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EUROPEAN PROJECT ON FORTIFIED LANDSCAPE FACING NEW THREATS

RESILIENT FORTRESS

SUMMARY OF NAARDEN EXCHANGE SESSION 5 – 7 May 2025

ERASMUS+ project

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Resilient Fortress, Erasmus+ project partners organizations.

Erasmus+ project named Resilient Fortress is designed for upskilling professionals facing the challenges of climate change and the increasing need of environmental responsibility in the context of fortified heritage.

Project partners and case studies are chosen by the geographical location of the sites and by the quality of their restoration, conservation and repair projects. The nine months project is divided into four activities: Suomenlinna Summer School (2–4.9.2024), Antibes Site Visit (2.4.2025), Mont-Dauphin Learning Session (3.4.2025) and Naarden Exchange Session (5–7.5.2025). The outcome of Resilient Fortress -project is environmentally responsible guidelines, that will motivate other professionals to gain an alert attitude towards climate change and open mind to transform old routines to green skills.

Summary of Naarden Exchange Session

Jeroen van der Werf, Pia Kurki, Tuija Lind, Xingchen Wang

The organiser of Naarden exchange session was Stichting Monumentenbezit, a Dutch non-profit organisation founded in 2014 for professional management of national monuments and culturally valuable buildings. Since 2016 the Monumentenbezit owns the fortifications surrounding the grid plan city of Naarden – that earlier belonged to the Dutch Government. From 14th century until the Second World War Naarden has played a vital role in the defence of Netherlands. During the French invasion in 1672 the land west of the city was inundated in an improvised way, which turned out to be a masterstroke and the starting point for the famous Dutch Waterline defence system. Fortress Naarden was part of this defence system.

Aerial view of the fortifications of Naarden. ©RCE

Some of the participants arrived already the 4th of Mai and could witness the two-minute silence in respect for the victims of Second World War and a day later an impressive parade of the Liberation Day celebrated the 5th of Mai in Netherlands.

After a gathering at the Utrecht gate office, the exchange session began in the afternoon of the 5th of Mai with an onsite visit to the southern part of city ramparts led by Jeroen van der Werf, construction project manager of Stichting Monumentenbezit. The Naarden fortifications have three main construction phases and already

several conservation layers. The bastioned trace with six bastions and curtainwalls, an inner ditch with six ravelins and the surrounding covered way was built between 1673 and 1685. Two hundred years later the defence was modernized by adding bombproof casemated brick buildings and at the turning of 20th century some concrete shelters were added on the covered way. The fortifications lost their military function officially in 1926. In the southern part a 19th century powder magazine and ammunition storage were demolishes to make a car park in 1957, and a demolished ravelin, that has served as quarry, was rebuilt in 1975.

The maintenance and restoration philosophy of the fortifications is two-folded. The southern part is kept and developed with its military appearance maintaining an open area with only some individual trees or bushes, while in the northern part the defence line – in army use until 1980 – is wooded. The nature has been allowed to take liberties. This distinction between the two areas of the fortified monument, partly created by history, provides an opportunity to both understand the essence of a fortification and to preserve and increase environmental diversity.

On the two tasks of Monumentenbezit: green maintenance (earthworks, trees, bushed, meadows and grass) and red maintenance (brick, concrete, natural stone), we were first presented the works related to red maintenance. Jeroen van der Werf showed how the rampart and brick wall structures of the defensive structure have been renovated at different times, some of which are now causing structural problems. In the 1980s, brick walls were repaired with cement, which has caused the brick surfaces to deteriorate, and in the 1970s, the roofing of the walls was waterproofed, which has also caused problems in masonry structures.

The new use of the spaces under the earthworks requiring heating, also affect the buildings. In the current renovations and repairs, the physical properties of the original structure are studied in more detail, and the conservation works are planned with respect for the original structure and construction method. Experience has shown that the measured surface moisture of a brick wall does not yet indicate the condition of the structure and other analyses are also required to understand how to plan the conservation works.

After a walking tour on the ramparts, we had an opportunity to see and almost touch the brick walls during a boat tour in the ditches. The electronic boat is owned by Monumentenbezit. The restoration works are conducted yearly and during summer periods. The scaffolding is erected on the bottom of the moat not deep next to the wall. In some brick repairs, the surface masonry is not restored, and at these points, changes in the moisture of the structure and the durability of the surface are monitored. The roots of the trees growing on top of the walls have not damaged the wall and do not need to be removed. The waterways of the moats enable the transport of materials from the construction site by water, which means that areas with vegetation are not worn out due to site traffic.

Boat tour on the water ways. ©GBS

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In addition to the boat tour, Ger Copier, construction project manager of Stichting Monumentenbezit took us to some vaulted spaces inside the bastions to inspect the conditions linked to a succesfull waterproofing. We paid attention to the relatively good indoor air despite the humidity, which is good, since the space is rented for occasional events. As elsewhere in Naarden fortifications, the doors and window shutters are painted in dark green, the colour determined by Army's instructions for military buildings.

The 6th of May started with a site visit on the Promers barrack building, with Martinus van Milt, a brick specialist, who has a background as a bricklayer and who does all the material tests for Monumentenbezit in Naarden and the ruins of Teylingen and Brederode. The ongoing work consisted on taking out wrong kind of bricks and wrong kind of mortar causing trouble to the surroundings. They were to be replaced by on-measure bricks produced by Zilverschoon Randwijk Brick factory.

After the visit to the Promers barracks the group participated in a symposium organised by Jeroen van der Werf to share the Resilient Fortress project with wider public. The welcome words were presented by Mark van den Bos, director of Monumentenbezit followed by the Erasmus+ project and report presentation by project coordinator, Tuija Lind, senior architect from the Governing Body of Suomenlinna. After, all the partner sites and their problematics were briefly presented: the collapsing walls and eroded landscape of Suomenlinna by Tuija Lind and Naarden's challenges by Jeroen van der Werf. Mont-Dauphin, a Vauban designed stronghold in Alpes was presented by Isabelle Fouilloy-Jullien, chief curator and Gaëlle Chérieux head of corporate social responsibility in Centre des monuments nationaux. The materials used for Mont-Dauphin fortification had understandably been sought from the vicinity. The principle of minimising transport would be a good principle in construction also today.

Port Vauban in Antibes and St. Tropez citadel with special attention to geckos and snakes living surroundings were presented by Germaine de Bazelaire, project manager jr. and Baptiste Grandais, project assistant in Atelier d'Architecture Philippe Prost. The Bomarsund Fortress-ruins with an interesting what-to-do questioning was proposed by Daniel Anderson, architect in Fastighetsverket in Åland Islands.

After a break some longer presentations followed from Suomenlinna and Naarden. First Federica Marulo, assistant professor in Groningen University made a rich presentation of the landscape design made for the demilitarized fortifications of Naarden in the 1930s. In the projects designed by D.F. Tersteeg, the green parts of the fortress were converted into parks, and trees and other park-like vegetation was planted on the ramparts. In 1939, a new entrance with a park composition to the fortress was built. After the Second World War these newly designed park complexes needed renovation. The good documentation and aerial views are today useful in planning the future resilience of Naarden green architecture.

Damage on The Promers barracks. ©Monumentenbezit

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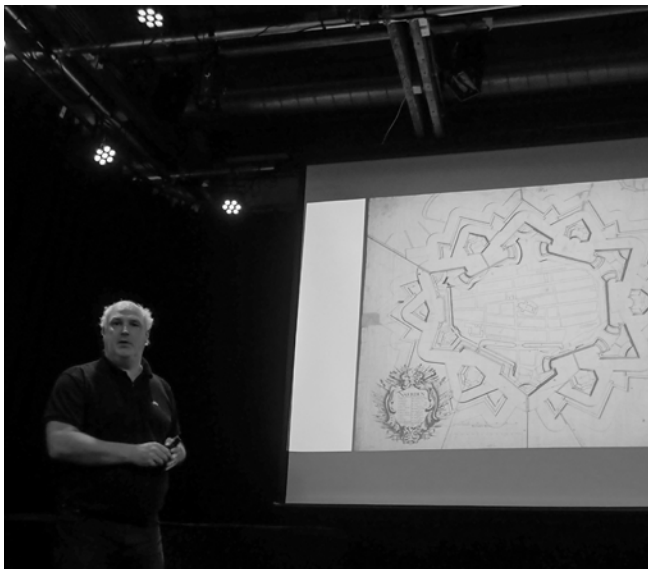
Almost all the sites involved in the project have problems with landscape erosion. Inspired by this fact, Asko Jääskeläinen, gardener and foreman in the Governing Body of Suomenlinna, choose the topic for his master's degree and gave a presentation with a title Research on the green maintenance of Suomenlinna. Due to a growing number of year-round visitors, the attempts to protect and repair eroded soil are not enough. A special mention was given to the protected vegetation widely present on Suomenlinna fortified islands.

Jeroen van der Werf demonstrated the connection between the city, the surrounding fortress and its inhabitants. The historical ramparts are protected monuments, but also an important park and recreational areas for Naarden inhabitants. This may cause a conflict between the preservation and use of the area. In some places, especially on the slopes next to the stairs, the abundant use causes erosion on vegetation surfaces. To better understand the recreational use of the covered way, Monumentenbezit invited a specialist on people's behaviour. As result it was concluded that both communication and planning based on understanding how people act if they are not guided is needed. As an example: do not put benches where pedestrians are not welcome.

The symposium participants. ©GBS

Federica Marulo. ©GBS



Jeroen van der Werf. ©GBS

After the symposium, the participants were introduced to the landscape management and access control structures on the ramparts by Federica Marulo, Eelco Barrau and Thomas Sohier responsible for landscape management. To increase biodiversity, mowing has also been thinned out on the southern ramparts. It was also considered to plant a low shrub in places where the passage causes erosion, even though the bushes are not the original vegetation of the embankments. Access is also controlled by mesh fences, which blended in well with the landscape with their wooden posts. A mower had been purchased for the steep mower slopes.

There are paths on top of the ramparts, and stairs have been built on the slopes. In a forested area, the stairs are beautiful steel stairs, and as a new type of staircase, a concrete element staircase model has been designed that is well suited to the area, which can be brought into place as step elements. This way, the construction of the stairs does not require driving large transport equipment to the construction site.

In Naarden, too, landscape management balances between preserving the original historical appearance and increasing biodiversity. This balancing act is done systematically and Naarden's green defense structures have been divided into different categories according to the treatment goals. On the southern ramparts, which are preserved as authentic open ramparts, large handsome trees grow in places, which are intended to be part of the fortress in the future as well. The goal is not to create a completely open embankment landscape through natural drain, but to plant a new tree to replace the tree to be removed.

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The mower.

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The organisation of the Symposium in the former Officers Cantine, today a theatre as well as the diner for the project group in the Visitor centre, both owned by Monumentenbezit, was made possible thanks to a voluntary organisations stichting deMess and stichting De Gele Loods.

The last day of the Naarden session on the 7th of May, was dedicated to a noble building material: brick. The participants had a chance to visit Steenbakkerij Zilverschoon Randwijk in Heteren under the guidance of Andre Bleumer, who presented us their factory, the last one in Western Europe where bricks are handmade. The factory and its ability to manufacture bricks in a customized way with different properties (water retention, color, surface structure, hardness) nicely supports the repairs of Naarden's brick walls. According to on-site studies, it is possible to order just the right kind of new brick for a specific repair, which corresponds to the old structure in terms of water retention, colour and surface. Depending on the use of the bricks, different types of clay are used, and by placing the bricks in the kiln, bricks can be fired at different temperatures, which again affects the properties of the brick. The factory also manufactures bricks from recycled bricks and glass, in which case the amount of new clay must be 40% of the mass. Combustion will take place with hydrogen in a carbon-neutral way. This significantly increases the cost of brick production but does not produce carbon dioxide emissions.

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List of participants at Naarden Exchange Session 5th to 7th May 2025

Philippe Allée / Centre des monuments nationaux (FR)
Daniel Andersson / Landskapets fastighetsverk (Å)
Germaine de Bazelaire / Atelier d'Architecture Philippe Prost (FR)
Ger Copier / Stichting Monumentenbezit (NL)
Gaëlle Chériaux / Centre des monuments nationaux (FR)
Rafaël Deroo / European Federation of Fortified Sites (EU)
Isabelle Fouilloy-Jullien / Centre des monuments nationaux (FR)
Baptiste Grandais / Atelier d'Architecture Philippe Prost (FR)
Karoliina Harvikka / Governing Body of Suomenlinna (FI)
Pauliina Harvikka / Governing Body of Suomenlinna (FI)
Iina Johansson / Governing Body of Suomenlinna (FI)
Jani Johnsson / Landskapets fastighetsverk (Å)
Asko Jääskeläinen / Governing Body of Suomenlinna (FI)
Pia Kurki / Governing Body of Suomenlinna (FI)
Tuija Lind / Governing Body of Suomenlinna (FI)
Federica Marulo / Monumentenbezit - University of Groningen (NL)
Jaakko Raidén / Governing Body of Suomenlinna (FI)
Jeroen van der Werf / Stichting Monumentenbezit (NL)

Symposium Guest the 6th May 2025

Pinar Akillilar / KU-Leuven (B)
Eelco Barrau / de Erfgoedhovenier (NL)
Patricia de Bie / deBie en Verkuijl (NL)
Mark van den Bos / Monumentenbezit (NL)
Loredana Cannas / Stichting de Gele Loods (NL)
Huibert Crijns / gemeente 's Hertogenbosch (NL)
Wim Debaene / Antwerpse Regionale Landschappen (B)
Wilton Diepstraten / Gemeente Moerdijk (NL)
Frits van Dulm / Naarden (NL)
Sarinah Fentross / Monumentenbezit (NL)
Marc Gayda / Association Vauban (FR)
Lars van Ginkel / de Erfgoedhovenier (NL)
Oscar Hefting / Stichting Menno van Coehoorn / New Holland Foundation (NL)
Marion Koelstra / Rijksdienst voor het Cultureel Erfgoed (NL)
Vera Kuijpers / Gemeente Utrecht (NL)
Merle Lammers / Monumentenbezit (NL)
Daan Lavies / Rijksdienst voor het Cultureel Erfgoed (NL)
Annemiek van der Made / Gemeente Moerdijk (NL)
Martinus van Milt / Takkenkampgroep (NL)
Marieke Muilwijk / Muilwijk Landschap Advies (NL)
Juke van Niekerk / Stichting Forten Nederland (NL)
Sarah Nooren / Rijksvastgoedbedrijf (NL)
Marius Peters / Fort Pannerden (NL)
Pieter Polman / Gemeente Arnhem (NL)
Thomas Sohier / de Erfgoedhovenier (NL)
Gabri van Tussenbroek / Rijksdienst voor het Cultureel Erfgoed (NL)
Haukit Yu / Rijksvastgoedbedrijf (NL)

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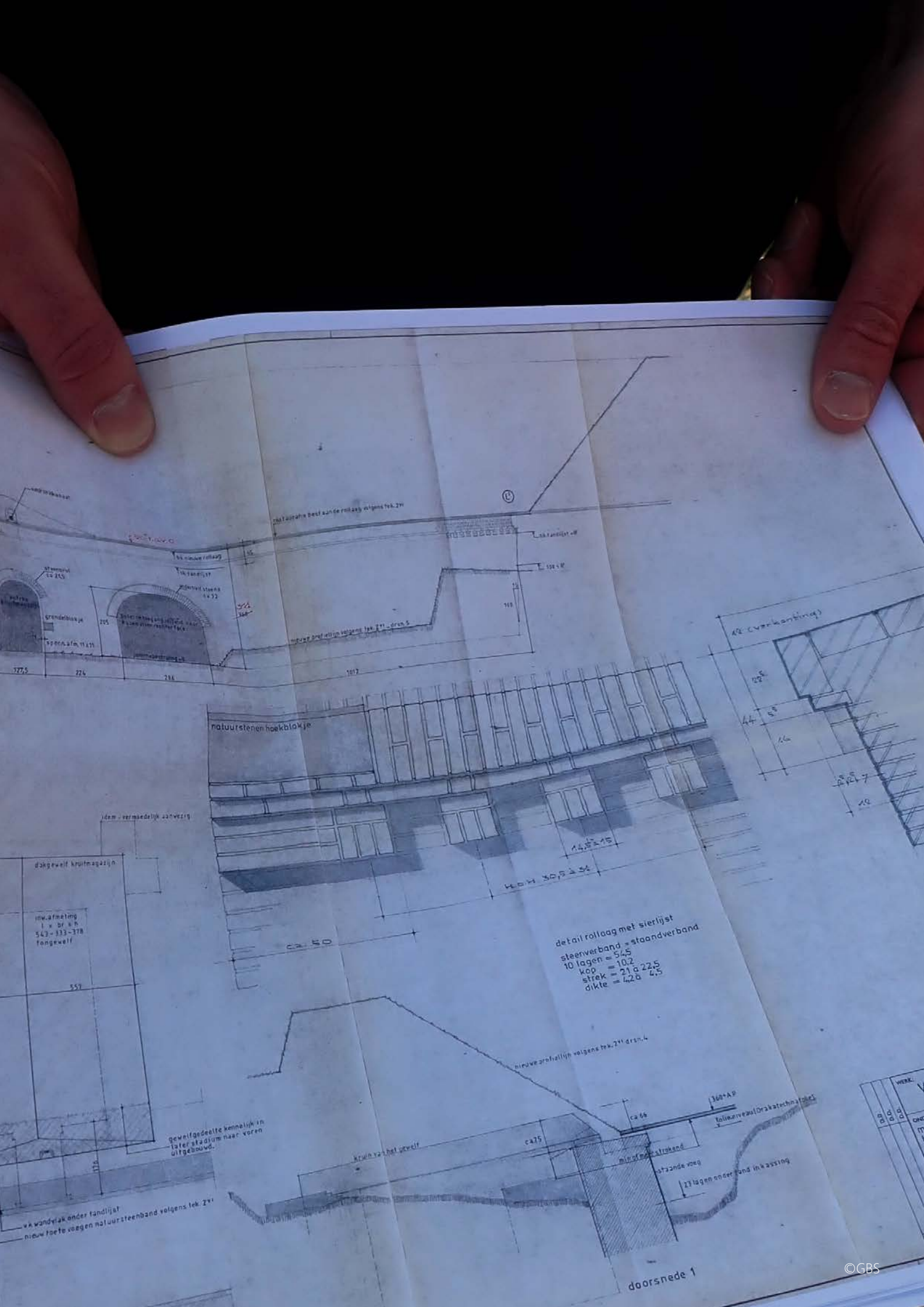
Naarden Exchange Session

Resilient Fortress Project Partners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