

# A virtual place of memory: Virtual reality as a method for communicating conflicted heritage at Camp Westerbork

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## Abstract

An important goal of the project Accessing Campscapes: inclusive strategies for using European Conflicted Heritage (iC-ACCESS), has been to develop inclusive approaches for the presentation and communication of contending perspectives on Nazi and Stalinist sites (Dolghin et al. 2017). A key objective for treating these ‘heritagescapes’ has been to ‘develop state-of-the-art strategies and implement innovative tools which provide sustainable in-situ and virtual forms of investigation, presentation and representation’ (Van der Laarse 2020). A central issue which is gaining increasing attention in heritage studies and management is the dilemma of preserving and exhibiting material remnants of Wehrmacht and SS-barracks or residencies at Holocaust memorial camps which are generally framed as victimhood sites. The Commander’s house at Herinneringscentrum Westerbork is a case in point and can be placed in different perspectives on the history of the camp terrain and all related sensibilities on its meaning as an object of heritage. In order to realise an application that can accommodate these perspectives, iC-ACCESS project leader Prof. dr. R. van der Laarse contracted two laboratories specialised consecutively in 3D visualisation technologies and spatial information to cooperate on its development, the 4D Research Lab (University of Amsterdam, The Netherlands) and the SPINlab (Vrije Universiteit Amsterdam). This paper illustrates the ideas, discussions and choices related to the production of the ‘Campscapes – Westerbork Commander’s House App’, provides a concise technical description of the actual application and presents a short prospection on potential future developments.

## Key Words

Commander’s house, conflicted heritage, 4D Research Lab, Herinneringscentrum Westerbork, iC-ACCESS, multivocality, SPINlab, virtual reality

## Introduction

An important goal of the project Accessing Campscapes: inclusive strategies for using European Conflicted Heritage (iC-ACCESS, HERA, European Union’s Horizon 2020 Research and Innovation Programme under grant agreement No 649307), has been to develop inclusive approaches for the presentation and communication of contending perspectives on Nazi and Stalinist sites (Dolghin et al. 2017). A key objective for treating these ‘heritagescapes’ has been to ‘develop state-of-the-art strategies and implement innovative tools which provide sustainable in-situ and virtual forms of investigation, presentation and representation’ (Van der Laarse

2020). A digital space provides all kinds of possibilities for creating platforms through which complicated and contrasting views on conflicted heritage can be presented and explained. Furthermore, in the field of memory studies, virtual reality or augmented reality are viewed as memory stimulating environments (Kenderdine 2007; Pacheco et al. 2014). As output of the research project, interactive virtual environments were foreseen as principal media to achieve the project goals. Due to their layered and conflicted histories, campscapes have often multiple, contested stories to tell. Various iC-ACCESS teams experimented with developing inclusive strategies for European memorial camps by means of digital mapping and storytelling (accessible both on-site as well as via the



**Figure 1.** image of the Commander's house at the memorial site (drone photo 2019, Jitte Waagen, 4D Research Lab).

internet). SPECS-Lab (Synthetic, Perceptive, Emotive and Cognitive Systems Lab) at the Institute for Bioengineering of Catalonia, Barcelona focused on cutting-edge visualisations of former wartime campscapes, whereas this contribution concerns a VR point cloud application of a single building with a highly contested past, developed by two Amsterdam digital labs.

A central issue which is gaining increasing attention in heritage studies and management is the dilemma of preserving and exhibiting material remnants of Wehrmacht and SS-barracks or perpetrators' residences at Holocaust memorial camps which are generally framed as victimhood sites. The Commander's house, strategically located at the entrance to the former Nazi-German Jewish transit camp Westerbork in the current Dutch Municipality Hooghalen, can be regarded as a contentious example of such perpetrator heritage (Van der Laarse 2009, 2010, 2015). Although built as the director's residence of what before the German occupation of The Netherlands was planned as a central German-Jewish refugee camp, after the Nazis took over the camp, the house became the seat of the Commander of the Netherlands' main Jewish transit camp. Between 1942 and 1945, it was the residence of Westerbork's German SS-camp commander Albert Konrad Gemmeke (Van Liempt 2019) and 'the House of Gemmeke' therefore directly links to the Nazi past. However, the history of the camp extends beyond its uses during the

Nazi occupation of The Netherlands. The camp was not only constructed by the Dutch government in 1939 to house Jewish refugees who fled from Nazi Germany and Austria after the exodus of the 1938 *Reichspogromnacht* (also known as *Kristallnacht*), after the war it was consecutively reused for interning Nazi collaborators, then briefly as a military camp, to become a repatriating camp renamed 'Schattenberg', for Dutch-Indonesian survivors of the Japanese camps and between 1951 and 1970 for demobilised South-Moluccan soldiers and their families.<sup>1</sup> From 1949 onwards, Colonel Van der Speck Obreen and his descendants, who also repatriated from the Dutch Indies, occupied the Commander's house, until it was abandoned in 2007 and, in 2010, transferred to the administration of the memorial institute Herinneringscentrum Kamp Westerbork. The Commander's house can, therefore, be placed in different perspectives on the history of the camp terrain and all related sensibilities on its meaning as an object of heritage.

With the intention of preserving the Commander's house from deterioration, it was decided by Herinneringscentrum Kamp Westerbork in 2011 to place a massive glass dome over the structure (Fig. 1). This raised discussion amongst experts, focusing on the perceived musealisation of the structure, the apparent disassociation with the camp terrain itself as well as limitations in access to the house and amongst Jewish memorial communities about the contested musealisation of perpetrator heritage.

<sup>1</sup> This concerned mostly Christian Moluccan Soldiers and their families from the demobilised Koninklijk Nederlandsch-Indisch Leger (KNIL) who were relocated to The Netherlands after the Indonesian National Revolution, when Ambon and other South-Moluccan Islands lost their promised independence within a Dutch Commonwealth to the new Republic of Indonesia.



**Figure 2.** Image created by ScanLAB Projects.

Given the intentions of the iC-ACCESS project to explore tools for inclusive strategies to present such ‘dark heritage’ as a way to get access through the perpetrator gaze as likewise depicted in the unique “Westerbork film” (1944), containing the only existing footage during the Holocaust of a Nazi-German transport of Jews and Sintti to Bergen-Belsen and Auschwitz; a film made under the command of Gemmecker by the Jewish inmate Rudolf Breslauer. The crucial railway platform from which all Dutch Jews were transported to Eastern concentration and extermination camps, was located right in front of the house on the central axis of the transit camp. This central structure has been an important focal point for developing a digital application to provide a space for contending perspectives on the Commander’s house and related historical narratives. In order to realise such an application, iC-ACCESS project leader Prof. dr. R. van der Laarse contracted two laboratories specialised consecutively in 3D visualisation technologies and spatial information to cooperate on its development, the 4D Research Lab (University of Amsterdam, The Netherlands) and the SPINlab (Vrije Universiteit Amsterdam). This paper illustrates the ideas, discussions and choices related to the production of the ‘Campscapes – Westerbork Commander’s House App’, provides a concise technical description of the actual application and presents a short prospection on potential future developments.

## A virtual place

In order to achieve public access to the now closed Commander’s house and use it as a framework for perspectives on its history and relation to the camp terrain, the

3D point clouds of the structure by ScanLAB Projects, based in London (UK), provided a suitable digital environment. Such scans are derived through terrestrial laser scanning. This is a technology in which laser beams that deflect on surfaces projected from a stationary scanning device are used to acquire accurate 3D coordinates. A camera can be used to attribute a colour to every individual point. The end-result is a so-called point cloud, which usually comprises millions of points and visualises the surroundings of the scanners’ location in very high detail. By relocating the 3D laser scanner through the Commander’s house, a large series of point clouds has been collected that have subsequently been integrated into a single set of points, envisaging the complete structure (Fig. 2).

As a virtual representation of the Commander’s house, the combined point clouds provided an objective and neutral capture of the historical environment for creating a virtual reality application. It was decided not to further post-process the point cloud into a 3D model. This would require ‘stitching’ together the points in order to create a polygonal mesh, i.e. a connected surface, that can subsequently be coloured, based on the point colours. Whereas that would provide a more familiar and smooth appearance to a viewer, meshes usually require a degree of complementary manual modelling. It was decided on ethical grounds not to do so, because such smoothness would raise questions both on how realistic, detailed and aesthetic the model should be and unavoidably would bring up the discussion of *disneyfication*, i.e. the perception of the derogatory process of violating the authentic character of what could be perceived as a virtual house museum (Bryman 2004).

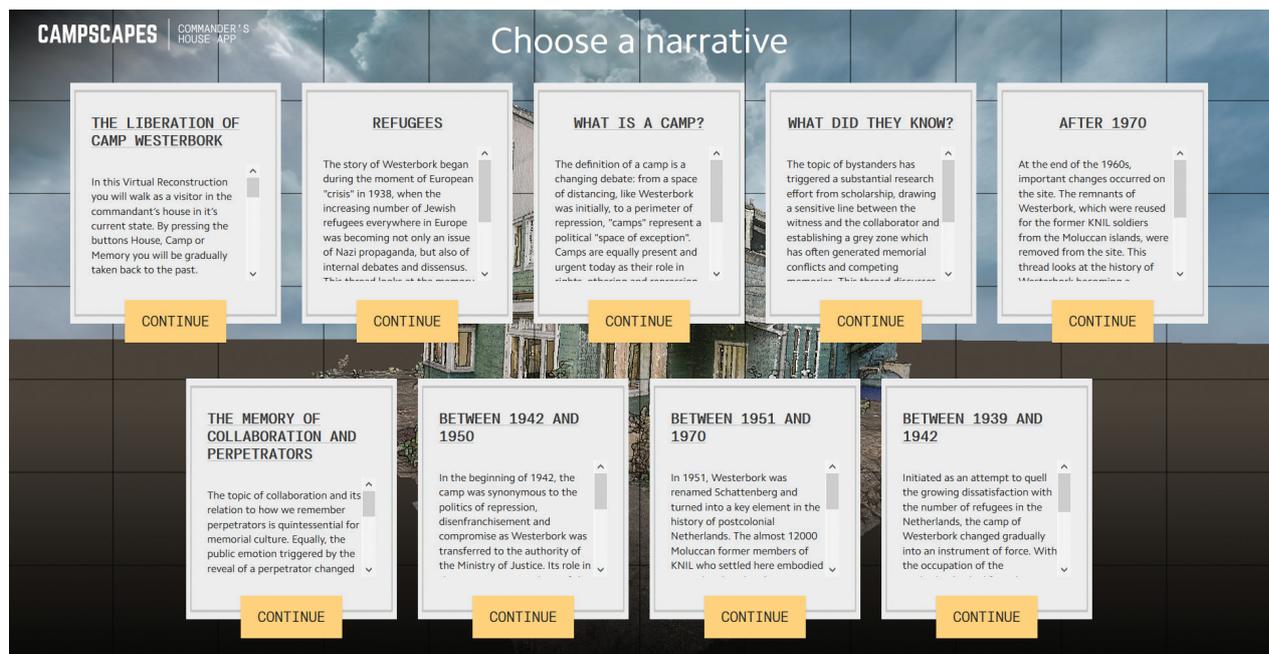


Figure 3. illustration of the narrative choice screen.

## Communicating perspectives

The purpose of the Commander's house application has been to provide a frame or viewer box for communicating perspectives on the use and transformation of the place, but also for visualising meaning and memory. The application was intentionally created for a diverse audience, from academics to the regular audience of the Herrinneringscentrum Kamp Westerbork. In practice, the application was developed in partnership with the memorial institute. In order to accommodate the interests of these different stakeholders, the application has been structured with the concept of narratives that offer space for the inherently multivocal perceptions of the Commander's house. Every narrative comprises a guided tour through the spaces of the house, following a linear path in which every part of the structure is visited. Examples of "narratives" are 'Refugees', 'What is a camp?' or 'The Memory of Collaboration and Perpetrators' (Fig. 3).

Each part of the house is used as a stage for presenting pieces of information that communicate historical facts, as well as past and current perceptions and discussions that surround them. This information is not necessarily chronologically structured or immediately related to the spatial context. The guided tours are used, instead, to communicate a set of storylines connected to the various spaces on varying levels of abstraction. As such, the Commander's house is used both as a visualisation of an object of conflicted heritage and as a visual background for the different narratives. Every narrative is layered in its information; there is a layer 'house' and a layer 'camp', both providing a platform for perspectives on different scales, as well as a layer 'memory' for less tangible parts of the narrative. The purpose of the app is to lure the visitors inside by inciting their curiosity to see what is not accessible

physically, but once the visitors are inside, the narratives turn their gaze outwards to the larger historical narratives and debates related to the Westerbork campscape.

## Towards a user experience

These two main components, the point cloud visualisation of the Commander's house and the structured narratives, have been integrated creating a Potree WebGL pointcloud visualisation tool (<https://github.com/potree/potree>). It is browser-based technology that renders the application platform-independent, as long as a modern browser is used and the medium has a decent graphics card. To allow for dynamic expansion of the number of narratives, as well as affording realtime updates to their content, the narrative data is drawn from a backend database. For this, Directus has been used, a headless content management system with an intuitive interface (<https://directus.io/>). All developers, iC-ACCESS research, as well as the historians at the Herrinneringscentrum Kamp Westerbork, could comfortably add, remove or update content in this way.

The application starts with a view from above the Westerbork camp terrain, which visualises LiDAR (Light Detection and Ranging) data, which is the same 3D laser scanning technology as explained above, yet collected by mounting a scanner under an aeroplane (<https://www.ahn.nl/>, see also Martinez-Rubi et al. 2016). The data are, thus, similar in its appearance to a point cloud, though the points are much less dense than the Commander's house point cloud because of the scanning distance. In order to emphasise the relation of the Commander's house to the camp terrain, the application starts by hovering over the camp terrain with an indication of the location of



**Figure 4.** illustration of hover over camp terrain.

the house, during which the user can freely look around (Fig. 4). When continuing, the camera slowly zooms in on the location of the Commander's house and finally at the Commander's house itself, again to evidence the connection with the camp terrain.

Once zoomed in on the house, standing just outside the front door leading to the hallway, the user is offered an explanation of the interface, the house and the laser scans. The latter was specifically added to make the viewer acquainted with the perhaps unfamiliar point cloud visualisation. After this, a choice can be made for either of the nine narratives. Following a narrative can be done in two ways. The first is the linear guided tour mentioned above, which is a path along which the camera or viewer follows a fixed trajectory. On a slider below the main viewport, the user can see the progression through the various parts of the house. The second option is to use this slider to 'jump' to the different parts of the house, which was made available to afford skipping or restarting segments of the narrative. On all positions in the guided tour, it is possible to freely look around from a stationary position in order to give the user the opportunity to absorb the environment (Fig. 5). On the other hand, to avoid disorientation, it was explicitly decided not to enable the user to freely navigate the house.

Upon entry to the separate parts of the house, a panel appears with information contained in the narrative (Fig. 6). These are generally historical sources in varying media, such as newspaper articles, photographs, recorded interviews or videos. The sources are provided with an explanation in the context of the narrative. On the panel, the user can choose between the tabs 'house', 'camp' and 'memory' to access the different layers in the narratives. The panel can be minimised to allow for more viewing space for inspecting the point cloud visualisation. To in-

crease the awareness of the user on where he or she is in the house, a floor plan can be activated that shows the section of the house in which the user is located, as well as the viewing direction.

Although the design of the navigation in the application is mainly accommodating the structure of the narratives, it is also possible to experience a more direct spatial contextual approach, by absorbing all information related to a room before moving to another part of the house. This is made possible by the option of selecting a different narrative using the narrative selection button; remaining in the current location, the user can browse through the narratives one by one and read all content.

Summarising the description above, the end result is a first concept as was viable in the available bandwidth of resources. In terms of theoretical and technical approaches, the application is still in development. As such, the current result is not intended to be a smooth and well-rounded VR experience, but a reflection of a finely balanced academic debate with different stakeholders and about various ideas and approaches and how technology can facilitate this. The first narrative 'The liberation of Camp Westerbork' exposes the different interests shaping this debate, as it refers to the explicit wish of the Herinneringscentrum Kamp Westerbork to incorporate a chronologically orientated narrative with the same theme as the semi-permanent exhibition of the same name. In this way, the application negotiates as an intermediary between the museum world and the academic world and the current solution is not necessarily optimal. As such, the application expresses the current state of the discussion and should be seen as a configuration that should be discussed, adjusted and developed further. Nevertheless, the application is fully functional and accessible and to the creator's contentions effective-

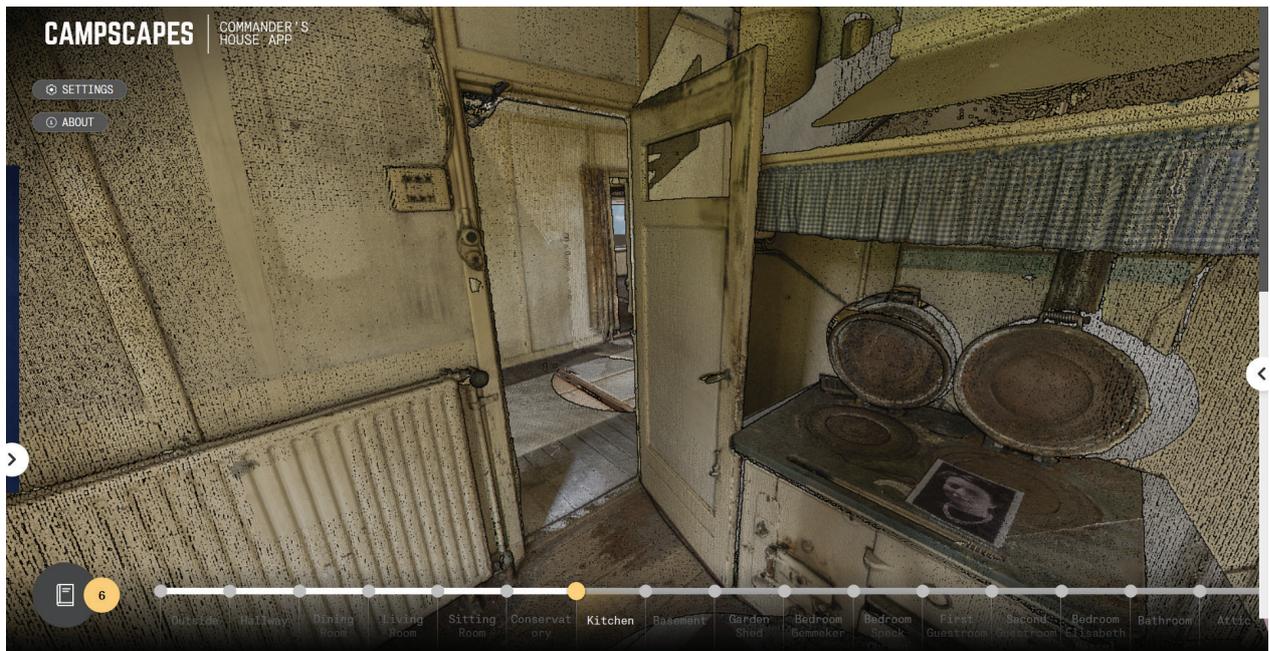


Figure 5. illustration of a ‘clean’ view of the house interior.

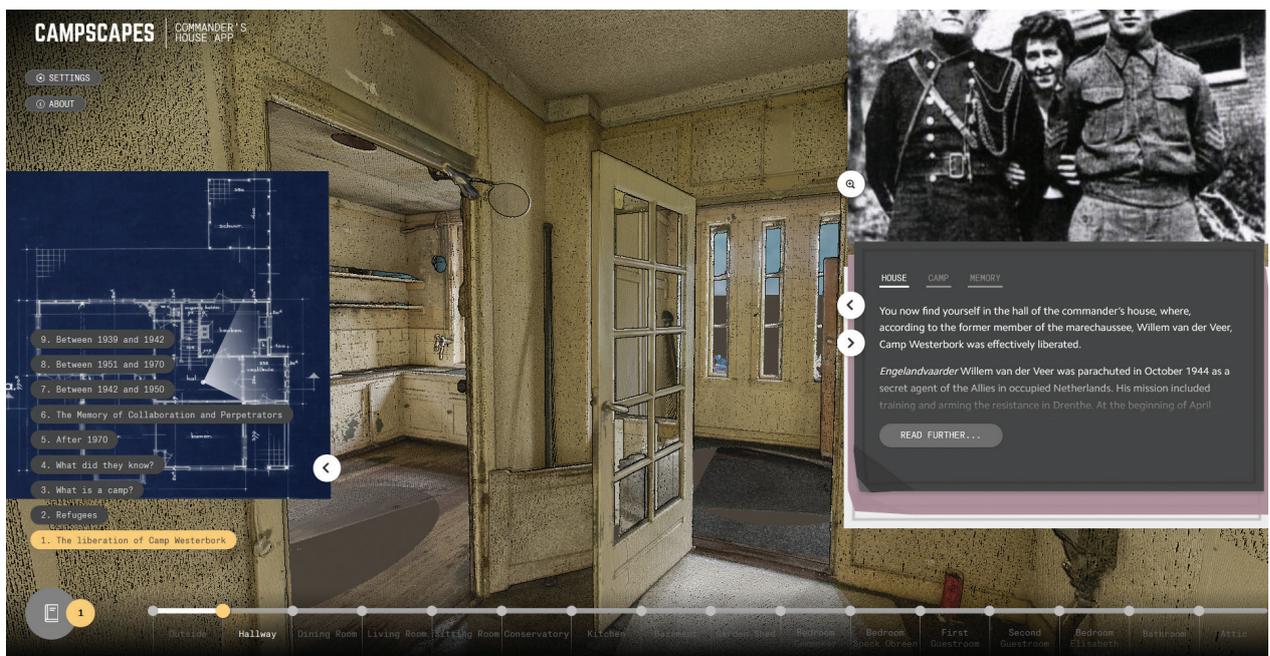


Figure 6. illustration narrative choice, slider, information panel, floor plan.

ly presents the complex multifocal perspectives of the Westerbork Commander’s house conflicted heritage: a virtual place of memory.

### Are we there yet?

In light of the above account, this question is rather rhetorical: the project has been developed in a limited bandwidth of resources, which practically has restricted the freedom to implement everything that was originally contemplated

to be part of the Commander’s house application. It is important to emphasise that the development of applications such as these is often grossly underestimated in terms of organisation, complexity and costs. This relates to person hours of 3D laser scanning, technical development and careful selection and representation of historical sources, time for fabricating a well-considered functional design and the precise planning and mapping storyboards.

An important element that has not been implemented and certainly one to work on in the near future, is the visual connection to the camp terrain from inside the Command-

er's house. The windows provide an excellent opportunity to make the user look out of the house towards the camp or, for example, the Kommandatur, virtually conceptualising the so-called 'perpetrator's narrative' or 'gaze' (Kopperman 2019). The windows would also allow perspectives on other, very important, source material, such as the Westerbork movie to which the campscape owes its European Heritage Label (2013) and which is recently included in the UNESCO Heritage of the World Register (2017). This is because it is the only document showing the Nazi deportation trains to Auschwitz, the script of which was commissioned by the same Commander who could look out from his balcony at the weekly transports.

Another improvement that would increase the awareness of the interconnectedness of the narratives would be to supplement crosslinks between them. It should be made possible to jump between the various sections and layers of the different narratives where their content addresses the same events or concepts. Finally, as mentioned, there is still quite some room for improvement in the interface making for a smoother and more comprehensible user experience. Since the application has been built such that expansion in the near future is straightforward, this is a goal that will be pursued. Moreover, the application has been developed as a free open source software application under a GNU GPLv3 copyleft licence. Therefore, others can freely download and expand on the software as long as they release the source code under the same conditions.

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The Campscapes – Westerbork Commander's House App can be found here: <https://data.campscapes.org/westerbork/>

The source code can be found here: <https://github.com/4DRLGit/westerbork-viewer>

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