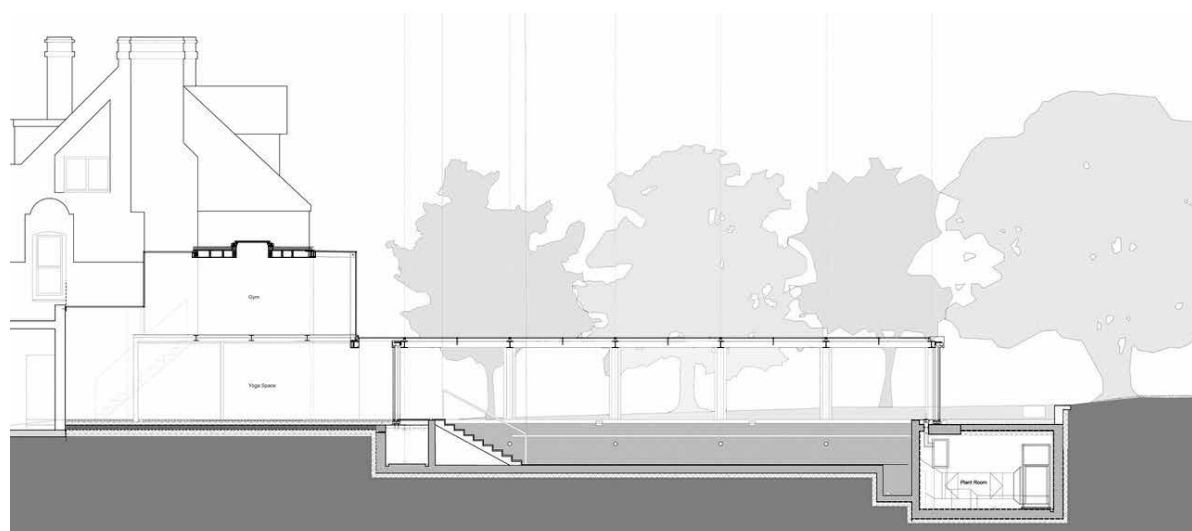




1



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- 1 Internal view of the specialised private training pool at Highgate, London.
- 2 Long section of the pool.

Drawing lessons from the dynamic processes of design involved in developing an enabling and 'glamorous' training pool for an individual client in north London.

Fluid freedom: An empathetic pool design empowering a client with multiple sclerosis

Maria Kramer

This paper is a case study that reflects on the intricate process of crafting a specialised private training pool, located in Highgate, London. The client is KP, a woman in her 50s who developed Multiple Sclerosis (MS) more than a decade ago. In her everyday life, KP uses a wheelchair and relies on continuous support. She can navigate semi-independently without the wheelchair by using her arms and upper body to push and pull herself through space with sufficient support such as from (door) frames, furniture, handlebars, etc. She has one side that is more dependent with one foot less responsive. When overcoming thresholds, for example, she therefore often requires additional help lifting. Generally, independent movement through space is slow, and her navigation and speed are inherently determined by the availability of surrounding support.

The pool is housed in an extension to the client's home in London. Its main function is to train walking and exercising KP's leg muscles to maintain her current condition and prevent deterioration. The submersion in water of the lower body provides buoyancy and, in combination with handlebar support, the client can walk back and forth along the 15-metre length of the pool to exercise independently. To cater for KP's unique needs, the design pays particular attention to physical aspects. For example, the pool space must be barrier free (including the adjacent bathroom), include shallow steps into the pool with continuous balustrade, have the correct water level to provide sufficient support in the water whilst avoiding too much friction, and be sized for the use of two people in parallel. Importantly, however, the design prioritises aesthetic aspects equally alongside practical ones. It is considerate of the existing house and generous garden, ultimately becoming an integral part of the landscape design, while simultaneously having a strong individual identity. Overall, then, the project ultimately aspires to facilitate a semi-independent lifestyle and to provide an architecturally valuable and inspiring space.

The design journey was a thorough and carefully considered collaboration between architect and client. Throughout the process, the client's needs were treated as an integral part of the design, rather than as add-ons. Intrinsic to the design approach is an exploration of the client's mindset and bodily awareness. This deeper understanding is crucial for tailoring the environment not only to accommodate physical limitations, but also to enhance the client's overall well-being, acknowledging the psychological and emotional aspects of living with a condition like MS. At the centre of the project is the understanding that architecture has a profound impact on individuals with disabilities.¹ Beyond mere functionality, the design strives to elevate the human experience, recognising the potential for architecture to inspire positivity and well-being.

This paper explores the multifaceted journey of delivering a training pool that embraces a holistic approach and encompasses the physical, psychological, and aesthetic dimensions of the client's needs [1, 2]. To reflect on these important issues, it draws on an interview between the client and author, who is also the architect. This was conducted sometime after the pool was completed, and the project as well as topics beyond the pool were discussed – such as wider lived experiences and challenges related to perception and agency.² Acutely aware that the built environment has actively contributed to the creation of systemic barriers hindering participation and inclusion for many disabled persons, this article considers space and architectural detailing critically, understanding the design process as an opportunity address inequality, promote confidence, resilience, and glamour, and advocate for cultural and structural change.

Disability as a dynamic experience

Disability is a dynamic experience rather than a static condition. The 'social model' of disability argues that disability is a social construction and thus arises not from an individual's physical, sensory, cognitive, or mental impairments but is



- 3 View of the pool from the garden. The path along the pool also serves as wheelchair access to the rear of the garden.
- 4 View from pool into the sky.

3



4

created by societal and environmental barriers.³ As such, it is set against the ‘medical model’, which proposes that any kind of pronounced bodily difference as a deficiency that needs treatment and, ideally, cure.

Social and cultural attitudes thus play a crucial role in shaping the level of participation and inclusion experienced by individuals with disabilities, and these attitudes can either create significant rifts or foster greater opportunities for engagement. The way society perceives and

responds to bodily differences and otherness profoundly impacts the experiences of those with disabilities. If attitudes are inclusive and accommodating, they allow people with disabilities to fully participate in various aspects of life. The collective mindset regarding disability – reflected in social interactions, public policies, and, crucially, in the built environment – plays an essential role in determining how well individuals are integrated and supported within the community.

Considered through the lens of the social model of disability, the built environment emerges as a central creator of inequality. Every set of stairs, communicate that a wheelchair user ‘is out of place’, Aimi Hamraie argues, that ‘the world was not designed with her in mind’.⁴ In conversation about the pool project, KP reflects on the experience of wheelchair users, who frequently face concrete access problems as well as assumptions about their capabilities [3, 4].

KP: I often think it’s the environment that disables you. They see me and they see the wheelchair and you can see all the alarm bells [...] the wheelchair should not be a sign that you can’t speak for yourself. So they start talking over me and they say ‘can she’ and I’ll often say ‘she can speak as well’. And she’s got perfect hearing [...] you give over a perception. I want to bring glamour to this.

MK: It must be mentally exhausting to have that strength, because if you are perceived that way and you have to constantly somehow push against that perception.

KP: It’s like, I’m not letting myself be defined by this. I am unfortunate with this challenge, but I’m privileged in so many other ways. You have the agency to say, I’m an individual.⁵

How, then, can architects create design processes that enable, rather than disable, a variety of human bodies through the (social) spaces our buildings produce? Jos Boys notes that some architects have addressed this important question: 'Rather than designing for a mechanical idea of a universal "user", Rem Koolhaas builds in some idea of the unfixability of human needs, desires and preference.'⁶ Koolhaas, she explains, acknowledges and addresses the inherently dichotomous human condition and translates and expresses this – for example in programmatic overlaying of a wide range of uses that give the potential of more complex and surprising spatial configurations. A more diverse approach rather than a purely mechanical one can provide a mindset and methodology celebrating differences, with an enabling environment that embraces bodily and social differences. Interior designer Graham Pullin, furthermore, proposes that design can be more inclusive and responsive to the needs of people with disabilities if empathy is brought to the design process.⁷ Through empathy, a deeper understanding of the nuanced challenges

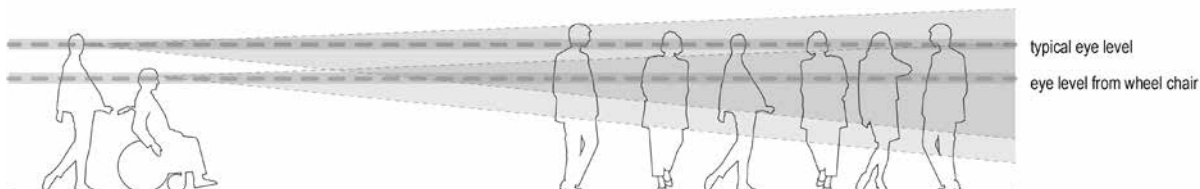
and unique perspectives that shape daily lives can be obtained. The client's reflections confirm this, emphasising the importance of empathy over sympathy and advocating for environments and interactions that truly understand and accommodate disability. KP reflects:

If you just had some concept of living with a wheelchair, living with disability and you put [yourself into this position]; if somehow in your rooms, in your building, in your way of being, you could try empathetically to design, then that would [improve things ... adding later], I don't want your sympathy, empathy would be greatly appreciated.⁸

Sympathy often involves feeling sorry for someone due to their situation. It can carry a sense of pity or condescension, as if the person with a disability is to be 'felt bad for' or is in a position of helplessness. It might lead to people treating individuals with disabilities as if they are fragile or incapable, focusing on what they *cannot* do rather than what they *can*. In this statement, rejecting sympathy means that the individual does not want to be viewed through a lens of pity



5 Photo of the bathroom showing copper handlebars and towel rail as integral part of the design.



6

6 Diagram showing the different eye levels of wheelchair user and able-bodied people.



7

7 Photo showing the 'glamour' of light and reflections, with integrated stainless steel handlebar for walking support.

or treated as someone who is solely defined by their disability. The architectural environment has the power to enable and to integrate all, rather than being provided with special measures for the 'helpless'. Providing design solutions that are universal and part of everybody's experience rather than separated, helps to avoid inducing feelings of 'sympathy'. Empathy, on the other hand, is about understanding and sharing the feelings or experiences of another person. It involves trying to see the world from the perspective of someone with a disability and acknowledging their challenges and strengths without judgement or pity. Empathy leads to supportive actions and respect, where the person with a disability is treated as an equal, and their lived experience is appreciated without being diminished. In this context, the person is asking for genuine understanding, not pity. They want others to connect with their experiences, respect their autonomy, and support them based on mutual understanding rather than on feelings of sorrow. 'When you come across an empathetic building or person, they kind of get it', KP reflects, 'it just would be good if, it was a little bit more commonly appreciated. And it will benefit all.'

The pool project provides an empathetic approach by making specific client requirements

inherently part of the design. For example, as a standard throughout, we included automatic pocket doors that do not require difficult to reach and manoeuvre door handles but are activated via push buttons or remotely via fobs or a phone application [5]. The opening and closing of windows and doors are similarly operated with no need to reach these physically, thus promoting a sense of agency and impact beyond the direct bodily reach. Spatially, full-length glazing provides uninterrupted external views for a standing person, a person in the pool, and – crucially – a person in a wheelchair. KP notes that being in a wheelchair 'on land' creates a different experience in most other spaces. She reflects on what she calls bum-watching – a daily experience:

Somebody said to me, if you could go next weekend to Glastonbury Festival, would you go? [...] I have just seen too many bottoms [...] I'm sick of being down here with all this. There would be lots of bottoms in Glastonbury. I just couldn't cope with the bottoms.

Expanding on the topic, the client continues:

People are always bending down to talk to you. You feel so bad for them. Some people pull up a chair, which is a really good idea. And then some of them bend down, and I'm really

*thinking your back is going to hurt if you just stay squatting like that. Because it's also not comfortable. We need to both find somewhere to prop because that's not good. It's not good for your knees and it's not good for your back. Perching stools might be a good idea. You always have bar stools, but maybe you could have perching stools. You miss a lot of conversations because it all goes on up there.*¹⁰

At the pool project, heights became an important point. Reference points to expected bodily height – eye level, shoulder level, feet – were omitted wherever possible to accommodate bodily variations: there are no skirting boards, plinths, or windowsill of any kind. Standardised heights for door sizes and steps were reconsidered and challenged. By excluding these standard 'environmental markers', less normative bodily frameworks are provided. This architectural approach allows freedom beyond bodily restrictions and normalcy, with fewer references to scale, for example, to create an environment that fosters reframing, new interpretations, a sense of openness, elasticity, and fluidity.

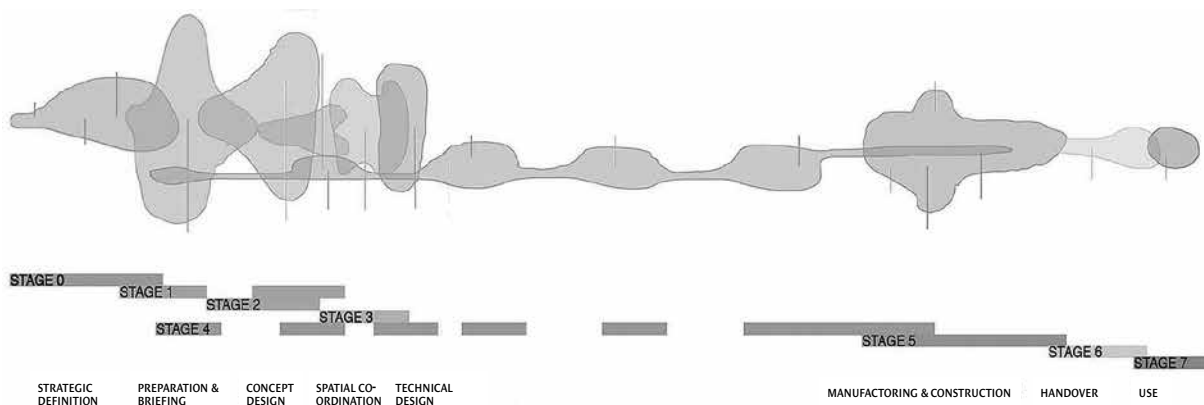
Empathic design in architecture involves considering the *experiences, emotions, and*

needs of individuals using a space. An inclusive approach creates visibility, enjoyment, and an equitable environment for all bodies. Understanding the different social, bodily, and spatial experiences of somebody whose eyes are on 'bum level' helps to think about the architectural section in a more complex and diverse way – away from 'normative' bodily assumptions [6].

Inclusive design, therefore, when approached empathetically, can transcend social and physical barriers to foster a sense of equality and dignity. Applying the principles of empathy not only meets practical accessibility needs but also promotes a broader societal shift towards inclusivity and has the potential to promote empowerment and equality [7].

Empowered collaborative processes

The pool's design process was rooted in collaboration and, therefore, empowerment. The collaborative design process is often a fragile space. Initially it requires developing a brief jointly. Requirements are frequently undefined regarding what the aspirations and aims are – only through repeated discussing and brainstorming do these



8

Royal Institute of British Architects RIBA work stages



9

8 Diagram of RIBA work stages showing the non linear process of the different work stages 'flowing' into each other.

9 The pool seamlessly integrates with the garden reflecting the bountiful green surroundings.

eventually take shape. This requires active participation in the process from all involved in decision-making and problem-solving. It involves building trust, showing vulnerabilities, and exploring concepts together. Discussing ideas openly and critically with feedback ensures everybody is on board with clear and transparent communication and facilitates a dynamic exchange of knowledge and perspectives.

Embracing the unknown can be difficult and parameters might shift throughout the project within this iterative process. The RIBA work stage framework provides a structure for a phased approach [8]. However, the creative design process is often less linear than the project stages set out to be. It is not uncommon for new challenges to arise within the process. Being sufficiently flexible and dynamic to incorporate these, whilst managing the project expectations is part of the complex task. Communicating this non-linear process creates awareness of the fluid nature of the creative process.

This is not specific to a disability-related project. For example, after several meetings discussing the pool's cross-sections, the client mentioned that she could not read the sections. This was an eye-opener, as the design team had assumed it would not be an issue. Consequently, sections were sketched out as extruded 3D cuts, which helped KP understand them. Following this process, she was eventually able to follow the 2D sections as well [9]. It required a trusted space for our client to admit she struggled with our form of representation. Interpersonal skills enable individuals to navigate

complex social dynamics, build consensus, and foster a collaborative atmosphere, whilst overcoming barriers. Creating an environment that encourages trust, open communication, and iterative process, ensures a richer and more adaptive design process.

The collaborative design process is intimately entangled with tacit knowledge, so to the unwritten, unspoken, and hidden sources of experiences, insights, and intuitions. This type of knowledge is not easily communicated or documented but plays a critical role in creative and innovative initiatives. The dynamic exchange of a wide range of perspectives in a collaborative setting is a catalyst for tacit knowledge transfer. Refining ideas together, one draws upon personal histories and understandings, thus transferring tacit knowledge indirectly through interaction and collaboration.

For the pool project, understanding individual requirements was essential, and was achieved through feedback and hands-on testing. Discussing limits and potential with the client – and how to support these – was crucial. In a new bathroom, which is part of the pool project, the locations of the supporting handlebars were determined by the client re-enacting her individual shower movements within the actual space. As KP carried out the push and pull motions needed to manoeuvre, the position and angle of the

10 View from yoga space to pool and garden with open pocket doors and level access.



10

handlebars was marked on the walls and installed by the contractor [10]. This unconventional 'Live Design' process was crucial (as it was impossible to plan this in advance and needed to be determined in the final space) and contractually solved by including the number of handlebars in the schedule and specifying that the location will be determined by the client on site. This process of having a person with a disability included in the decision-making process and as an author in the actual space could be more widely adopted further and inform design decision [11–13]. This direct and immediate engagement and design process is a powerful way of impacting design.

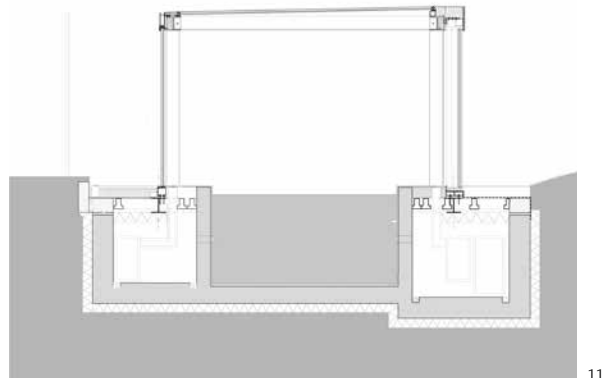
Extensive testing – including determining the exact location, angle, and size of handlebars but also the mapping out of wheelchair turning circles and the choosing the correct tiles and pool depth – demonstrates the practical challenges and the necessity for iterative design processes to meet specific needs. The client's description of the pool environment, with its optimal water level and supportive features like safe handles and railings, underscores how thoughtful spatial design can facilitate independence and stability. The following dialogue with KP reveals the critical importance of both visible and invisible design elements in creating accessible and empowering environments for individuals with disabilities. The client's sensitivity to surface textures, such as the right balance between slip and grip, highlights the need for attention to tactile elements to ensure safety and comfort.

KP: It was important about slip or not slip, and then not too much grip. Because too much grip is equally worse than slip, because I have sort of foot drop, so I can tear my toes [...] So we went to test (the pool depth) in another pool to see if it's too high. And you realise that it (the specified height) was too low because your upper body would get cold. Because you're moving slowly [...] It was between my waist and my armpit, which was the right height, where you would be supporting your walk, but your feet did not lift [...] You haven't got too much buoyancy that you can't ground yourself.

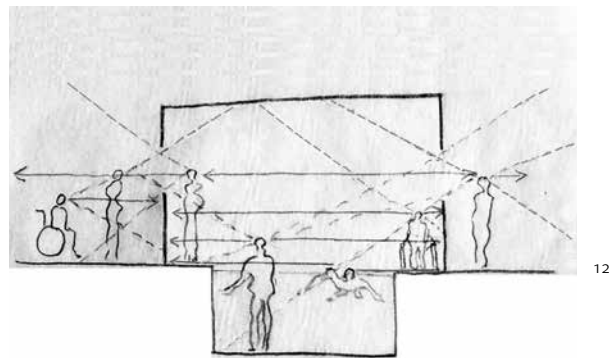
MK: How does the design specifically meet your individual needs in everyday life? How does it enable you to be more independent? Can spatial design provide agency?

*KP: Absolutely, it does, it's perfect for me. You know, I can go in there, I can put the music on, we've got speakers in there, I play loud music [...] so I walk and I just love it. It's my own time, I can sing, I can walk. I'm in nature. It's really beautiful.*¹¹

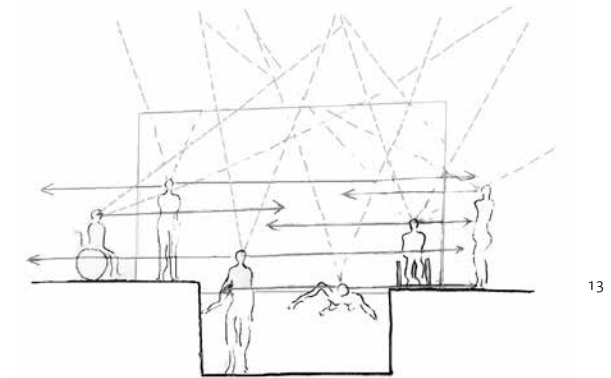
A collaborative process is not easy. Using tacit knowledge requires commitment. Maybe unsurprisingly, the construction project was likened to childbirth by its multiple authors and participants: a messy and complex process, but one that ultimately leads to a rewarding outcome. The analogy of 'no pain, no gain' helped to maintain a positive mindset throughout the challenges.



11 Cross-section of the pool showing M&E pockets on each side.



12 Diagram showing solidity and opening at specific heights creating a less equitable experience.



13 Diagram showing how transparency offers a more equitable experience.

'Bringing glamour to disability': dynamics of perception and agency

In their book *Universal Design: Creating Inclusive Environments*, Edward Steinfeld and Jordana Maisel highlight that spaces that are conceived to accommodate people with disabilities often have a functional and clinical feel. For example, accessible restrooms frequently include features such as grab bars, lowered sinks, and wider stalls. While these elements are necessary, their predominance can make the space feel akin to hospital or social care environments. Themselves like medical instruments, these purely functional spaces



14 The glass enclosure showing transparency throughout.

14

intended for people with a specific disability often draw on and perpetuate accepted understandings of a 'normal body'. Areas designed for people with additional needs are frequently guided by questions of access and ideologies of convalescence.

From the outset, the pool project aimed to fundamentally diverge from this medicalised approach and aesthetic. It set out to foster an understanding of bodily diversity as normal, valuable, and deserving of detailed design attention. The project focuses on creating an inclusive and unified space, that seamlessly integrates supportive elements, without compromising on architectural resolution, comfort, and functionality. By doing so, it moves away from the clinical atmosphere that has been shown to frequently permeate similar spaces, instead offering an environment that celebrates and accommodates diverse bodies in a more holistic manner.

From the beginning, the client was very clear that both perceptions and experiences of disability are shaped by the built environment, which – inadvertently – reinforces feelings of being disabled. She highlights this issue as she points out the impersonal and uninspiring design of accessible features she relies on, such as when she is staying in a hotel and they provide her with the accessible room, whose clinical features are in stark contrast to the rest of the hospitality environment, which is elegant and aesthetically considered. More thoughtful and nuanced accessibility solutions must be sought for, KP explains, rejecting the stark, all-or-nothing approach that dominates current designs. For example, she would prefer a room that has added features as an integral part of the design, which are part of and in line with the overall aesthetic considerations of the specific environment.

The client's adverse relationship with the clinical, hospital-like aesthetics of spaces created for disability underpins her broader call for change. She advocates for bringing more design attention to disability, emphasising the need for

dignified solutions that enhance the experience of accessibility:

You can be made to feel disabled because they'll give you the whole thing, such as pull-down seats and beige coloured plastic finish [...] I don't actually want the handicapped room.

KP explains:

I just want a little bit of help [...] it's not thought about. It's almost like it's all or nothing [...] You could just have gradients [...] I feel I have an adverse relationship with [...] disability and grey. There's that hospital grey [...] they make everything in this grey plastic.

After a pause, she says: 'I want to bring glamour into disability.'¹²

Glamour, with its vision of elegance, charisma, and admiration, necessarily shifts any narrative around disability. In the context of disability, the unexpected proposal of infusing elements of glamour serves several important purposes [7]. Incorporating glamour into architectural design transcends mere functionality and instead seeks spatial experiences that evoke desirability and resonate with exuberance, passion, and joy. It helps to break down stereotypes that often associate disability with limitations or a lack of aesthetic value. Finally, it can aim at challenging societal perceptions and barriers by offering the opportunity to see disability through a lens of respect and desirability rather than a lens of accessibility and pity.

In the pool project, materiality and texture was a key consideration. The bathroom grab bars were finished in the same bronze as the sanitary wear accessories, making them blend in rather than stand out (as is often the case). The towel rail, furthermore, has the double function of also assisting with shower access. The floor tiles needed to have anti-slip properties throughout to allow for the client's safe, independent navigation of the space. To achieve

an environment of continuous materiality and sensory richness, a near-identical tile (with a slightly smoother finish) was also applied to the horizontal surfaces throughout. This creates a seamless surface that is indiscriminate and blurs the distinction between the non-slip nature of the floor and the regular adjoining wall. Overall, the walls and floor can be seen as a canvas of possibilities for glamour and freedom, where the theatre of the everyday can take place, seamlessly and elegantly framed, independent from bodily variations.

An architecture of glamour was also realised through transparency and the layering of views, light, and reflections [14]. The pool building has extensive glazing which fulfils practical needs but also indulges a desire for beauty, sophistication, and connection. It provides a visual link between the inside and the outside from all eye levels, independent of various bodily positions, such as walking or swimming in the pool, or sitting in a wheelchair or standing on the edges of the pool or in the adjacent landscape [9]. The views are unobstructed throughout, from the outside-in and the inside-out. Experiencing the garden and its seasonality on eye level whilst swimming or walking in the pool, the light reflections of different weathers throughout the day, incorporates an architectural approach of generosity, openness, playfulness, and interconnectedness with enjoyment of experiences of enchantment and glamour for all.

Glamour, in the pool project, is about more than just physical appearance: it is about a sense of confidence that can be achieved, regardless of physical abilities. It highlights the idea that individuals with disabilities possess and project style and charisma, challenging preconceived notions and emphasising their capabilities and

achievements. This can be empowering for individuals with disabilities, enhancing their self-esteem and social presence, as KP confirms:

*I can be a bit more spiritual, and I really love it. I can spend more time in nature and it's a privilege really. So that's quite weird that disability is a privilege, but in many ways it is. It's lovely, a privileged position, I suppose.*¹³

Beyond this project, moreover, the inclusion of glamour can attract wider public interest, support for disability-related projects, draw admiration and potentially increased funding and resources. This heightened visibility could lead to greater awareness and advocacy for disability rights and issues, contributing to a more inclusive society.

Challenging and changing perceptions

Swimming is one of the most egalitarian of pursuits. In the water, we are all the same.

Bonnie Tsui

In the water of a pool, many of the visible differences between people with and without disabilities diminish. Everyone is subject to the same principles of buoyancy and movement, which can create a sense of equality and shared experience. 'To swim', Tsui argues, 'is to witness metamorphosis, in our environment, in ourselves. To swim is to accept all the myriad conditions of life.'¹⁴

A swimming pool, perhaps more than any other space, is already a site of greater equity and participation for many people with disabilities. This article has looked at one particular design for a private pool to show how, through its overall design, through its considered details, and through the process of its inception, a team of many authors created a building through an empathic and a collaborative approach and with inclusive methods.



15 Photo of the client in front of the pool taken during the interview.

15

Tracing the design and construction of a swimming pool in London, this article has thought about the experience of disability in the built environment, about empowered design processes, and about the value of bringing glamour and architectural attention to spaces for disability. It has foregrounded decisions taken about materials, layouts, and spatial positions, resulting in distinct features such as full-length glazing (which provides uninterrupted views for a standing person, a person in a wheelchair as well as a person in the pool, creating barrier free visibility and spatial enjoyment), custom-positioned and designed grab bars (which blend into the space while also allowing maximum accessibility and independence), and automatic pocket doors (which do not require difficult to reach and manoeuvre door handles), and an environment with fewer references to scale (which fosters a sense of openness regardless of whether a user is in a standing or sitting position).

In addition, the article discussed non-linear design processes, including the importance of tacit knowledge, of building trust, and of discussing ideas openly and critically with transparent communication facilitating a dynamic exchange. While the project was being delivered, this design process was applied carefully and repeatedly, for example integrating when

determining the swimming pool depth, the water level, and the surface textures

Finally, this article has addressed the importance of what the client of the pool project, KP, referred to as 'bringing glamour into disability' [15]. This was achieved by integrating continuous seamless surfaces, the use of large glass panes, and the specification of considered materials. The elegant space should be understood as celebrating bodily variations beyond the normative framework, shifting the perception of disability being seen as a limitation and restriction, to being viewed as an enrichment, an attraction and appeal beyond 'the normal'.

Overall, the pool project discussed in this article serves as an example of architecture's transformative potential, illustrating how inclusive design can create environments that are not only accessible, but also enriching and empowering. Challenging and changing the reductive perceptions of bodily diversity and societal norms, which architecture still, unfortunately, perpetuates, has wide-reaching implications: the built environment can advocate for a more inclusive and holistic society that not only respects and values diversity (including but not limited to disability) but celebrate this through spaces which are inclusive, joyful, exuberant, glamorous and beyond.

Notes

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3. Tom Shakespeare, *Disability Rights and Wrongs* (London: Routledge, 2006), pp. 10–12.
4. Aimi Hamraie, 'Introduction: Critical Access Studies', *Building Access: Universal Design and the Politics of Disability* (Minneapolis, MN: University of Minnesota Press, 2017), pp. 1–18.
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6. Jos Boys, *Doing Disability Differently: An Alternative Handbook on Architecture, Disability and Designing for Everyday Life* (London: Routledge, 2014), p. 71.
7. Graham Pullin, *Design Meets Disability* (Cambridge, MA: MIT Press, 2011), p. 89.

8. Author's interview with KP, 23 July 2024.
9. Ibid.
10. Ibid.
11. Ibid.
12. Ibid.
13. Ibid.
14. Bonnie Tsui, *Why We Swim* (London: Rider, 2020), p. 3.

Project information and credits

Pool length: 15m, Pool width: 2.65m, Water depth: 1.28m
Gross floor area of the pool including M&E: 144sq m.
Gross internal floor area pool: 72sq m.
Heating system: Air Source Heat Pump.
Architect: Room 102 Ltd.
Structural engineers: Aleck Associates, Malishev Engineers.
M&E consultant: Enertech, Consolux.
Quantity Surveyor: PT Projects.
Interior Designer: Geraldine Morley.
Swimming Pool specialist: Poolcourt Ltd.
Approved Inspector: Head Projects.

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Jessica Morrison: 7

Competing interests

The author declares none.

Author's biography

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