Zij bouwen voort op het pionierskarakter van het betekenisvolle erfgoed.

Full reference
De wisselende waardering van Dudoks erfgoed

Marieke Kuipers

The executed work by W.M. Dudok has enjoyed a varying appreciation over time. Initially, the plastic aesthetics of the receding volumes in brick received a lot of appraisals. This style of 'Dudokian' architecture was frequently imitated abroad during the interwar period. But in the early post-World War II-decades, Dudok's striving towards a synthesis of monumentality and modernity was more and more criticized. It happened that the remains of the Bijenkorf Department Store in Rotterdam that had survived the air raids of the war were removed in the 1950s almost without any protest, although the building had been applauded as a masterpiece when it was inaugurated in 1930. From the 1980s on, however, a more positive turn took place towards the architectural heritage that Dudok had left, especially in 'his' Hilversum, where the local authorities had discovered the unique legacy of their municipal architect in an attempt to promote itself as an attractive town with young heritage. Not only the famous Town Hall (acknowledged as a 'top' monument) became a statutory protected monument but also many of his municipal housing schemes and numerous other building types, even in other places. Recently, also a selection of his post-war works is acknowledged for preservation and protection. Most spectacular was the move of one of his gasoline stations from its original place along the highway to the Autotron in 1995, and afterwards to Raamsdonksveer. Some of his works have even been replicated, which indicates an increasing appreciation of Dudok's typical architecture, but such actions are also contested by conservationists.

Full reference
Book review on Joan Melchior van der Meij, architect. Pionier van de Amsterdamse School by Michiel Kruidenier and Paul Smeets

Marieke Kuipers

The review regards a lavishly illustrated monograph on the life and works of Joan Melchior van der Meij, one of the protagonists of the 'Amsterdam school' in architecture. The publication follows mostly a chronological order in the successive chapters, here and there interrupted by thematical entrefilets about such various topics as his multi-talented wife, Sara Herweijer, a visit to the ruins of Chorin, the role of photography, an interview with the son of draughtsman Co Franswa, the architect’s fascination for towers and the ideal of collective living. Also included is a telling interview with nurse Lidwina who had cared for the two Van der Meijs in the last period of their lives when they lived under very poor and primitive conditions in the south of the country after the office went bankrupt in 1938 and the Second World War had broken out. The widow had even to sell the copyrights of the most famous piece of work, the Scheepvaarthuis at Amsterdam, in 1949 in order to gain some income. Much attention is paid to this masterpiece and, to a lesser extent, to the many projects for social housing that Van der Meij had designed in collaboration with the architect's office of Gulden and Geldmaker, but either a broader context or a deeper analysis would have enriched the now rather dry descriptions of all designs.

Full reference
Dutch Conversions in Conservation. The European Architectural Heritage Year and its Aftermath in the Netherlands

Marieke Kuipers

The 1975 European Architectural Heritage Year was called M75 in the Netherlands. The majority of its related activities had a national if not a very local focus and hardly a pan-European orientation, although several Dutch parties participated in the exhibitions of Europa Nostra and the swelling stream of publications, exhibitions, festivities and media events frequently referred to the European initiative in general. After all, the major objective was to interest and engage the local population for the cause of conservation. According to the insights at the time, this engagement could best be encouraged by inviting the public at large for visits, competitions in drawing or photography, lectures, demonstrations of traditional craftmanship and other events on site (and to buy the specially issued stamps for postal mail). The general idea of M75 was to broaden the scope from the single monument to the totality of the historic environment which was implicitly defined by the pre-industrial construction phases, roughly before 1850. As such, this broader spectrum was not new but it implied for the professionals a more intense collaboration between the conservation architects who were used to concentrate on the restoration of single objects and the urban planners who were basically more future and development oriented than focused on the past. With
hindsight the texts of the concluding 'Declaration of Amsterdam' were mainly an
affirmation of the firmly rooted traditional conservation concepts, but in some
associated Dutch reports the seeds of further public-private partnership and of
future strategies towards ‘integrated conservation’ were already present.

Full reference
Architectural Heritage Year and its Aftermath in the Netherlands’. In: M. Falser &
Notre Passé. 40e Anniversaire de l’Année Européenne du Patrimoine Architectural
A new method for making artificially weathered stone specimens for testing of conservation treatments

Barbara Lubelli, Rob van Hees, Timo Nijland & Jan Bolhuis

The application of new consolidating products on the surface of weathered materials is a common intervention technique in conservation practice. Due to the difficulty of producing artificially weathered substrates in a reproducible way, the effect of consolidating products in laboratory is generally assessed on sound substrates. However, the properties of a weathered substrate largely differ from that of the original sound material; this might make the results of laboratory tests unreliable or hamper their interpretation. In this research, a new method for the production of weathered specimens in a reproducible way has been developed and validated on three types of limestone with different total porosity, pore size and petrographical characteristics: Maastricht, Savonnières and Euville. The aim was to develop a substrate on which the effectiveness, compatibility and durability of consolidating products can be tested in laboratory in a more reliable way than when using fresh stone. The method consists of grinding and sieving the stones in a grain size largely similar to that of the sound material and re-aggregating the particles by the use of air lime: a lean “mortar” is obtained which is applied as a layer on the sound stone to simulate the decayed surface of a material showing granular disintegration. The grain size and the binder to aggregate ratio are chosen in such a way as to reproduce those characteristics typical of weathered stones.
showing loss of cohesion (i.e. sanding or powdering): i.e. increased pore size and open porosity and lower cohesion and strength in comparison to the sound substrate. The properties of the obtained weathered substrates have been studied in comparison to that of the fresh stone: pore size and pore size distribution have been measured by Mercury Intrusion Porosimetry; Polarized and Fluorescence Microscopy has been carried out to study the petrographical characteristics of the assemblage sound stone/re-aggregated layer; the water absorption behavior and hardness (by means of Drilling Resistance Measurement System, [DRMS]) have been measured as well. The results of the research show that with this method it is possible to obtain specimens reproducing the higher and coarser porosity and lower mechanical strength, typical of stones suffering loss of cohesion.

Full reference
Waarom gaat tufsteen kapot?

Barbara Lubelli, Timo Nijland & Hendrik Jan Tolboom


Full reference
The transformation of the Rijksmuseum Amsterdam

Paul Meurs & Marie-Thérèse van Thoor

On April 13 2013, the Rijksmuseum Amsterdam reopened after a renovation process that had lasted more than a decade. The building, which dates from 1885, was designed by the architect Pierre J. H. Cuypers (1827-1921). Initiated as a royal museum the museum had been transformed into the Dutch National Museum. Originally the building was conceived as a collection of museums. It housed five different collections, with specific characteristics in construction, spatial lay-out and decoration, all embodied in one Gesamtkunstwerk. The specific features of the various parts of the museum however, had been long lost. The central passageway through the building, making it a gatehouse between the centre of Amsterdam and the district Amsterdam-Zuid, still remained in use. This passageway turned into one of the pivotal issues in the long lasting building process, that faced several problems. Already twenty years ago, in 1994, the Rijksmuseum commissioned a study of the possibility of closing this passageway under the building for bicycle traffic. In a press release the museum announced this as a means for the passageway to serve as an entrance area. A year later Hans Ruijssenaars (b. 1944) started developing a master plan for the Rijksmuseum. This comprehensive view was intended to find solutions to infrastructural problems, the sense of clutter and the shortage of space in and around the building. This article focuses on the evolution of the design for the new Rijksmuseum, in a complex and ambitious context involving a great many parties.

Full reference
MDCS - A new system for the diagnosis of damage to monuments

Silvia Naldini

MDCS (Monument Diagnosis and Conservation System) is a complete new version of the Decision Support tool MDDS (Monument Damage Diagnostic System). This light version of MDDS is meant to furnish a support during inspections, aiming at assessing the type and severity of the damage found and planning interventions.

The system is online and runs on computers and tablets - in English and Dutch. MDCS makes it possible for different users to collected data in a homogenous and essential way. The digital reports are exhaustive and clear. Homogeneity in language and method will make it possible to compare reports made by different users. Also the plans based on the reports, can be better understood, which represents a step forward in the communication between inspectors, architects, owners and stakeholders. This further means that governmental bodies having the task of approving plans of intervention could better compare and judge the submitted projects; the repeated investigations could be not only a means for assessing the condition (damage) of a monument evolving in the course of time, but also the quality of the interventions performed.
The first of the time phases planned for working at MDCS was centred on the development of the software to create the new system, the control and improvement of the existing knowledge and its implementation.

The software has been produced and supported by Auxilium in Delft, the work of the content has been carried out by experts form TNO, TU Delft (Faculty of Architecture), and RCE.

Full reference
Jan Benthem: The metro and railway stations are public spaces which belong to the entire city

Interview by Ivan Nevzgodin

Одно из самых авторитетных архитектурных бюро Голландии Benthem Crouwel Architects было создано в 1979 году выпускниками Делфтского технического университета Яном Бентемом (р. 1952) и Меслом Краувелем (р. 1953). С 1986 года бюро активно участвовало в проектировании и строительстве амстердамского аэропорта Схипхол, превратив его в один из самых удобных аэропортов в мире. Взвешенный подход к решению сложных проблем, логичность, элегантность и долговечность разрабатываемых концепций, а также последовательность и настойчивость в их реализации — вот черты фирменного стиля этого бюро. Возведение множества офисных и жилых зданий по всей Европе, Benthem Crouwel Architects продолжают самое активное внимание уделять объектам транспортной инфраструктуры. Построенный ими мост «Голландская глубина» (Hollandsch Diep) около Дордрехта стал символом скоростной линии Нидерландской железной дороги, а проекты новой линии метро Амстердама и центральных вокзалов четырех крупнейших городов страны принесли бюро награду «Куб БНА» (BNA Kubus) «За вклад в преобразование инфраструктуры Голландии».

One of Holland's most respected architecture firms, Benthem Crouwel Architects, was established in 1979 by Jan Benthem (born: 1952) and Mels Crouwel (born: 1953), graduates of Delft Institute of Technology (the precursor of Delft University of Technology). In 1986 the firm became actively involved in designing and building Schiphol, Amsterdam’s airport, turning it into one of the most convenient airports in the world. A balanced approach to solving complex problems, logicality, concepts that are elegant and have a long service life, and the systematic and insistent way in which these concepts are carried out are the marks of this firm. While designing numerous office and residential buildings all over Europe, Benthem Crouwel Architects continue to take a keen interest in transport infrastructure. Their Hollandsch Diep bridge near Dordrecht became a symbol of the Dutch High-Speed Line, and their designs for the new line of the Amsterdam metro and the central stations for four of the country’s largest cities have won them the BNA Kubus award “For a contribution to the transformation of the infrastructure of Holland”.

Full reference
Wini Maas: To invest in the social housing is to invest in the city

Interview by Ivan Nevzgodin

Ivan Nevzgodin Why should it be that Holland of all countries has become so famous for its social housing?
Winy Maas Often it's the Dutch themselves who are convinced that they're better at something than anyone else and create a Messianic role for themselves. All that's foreign to me. It's for others to judge us. But certainly ever since 1901, for over more than 100 years, social housing has been coming on in leaps and bounds. The pace of development has slowed more recently, especially over the last decade. But almost an entire century is a whole epoch. That's not something that's happened in every country. The very fact of the matter speaks volumes. Virtually every Dutch government has wanted to invest in the construction of social housing, especially since 1945. Why was that the case? It's because the Netherlands is a social-democratic country, a little bit socialist although not entirely so. Industry saw a need for workers to be supplied with housing and there was a keenness to bring about social housing. That turned into an aesthetic undertaking as happened, for example, with the Amsterdam School. In the Netherlands, a country with a great many small towns, each of them wanted to stand out, to compete with the others. 
And in the 1980s and 90s towns wanted to show off, to attract new inhabitants and enterprise. Good quality housing for workers makes a town attractive. It's part of the economy. And it was the economy that came to the aid of these towns since in Holland there is no big megalopolis along the lines, say, of Moscow.

IN Doesn't the scale of Randstad put it in the same league as Moscow?
VM Yes it does, but just like those piddling little cantons in Switzerland each one has its own voting power. There isn't even a proper capital in the Netherlands. There wasn't an obvious leader among Dutch cities, which made them compete with each other, thereby furthering the development of good quality architecture. Lastly there's the density of the population. It's not

Singapore, of course, but the very fact that people have to live in close proximity to each other is very important. That made it necessary for them to build polders together, fired their interest in construction, in creating an artificial habitat. Unlike Switzerland, for example, where everything quickly becomes traditional, in Holland we're forced to experiment. In any case the whole environment is artificial and classical traditions in the field of housing typology were weak. The Dutch had a desire to build their own way and to enjoy doing it. In Germany architectural traditions were stronger and everyone was clear about how a building was supposed to look.

IN What was the role of national and local government?
VM Investment in social housing is a way of saving up money, a state piggy bank. It's not just investment in 'human capital' but also simply investing in an area, in a city. For example, in Eindhoven, where around 70 percent of the housing is social housing, between 1990 and 2000 many of those sites were sold at a profit for infill construction. These were strategically important sites in the city which had been 'saved up' by social housing.

IN For whom? Town-planners?
VM Yes, for town-planners. In these neighbourhoods which were being rented out there's a single owner, it's easy to come to an agreement with him by offering an alternative. On the same site you can build something which has greater value in this day and age and will make more of a profit. That could be higher density housing, a different function altogether, or a mixed use development, for example.

IN What role did experts on social housing such as Swis Hugo Priemus play in all this?
VM They were very important. Priemus is a man of genius. I often quote his ideas. He didn't always have much of an eye for good architecture but his achievements can't be denied. He made lots of things possible, he fought for the kind of variety that I'm talking about.

Full reference
Sunlight in the search for a new Russian architecture in the 1920s-1930s

Ivan Nevzgodin

One of the “discoveries” of the Modern Movement was that architecture is not only about the outside – the envelope of a building – but also about its inner space. Yet we can only perceive space when it is illuminated, thus light is the most essential component of architecture. In this sense, sunlight is also the oldest material for an architect – an eternal and ephemeral one. Already before the October revolution of 1917 the re-examination of light in art generated a peculiar Russian movement, Rayism (or Rayonism; in Russian, fadism). An avant-garde painter, Mikhail F. Larionov (1881–1964), introduced this concept in 1913. He thought that the artist should concentrate on the spatial extension of the object; not on the object itself but on the lines (rays) in space between objects. Larionov explained this in Rayist and Futurists: A Manifest: “Rayist painting has concentrated on spatial forms arising from the intersection of rays reflected from different objects.”

Density as an Urban Problem

Until today, surprisingly enough, the theme of light did not generate a lot of attention in the history of the avant-garde of Russian architecture. Little has been published on the subject. Yet the contrast between the dark and dense urban fabric of tsarist Russia and the light and spacious Soviet one was one of the most popular subjects of communist propaganda. One of the first Soviet state acts was indeed the Decree on Land of 26 October 1917, nationalizing all land and real estate. State landownership gave unprecedented possibilities to town-planners. There was no economic pressure of the land price anymore. This became especially clear in Leningrad (the former St. Petersburg) with its light-wells and courtyards made famous by Fyodor M. Dostoyevsky’s stories and novels. The new Soviet housing should boldly represent the difference in approaches between Socialism and Capitalism, which would be articulated in the density of urban blocks. The first Soviet studies on light in housing were not very original. They offered a summary of Western European and North American research and followed the argument of the hygienic importance of sunlight. The accent was on the proportion between the width of the windows and the perimeter of the walls. Already in the first soviet housing projects, daylight determined the length of the building with a central corridor. That is the reason why plans for buildings were configured with two or more rectangles slightly replaced, with a window providing daylight at the end of the central corridor, for each rectangle.

1. Larionov, Mikhail and Goncharova, N., “Lucki v, i badashchik,” Manifest printed in Park in Yaroslaw, Ostrov Ayvolt i mionton (Orley’s Tail and Target), Moscow TsA. Muster, 1913, p. 13.

Full reference

The Netherlands: Architecture and Fine Arts

Ivan Nevzgodin

Full reference
The use of Tithonian oolitic limestones from the Lorainne, especially Morley, in construction and restoration in the Netherlands, 1840-1960

Timo Nijland, Wim Dubelaar & Wido Quist

The Netherlands have only limited resources of dimension stone within the own borders, viz. local bog iron ore in the middle and east of the country, erratics from the Saalian ice age used in a few churches in the north, and Carboniferous sandstone and Cretaceous limestones in the south of Limburg; of these, the Maastricht limestone form the largest supply. Therefore, Dutch architectural tradition always heavily relied on import of dimension and ornamental stone. Until half of the 19th century, import mainly comprised stones transported over the rivers Scheidt, Meuse (Namur limestone), Rhine (Rhenish tuffs, Drachenfels trachyte, red Eifel and Main sandstone), Vichte (Bentheim sandstone) and Weser (Obernkirchen sandstone). Half the 19th century, with the development of railway systems all over Europe, new types of dimension stone became available, including Muscheikalk and travertine from the south of Germany, sandstones from the Rhineland-Palatinate and the German-Luxembourg border area, granites from Bavaria, Scandinavia, Scotland and France, as well as abundant French limestones. The current paper gives a concise overview of the use of the latter in the Netherlands, focussing on the Tithonian oolitic limestones from the Lorraine, especially the Morley-type.

Full reference
Prof. Jacobus Alida van der Kloes (1845-1935) was appointed teacher in building materials at the “Polytechnische school” of Delft in 1882. From 1905 until his retirement in 1915 he was promoted to full professor on the subject of knowledge and research of building materials at the “Technische Hoogeschool Delft”, the predecessor of the current Delft University of Technology. Van der Kloes is well known in the Netherlands for his – over one thousand pages - magnum opus “Onze Bouwmaterialen” (Our Building Materials) that was first published in 1893 and followed by a revised edition in 1908 and followed by a third revised edition in 1923. Less known is that, together with different academic and professional co-authors, he published several manuals for craftsmen, for building in the Dutch colonies and reports on different topics. His manual for the bricklayer and stonemason has even been translated and published into English and German. Also other publications in German, English and French are known, for example in the journal of the International Association for Testing Materials.

Van der Kloes was editor in chief of the (weekly) magazine “De Ambachtsman” (the craftsman), published from 1885 until 1905 and he published frequently in other Dutch architectural magazines such as...
“Bouwkundige Bijdragen” and “Architectura”. Many of his magazine publications cover topics of new inventions, discussions on durability of certain materials, testing methods or techniques for good craftsmanship. Recent publications and reports on early twentieth century architecture and building materials suggest that prof. Van der Kloes was the one and only authority in the field of building materials in the Netherlands and that he, almost personally, invented all new techniques and materials. This paper investigates whether this is true or a myth by describing, categorizing and analyzing his writings. By looking at his international publications and the references used in his books, his oeuvre will be compared to other international academic and professional writers on building materials.

This paper highly benefits from the collection of the Library of Delft University of Technology, which holds an original copy of most of Van der Kloes’ writings.

Full reference
Inleiding. Het werk van Dudok: 100 jaar betekenis

Wido Quist, Harriën van Dijk & Maartje van Meer

Dit jaar is het honderd jaar geleden dat Willem Marinus Dudok (1884-1974) in Hilversum kwam werken. De gemeente Hilversum heeft daarom 2015 tot Dudokjaar uitgeroepen. Dit was de aanleiding voor de Gemeente Hilversum om in samenwerking met Stichting Docomomo Nederland een publicatie samen te stellen en een seminar te organiseren over het werk van deze architect en stedenbouwkundige.

Full reference
Nieuw leven voor oude kerken

Alexander de Ridder


Full reference
The Stratified Significance of a Historic Façade as a Basis for a more Durable Conservation Approach

Nathalie Van Roy, Koen Van Balen, Els Verstrynge & Silvia Naldini

In heritage conservation, a gap is often observed between the theory of conservation as a durable process that aims at the preservation of a historic building and the practice of restoration as a single intervention that aims at a fast and convincing result. This paper describes the proposed approach for the conservation of the main façade of the Shoemakers Chapel (in Dutch: Schoenmakerskapel) in Antwerp (Belgium), a listed monument since 1976. It serves as an example of how to develop a durable and realistic approach for the conservation of a sixteenth century façade. The basis for the conservation approach is the understanding that each intervention should take the stratified significance of the historic façade into account. In this paper, it will be shown how to combine a study of the façade from a technical point of view with an analysis of the façade as a carrier of cultural significance.

Full reference
‘Kein Ästhetisches Heil, ausser im Alterswert?’ Lessons from the German Debate on Reconstruction

Sara Stroux

The cultural heritage institutions in the Netherlands have traditionally taken a dim view of the reconstruction of heritage buildings when most or all of the material substance has been lost. Recent discussions about, for example, the listed status of the reconstructed mill at Burum (destroyed by fire in 2012) or the possible reconstruction of the nineteenth-century attic of Artis’s Ledenlokalen (damaged during World War II) illustrate that the guiding principles of the institutional heritage sector do not seem to meet the actual challenges arising from the quest for reconstruction. There is a need for in-depth investigations and theoretical reflections on this topic, yet these are rare at present in the Netherlands. Hence this article takes a closer look at Germany where—in reaction to an increasing number of reconstruction initiatives, such as the Berlin Palace or the Neumarkt/Frauenkirche in Dresden—some noteworthy research projects have been conducted in recent years. First and foremost is Geschichte der Rekonstruktion – Konstruktion der Geschichte, an extensive study by a group of scholars led by Winfried Nerdinger and Uta Hassler. Based on a large corpus of reconstruction cases from different time periods dating back to the classical age, they concluded that the act of restoring a structure to an earlier, lost state using new materials has a long cultural history. The case-study analysis also revealed that while the motives for reconstruction are quite stable over the centuries, the paradigms and techniques for the preservation of ancient monuments are historically determined.
The publication and exhibition of the research results provoked fierce protests from German heritage professionals who feared that these conclusions might pressurize them to abandon their reserved attitude towards reconstruction. Their line of argumentation mainly followed the guiding principles of the founding fathers of the modern heritage preservation movement, including Alois Riegl and Georg Dehio. The dispute generated an anthology of interesting key texts, but it also demonstrated that clinging to a theoretical framework established over a hundred years ago can blind one to relevant topics for in-depth research within the field of heritage preservation, such as the question of how and to what extent different target groups should be informed about the reconstruction of (parts of) a building. Another promising line of investigation concerns the various heritage values related to the topic of reconstruction – think of traditional values like the *beeldwaarde* (image) or recently established ones like the *belevingswaarde* (experience) and *nostalgiewaarde* (nostalgia) – and their shift in meaning over time.

Full reference
In November 2015 the Kyoto Institute of Technology (KIT) launched the KYOTO Design Lab.: ‘By engaging with and responding to the global problems faced by our world, the KYOTO D-Lab will be a site for social innovation through design and for the exploration of practical design methodologies. D-Lab is the first institute of its kind in Japan to focus on architectural education and research into urban revitalization.’ (http://kyoto-design-lab.tumblr.com). Heritage & Architecture has been invited to participate in the Kyoto Design Lab. to address the issues of built heritage. From the chair of Heritage & Cultural Value plans have been developed for cooperation in the field of education and research.

**The Kyoto Design Lab. education project**
The KYOTO Design Lab. started in the fall semester of the TU Delft academic calendar 2015 - 2016 with a joint education design project: Heritage & Machiya. It is integrated into the regular curriculum of Heritage & Architecture. The MSc2 design project is supervised by two teachers, one with an emphasis on design and one with experience in conducting research. In MSc2 Heritage & Machiya project is connected to research. The results have been presented in January 2016 at TU Delft together with the participants from KIT and an exhibition is prepared in November 2016.

**The KYOTO Design Lab. research project**
During 5 years KIT allows Delft researchers to work in Kyoto. We hereby proposed a multidisciplinary and multi-personal approach: the aim is to make a Heritage & Architecture investigation of one urban block of Kyoto, from different Dutch perspective where we distinguish three scales (L / M / S). Instead of focusing on the
highlights like the 1600 Buddhist temples, 400 Shinto Shrines and 17 Unesco World Heritage sites we have chosen the block with the Ninigi Machyia as starting point for the research. Those are the original shop-houses in Kyoto. Some more or less original ones are still there, but they rapidly change or disappear. The scope of the Heritage & Architecture field of interest can be found here like the relation of the city to the landscape, layers of history from the city till the house, the architectural impact, social and cultural structures and the development of a single houses in a Japanese city but also the use of materials, climate design and building regulations. So from this block the researcher generates its individual research topics and questions but will always reflect on the overall formulated theme relate questions. Their studies develop in conjunction and incorporated in the joint publication: Kyoto from Western perspectives. Each year two researchers stay one month in Kyoto to work out their research.

**Full reference**

Kyoto Design Lab. 5 year (2015-2020) collaboration in research and education between the Kyoto Institute of Technology (KIT) and the Delft University of technology (TUD)
Other academic activities

Presentations & short writings
Giovanni Borsoi, Barbara Lubelli, Rob van Hees, Rosario Veiga & Antonio Santos Silva, lecture ‘Deposition of modified nanolimes within calcareous substrates’ at Green Conservation of cultural heritage, 2015, October
Giovanni Borsoi, Rob van Hees, Barbara Lubelli, Laura Colla, Laura Fedele, Patricia Tomasim, Rosario Veiga & Antonio Santos Silva, lecture ‘Modified nanolimes dispersion: structure and colloidal stability’ at Centre for Doctoral Training in Science and Engineering in Arts Heritage and Archaeology
Nicholas Clarke, 2015. ‘Engaging through built heritage for urban and social transformation.’ Presented on invitation at: Johannesburg: Performative Urbanisms: fighting for and over the city; expressing the city; knowing the city. Johannesburg Institute for Advanced Study. University of Johannesburg, 2015, September 8-10
Rob van Hees, voordracht voor Bureau BMA Amsterdam, conservering van historische gebouwen en het gevaar van zouten, 27 mei 2015
Rob van hees, voordracht ‘Sustainable use of materials in past and future: the example of Curacao’, in het kader van de research week januari 2015, op dinsdag 13 januari 2015 (dag gewijd aan het Research Programma 'Design and History').
Rob van Hees, speech bij opening van de nieuwbouw van de firma Remmers bv te Duiven: Duurzaamheid van monumenten. Eeuwige jeugd of natuurlijke veroudering?, 6 juni 2015
Rob van Hees, lezing in kader van het Athens programma: Consequences Induced Earthquakes on Cultural Heritage in the Province Groningen, 17 november 2015
Rob van Hees, voordracht: ‘3D printen van Bouwmaterialen: Een logische innovatie?!’, workshop 4 december 2015, TUe
Wessel de Jonge, ‘Rehabilitation and Reuse of the Modern Movement Architecture’. Key Note Lecture for DOCOMOMO International Seminar Institute Superior Tecnico, Lisbon, March 27, 2015
Marieke Kuipers, Bewertung und Bewahrung der Nachkriegsmoderne in den Niederlanden, paper presented at the international conference on postwar modern architecture (Nachkriegsmoderne), TU Dortmund, 2015, March 12
Marieke Kuipers, Sharing Heritage? Ambitions and ambiguities in preservation policies of the Netherlands and South Africa, paper presented at the international conference African Challenges CRASSH, University of Cambridge, 2015, May 15
Marieke Kuipers, Teaching Theory and Practice of Architectural Heritage Conservation in the Netherlands, paper presented at the international 'Denkmal' conference, VDNK, Moscow, 2015, October 15
Marieke Kuipers, Maintaining Megastructures as Young Heritage? Postwar works of civil engineering and preservation in the Netherlands, paper presented at the international colloquy Denkmal – Bau – Kultur, Konservatoren und Architekten im Dialog, on the occasion of the 50th anniversary of ICOMOS Germany, Town Hall Mainz, 2015, November 27
Marieke Kuipers, Culturele Draagkracht van eeuwenoude Stadskerken in Nederland, paper presented at the ICOMOS Flanders-Brussels-Netherlands Contact day and international symposium '50 jaar uit de stellingen Kathedraal van Antwerpen', Plantijn Hogeschool, Antwerpen, 2015, December 11


Marie-Thérèse van Thoor, Nederland op de Wereldtentoonstelling, lezing bij Het Nieuwe Instituut Rotterdam, 23 april 2015


**Editorships**

Barbara Lubelli, member of Editorial board of “Restoration of Buildings and Monuments - Materials science, Conservation of architectural heritage, Sustainable construction”.


Marie-Thérèse van Thoor, editor of *Bulletin KNOB*, 114 (1, 2, 3 & 4), 2015

**Exhibition**

Marie-Thérèse van Thoor, onderzoek ten behoeve van de tentoonstelling *Wat is Nederland* in het Nieuwe Instituut Rotterdam, april-augustus 2015

**Interviews**

Sanne Granneman, interview in BK News


Marieke Kuipers, interviewed by Evgueniya Tvardovskaya about Russian and Dutch concepts and practices of architectural conservation in Хранители наследия (published 21 October 2015)  


Marie-Thérèse van Thoor, radio-interview over de geschiedenis van Nederlandse inzendingen voor wereldtentoonstellingen bij de opening van de tentoonstelling *Wat is Nederland* in Het Nieuwe Instituut Rotterdam, 25 april 2015

**Workshops**

Rob van Hees, Barbara Lubelli & Silvia Naldini, workshop *Diagnosis with MDDS*, RLICC, KU Leuven, March 2015


Marieke Kuipers, Reuse and Redesign in the Netherlands, Urban Heritage Strategies Course, Kirillov House, Moscow, 14 October 2015

Reviewer
Rob van Hees, external peer for Master thesis of Katy Marie Sammut, University of Malta
Marieke Kuipers, peer reviewer for South Africa’s National Research Foundation (NRF)
Marieke Kuipers, peer reviewer for the journal Planning Perspectives
Marieke Kuipers, peer reviewer for World Heritage nominations for ICOMOS/Unesco
Barbara Lubelli, reviewer for Journal of Cultural Heritage, Construction and Building Materials, Materials and Structures
Barbara Lubelli, external reviewer for MSc thesis Nadya Martinelli, University of Malta

Scientific Committees
Nicholas Clarke, Committee member of the Visual Arts Commission of the South African Academy of Arts and Sciences/Suid Afrikaanse Akademie vir Wetenskap en Kuns (2014-)
Nicholas Clarke, Built Heritage specialist member of the Strategic Environmental Assessment for Shale Gas Exploration in the Karoo Basin Working Party, advisory team to the Cabinet of the President of the Republic of South Africa (2015-)
Rob van Hees, member Policy Committee of the Delft Centre for Materials (DcMat)
Rob van Hees, president WTA NL-VL
Rob van Hees, Coordinator Materials within ECTP – FACH (Focus Area Cultural Heritage)
Rob van Hees, president ‘Centraal College van Deskundigen van ERM’ (Stichting Erkende Restauratiekwaliteit Monumentenzorg)
Rob van Hees, Member selection committee VSB-fonds Grants
Rob van Hees, Member CEN TC 346 Cultural Heritage and NEN mirror committee Cultureel erfgoed
Rob van Hees, Member RILEM TC Mortars and grouts for historic masonry
Rob van Hees, Member TU vision team ‘Groninger Aardbevingen’
Wido Quist, treasurer WTA NL-VL
Wido Quist, treasurer Docomomo_nl

PhD Committees
Rob van Hees, Member PhD committee Haoling Huang (TU Delft - CITG), subject: Thermodynamics of Autogenous Selfhealing in Cementitious Materials (November 2014)
Marieke Kuipers, member PhD committee Mieke Dings (TUD - ABE), subject: Tussen Tent en Villa. Vakantieparken in Nederland (23 April 2015)
Marieke Kuipers, member PhD committee Charlotte van Emstede (TUD - ABE), subject: Waardestelling in de monumentenzorg (27 October 2015)

**Awards**


The Heritage & Architecture section focuses on the design projects of the built heritage. Heritage is interpreted in a broad sense and is separate from a particular object’s or ensemble’s monument status. In all design projects in an existing context, the past will play a more or less important role. The Heritage & Architecture section focuses first of all on those design projects in which the past will strongly determine the further development. In other words: the section focuses on the highest divisions of the built heritage.