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Jessica Noël-Smith is a chartered Architect, advocate, and academic specialising in accessible and age inclusive design practice. Over the past 20 years Jessica has gained a variety of interdisciplinary experience including working in the disability sector, architectural practice, social housing, and dementia design.

Jessica's research contributes to a new interdisciplinary cluster focussing on accessible environments at the University of Stirling, Scotland. Her PhD thesis examines the ethical, moral and sociological impacts of contemporary accessible design practices in the UK, revealed by the lived experiences of disabled people and the gap between technical compliance and human rights.

In 2024, Jessica founded Beyond Access - a consultancy supporting designers and place-makers to go *beyond mere compliance* when creating accessible and life-long inclusive environments. Jessica is also a member of the Royal Incorporation of Architects in Scotland (RIAS), the Access Association, the Scottish Ecological Design

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EDITORIAL

Designing Inclusion: Perspectives from Theory and Practice

By Jessica Noël-Smith

I am delighted and honoured to be invited by Dr. Sunil Bhatia to guest edit the September 2025 edition to be published during the Design for All Institute of India's celebratory 20th year, alongside an esteemed line-up of superb female-led guest editors.

When I look back at the past twenty years of my own career, beginning with my fledgling years as an architectural studies student, I'd like to say I have seen great progress in the field of designing built environments which are considerate to all, mainstreaming universal design principals and inclusivity; but the reality is that I just don't see the progress and momentum I had personally hoped for. This is not to say that progress has stalled entirely, in fact there is plethora of fantastic work being done both in research spheres and across practice and industry, some of which you will read about in the following papers of this edition.

Looking at the bigger picture, design standards such as building regulations for accessibility, (such as the UK's Approved Document

M) remain largely unchanged since their inception, design education does not routinely feature theory on the social model of disability, and attitudes in practice commonly seem to default to minimum compliance rather than maximising or investing in best practice access and inclusive design practice.

I see this tussle almost daily in my work in practice as an accessibility consultant and architect, when the reality of developing and delivering inclusive design is often seen as an add-on to the main design, or when accessibility is described as a 'balance' as if disabled access is somehow at odds with, or is a compromise to the primary design objective. And it's this particular issue, when architectural spatial planning seems to struggle with integrating inclusivity as an intrinsic part of the design process itself, that recently brought me back to academia to embark on my PhD research into the way in which architects and designers apply accessible design in practice, investigated through the lens of lived experience of those who are disabled by built environments.

As such, straddling both worlds of academic research and practice is where I have chosen to position the theme of this volume, with rich insights of both experienced industry experts and researchers tackling issues at the forefront of how best to carry out design for all, which is simultaneously inclusive for all and responding to the contemporary challenges of placemaking – collating perspectives from theory and practice. At this point I wish to extend my sincerest gratitude to the authors who have generously given their time and expertise to contribute to this month's edition.

When we think of designing inclusive, accessible and age-supportive environments, do we consider the complexities and challenges of delivering effective designs in practice? And how academic research is translated into industry-based impact to deliver inclusive places? Often, for an architect or designer in practice, high level project aspirations of delivering best practice inclusion and accessibility are constrained by project briefs to no more than mere basic compliance with minimum regulatory standards, with any design moves seeking to go beyond mere compliance considered a 'luxury' or surplus to project requirements.

Where does this type of design practice leave the end users, now thirty-five years on from The Disability Discrimination Act 1995, and fifteen years on from The Equality Act 2010? Participatory-led research methods can offer a window into this world of lived experience. Through the lens of participant insights who might otherwise struggle to find their voices heard, and where the enormous value lies in socially orientated academia - gathering a robust body of research evidence which filters into policy and ultimately delivered through changes in practice.

The following five articles demonstrate the power of translating research into practice, from the development of tools to support good practices of inclusive design in action and the resultant impacts of community-led practice, to the latest research in findings addressing some of today's challenges in design practice such as integrating socially responsible ecological design and considering

the ethical considerations of applying minimum technical design standards.

My hope for you, the reader, is that you find this collection of articles insightful for your own working practices be that in the spheres of academia, practice, or both. Supporting us all to continue to work towards the most effective ways in which we can design for all, creating spatial and environmental equity - a better world for everyone.

Finally, I will wrap up with the words from another editorial piece dating back to 1965, from the UK's Invalid Tricycle Association (later becoming the Disabled Drivers Association) journal titled "The Magic Carpet":

"To hell with the half-witted architect who dreams upfabulous ornamental buildings with not one scrap of common sense about them. He may be a great man [sic], but how much greater could he be if his dreams were less like nightmares to a percentage of the population."

(1965, 'The policy meeting' Editorial, The Magic Carpet, 17, 4, Winter. The Invalid Tricycle Association, London; via Watson and Woods, 2005 Social Policy & Society 4:1, 97-105, Cambridge University Press)

DOING THE BARE MINIMUM: COMPLIANCE-FOCUSSED ARCHITECTURAL ACCESSIBILITY

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ABSTRACT

The World Report on Disability (WHO and World Bank, 2011) positions disability discrimination as a human rights issue and identifies the physical environment as having ‘a huge impact on the experience and extent of disability’ – impacting the everyday lives of disabled people and perpetuating disablement, stigmatisation, and discrimination (Imrie, 1996; Hendren, 2020; Pérez Liebergesell et al., 2021) This paper contextualises technical accessible design practice in the UK by mapping the development of regulatory compliance standards alongside the emergence of disability rights and equalities legislation. By situating accessible design in the context of the social model of disability and human rights, the paper suggests a need for further research focussing on disabled people’s experiences, and an examination of the professional and ethical responsibilities of the architect.

With compliance-focussed design practice remaining the conventional approach to accessibility, underpinned by basic minimum dimensions for spatial access which pre-date disability

rights (Shipley, Venn and Bell, 2025; Goldsmith, 1963; Liebermann, 2024); isn't it time we start calling out compliance-based accessibility as poor quality, discriminatory, and disrespectful of the rights of disabled people? And by claiming 'accessibility' when designs are in fact merely only minimally compliant – doing the bare minimum – and failing to recognise and address unethical practice?

KEYWORDS

Accessible Design; Accessibility; Architecture; Disability; Disability Rights; Inclusive Design; Architectural Discrimination; Building Regulations; Social Model; Disability Studies.

INTRODUCTION

THE PARADOX OF ACCESSIBLE DESIGN AND EXPERIENCES OF PHYSICAL ACCESS

The fundamental objective of the practice of accessible architectural design is to create accessible built environments, however this objective does not appear to be reflected in the everyday experiences of disabled people (Titchkosky, 2011; Liebermann, 2024). While the architect often sees accessibility through the lens of technical design guidance and compliance with nationally (and internationally) established dimensional compliance standards (Imrie, 2003), the everyday reality for most people living with disabilities is still fraught with widespread inaccessibility (Andre et

al., 2025; Kirk-Wade, 2023) in-part due to the design standards themselves being based on minimum criteria, (British Standards Institute, 2018, p. 99) and are not sized appropriately for the majority of physically disabled people's access needs due to the activity spaces being too small (Arup, 2022). Consequently, many physically disabled people still face spatial barriers to accessing places and services despite these spaces being designed in accordance with the legal minimum design regulations (Building Regulations ADM, HM Government, 2015b; British Standards Institute, 2018; The Building Safety Act 2022).

“Even though access issues have been addressed by legislative procedures, particularly in the UK and US, access in even these countries remains something to analyse since it represents the question of legitimacy of social space for all.” (Titchkosky, 2011, p. 9)

DISABILITY PREVALENCE

In the UK, it is estimated that 24% of the population (approximately 16 million people) are disabled as defined under the core definition of 'disability' specified in the Equality Act 2010 (DWP, 2023; Kirk-Wade, 2023). The United Nations Convention of the Rights of Persons with Disabilities (UNCRPD, 2006) defines disability under a broader relational model:

“Persons with disabilities include those who have long-term physical, mental, intellectual or sensory impairments which in interaction with various barriers may hinder their full and

**effective participation in society on an equal basis with others.”
(UNCRPD, 2006 Article 1, p. 4)**

Under the UNCRPD definition of disability, the number of people living with disability in the UK is likely more than that reported by the Department of Work and Pensions (DWP) in 2023 which applies the Equality Act definition (Jackson, 2018; Lawson and Beckett, 2021).

The most common impairment type reported in the UK’s 2021/22 Family Resources Survey (FRS) is mobility related, at a proportion of 47% of disabled people (DWP, 2023). Notably, the ‘prevalence of disability rises with age’ as 45% of disabled adults are over the state pension age (Kirk-Wade, 2023, p. 14). A generational demographic shift in the ageing population is a global issue, with the World Health Organisation estimating the proportion of people over the age of 60 is set to double by the year 2050 (WHO, 2024). This demographic shift also represents a significant increase in physical and cognitive disability, and age-related impairments, making the issue of appropriate accessibility in the built environment a primary concern (Henry et al., 2022)

BUILT ENVIRONMENTS AND THE RIGHT TO ACCESS

The World Report on Disability (WHO and World Bank, 2011) positions disability discrimination as a human rights issue and identifies the environment as having ‘a huge impact on the experience and extent of disability’. The UNCRPD (2006) also highlights the importance of accessibility in the built environment under Article 9, stating that all Parties ‘shall take appropriate measures to ensure to persons with disabilities access, on an equal basis with others, to the physical environment’ (UNCRPD, 2006

Article 9, p. 9). The significance of the environment in enabling equity and facilitating the rights of disabled people resonates strongly with the social model of disability (Oliver, Mike, 2013; Lawson and Beckett, 2021).

As such, it is clear the everyday lives of disabled people are directly impacted by the way in which architects design the built environment, with the potential to exasperate, create and perpetuate disablement (Imrie, 1996; Pérez Liebergesell et al., 2021). A key architectural feature which affects the physical accessibility of the built environment is the minimum dimensional spatial allowance for wheelchair turning, formed on technical plan drawings by a 1500millimetre (or 1.5metre) diameter circle (British Standards Institute, 2018) or a 1500mm by 1500mm square as indicated in the Building Standards Technical Handbook (2023) used in Scottish building regulation.

Significantly, the 1500mm wheelchair turning space in use today remains virtually unchanged since its inception over sixty years ago when it was first identified and published in the UK by Selwyn Goldsmith in *Designing for the Disabled: A Manual of Technical Information* (1963). At the time of publication in 1963, disabled people in the UK were not protected by the same rights and legal protections as the rest of the general population. People with disabling impairments were seldom seen nor included in general society because it was common practice to segregate people with physical and cognitive impairments within medical institutions or out-of-town asylums (Oliver, M., 1990).

Yet today the same physical dimension, the 1500mm turning space, underpins accessible spatial planning because it is the dimensional standard applied ubiquitously to plan drawings to demonstrate achieving compliance with the legal requirements of the building regulation, eg; The Scottish Government and Building Standards Division, 2023. In practice, despite the dimension being the minimum requirement for regulatory compliance, the 1500mm turning space is ubiquitously applied to technical plan drawings in any spaces requiring wheelchair accessibility, such as accessible toilets, domestic and non-domestic corridors, hotel rooms, assembly spaces, offices, leisure facilities, health, and educational buildings, see Fig. 1.



Figure 1 Typical architectural plan drawing showing typical application of the square 1500mm x 1500mm wheelchair turning space (highlighted in the red outlined yellow boxes). Image courtesy of anonymised architectural colleague.

Given the prevalence of the 1500mm turning space in accessible design practice, it is therefore important to consider the historical, social, and political context in which architectural accessibility was first conceived before critically appraising the effectiveness of contemporary accessible design practice. Goldsmith himself, the 'father of accessibility' (Richards, 2011), regarded the 1500mm turning space as 'a relatively crude' architectural design tool (Goldsmith, 1976, p. 151), because it was based on rudimentary and reductive theoretical diagrammatic assumptions of spatial manoeuvring patterns.

WHEELCHAIR ACCESS AS A FRAMEWORK FOR ENQUIRY

The proposed case study-like use of the 1500mm wheelchair turning space is to act as a 'golden thread' on which to contextualise and problematise accessibility in terms of design and experiential narratives of physical access. While it is not the only physical feature of accessible design practice, the fact that the wheelchair turning space requirement has remained uniquely unchanged since inception gives rise to enquiry – is the dimension still appropriate given recent empirical evidence suggesting otherwise (Arup, 2022)? Its origins in rudimentary ergonomics, anthropometry and pre-disability rights suggest it is more of a remnant of out-dated disability (in)equality and social attitudes of disabled people's limited place in society (Guffey, 2020).

Since the introduction of technical accessible design, other features have evolved and been revised to better meet the requirements of

the disabled population, such as doorway widths widened; ramps and stairs becoming less steep; brailletactile signage and paving have been introduced; and entrance doorway thresholds becoming step-free (Goldsmith,1963; Pickles, 1998; HM Government, 2015a).

Watson and Woods (2005) in their historical review of wheelchair accessibility in the context of advancements in 1930's wheelchair technology – the design of the tubular steel, light-weight folding wheelchairs – argue that the origin of formal, regulated built environment accessibility can be directly attributed to early advancements in wheelchair design;

**“We would argue that wheelchairs have played a central element in the transformation of public policy as it pertains to disabled people [and] paved the way for legislation throughout the world, such as the Disability Discrimination Act in the UK. ... [providing] the impetus for disabled people to campaign against their exclusion and to demand greater social justice.”
(Watson and Woods, 2005, p. 104)**

Using the wheelchair turning space as a framework for enquiry, a more focussed lens is generated through which to examine sociological accessibility, alongside the evolution of technical accessible design practice, integrating the micro, the specific 1500mm turning space, with the macro - social disability theory. Mooney Cotter (2007) suggests that to tackle disability inequality there is first and foremost a requirement for close attention to

detail, and thus bringing specific issues of inequality 'to the forefront of microscopic debate can only serve to advance all quests for equality'. (Mooney Cotter, 2007 p341). In terms of 'microscopic debate', the wheelchair turning space is a simplistic, and, as Goldsmith himself has stated a 'relatively crude' architectural planning device (Goldsmith 1976 p.151) drawn at scale on plan either in the form of circle with a diameter of 1500mm or as a 1500mm x 1500mm square. It is often cited as a standard allowance (albeit the minimum) for wheelchair users to manoeuvre a 180degree turn, ie; a space in which to change direction of travel, however in reality this additional space also functions as spatial accommodation for parents with babies in buggies, people using walking frames or crutches, people requiring support from carers, people with guide dogs, and basically anyone other than an a typically 'able-bodied' individual (Boys, 2014)

Could the unchanged wheelchair turning space be considered representative of a culture not fully on board with disability rights in general? And if so, does the routine application of this feature in every-day accessible design practice reflect continued ableism and disability discrimination? Is its unchanging existence and use in contemporary legislated regulations representative of broader systemic discrimination?

ACCESSIBLE DESIGN REGULATION AND THE CIVIL DISABILITY RIGHTS MOVEMENT

To address the wider critique of contemporary compliance-focussed accessible design, it is important to understand the historical social context through which accessible design was established and how

accessible design implementation has been influenced by the disability rights movement, and indeed vice versa;

“Wright’s [Beatrice Ann Posner Wright] and Goldsmith’s approaches provided an intellectual foundation to the disability rights movements of the 1960s and 70s, and gave disabled people a way to frame disability experience in ways that transcended medical findings alone.” (Guffey 2020)

Crosscutting disciplines of technical architectural design and social history of disability rights, paints a fuller picture of the state of accessibility today – that architectural accessible design practice is tarnished by compliance-based design thinking (Liebermann, 2024), while the social perspectives of those living with physical impairment paint a picture of continued architectural discrimination, and repeated calls for access equity and improved approaches in the creation of higher quality accessible environments (Goldsmith, 2000; Titchkosky, 2011; Boys, 2014). This dichotomy, where lived experiences of access inequality is at odds with the intended outcomes of regulated accessibility through technical building regulations, is telling of the issue at hand - that mere compliance with minimum regulations doesn’t meet the access requirements, or basic human rights (Jackson, 2018) of a significant proportion of our population.

When Goldsmith’s 1st edition of *Designing for the Disabled* was first published in 1963, the prevailing model of disability was the ‘medical’ or ‘individualistic’ model, seen in the terminology used by Goldsmith when using impairment-first language such as ‘polios,

spastics, epileptics, multiple-sclerotics' (Goldsmith, 1963). Twenty years later, Mike Oliver's first publication, *Social Work with Disabled People* (1983), coins the term the 'social model of disability' based on the work of the Union for the Physically Impaired Against Segregation (UPIAS) from the mid-1970s.

"What we are interested in, are ways of changing our conditions of life, and thus overcoming the disabilities which are imposed on top our physical impairments by the way this society is organised to exclude us."

(UPIAS founding statement, 1975)

THE SOCIAL AND MEDICAL MODELS OF DISABILITY

While *Designing for the Disabled* was revised and updated over the course of its four subsequent editions (Goldsmith, 1967; 1976; 1997) to reflect changes to language (removing terms such as 'handicap' and 'paraplegics'), and addressing the growing politicisation of disability issues during the emerging disability rights movement of the 1970s (UPIAS, 1976; Oliver, 1993; Goldsmith 1997), the resultant legacy of out-dated language can be seen in architectural design guidance, policy and legislation, framed through the lens of the medical model (Imrie, 2003). Terms such as 'wheelchair user', and the categorisation of impairment such as 'ambulant', 'non-ambulant', and 'older-age' is still common place in contemporary building regulations and design guidance (Pickles, 1998; BSI, 2018; Approved Document M 2015). The 1500mm wheelchair turning space is also predicated on the notion that disabled building users have a pre-determined ability to self-propel

and transfer, since that is the basis on which Goldsmith conceived of the turning space in 1963.

In Mike Oliver's most recent commentary on the social model (2013), thirty years since his seminal publication (Oliver, 1983), Oliver makes clear that in the context of the UK's suffering economy and reformed approaches to disability benefits, services and support mechanisms, the social model is more relevant now than ever. Oliver specifically notes that current governmental approaches to public welfare and support have 'taken us back more than 30 years to the time before the social model came into existence' (Oliver, 2013), due to the individualisation of impairment on which severity and type of impairment are used to assess worthiness of publicly funded services and benefits.

Echoed in architecture, is the categorisation of impairment vs non-impaired 'able-ness' evident in the subdivision and separation of the UK Building Regulations. In the Approved Document M (ADM, 2015) people with physical disabilities are catered for in terms of access to buildings in a dedicated, or segregated part of the regulations. Since the first building regulations for disability access were published in 1987, little has changed in terms of the macro terminology and normative assumptions of 'able-ness', referring to 'wheelchair bound' 'wheelchair users' and 'wheelchair user houses' – akin with the medical model of individualised impairment.

The Approved Document M section of the building regulations is heavily weighted to wheelchair access, with requirements for people with visual impairments only being added in the guidance in 1999. Further echoing Goldsmith's approach to *Designing for the Disabled* (Guffey, 2020) is the pervasive and continued use of the 1500mm wheelchair turning space in common practice today, some 62 years following its introduction (Goldsmith 1963) as the primary tick-box goal for achieving 'accessible' design compliance, as illustrated above on Fig 1.

BUILDING REGULATIONS – APPROVED DOCUMENT T (UK)

In a further somewhat curious turn of events, UK's the recent 2024 Approved Document T (ADT) sets out the latest update to the building regulations for the design and construction of toilet provision, effectively clarifying that ADT 'universal toilets' do not require to be wheelchair accessible toilets;

"A universal toilet is not designed to be wheelchair-accessible: it is a toilet for universal use for all who choose to use it."
(Approved Document T, 2024, section 1.10 p. 24)

In adopting the term 'universal' when describing an all-inclusive gender-neutral WC facility, the ADT appears to ignore 'Universal Design' theory of inclusive disability access, as detailed by Goldsmith in his publication of the same name (2000). In the redefined 2024 version of the ADT, by suggesting that the ADT 'universal toilet' facility is for 'universal use for all who choose to use it', with the apparent explicit exception for those people

requiring wheelchair-accessible spaces, exemplifies further the segregated and individualised approach to impairment and access.

TESTING THE CURRENT MINIMUM STANDARDS

In 2022, the UK's Department for Levelling Up for Housing and Communities (DLUHC) published research originally commissioned as part of the consultative process for the development of amendments to the 2024 Approved Document T (Arup, 2022) in relation to the design requirements of public toilets. In the Arup report, the 1500mm wheelchair turning space was tested in 'real-life conditions', and revealed to be suitable for only 24.9% of the study's sample wheelchair user participants (Arup, 2022 p. 58).

The 'real-life conditions' were the analyses and measurement of real-time manoeuvres where people who routinely used wheelchairs in their daily life carried out a turn through 180degrees, using their own wheelchair, or being supported by someone to manoeuvre their wheelchair (as would be normal practice for them), unimpeded by physical restrictions (eg. walls) to move in the way their body naturally moves when carrying out such turning manoeuvre. The cross section of participants ranged from self-propelling manual wheelchair users, self-propelling powered wheelchair users, and assisted wheelchair users using manual wheelchairs. The study suggests a much larger optimum wheelchair turning space of 2500mm x 2500mm is required to accommodate 99% of independent wheelchair users to successfully carry out a 90degree turn. (Arup 2022, p.108).

What the Arup study reveals is the impact of measuring 'real-world' people, in the mode of 'real-life' moving and turning, resulting in ergonomic requirements which are much larger than that assumed during the desk-top derivation of turning spaces and assumptions made during Goldsmith's early development of the original wheelchair turning space (Goldsmith, 1963 and 1967; Arup 2022).

Further, the Department for the Environment, Transport and the Regions' (DETR) 2009 study on reference wheelchair dimensions indicates useability of the 1500mm turning space is limited to 85% of the wheelchairs included in that study; noting that this particular study does not measure these wheelchairs in use, in motion, include an assistant, allow for motorised wheelchairs, or measure the real-life turning space requirements as examined the Arup report (2022).

The Arup study appears to be unique in its approach of using disabled participants as experts in their own manoeuvring requirements, without imposing pre-defined requirements or specifying types of manoeuvres to be tested. Involving people with lived experience – disabled people themselves as experts in their own lives – in the technical ergonomics research was not a method employed by Goldsmith in pursuit of the design guidance in his early publications (Goldsmith 1963, 1967, 1997; Guffey, 2020). Goldsmith's desk-top theoretical analysis assumes a particular type of manoeuvre in the derivation of the 1500mm dimension, such that the wheelchair would be pivoted around a rear-central axis, with the inherent assumption that the person in the wheelchair has a strong

enough upper body in which to carry out such a turn – comparable to that of an able-bodied, average height male (Goldsmith, 1967;1997).

EMBODIMENT AND ERGONOMICS

In the 1997 *New Paradigm* revised version of *Designing for the Disabled* and again in *Universal Design* (2000), Goldsmith criticised the lack of ergonomic and anthropometric data available on physically disabled people, stating that the 'figures of ambulant disabled people are tall men' (Goldsmith 2010, p17). In chapter 3 of *Universal Design* (2000), Goldsmith goes into great detail reviewing and critiquing the available anthropometric and ergonomic resources available, particularly in pursuit of 'ambulant disabled people' and 'wheelchair users'. He cites the variability of the shapes and sizes of wheelchair users as a barrier to achieving a representative anthropometric sample in the form of a 'statistically normal distribution for any anthropometric measure' (Goldsmith 2010, p.24).

"Collectively therefore, in the context of anthropometric illustrations in diagrammatic form, it is admissible for normal able-bodied people to be surrogates for these wheelchair users. The effect of this is that independent wheelchair users can be represented by able-bodied people who are placed in wheelchairs." (Goldsmith 2010, p.25)

Historically, representation of the various shapes and sizes of the human body in architectural practice is tainted by gendered

stereotyping and standardisation of people, reduced to mere 'building users'.

"Outdated conceptions of the body endure in the field [of architecture]. They have been shaped by centuries of venerating a particular physical ideal – while, male, able (and heterosexual) – exemplified by Leonardo da Vinci's Vitruvian Man, and in the twentieth century, le Corbusier's Le Modulor [modular man]... ubiquitous reference presents the body as a fixed physical entity, untouched by power dynamics and discourses that shaped lived experience." (Liebermann, 2024 p.4)

Architectural Modernism of the post-war 20th century was dehumanising (Imrie, 1996) and the effect of 'form following function' has been to strip away the humanity of the people who use buildings, reducing the populations of people down to 'the modular man' (le Cobusier, 1927) and presenting humans as mere functional forms moving through spaces in a standardised and predictable way (Eileen Gray via Imrie 1996). It may therefore be unsurprising that Goldsmith was willing to overlook the realities of disabled embodiment and the shapes and dimensions of wheelchair users' bodies. The resulting effect being that the original wheelchair turning space repeatedly endures throughout five decades of revisions of his works and into formally regulated design practice.

"Accessibility is much more than admittance to a building or a matter of logistics, but is also a quality of socio-psychological experiences which modernist ideas did little to acknowledge."

(Davies and Lifchez, 1987 via Imrie 1996 p88)

CONCLUSION

Across many sociological discourses of disability and the built environment, there are repeated calls for action to 'improve accessibility' (Mackintosh and Heywood 2015; Fleck 2019; McKinney and Amosun 2020; Mathews et al. 2022; McCall 2022) in response to the experiences, barriers and discriminatory exclusion faced by physically disabled people when accessing the built environment.

In the 2023 *Access Survey* by *Euan's Guide*, with over 6000 respondents UK-wide, 79% of respondents reported they 'experienced a disappointing trip or had to change plans due to poor accessibility' of public places such as hospitality venues, leisure facilities, hotels, retail premises or other public services. A correlation is seen between the Euan's Guide Survey finding at 79% of people reporting negative experiences of accessibility, and the ArupDoc M Extension research (2022) in finding that 75% of the wheelchair study participants were unable to carry out successful turning manoeuvres within the commonly applied 1500mm wheelchair turning space (Arup 2022).

Titchskosky likens the ISO symbol of accessibility to the mere 'possibility or concept of access rather than the substantive reality' (2011), and Ross et al consider 'the normalized inattention to disability' in planning practice serves only the 'so-called "able bodies" much better than they do the disability community' (2023). Lieberman's *Architecture's Disability Problem* (2024) considers how contemporary practices of accessible design are framed as an

additional extra to normal practice, sometimes 'even a creative encumbrance' due to the everyday focus on 'normate [sic] bodies' (Liebermann, 2024).

Further to the mounting evidence indicating a problem with compliance-focussed accessible design practice, is the common contemporary assumption that modern buildings are equipped with enhanced or improved accessible design features compared to those of the past (Mathews et al. 2022). While this assumption is true for some elements of accessibility such as widened doorways, less steep ramps and stairs, improved tactility for visual impairment, higher quality lighting and acoustic technology to support hearing impairments; this is simply not true of the minimum requirements for wheelchair turning spaces. The unchanged dimensional minimum standard for wheelchair access is still relevant and more prevalent today given its place in legislated building regulation, despite rising evidence indicating the need for reform and revision of what constitutes an acceptable minimum spatial allowance.

"The beautiful complexity of disability requires that there cannot be a singular disability perspective that serves as a panacea for accounting for disability and ensuring accessibility and inclusion." (Ross et al., 2023)

This paper correlates problems with physical access for wheelchair users in the built environment with the continued application of minimum dimensions for wheelchair turning spaces via the common practice of compliance-based accessible design in architectural practice. This problem is compounded by the fact that regulated

spatial requirements for wheelchair turning spaces, specifically the 1500mm turning space, has remained unchanged since its inception over sixty years ago, and might therefore potentially be considered an obsolete dimension in light of progression in the rights of disabled people, changes to wheelchair design, and the increased (now rightly normalised) presence of physically disabled people themselves in public spaces, alongside a growing ageing and disabled population.

Further research is therefore required to establish a robust, evidence-based solution which places the rights and wellbeing of the world largest intersectional minority – disabled people – at the forefront of any potential proposed change. The persistent issues of built environment access and architectural discrimination (Goldsmith, 2000) is complex and cannot be solved by simple solution-based problem-solving methodologies. Broader cultural change is required in design practice in the way accessibility is approached and applied, bringing together architectural accessibility and the social model of disability. Upgrades to the minimum dimensional requirements to a more inclusively sized, larger wheelchair turning spaces might be a start, but the issues of systemic ablism, rooted in the medical model of disability, still underpin the format, terminology and ultimately the message of the building regulations. Indeed, another potential angle for change is a broader reinterpretation of building regulations where accessibility is no longer delineated in a separate section but distributed more holistically throughout the various technical design requirements, combined with changes in terminology to reflect the requirements of accessible design through the lens of the social model of disability.

And most importantly, any considerations of problem-solving through future research activities will require to centre the highest value expertise of the 'voices of experience' of those disabled by the built environment (Imrie, 1999; Boys 2014) to best inform the many ways in which we can truly *design for all*.

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