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Informing Heritage Conservation Through Diverse Experiences: The Case of the Leuven Town Hall

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Abstract

Awareness is growing of the need for more inclusive and sustainable cities and communities, as evident in the objectives of the United Nations Sustainable Development Goals. The targets underline the importance of participatory approaches, protecting cultural and natural heritage, and providing universal access to inclusive public spaces. To achieve these targets in the context of built heritage, our research explores a pathway that aligns with conservation practice's gradual shift to collaborative approaches involving diverse others. Seeking a more inclusive approach in built heritage conservation, we engage people with diverse bodies and minds as users/experts, attending to their situated and embodied experiences. Their unique expertise-by-experience informs architecture and conservation practice by providing nuanced insights into qualities and obstacles of built heritage. However, suitable methods and tools are necessary to capture and transfer these insights to practice effectively. In this article, we present the approach we experimented with in the case of the historic Leuven Town Hall (Belgium), which is undergoing a restoration project. We outline our process and methods for transforming disability experience into actionable knowledge that facilitates exchange between users/experts, architects, and city representatives. We detail how the resulting tools illustrate and situate the identified qualities and obstacles in the user/experts' interaction with this heritage site, building on the concepts of affordance and gradient of accessibility. Leveraging user/expertise for built heritage, our approach promotes a conservation process inclusive of diverse voices and experiences and fosters collaboration between academia and practice, while contributing to creating inclusive and socially sustainable historic environments.

Keywords
affordance; built heritage; disability; inclusive design; participation; user/expert(ise)

1. Introduction

The United Nations Sustainable Development Goals (UN SDGs) aim towards a better and sustainable future (by 2030). Goals such as "reduced inequalities" (goal 10) and "sustainable cities and communities" (goal 11) emphasize a growing awareness of the need for more inclusive and sustainable societies reflected in their living environments (United Nations, n.d.). The targets of goal 11 underline the importance of participatory approaches, protecting and safeguarding cultural and natural heritage, and providing "universal access to safe, inclusive and accessible, green and public spaces, in particular for women and children, older persons and persons with disabilities." Our research on inclusive built heritage seeks to contribute to achieving these targets.

Conservation practice is increasingly embracing collaborative approaches, influenced by social and political changes that push for more participatory methods including others beyond heritage experts (see Eisazadeh et al., 2023). In line with these changes, we seek a more inclusive approach to built heritage conservation that includes diverse voices and experiences. To this end, we adopt a participatory approach and engage people with diverse bodies and minds, attending to their situated and embodied experiences.

Through their daily encounters with disabling situations, individuals with diverse bodies and minds develop a distinctive expertise derived from their experiences. As users/experts, they offer valuable perspectives on the built environment, contributing insights and solutions that help create spaces that are more accommodating to a wider range of people (Ostroff, 1997).

With the objective of making built heritage more inclusive, we conduct multiple case studies to understand users/experts' experiences in selected heritage sites and explore the potential of disability experience for reviving and reconnecting heritage with the broader society. In this process, suitable methods and tools are required to capture and transform disability experience into actionable knowledge for conservation practice.

In this article, we present our approach in the case of the Leuven Town Hall (*Stadhuis*) in Belgium, which is located in the centre of this historic Flemish city. This prominent heritage site dating back to the 15th century consists of multiple wings around an inner courtyard (the *Vrijthof*), with the gothic wing as the icon of Leuven (Figure 1).

In 2019, the city administration of Leuven organized a design competition for the conservation and adaptation of the Town Hall. To this end, they collaborated with the team of the Flemish Government Architect (*Vlaams Bouwmeester*), whose core mission is to promote architectural quality in the built environment in Flanders through advising on the design and realization of public buildings and spaces. Their vision for the future of this heritage site is described on the team's website:

> With the adaptive reuse of the town hall (including the current police station), the city of Leuven is taking an important step towards opening up this top monument permanently and giving it a

Figure 1. The historic Leuven Town Hall in Belgium (© Negin Eisazadeh, 2020).

> fully-fledged cultural and tourist function….The town hall should thus offer a new, attractive, unique and atmospheric experience for both the people of Leuven and (inter)national visitors. An integrated interpretation, multifunctionality and optimal accessibility and circulation are the main starting points. (Vlaams Bouwmeester, n.d.)

From the very start of this important urban project, the city of Leuven stressed the need for a collaborative approach: "The design team will have to be prepared to go through a process together with the city in which citizens, partners and stakeholders will be very closely involved" (Vlaams Bouwmeester, n.d.).

In the initial design brief, the city's objective to make this heritage site more accessible is evident. This focus on accessibility is present in the winning design, by design teams aNNo architecten, FELT architecture & design, Atelier Arne Deruyter (landscape design), Endeavour, and 88888. As stated on the aNNo architecten website, "[m]aximum accessibility is the keyword" (aNNo architecten, n.d.).

In dialogue with the city of Leuven, we joined this project after the selection of the winning design. Building on previous experience in our research group (Vermeersch & Heylighen, 2015), we proposed to support the existing efforts for "maximum accessibility" by offering and refining our methods and tools to mobilize disability experience to inform the design process. Collaborating with the city and the project designers, we offered insight into the experiences of diverse users/experts in this heritage site in view of the initial design proposal. This collaboration was extended over several years through multiple stages of the design process, from initial to final design, in order to guard the users/experts' input.

To leverage user/expertise for (inclusive) built heritage, we explore how to capture and transfer knowledge from disability experience to inform a conservation practice that is inclusive of more diverse voices and

experiences. This article details our approach to translating disability experience into tangible and actionable knowledge that informs the design process in the Leuven Town Hall project.

We elaborate on this participatory process and present the methods and tools we used to mediate and facilitate the exchange of experiences, knowledge, needs, and ambitions between users/experts, architects, and city representatives. To communicate the insights gained from in situ go-along interviews with users/experts, we produced graphic and text reports that illustrate and situate the identified qualities and obstacles they experienced. By adopting the "concept of affordances" as action possibilities provided by the environment (Rietveld & Kiverstein, 2014), initially advanced by Gibson in 1979 (Gibson, 2015), we link the needs of diverse users to the features of the built environment. Moreover, we visualize the disability experience using a gradient of accessibility (Vermeersch & Heylighen, 2015), which goes beyond the accessible-inaccessible dichotomy. Furthermore, in the follow-up sessions, we made visuo-haptic models as accessible representations (Vermeersch & Heylighen, 2021) to discuss the design (alterations) with users/experts.

In what follows, we begin by exploring the connections between inclusive heritage, sustainability, and participatory approaches. We then elaborate on disability experience and the concept of affordance which forms and frames our research. We outline the methodology, elaborating our methods for data collection and analysis to gain insights into the users/experts' experiences in this heritage context. Subsequently, we present our resulting tools, linking embodied experiences with affordances, and their spatial grounding and implications. In discussing our approach, we explore the complexities and nuances of engaging users/experts in heritage conservation, highlighting the impact of such participatory approaches on creating inclusive and sustainable environments. We conclude by reflecting on our experiences and the potential for future research to further refine and enhance participatory practices in heritage conservation.

2. Points of Departure

2.1. Participatory Approaches to Heritage and Sustainability

Over recent years, participatory approaches to heritage that incorporate the perspectives of various stakeholders beyond the conventional heritage experts have gained prominence (Avrami et al., 2019). As heritage values are increasingly viewed as socially constructed, this evolution represents a transition towards more collaborative and inclusive heritage practices (Eisazadeh et al., 2023).

Conservation practice's gradual direction towards more participatory approaches has been shaped by various international heritage charters and documents. One significant example is the *Burra Charter*, first adopted in 1979 and revised in 2013, which has been used as "a reference point in promoting community inclusion in heritage conservation" (Waterton et al., 2006, p. 340) and dedicates Article 12 to participation (ICOMOS Australia, 2013).

In the European context, the *Council of Europe Framework Convention on the Value of Cultural Heritage for Society* (Council of Europe, 2005), known widely as the Faro Convention, highlights the importance of both "access to cultural heritage and democratic participation" (Article 12) while emphasizing everyone's right to "benefit from the cultural heritage and to contribute towards its enrichment" (Article 4a). It recognises "the need to put

people and human values at the centre of an enlarged and cross-disciplinary concept of cultural heritage" and emphasizes "the value and potential of cultural heritage wisely used as a resource for sustainable development and quality of life in a constantly evolving society" (Council of Europe, 2005).

The Faro Convention highlights the link between inclusive heritage and sustainability, emphasizing the importance of participatory approaches in this context. However, it does not clarify how participatory processes could be employed, leading to ambiguity in practice and disparity between theoretical ideals and actual implementation (Colomer, 2023).

The Faro Convention inspired the European Commission's Heritage for All initiative, which is supported by the REACH project—RE-designing Access to Cultural Heritage for a wider participation in preservation, (re-)use, and management of European culture (Forbes & Colella, 2019). This project provides a repository of good practices for participatory approaches to cultural heritage in Europe and beyond (Open-Heritage.eu, 2019) involving diverse stakeholders such as minorities and indigenous communities. Among the 128 projects consulted on the website (Open-Heritage.eu, 2019), a select few focus on diverse bodies and minds, mainly aiming to increase accessibility to culture through inclusive cultural offers and representations. This includes projects in museums (Lugo Museums Network in Spain, Inclusive City Museum in Germany, Full Access to Cultural Spaces project involving ten European countries), events (Macerata Opera Festival in Italy), and archaeological sites (Heritage for All in Poland). Forbes and Colella (2019) look into REACH's repository of good practices, stating that each one can offer valuable lessons. They argue that achieving truly transformative participation requires both short- and long-term processes. These involve testing and experimenting with participatory approaches to facilitate the transition from "rhetoric" to "practice": "from the theoretical consensus about the importance of participation, to the realisation of sustainable initiatives that verify, in the field, what works and what doesn't" (Forbes & Colella, 2019, p. 70).

On the global scale, as mentioned before, the UN SDGs emphasize the importance of fostering inclusive and sustainable environments. Furthermore, towards creating "sustainable cities and communities," Target 11.4 explicitly highlights the importance of protecting and safeguarding cultural and natural heritage. In outlining the link between UN SDGs and heritage, more specifically "reduced inequalities," the International Council on Monuments and Sites (ICOMOS) Sustainable Development Goals Working Group further elaborates:

> The dynamics of growing inequality endanger the sustainability of heritage sites and the inclusive, sustainable development of their communities. Heritage sites and practices can offer platforms for shared identities, experiences, and exchange, which help alleviate social inequalities and support the social cohesion and dignity of communities. On the other hand, in these fast-changing environments, culture-based discrimination needs to be addressed and transformed, fostering inclusive heritage practices that can play a fundamental role in the respect of human rights and the preservation and promotion of cultural diversity. (Labadi et al., 2021, p. 70)

To "harness the role of heritage in reducing inequalities and fostering inclusiveness," the working group advises engaging and empowering local communities, diverse groups, and individuals (Labadi et al., 2021, p. 71), including those with disability experience. Furthermore, they emphasize heritage's important role in shaping the unique character of cities through preserving local identities and shared values and fostering a sense of pride and belonging (p. 76).

Frameworks such as the Burra Charter, the Faro convention, and the UN SDGs highlight the growing importance of participatory approaches in heritage conservation. Despite the promotion of such approaches to engage diverse stakeholders in heritage practice, challenges in implementation exist, highlighting a need for strategies to bridge the gap between theory and practice.

2.2. Disability Experience and Heritage

In the post-modern view, disability is seen as a social and cultural construction rather than a purely biological condition that is found within the body (Devlieger et al., 2003). It is more and more understood as a mismatch between someone's body and the sociomaterial environment. Hence, as opposed to *having a disability*, (any)one can *become* or *be made disabled* (Moser, 2005). This underlines the critical role of the built environment and those who shape it, in creating enabling or disabling interactions for people with diverse bodies and minds.

Inclusive design approaches acknowledge and address this diversity of human abilities and conditions in design processes, seeking resonance between diverse needs. In this connection, users/experts and their specific experiences play an essential role (Heylighen et al., 2017). They can provide complementary perspectives in understanding the built environment, its challenges, and potentials.

Users/experts are a wide spectrum of individuals who develop natural experiences through navigating the everyday challenges posed by their environment (Ostroff, 1997), including toddlers, parents with prams, and ageing individuals with changing abilities. In the context of our research, users/experts are individuals whose diverse bodies and minds differ from the norms that are typically considered in the design of built environments and cities. Hence, they often encounter disabling situations in their daily lives and are generally referred to as disabled people or people with disabilities.

Existing literature acknowledges the value of insights gained from disability experience for architecture (Vermeersch & Heylighen, 2015), and views disability as a creative force for design, which challenges what is assumed to be "normal" (Boys, 2020). Building upon this, we explore the potential of disability experience for identifying what may hinder or facilitate interactions with heritage sites. Moreover, attending to disability experience provides an opportunity to rethink conventional normative approaches in heritage conservation (see Eisazadeh et al., 2023).

To communicate users/experts' situated and embodied knowledge derived from their bodily interactions with a heritage site, suitable methods are required. These methods should link the insights to both the user/expert and the heritage context, facilitating knowledge transfer to professional experts.

2.3. Affordance and Heritage

Building upon the work of Gibson (2015), the concept of affordance has been used in various disciplines including architecture. In architectural theory, this concept serves as a conceptual framework to understand the relationship between built environments and their occupants (Maier et al., 2009). In architectural design, it represents a shift in design thinking (Maier & Fadel, 2009), while in architectural practice, it is used as a tool to explore how design intentions align with actual use (Maier et al., 2009).

The theory of affordances provides a framework for understanding the relation between the environment and its inhabitants. Coining the term, Gibson states that "*affordances* of the environment are what it *offers* the animal, what it *provides* or *furnishes*, either for good or ill….It implies the complementarity of the animal and the environment" (Gibson, 2015, p. 119, emphasis in original). Overcoming the objective–subjective dichotomy, "affordance points both ways, to the environment and to the observer" (Gibson, 2015, p. 121). Chemero (2003, p. 181, emphasis added) further refines affordances as "relations between the *abilities* of animals and *features* of the environment," which are understood as real and perceivable, and neither the properties of the environment nor the animal. The features of an object or an environment determine its affordances, which emerge when the characteristics of individuals—such as their physical dimensions and abilities, needs, and intentions—match the features of the environment (Menatti & Casado Da Rocha, 2016).

In the context of the built environment, taking into account the sociocultural context relevant for humans, affordances have been further refined as relations between *aspects* (as opposed to Chemero's *features*) of a *sociomaterial* environment and *abilities* available in a *form of life* (Rietveld & Kiverstein, 2014). Features refer to the physical and observable properties of objects or environments, such as size, shape, texture, colour, and other material qualities, which can be directly sensed and interacted with. Aspects, on the other hand, offer a broader, more holistic view. They include not only these physical features but also how these features are perceived and experienced by individuals within their specific sociocultural contexts. Hence, the theory of affordances facilitates the study of how people interact with the built environment by considering how its various aspects—different features within the sociocultural context—afford diverse users various possibilities for action.

Koutamanis (2006) emphasizes the significant contributions of the "notion of affordances" in architectural design, particularly its capacity to account for the diversity of users, including variations in mobility, perceptual or cognitive abilities. He asserts that by analysing how individual characteristics correlate with architectural elements and spaces, "architects can go beyond vague, stereotypical user profiles, gross generalizations and arbitrary selections." He argues that the insights gained "should lead not to deterministic design solutions but to better understanding of space as a flexible and adaptable arrangement of multiple, overlapping opportunities" (Koutamanis, 2006, p. 362).

In the context of heritage sites, where the material aspects are embedded with meanings and values rooted in the sociocultural context, the theory of affordances holds potential for understanding how these sites are experienced. For example, this theory has been used to explore embodied experiences in a sacred heritage site, allowing to consider both the agency of place and people (see Ackerman, 2019). Another example is the affordance-based approach to heritage in the Hardcode Heritage concept of Rietveld Architecture-Art-Affordances (RAAAF) studio:

> Hardcore Heritage aims at providing affordances for spatial experiences that trigger one's imagination. By taking seriously the idea that people engage with their environment—such as heritage—based on the relevant affordances it offers to them, Hardcore Heritage provides a perspective [that] can clarify the value of cultural objects, by relating the use of objects in sociomaterial practices to the skills and concerns of people, instead of keeping objects at a distance the way conventional historic preservation tends to do. (Rietveld & Rietveld, 2017, p. 2)

As Ackerman (2019, p. 417) notes, "affordances provide a way to both explore and speak about the embodied experience," allowing to consider both the users/experts' abilities and conditions and the features of the historic built environment within its sociocultural context. Affordances can apply to diverse scales of a (heritage) site, from a door handle to a specific room, an entire building, and even its neighbourhood. This versatility enables exploring a heritage site at different levels, from the smallest architectural details to the broader urban fabric. Furthermore, the grounding of affordances in the sociocultural context (Rietveld & Kiverstein, 2014) allows going beyond the physical features to include the potential impact of other people and the specific context of each heritage site.

3. Methodology

In our research on inclusive built heritage, we collaborate with users/experts on multiple case studies across diverse heritage sites in Belgium to understand how people with different bodies and minds experience these historic spaces. This section elaborates on the methods used to gain insights into the users/experts' experiences in a case study on the Leuven Town Hall, which was conducted during the coronavirus (Covid-19) pandemic. This iconic monument renowned for its richly decorated gothic wing overlooking the Great Market (*Grote Markt*) square stands in the historic centre of Leuven, opposite St. Peter's Church. This heritage site consists of multiple buildings constructed over the centuries around an inner courtyard. To effectively study the users/experts' experiences of the Leuven Town Hall, the importance of on-site methods is evident. Such methods allow us to capture both the unique spirit of this historic place, its genius loci (Norberg-Schulz, 1980), and the situated experiences of people with diverse bodies and minds within this historic fabric.

3.1. In Situ Go-Along Interviews

To explore users/experts' interactions with the Leuven Town Hall and its surrounding urban context, we conducted in situ go-along interviews that allow questioning, observing, and discussing their situated and embodied experiences.

The preparation for these interviews included historical research, familiarization with the new design proposed for the Town Hall, and an initial site visit to define the scope and the route for the interviews. This visit highlighted that experiences of the Town Hall extend beyond its legal boundaries to encompass the immediate urban context. In addition to the heritage site itself, various factors can influence these experiences, including the availability, accessibility, and proximity of public transport, the layout and materials (e.g., for pavements) of the urban fabric, vehicular and bicycle traffic, and the presence of people on the site and its surroundings. Therefore, making this heritage site more inclusive, starts from its extended urban context and its reachability. Based on this, we investigate the users/experts' experiences of the heritage site and its immediate urban context. This allows us to reflect on both the dynamic urban interactions around the site and how the users/experts experience the building itself and its connection to the surroundings.

Based on this preparatory stage, we selected specific public spaces within the Town Hall and its immediate context that are important for this heritage site and/or the future project. The route for the interviews was planned accordingly; the way the users/experts entered the building is based on how the Town Hall will be

entered in the new design. Focusing on building parts that are planned to be open to the public, all visits followed a similar route, be it adapted to each user/expert's abilities and preferences and also the availability of the spaces on the day of the visit.

All interviews were semi-structured and based on open-ended questions about the experiences of the users/experts and the qualities and hindrances they are confronted with. This approach allowed the participants to answer and elaborate on the questions as they saw fit, or to introduce other topics for discussion in the interview. Additionally, during the visit, the researcher narrated the story of the building's past and when relevant, showed graphic documents illustrating the future vision for the Town Hall (Figure 2).

This research on Inclusive Built Heritage has been approved by the Comité d'éthique en sciences humaines et sociales (CESHS) at the ULiège. Throughout the project, the users/experts have participated on a voluntary basis. However, at the end of each case study, a small gift is provided to each user/expert as a token of appreciation for their time and contribution.

In preparation for the interviews, informed consent forms were shared with the users/experts and signed by them. These forms informed participants about the research objectives, methods, and data handling procedures, ensuring transparency. The forms also outlined participants' rights, such as the option to remain anonymous in visual and textual data, the ability to withdraw from the study at any time, and the confidentiality measures taken to protect their personal information. Participants were given the opportunity to choose whether they wished to receive updates on the research results and to indicate if they preferred to remain recognizable in visual data.

Additionally, for the Leuven Town Hall, another informed consent form was prepared for the collaboration with the City of Leuven. This form outlined the study's objectives, data collection methods, data handling procedures, and the possibility of publishing the research findings in various formats. It reiterated the

Figure 2. Use of design project documents during in situ go-along interview with user/expert (© Piet Tutenel, 2021).

voluntary nature of the participation of both the users/experts and the city of Leuven while emphasizing confidentiality, data protection, and participants' rights to withdraw at any time. The form also specifies that data, such as interview quotes and photographs, will be pseudonymized unless the users/experts explicitly request otherwise. Moreover, it details the research team's requests for this collaboration and the expected research deliverables, and allows the collaborator to specify any additional conditions.

In the Leuven Townhall project, we collaborated with four volunteer users/experts, whose names have been replaced by pseudonyms: Martin who is autistic and has a background in architecture, Sara who has a vision impairment, Ben who uses a wheelchair and is also able to walk for short distances with support, and Kobe, who is deaf in his right ear and also has ADHD. In the course of our project, we collaborated on previous case studies with Martin and Sara, therefore they were already familiar with us and our methods. Ben also had prior experience working with the research group and was well-acquainted with our approach. Since the research focuses on the embodied experiences of the users/experts, no personal information (e.g., age, marital status) is collected from them, ensuring that the emphasis remains on their interaction with the built heritage rather than personal demographics.

The interviews were conducted in English. During the interview with Sara, we used two existing touristic models of the Town Hall's gothic wing (see Figure 3) to give access to more distant features of the building and communicate through touch additional details about the outside volume. This allowed us to gain insights into her experiences with such models.

The go-along interviews were documented using observatory notes, photos, audio, and video recordings (GoPro mounted on the user/expert). The videos also served as a backup for the audio recording. In each interview one user/expert and two researchers were present, one focusing on the interview questions and the other on recording the information (mainly through photographs). These recording techniques document the diverse conditions of the experiences by capturing, for example, the movement, and acoustic and visual

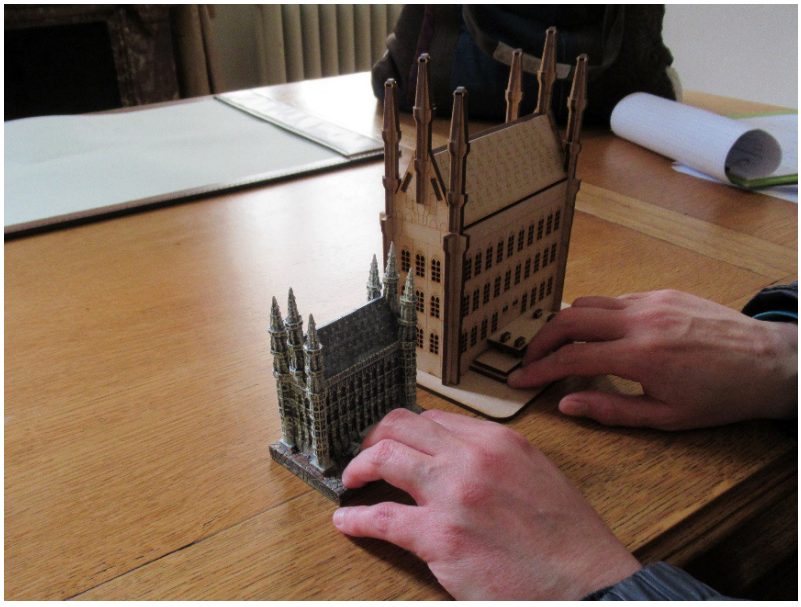

Figure 3. Use of existing touristic models in the interview with user/expert with a vision impairment (© Peter-Willem Vermeersch, 2020).

features in diverse spaces. As the go-along interviews are very attention-consuming, this approach helps minimize the risk of overlooking important details during these interviews.

To analyse the go-along interviews for gaining insights into the users/experts' experiences, audio recordings were transcribed and data were pseudonymized. We conducted a qualitative data analysis roughly following the QUAGOL guide (Dierckx de Casterle et al., 2012). This consisted of an iterative process of coding, developing concepts, and identifying themes, while integrating sensitizing concepts from our conceptual framework. To transfer the insights to the design team, we built on our previous experiences in other projects to develop and refine tools, presented in the next section.

In finetuning our approach, we organized two discussions with representatives from the city and the design team. Notes from these meetings document their perspective on the adopted approach and output. For instance, after the initial two go-along interviews, we requested a meeting to present and validate our approach and preliminary findings, documented in a graphic report. They appreciated the clarity provided by the explanations during the presentation, which led us to complete the graphic report with a glossary of themes to improve understanding. Additionally, given the significance of the concept of affordance to form and frame our analysis, we created a separate table of affordances to further elaborate our findings. The output choices were presented and approved in the second meeting and are detailed in the following section.

4. Results

In our collaboration with the city of Leuven, we communicate the insights gained into the users/experts' experiences to the design team using a twofold approach: a textual report complemented by familiar graphic means, which are detailed in this section.

4.1. Embodied Experiences and Affordances

Adopting an affordance-based approach, as opposed to a function-based approach, to explore and discuss the embodied and situated experiences, allows us to go beyond mere functional suitability of spaces and their elements. This approach addresses not only the specific abilities and needs of each user/expert, but also potential meanings and values that emerge from their interactions with the heritage site.

To collaborate with the architects of the Leuven Town Hall, we employ the theory of affordances to map and communicate the insights gained into the users/experts' experiences, by linking them to aspects of the heritage site. The users/experts' interaction with the heritage site and its urban context can be deciphered in a real and perceivable manner (Chemero, 2003), allowing the identification of matches and mismatches between the built environment and diverse bodies and minds. This understanding informs professional experts (e.g., architects) of the affordances for diverse users, highlighting the links to required spatial features.

Architectural elements and their features, with their specific quality/manner/state afford certain actions, opportunities, and meanings for certain individuals, such as the users/experts with their specific characteristics and needs. To organize and communicate the insights gained during the go-along interviews with them, we prepared a table of affordances (a shortened version is shown in Table 1). This table shows which architectural element(s) and their feature(s) are notable for each user/expert, detailing what (actions)

Table 1. Table of Affordances.

User/expert	Architectural element(s)	Feature(s)		What's afforded	*How?*
Martin	windows	(visual) connection to exterior	affording	self-orientation	*providing an anchor (reference point)*
Sara	windows	natural lighting	affording	wayfinding	*guiding by/towards light*
Ben	floor	height difference	affording	(equitable) access to levels	*providing suitable equitable circulation solutions (e.g., ramps and elevators)*
Kobe	space and/or windows	(natural) lighting	affording	seeing the mouth to lip-read	*providing sufficient light*

they afford and under what conditions (how) they are afforded. As a tool, it informs architects about the needs of diverse users and their associations with spatial features, elaborating on where and how the environment succeeds or fails to meet these needs.

In addition to the Table of Affordances, the textual report includes a glossary of insights, defining the main insights gained into the users/experts' experiences. It describes the main themes (in alphabetical order) and their potential link/relevance for the users/experts. This includes descriptions of various architectural elements (such as stairs and handrails, floors and walls) and their features (such as dimension, style, materiality) while elaborating what they afford for the relevant users/experts and how. Examples of occurrences for these are presented in the graphic analysis, which is detailed in the next part.

4.2. Spatially Grounding Disability Experience

To situate and illustrate the users/experts' experiences of this heritage site, we link the identified affordances to the features of the built environment, indicating them in a graphic report using architectural plans of the site. This report consists of two parts: the approach to the site (Figure 4) and the different sections of the heritage site (Figure 5).

This graphic approach deliberately uses a language that is familiar to the professional heritage experts. In the conservation and management plan of a heritage site, value assessment drawings (i.e., value maps or heritage significance maps) are commonly used in both academia and professional practice. Such drawings graphically represent the varying levels of significance or value of different parts of a heritage site, often using colour coding on architectural drawings such as plans, maps, or diagrams (see Meurs, 2016). This approach is used to document and easily identify the different values that parts of a building or site hold and serves as a tool in making informed decisions in the management and conservation of a heritage site.

This report covers each space as visited by each user/expert, in the order of the visits. For each space, the following details are provided, as indicated in the legend (Table 2): the path taken, disruptions on the path, the overall quality of the space, specific elements (e.g., doors, windows) and the floor, an important component hence indicated separately. The attention to the overall quality of space, distinct elements and the floor aligns with the typical approach in value maps for heritage sites. It should be noted that while some details are quite

straightforward (e.g., path taken), others, such as the overall quality of space, are decided by the researcher(s) based on the overall experience of the user/expert and may involve multiple qualities and obstacles.

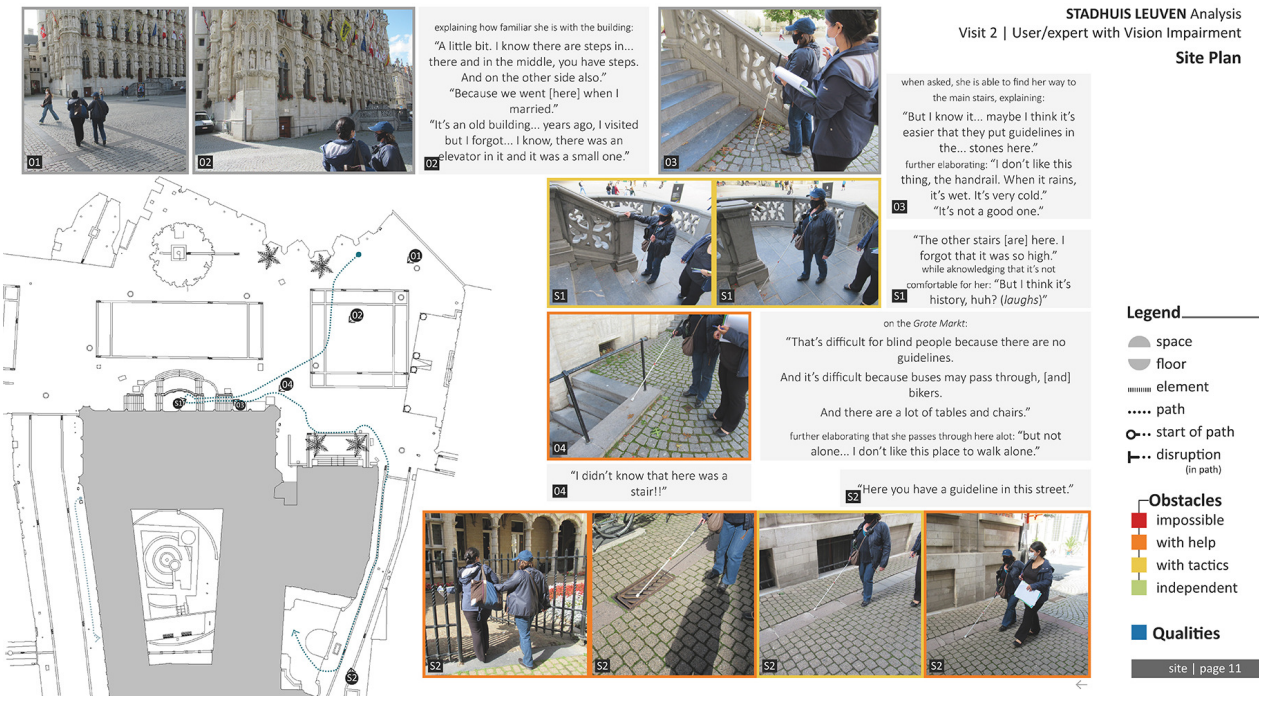

Figure 4. An example page of the graphic report using the site plan.

Figure 5. An example page of the graphic report using the building plan.

Table 2. Graphic report: Legend details.

space	overall quality of the space as experienced by user/expert as either quality or obstacle indicated in the corresponding colour
floor	the floor as experienced by user/expert as either quality or obstacle indicated in the corresponding colour
element	diverse elements such as windows, doors, and ramps as experienced by user/expert as either quality or obstacle indicated in the corresponding colour
path	indication of the path taken during the visit
start of path	indication of the start of the path for each level
disruption	indication of disruptions in the path as experienced by user/expert indicated in the corresponding colour (e.g., impossible to continue, requiring help)
obstacles	hindering aspects of the environment as experienced by user/expert, divided into four categories
qualities	enabling aspects of the environment as experienced by user/expert

The qualities and obstacles identified during the go-along interviews are documented through photos and quotes from the users/experts. To illustrate these qualities and obstacles, we use a gradient of accessibility (Vermeersch & Heylighen, 2015), as shown in Table 3, which articulates qualities and four categories of obstacles, each represented with a specific colour in the graphic report.

Table 3. Gradient of accessibility (after Vermeersch & Heylighen, 2015).

Gradient of accessibility		Description	Example (from the Leuven Town Hall)
Obstacles	impossible	obstacles the user/expert cannot overcome	a wheelchair user confronted with a staircase (in the Town Hall where a podium is placed on top of a few stairs, the user/expert states: "The main attention point for me is getting to the [podium] as a wheelchair user, because otherwise it doesn't make sense…for instance you have an athlete that has won a gold medal at the Paralympics, wants to give a speech and he can't even get [to] the microphone. That's old-fashioned.")
	with help	obstacles the user/expert can overcome with help	a user/expert with a vision impairment requiring help to navigate large open spaces that lack (natural) guidelines (see Figure 4)
	with tactics	obstacles the user/expert overcomes with their own specific strategy or tactic	a user/expert with a vision impairment using the pavement edge as guidelines for navigation (see Figure 4)
	independent	obstacles the user/expert can overcome and manoeuvre independently	a narrow doorway that is difficult to pass for a user/expert with a vision impairment but still manageable (the user/expert states: "[The doorway] it's too small!")
Qualities		enabling aspects of the environment	guiding role of light for wayfinding for a user/ expert with a vision impairment (see Figure 5)

In consultation with the architects and city representatives during the preliminary presentation of the findings, we decided to organize the graphic report as a digital file (as opposed to a print file) that will be mainly consulted on a screen. Hence, through a progressive build-up, the graphic report narrates the experiences of each user/expert, starting from their approach to the site and continuing with the different sections of the site. Each graphic sheet that represents one user/expert's experiences in one specific space, is gradually built up in the order of their movement through space. This approach was used in the preliminary presentation to the architects and city representatives and was received positively.

4.3. Follow-Up Sessions

The collaboration with the architects and the city of Leuven on the Leuven Town Hall project was initially intended to end after reporting the findings of the go-along interviews (graphic and text report). However, the city administration requested an extension of our research group's participation and that of the users/experts through to the final design stage. This extended long-term multi-stage collaboration over several years, led by the second author, allowed us to follow up on the analysis results as input for the design process and provide feedback on design alterations. To facilitate the process, the city administration incorporated multiple information and exchange sessions throughout the project's planning, for the sketch design (2021), preliminary design (2022), and final design (2023). These sessions were together with the many other parties involved in the design process, allowing the design team to coherently document and evaluate their feedback (covering topics beyond accessibility).

For the sketch design, we sought complementary feedback from the users/experts through organizing in-person meetings with them. In these discussions, the main means for communicating the design were visuo-haptic stacked plan models (prepared by the first and second author) for the user/expert with vision impairment (Figure 6) and the design plans for the other users/experts (Figure 7). We reported on the users/experts' sketch design feedback to the city and architects in written form.

For the preliminary design, the users/experts were not directly consulted and we provided feedback based on previous insights and discussions. However, for the final design, we consulted once again the (available) users/experts. The users/experts, accompanied by the second author, were present in the meeting with the client and the architects and provided direct input. For this session, the first and second authors updated the visuo-haptic model to represent the final design for the user/expert with a vision impairment.

5. Discussion

In collaborating with the city of Leuven and the design team on the Leuven Town Hall project, we adopted a dynamic and time-intensive participatory approach that engages users/experts in heritage conservation. In this article, we present the process and methods we experimented with and the resulting tools to mediate and facilitate exchange between users/experts, architects, and city representatives.

Acknowledging the critical need for inclusive and participatory approaches in heritage conservation, as advocated by the UN SDGs and various international charters, our experience offers one potential way of implementing a participatory approach in heritage conservation. This application helps bridge the existing gap between theoretical ideals and practical implementation, as highlighted by Colomer (2023). Additionally,

Figure 6. Sketch design discussion with Sara using visuo-haptic models (© Negin Eisazadeh, 2021).

Figure 7. Sketch design discussion with Ben and Martin using plans (© Negin Eisazadeh, 2021).

REACH's repository of good practices for participatory approaches to cultural heritage reveals a lack of projects that attend to disability experience in the context of built heritage, further emphasizing the relevance of our work.

Aligning with the UN SDGs, our research contributes to multiple targets (11.3, 11.4, and 11.7) of the "sustainable cities and communities" objective. In efforts to protect and safeguard heritage sites, this participatory approach is a step towards reviving such sites in sustainable ways that are more fitting for the

diverse, evolving, and ageing society. Furthermore, towards "reducing inequalities," our approach can potentially advance empowering and promoting the "inclusion of all" regardless of their diverse abilities and conditions (target 10.2).

Acknowledging the potential of disability experience for heritage (Eisazadeh et al., 2023), we reconsider the relation between architecture and people with diverse bodies and minds (see Heylighen et al., 2013), focusing on how users/experts experience the Leuven Town Hall. In-depth observation and analysis of each user/expert's interaction with this site, through go-along interviews, allows identifying and understanding qualities and obstacles from their perspective. Integrating these diverse perspectives in the conservation process can render it more inclusive of diverse voices and experiences. However, suitable methods and tools are necessary to capture and transform disability experience into actionable knowledge for practice.

The concept of affordance allows for deciphering embodied experiences (Ackerman, 2019) in relation to the historic built environment within its sociocultural context (Rietveld & Kiverstein, 2014). Using this concept to frame the insights into users/experts' experiences, we highlight how spatial elements facilitate or hinder human actions. Additionally, aligned with designers' visual approach to thinking (Goldschmidt, 1994), the graphic report illustrates and situates these matches and mismatches, offering concrete in situ examples. This visual story of each user/expert's lived experiences is enriched with quotes, giving more context and sometimes even depicting the (specific interaction's) meaning for and impact on the user/expert.

Framing the interactions with built heritage through various levels of affordances, from small details to the urban scale, translates disability experience into tangible and actionable knowledge that informs the design process. This approach does not prescribe specific design solutions; instead, it enhances the client's and architects' understanding of "space as a flexible and adaptable arrangement of multiple, overlapping opportunities" (Koutamanis, 2006), or, in other words, as "a rich landscape of affordances" (Rietveld & Kiverstein, 2014).

Providing architects insights into users/experts' experiences draws their attention to spatial qualities and affordances they might otherwise overlook. This process is comparable to what Rietveld and Kiverstein (2014, p. 331) refer to as "educating attention," where experienced practitioners guide novices "to the right aspects of the environment and their affordances."

The preparation of the graphic and text report is not the end of this participatory process but rather serves as the foundation for initiating a dialogue among the various relevant stakeholders. These reports are fundamental means that communicate to the architects and the city representatives how the users/experts experience this heritage site in view of its future project. Through follow-up sessions, the discussions and negotiations between the users/experts and the architects (whether direct or indirect through the research team) continued up to the point of reaching the final design. By fostering this interaction, architects gain valuable insights that inform and enhance their design decisions, ensuring that the final design for the revival of this heritage site is inclusive for a broader and more diverse range of users.

Given the project's scale and multitude of actors involved, similar to many other large-scale conservation and adaptation projects, this participatory approach was a time-intensive process requiring comprehensive and flexible planning to allow moments of exchange between diverse parties. This process highlighted the need

for commitment and openness from all parties involved. A critical factor that enabled this collaboration was the client's continuous dedication to fostering participation and integrating this participatory approach in the planning. Additionally, the design team's openness to collaboration was important, especially considering that we joined the project after the competition stage. This was also pointed out by one of the architects during a later public discussion regarding this collaboration. He also brought up the concept of shared authorship and how other participants also contribute to the final project, which shows the value and importance that he attributes to the users/experts' contributions.

6. Limitations, Challenges, and Future Research

Regarding the limitations and challenges of the research, all site visits were conducted following safety guidelines during the Covid-19 pandemic. The pandemic had a noticeable impact on the research process, influencing the researcher's focus and causing fatigue, largely due to the physical challenges of wearing masks throughout the visits. Health concerns also influenced the participants' behaviour, as Sara, for example, was less inclined to navigate the space by touching surfaces. Additionally, hand sanitizer stations, placed throughout the building, presented extra obstacles.

For the visit with Kobe, transparent masks were used to facilitate lip-reading; however, these masks frequently fogged, making communication more difficult. During the visit, Kobe remarked on a picture showing what would typically be a normal day in Leuven, stating: "It's a strange Leuven, I don't know Leuven like that. There are people without masks and stuff." As a first-year student in Leuven during the pandemic, Kobe had a markedly different perception of the city, which highlights the potential, yet often unnoticed, impact of Covid-19 on personal experiences of place.

Another key limitation to note is that the visits with users/experts occurred while the building was not in use, meaning it was largely empty. This creates a contrast with real-life conditions, particularly for Kobe, whose experience is significantly shaped by the presence of other people, and this may have an impact on the insights gained.

While the number of users/experts in our research is limited to four, their involvement should be seen as part of a broader knowledge exchange that also includes legislative documents, literature research, best practices, and meetings with the city's Accessibility Advisory Board (Leuven Toegankelijk, n.d.). The in situ interviews offer detailed, in-depth, and rich insights that complement the more generalized knowledge gained from other sources, helping to adapt it to a local context through reinterpretations by involved stakeholders. Limiting the number of users/experts also made the organizational aspects more feasible. The users/experts were carefully selected to represent a diverse range of bodies and minds, allowing us to gain valuable insights into their embodied experiences. These insights act as sensitizing tools for architects, making them aware of the limits of their own empathy, and deepening their understanding of how diverse people experience and interact with heritage spaces.

For future research, we will elaborate on how the design team integrated the insights gained from this collaboration with the users/experts into their design (process). Looking ahead, we consider an added attention to other aspects in understanding the relationship between users/experts and a heritage site. While our go-along interviews primarily focused on the physical features of the built environment and

ongoing interactions, users/experts occasionally shared personal memories and connections to the site. Recognizing the importance of these personal narratives and the affective dimensions of their experiences, additional questions on the user/expert's connections and relations with the heritage site and its story could enrich future interviews. This approach could yield more insights into the personal significance, meanings, and values of the heritage site for them.

7. Conclusion

Participatory approaches in heritage conservation that engage diverse individuals, such as those with a disability experience, can potentially strengthen the link between built heritage and the broader public. By focusing on the embodied experiences of users/experts, this research contributes to a better understanding of the diverse ways in which people, particularly those with disability experience, engage with heritage sites. Through informing the design process, the insights gained can potentially contribute to making heritage sites more inclusive, relevant, and meaningful for a more diverse audience.

Acknowledging the importance of heritage sites as "platforms for shared identities, experiences, and exchanges" and the necessity of "fostering inclusive heritage practices" to reduce inequalities (Labadi et al., 2021, p. 70), these participatory approaches show potential to enhance the relevance and social sustainability of heritage sites. They can benefit both the heritage itself and today's diverse and ever-changing society.

On the global path towards sustainable and inclusive living environments, we acknowledge that there is no one-fits-all model of participation in cultural heritage (Forbes & Colella, 2019). Nevertheless, our experiences in the case of the Leuven Town Hall present an example of how leveraging user/expertise through a participatory process can transform disability experience into actionable knowledge. This approach fosters a more inclusive conservation practice, enriched by diverse voices and experiences.

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Conflict of Interests

The authors declare no conflict of interests.

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