EXPLORING THE POTENTIAL OF DISABILITY EXPERIENCE AS CONSULTANCY IN ARCHITECTURAL DESIGN PRACTICE

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ABSTRACT

Due to their particular interaction with the built environment, disabled people are able to appreciate spatial qualities architects may not be attuned to. Because this ability is rarely tapped in architectural design practice, and disabled people have a vulnerable position on the job market, we explored the potential of mobilizing disability experience as a consultancy service to inform architectural design. Findings suggest that such a service could bring added value to architectural design practice. However, efforts are needed to convince stakeholders of this added value, while alternatives to the standard definition of innovation deserve further exploration.

INTRODUCTION

Through their bodily interaction with the designed environment, disabled[1] people are able to identify obstacles and appreciate qualities designers may not be attuned to (Cassim & Dong 2003, Pullin 2009). This holds, e.g., for people living with a mobility or sensory impairment (Heylighen et al. 2013), but also for people with a diagnosis on the autism spectrum (Baumers & Heylighen 2010).

For this reason, a field experiment was set up on the KU Leuven premises to mobilize disabled students and staff to inform the redesign of university buildings (Heylighen 2012). Architects in charge of the redesign highly valued disabled people's involvement. Compared to accessibility audits by professional accessibility advisors, the architects especially appreciated the broad and nuanced approach to accessibility resulting from the involvement of people with very diverse impairments. The insights gained informed and inspired the design and implementation of major alterations in some of the buildings analysed.

The field experiment's outcome, combined with disabled people's vulnerable position on the job market, encouraged us to explore the potential of mobilizing disability experience as a paid service to inform architectural design practice. This would bring about changes in practice at several levels: it would contribute to a more inclusive built environment, and strengthen disabled people's position on the job market. The exploration focused on three questions: 1) what is the added value that disabled people (could) bring to architectural design practice? 2) To what extent, and under what conditions, are disabled people interested in

[1] In line with the WHO (2002), this paper distinguishes between having an impairment (a problem in a body function or structure) and being disabled (a complex phenomenon reflecting an interplay between features of a person's body and features of the environment and society in which that person lives).

partaking in such a service? And 3) to what extent are stakeholders interested in and willing to pay for it?

BACKGROUND

DISABILITY EXPERIENCE AND DESIGN

Disabled people are increasingly acknowledged as lead or critical users in product and service design (Conradie et al. 2014): they experience a need that is not yet felt by the rest of the market, they expect high benefits from obtaining a solution (Hannukainen & Hölttä-Otto 2006), and they may interpret and use existing products in radically new ways (Cassim & Dong 2003). In architectural design practice, by contrast, disability experience is hardly acknowledged as a valuable resource for design: building accessibility tends to be considered as a matter of fact (Latour 2005), as something people are detached from, taken care of by professionals and state officials, instead of something people are exposed or attached to. In Flanders (Belgium), building legislation strengthens this tendency by translating accessibility into facts: it fixes minimum door widths and maximum heights of thresholds (Peeters et al. 2009), which can be objectively measured by professional accessibility advisors. Considering accessibility as a matter of fact limits the scope in which disability experience can be considered a valuable resource for design in two ways.

On the one hand, it offers architects little insight in why a building feature may be problematic or appreciated. Gray et al. (2003) observed that accessibility legislation is felt by designers as restricting their creativity and removing the challenge to come up with intelligent design solutions. In a survey among Flemish architects, accessibility featured indeed in the top 10 of most irritating aspects of their profession (NAV 2012).

On the other hand, considering accessibility as a matter of fact leaves numerous buildings poorly accessible. A survey in the city centre of Leuven (Belgium) unmasked 70% of the 1500 commercial buildings as inaccessible for wheelchair users (HiddenCity 2015), even when applying less stringent accessibility criteria than legally required. Moreover, historic buildings in Flanders that are provisionally or definitely protected, or building sites located in (provisional or definite) conservation areas, are even exempt from this legislation.

Together these observations suggest a need to change architectural design practice, and to start addressing accessibility in a different way than based on objectively measurable facts.

DISABILITY AND THE JOB MARKET

Disabled people occupy a vulnerable position on the job market. They have far less opportunities to employment and to sustaining employment than people without an impairment (Van Laer et al. 2011). In Flanders, only 40% of them have a job (Werk.be 2013). Employers have difficulty to see beyond the impairment a person who has particular skills and competencies, just like other people (ibid.). Mobilizing disabled people to inform architectural design practice is expected not only to 'give them voice' in studying their experience, but also to empower them to take up the role of and be rewarded as experts: as actors of innovation, they would partake in developing innovative design knowledge. This would likely improve their self-esteem and self-reliance, which may help them in convincing future employers of their skills and competencies, and thus address their structural unemployment.

METHODS AND DATA

In order to explore the potential of mobilizing disability experience as a paid consultancy service to inform design practice, our study covered three tracks.

TRACK 1: ADDED VALUE

In order to pinpoint the added value disabled people (could) bring to architectural design practice, Track 1 relied on document analysis (Mortelmans 2013) using reports resulting from the field experiment.

At the time of the study, eight KU Leuven buildings had been analysed by students and staff with a mobility impairment (having difficulty walking or using a wheelchair), a sensory impairment (low vision, blindness, hearing impairment), or a diagnosis on the autism spectrum. Participants had been recruited through the Service for Students with Disabilities and the research group's network. Each student or staff member visited the building at stake, accompanied by two architecture students. The latter wrote a report that analyses and documents the disabled person's experience during the visit, illustrated with photos and graphical material. It is these reports which formed the basis for the analysis in Track 1.

First, 29 reports about five buildings were analysed qualitatively in terms of how the building visit was approached, which kind of disability the disabled person experienced, what information was exchanged during the visit, and how this information was presented in the report. Subsequently, the selected fragments were submitted to a thematic analysis.

TRACK 2: DISABLED PEOPLE

Track 2 explored disabled people's interest in participating in a consultancy service based on disability experience. To this end, interviews were conducted with parties having in-depth knowledge on disabled persons' employment issues in Flanders, i.e., disabled people themselves and expert organisations.

For the first group, we initially used three inclusion criteria: a) being disabled, b) having or having had a job, and c) covering different kinds of impairments, preferably those involved in the field experiment (mobility impairment, sensory impairment, autism). This resulted in interviews with five users of (electric or manual) wheelchairs, one person with autism and one vision impaired person.

Soon we noticed that the interviewees had a clear vision on why they were working or not, and what was needed to perform well in the work place. Yet, their vision was limited in the sense that they were not interested in taking part in the service themselves. After all, they already had a satisfying job or had decided not to work anymore for medical or other reasons (e.g., going out on a long journey). Therefore we decided to include also younger people (students) in the study, in order to record a more open-minded vision on the potential of the envisaged service. This resulted in two extra interviews, one with a wheelchair user and one with an autistic student.

In addition, we interviewed 11 experts working in organisations known for their expertise regarding disabled people's employment. The organisations were selected with the aspiration to cover the Flemish landscape of vocational assistance for job-seekers and disabled employees as well as employers who (want to) employ them. The Belgian federal department of social security was contacted as well to gain insight into what remuneration strategies are compatible with possible unemployment and other social benefits.

Disabled people were recruited via the network of the research group. Most interviewees had already participated in the field experiment. The experts were selected by the contacted organizations. The latter were singled out based on desk research and snowball sampling. The interviewees were informed about the study's goals and gave approval for the interview by means of a written informed consent form.

The interviews were semi-structured (Mortelmans 2013). Topics discussed with the disabled people include previous work experiences, work-related conditions and expectations. The expert organisations were asked about their experience regarding employment issues and support for disabled people. Topics that surfaced after analysis of an interview were discussed more thoroughly in subsequent ones.

Interviews were conducted face-to-face (ibid.) and tape recorded. They took 51 minutes. General impressions were written down immediately after each interview. The notes were afterwards copied in a standard form. These forms, with the structured notes of the interviews, were subsequently coded with NVIVO. This coding resulted in nine umbrella principles of employment. All interviews were a second time analysed according to these principles, relationships between the topics were sought and were explored in subsequent interviews.

TRACK 3: DESIGN PRACTICE

In Track 3 we conducted a market study to probe design practice's interest in and willingness to pay for a service based on disability experience. Since the situation in design practice may vary from country to country (due to e.g. differences in legislation), we conducted this part of the study in Belgium and the Netherlands. Including more countries was unfeasible within the study's scope.

By way of orientation, we subdivided the market into segments based on how the built environment is classified in literature (e.g., Neufert 1998) and on websites of Belgian and Dutch architecture firms. Subsequently, we conducted desk research to roughly estimate which segments might be interested in the service, and which might be commercially attractive.

The market segments identified as most attractive were examined in more detail: care & cure, living & care, offices, leisure & culture, research & education, residential, and exterior. Because of the multitude of unknowns, we opted for semi-structured interviews (Mortelmans 2013) with different stakeholders. Interviewees thus had various roles, ranging from working on building projects (e.g., architects, building developers, employees of governmental services) to being involved in building exploitation (owners, operators, maintenance services, umbrella organisation etc.).

Stakeholders were selected based on three criteria: a) estimations made in the orientation phase, b) their ability to overview (part of) the market, and c) their expertise within one specific market segment. In total 31 stakeholders in Belgium and 25 in the Netherlands were contacted, of which respectively 19 and 15 were interviewed. The interviewees were informed about the goals of the study and gave approval for the interview by means of a written informed consent form.

Except for one phone interview, all interviews were conducted face-to-face (ibid.) and tape recorded. On average they took about 1 hour. General impressions were written down immediately after each interview. The interviews conducted in Belgium were summarised. Because we were less familiar with the Dutch market situation, the interviews conducted in the Netherlands were transcribed. The interview summaries and the transcriptions were analysed in order to explore to what extent a service based on disability experience would be commercially feasible. Questions that directed the analysis include to what extent do people experience a need for a service based on disability experience? What kind of services based on disability experience are desired? And who are possible competitors?

EVALUATION OF DATA

The study's methodology underwent an ethical review by committees of the European Research Council and KU Leuven. The methodology and intermediate results were also presented to and evaluated by an (external) steering committee, composed of seven experts from architectural design practice, building accessibility, social innovation, technology transfer, and workforce diversity. Three experts have an impairment. The results were also verified with research results found in literature.

A limitation of the data collected in Track 1 and 2 is that only a limited number of impairments were covered. Another limitation is that the disabled people

interviewed in Track 2 were recruited via organisations of or for disabled people. Disabled people not engaged in such organisations might have more problems with the envisaged service because they prefer not to draw attention to their impairment.

Also regarding the data collected in Track 3 several remarks should be made. First, for two interviews with stakeholders in the Netherlands summaries instead of transcriptions were made because the recording failed. Second, because the stakeholder samples in each market segment are small, the results cover the spectrum within the entire market, but not necessarily all specificities within each market segment. However, we think that the results do reflect the general attitude, because all architecture firms interviewed, except for one, work in more than one segment.[2] This means that, on average, for each market segment we were informed by seven Belgian interviewees and five Dutch interviewees, who mostly gave similar answers to our questions.

ADDED VALUE

What added value could disabled people bring to architectural design practice? Our analysis of students' reports suggests that they could contribute to a nuanced understanding of the richness of spatial qualities, and add nuance to existing accessibility standards.

To start with, building visits with disabled people translate the numerical values at the core of accessibility standards to the impact on people's actions. As disabled people explain the how and why of their needs, the visits provide insights into the actual **use situations** that are linked to accessibility standards. E.g., when a wheelchair user demonstrated all movements necessary to open a door, students could observe the relevance of an appropriate use space next to the door and how that space was used, or which excess space there still was.

Moreover, the building visits offer a nuanced insight into how conformity (or not) with such standards is experienced and dealt with. Teaming up disabled people with assisting students enabled them to tackle obstacles in different ways during the building visits. This revealed a **gradient of** situations in which **obstacles** are encountered: from impossible to overcome, over requiring assistance or personal tactics, to not requiring other persons' assistance, and even comfortable to take. The possibility to distinguish obstacles along this gradient allows the analysis to take into account more factors than the (abstracted) impaired person and the building only: e.g., the help of others, the person’s own creativity, and even unexpected qualities.

Third, in dealing with the built environment and its obstacles during the visits, disabled people distinguished between user **group strategies and personal tactics**. The former refer to what disabled people learned from others with similar impairments through schooling (e.g., shore lining taught to blind persons); the latter to in situ adaptations of strategies to the situation at hand. When encountering obstacles during the visit, disabled people demonstrated how they dealt with them, enabling students to observe their tactics. Furthermore, some described verbally how these tactics followed or diverged from general strategies. Strategies can be taught to designers, but the tactics' nuances emerge from actual use situations. When disabled people present solutions to overcome obstacles, they do so in a particular situation. E.g., the strategy of shore lining teaches blind people to follow distinct elements like blind guide lines, curbs, walls, etc. During a building visit, however, this lead to confusion when a blind participant interpreted a relative high curb as a guide line to follow instead of step to take. The participant had to call for assistance and, based on a description of the step's material (metal), he tactically chose to rely on acoustic rather than haptic feedback from his cane.

Next to identifying obstacles, disabled people also described to a larger or lesser degree their **overall experiences of the building** visited. Because of their specific bodies, their experiences may differ from those of most architects (c.q., the assisting students). Including these experiences in the reports thus provided a richer insight into the building's qualities, especially its **sensory qualities**. Wheelchair users are more attuned to visual qualities from a different (lower) perspective, e.g. in views towards outside, or visibility of wayfinding systems. Vision impaired people marked acoustic and haptic qualities. Those who have some remaining sight were able to pinpoint difficult lighting conditions. Autistic people were strong in identifying spaces' general atmosphere, providing insight into the building's legibility, e.g. whether a public passage is also experienced as public. For instance, one participant was reluctant to open a door from one corridor to the next because it was a double door, which he associates more easily with large (meeting) rooms—which are less public—than with a passage between corridors.

DISABLED PEOPLE

To what extent, and under what conditions, are disabled people interested in partaking in a consultancy service based on disability experience? Interviews with disabled people - whether or not employed - and expert organizations, highlight the potential **societal effects** of the envisaged service.

On the one hand, disabled employees' presence in the workplace may **stimulate awareness and acceptance of difference** within the organisation, which can influence society at large. The disabled employees we interviewed regularly talked about their mission as ‘ambassadors’ to make disability more accepted in the organisation or society at large. When talking about

[2] E.g. one firm was active in residential projects as well as in research & education.

their experiences with the field experiment, they frequently mentioned the same mission. They had the feeling that they could persuade the technical services and the observing students of their value by providing insights into their own experience. People are often excluded not because of attitude, but because of ignorance or fear. By signalling possible obstacles and offering reasonable solutions, a disabled employee can thus make co-workers aware that being different does not necessarily mean being unreasonable or a burden. Co-workers who are comfortable with difference and disability can spread these notions through their social networks. Moreover if an organisation is successful regardless of employing less 'normal' employees and also makes an effort for them, this can differentiate the concept of normality within society. The more successful organisations with disabled employees there are, the more impairments will be accepted on the work floor as well as in society at large. Employing disabled people can thus have a societal value. An interviewee formulated it as follows:

"Rather than pointing a finger at someone, I try to make people comfortable with the fact that there are people in a wheelchair who do things and that this isn't a problem and that it's also not terrible if they have questions about it in the beginning."

On the other hand, by acquiring work experience, disabled people may become **empowered as societal actors of equal value**. Nowadays many of them stay at home because of the high social benefits and are seemingly not encouraged to claim a strong position. Success in their profession may bring on the self-confidence to speak up and demand more rights. Both emancipatory flows may foster a societal shift towards a more inclusive society where differences are considered as an asset rather than as a problem.

The interviews also brought to the fore six **principles of employment**, which were further substantiated by literature (e.g., Van Laer et al. 2011, Värlander 2012, Kulkarni & Gopakumar 2014), and which may act as guidelines for any organisation that wants to pursue a responsible policy regarding disabled employees:

1. employers should foresee a good-functioning back-up and **support** system, including a contact person, sufficient information regarding diversity and disability in the organisation, and role models;
2. **expectations** should be articulated clearly: employer, disabled person, colleagues and HR department should communicate openly about expectations regarding the job, assistance, adaptations to the work place, etc.;
3. **inclusion** should permeate all aspects of employment; this implies a social atmosphere in the workplace, an accessible work environment (e.g., cafeteria or staff room), and accessible social activities;
4. employers should be up-to-date regarding subsidy possibilities and use them in a sustainable and creative way. The availability of a **budget** for reasonable adjustments is a requirement to hire a disabled person;
5. organisations employing disabled people should adopt a **case-by-case approach**: since every disabled employee is different, an overall and standardized approach is not possible;
6. disabled employees (like other employees) should receive well-structured **training** opportunities and honest performance feedback.

Regarding the potential of setting up consultancy service based on disability experience, two principles are worth discussing in more detail.

Principle 4 draws attention to the remuneration aspect of the envisaged service. Interviews suggest that, at least in Belgium, social benefits for disabled people are highly inflexible. As a result, participating in a paid service would be too risky for them as they would lose all these benefits. One interviewee mentioned the high benefits as a reason why he is not working at the moment. He stated that it is the task of the government to stimulate disabled people to work. As a result of these high benefits, many disabled people volunteer instead of work. For them, it seems only profitable to work for a longer period and within a well-protected employee status. Finding people who are willing to participate in the envisaged service may thus be a challenge in the initial phase.

Principle 6 focuses on training, which includes acquiring experience in being an employee. In the search for a job for disabled people, the experts we interviewed considered work experience as highly important. After all a future employer will have more confidence in someone who has work experience already. This holds for all employees, but certainly for disabled ones. Employers' fear of the impairment is more easily taken away if a disabled employee is confident and can already come up with solutions for specific disability related issues. By being an employee, a disabled person can educate him/herself in how to behave in the workplace. Gaining insight into work circumstances is different from gaining personal experience. E.g., a disabled person can be perfectly able to function in society, but not know what to do in a work environment. Knowledge about the latter can help a disabled person in persuading a future employer. This is one of the objectives of the envisaged service: enabling disabled people to obtain work experience and by doing this giving them a head start into finding future employment. One interviewee explicitly said that, due to his work experience, he feels stronger now, as a person and as an employee. The students saw the service as a way to create more opportunities for themselves on the job market. This potential was confirmed by the expert organisations:

"[f]or jobseekers [with an impairment] if you already could mention some items on your cv, then the employer will be more eager to look behind the impairment… if

you could refer to 'how is that [office] adapted'…or if you could put it concretely…this is an easy solution [for that disability-related problem]…this is due to work experience…it's different from daily life experience."

DESIGN PRACTICE

To what extent is design practice interested in a consultancy service based on disability experience? Judging from the interviews with different stakeholders, the answer to the above question is mixed.

The stakeholders' interest seem to depend mostly on the **incentives** generated by the market. At this moment, economic incentives do not seem to be the driving force. A Dutch interviewee formulated this as follows:

"We know that when we create dissatisfiers in our plans, people may ignore our buildings. If we applied this to disabled people ... we could investigate whether there are dissatisfiers in our plans for this specific target group. We won't investigate this, at least not yet, … because the extent to which a crucial dissatisfier will become apparent is of such limited scope, that the commercial result of [such a building] won't be in danger..."

Asked whether he might become interested in the envisaged service in the future, he replied:

"I find it hard to say. As long as we're successful in the things we create, there's no drive to change things. ... At the moment that its purchasing power reveals that it's a relevant target group, we'd do it [investigate dissatisfiers], but as long as disabled people [as for their purchasing power] can be merged with the average target group, we don't take action."

Rather than from economic incentives, for most existing markets the driving force to change seems to derive from incentives like certificates, standards and norms. Asked whether her organisation might perceive a need for the envisaged service, an interviewee from the care and cure sector replied:

"I think I would. However, I think that the hospital always has to cut costs ... If the government obliges hospitals to acquire the International Accessibility Symbol [ITS][3] ... then they will say ... we have to acquire it [the symbol], otherwise we won't comply with the national requirements ... You could sell your service if you can show its impact. 'What's in it for me?' that's the question. The organisation won't make costs out of love for humanity. (laughing) I think if you want to offer a service you have to think about how to get it to the [hospital] board ... Certificates will help [to do so]."

These incentives create a **top-down accessibility framework** of legislation, standards, certification systems and professionals, which objectifies disability experience. In Belgium this framework seems more institutionalised than in the Netherlands. Yet, in both countries, most interviewees frame their needs and wants regarding a service based on disability experience in this framework. They mostly expect that disabled people's perspective be researched and framed by scientists or other professionals in order to generate "objective" knowledge, rather than that disabled people become involved themselves. For example, one of the Dutch interviewees would like a service that provides measurable criteria. Asked to what extent he perceives a need regarding disabled people's experience, he replied that there is a need to evaluate in the design phase:

"Yes, I think evaluation criteria. Yes, at the end you want measurable criteria … Suppose, an element should have a certain quality, which depends on the product, then we have to say that the wall must not be too hard. It should have a certain smoothness, because nobody will hurt or cut his arm ... The quality should therefore be measurable."

Another Dutch interviewee framed the need in terms of a certain "truth", which can be regarded as an objectification, yet admitted that the existing top-down framework does not satisfy all needs. When the interviewer remarked that the interviewee did not seem to be enthusiastic about yet another service, she replied:

"No, yes I think I am, however... The dialogue is interesting, you can learn a lot from it. Yet, the question is: what is the truth? You have to find your own way.... What I'd like is the involvement of more kinds of expertise in the process ... there's no moment ... in which there's an accessibility evaluation. Alright there's an evaluation based on [sarcastic:] the three rules in the building regulation. ... That's very shallow. I agree that it'd be interesting to have an in-depth evaluation at an evaluation moment [during the design]."

Asked about what she considers the strengths and weaknesses of the legal regulations, she replied:

"That it's measurable.... that's an advantage, but immediately it can be regarded as the disadvantage, because many things aren't part of the legal regulations because they aren't measurable."

What is important for design, however, may be precisely those things that are **not measurable**, a Belgian architect suggests:

"I think that for us it's especially important to understand the question very well […] And I think that if you must reflect on other target groups, that also there it's mainly a matter of 'what is actually the question behind what is being said?' […] The underlying motivation is much more important to us, because we can work with it, and then we can seek solutions for it which someone else doesn't think about, well, that should be our added value, I think."

[3] ITS is a Dutch certification given to buildings that comply with diverse accessibility standards and norms.

Several interviewees, especially architects, mentioned the university's involvement in the envisaged service as an added value, because of the "scientific" component. This might convince other stakeholders to opt for a specific design direction or solution. In this respect, a Belgian architect thinks for instance of demonstrating to clients how important a certain aspect is:

"We can say 'we don't want a stupid modular ceiling […]', [yet] if you can substantiate it with […] research, then it has a big added value. If it comes from us, it sounds differently than that it's scientifically grounded by a more neutral party."

Two Dutch interviewees suggested that a service based on disability experience could create awareness about the imbalance between reality and the strict ITS accessibility norms and probably could convince stakeholders to abandon them.

Only a few interviewees seemed to understand the envisaged service much broader than within the accessibility framework, and to link it with **spatial experience**. They showed interest in the service either because of their personal situation or experience, or because they work in a segment with customers in various disabling conditions (e.g., care & cure) or a segment that pays explicit attention to diversity (e.g. local authorities) or experience (e.g., museums). A Belgian architect who was involved in the redesign of a town hall, testifies:

"For instance, the town hall of [Town X] had also a bigger interest, perhaps, or a more apparent interest. […] Yes, because there also the question of the client was specifically to make the building not […] just generally accessible […]. So it also started from that question, and thus the result of the design was also more apparent. […] So not only making it literally accessible, but also […] making it legible, was very much present there."

Asked whether there is a need for more insight into how disabled people experience the built environment, a Dutch interviewee replied:

"… it's the least understood phenomenon how space is experienced. Look, we make architecture with a specific [visual] image and atmosphere, that's unequivocally. For blind people, for example, this image and atmosphere probably doesn't exist, and probably there are many people with another dominant sensory experience, than the [design] pallet and compositions we acknowledge and know. And actually we don't know much about it and it would be interesting to know how this functions. We think about how you enter a room and it starts small and gets larger, or about routes, sightlines […] We know that very well. How that works with sounds and resonating sounds for somebody with a [visual] impairment we know less. I think this would interest me most, because there's relatively little knowledge. In brief the answer is: Yes."

A Belgian architect was particularly enthusiastic about involving disabled people themselves:

"It can surely be an added value. Because then you get input from a totally different perspective. For otherwise you get a perspective always from an architect, an engineer, a technical viewpoint, or whatever, colour specialist or whatever - as such all fine, but indeed, the final end-user who has to lie in that bed, or wheelchair, or whatever, how s/he experiences that space, [that] is good."

This does not mean that within these segments, a market for the envisaged service exists already. As suggested by the following quote, this market should be created by stakeholders with a common view.

"When you're looking for it, then you will find other parties. However you have to seek it and create [a market] yourself. There's a kind of common view on our profession and the things we're doing ... We recognize this in different aspects, but you have to organize it yourself. We think it's a collective mission to create a market. This sounds very commercial, but the driving force is a sense of responsibility."

DISCUSSION

Disabled people are able to appreciate spatial qualities architects may not be attuned to. This ability, combined with disabled people's vulnerable position on the job market, inspired us to explore the potential of mobilizing disability experience as a consultancy service to inform architectural design practice.

Analysis of the students' reports suggests that the major added value of such a service is that it would provide rich and nuanced insights into a building's qualities, which not only surpass accessibility standards, but also can assist designers in applying them. Disabled people can **explain the how and why**, which enables designers to understand the solution rather than merely apply it: by understanding the how and why, designers know the preconditions to alter a given solution. These insights are important to designers who need to integrate standards into the complexity of a design. As such, disabled people's involvement allows to bridge two concepts that tend to be considered as unrelated in design practice, i.e., accessibility and spatial experience.

Interviews with disabled people suggest that the envisaged service does hold potential to strengthen their position on the job market by enabling them to gain work experience. However, because social benefits for disabled people are highly inflexible, at least in Belgium, participating in a paid consultancy service likely is too risky for them as they would lose all those benefits when being employed by the service. Other statuses than employee (e.g., freelancer, worker-owner in a cooperative) assume that the individual is in a strong position, whereas disabled people's position is typically weak. In an early phase of the service, where a steady revenue might not be guaranteed, creative use of

employee statutes might offer a solution, e.g., by hiring students with an impairment. However, in the long term, it will be necessary to create a **steady and trustworthy work environment**, supported by the principles mentioned above, in order to attract disabled employees. On the other hand, it could be worth investigating to what extent social benefits for disabled people can be made more flexible.

As to the interest from design practice, interviews suggest that most stakeholders show an interest in gaining knowledge about disabled people's experience. However, many frame their needs and wants in terms of the **top-down accessibility framework** of legislation, standards, certification systems and professionals. Moreover, architects are not willing to pay for a project-specific service, which they consider the client's task, and are particularly interested in **general knowledge** instead. The latter might relate to the fact that architects are less used to involving users - whether disabled or not - during design than product or service designers (Sanders 2009). This probably explains why disability experience is acknowledged in product and service design (Conradie et al. 2014), but hardly in architecture.

The fact that disabled people's perspective allows to **bridge accessibility and spatial experience** is recognized only by some interviewees working in segments where experience is considered important or most customers find themselves in disabling conditions. In these cases the driving force to bridge accessibility and experience is not an incentive generated by the market, but a sense of responsibility. Questions arise as to what extent people's spatial experience is taken into account in the existing framework if it is presented as objective, and whether it should not be embedded more adequately.

Since few interviewees seemed to link disability with spatial experience, we are currently exploring ways to sensitize architectural design practice. Given architects' unwillingness to pay for a project-specific service, we are also considering alternative formats to involve disability experience. Other topics for future research include whether and how disabled people should be trained to communicate their spatial experience, and extending the study towards other impairments and other countries.

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