ARCHITECTURAL ACCESSIBILITY

HISTORY, ADVOCACY, AND DESIGNS FOR AN INCLUSIVE ENVIRONMENT

Ellis Wills-Begley | Kompas Fellowship 2018 - 2019 | MYEFSKI ARCHITECTS

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6.3 IMAGE CITATIONS

PREFACE / ACKNOWLEDGMENTS

This book would not have been possible without the tremendous support of numerous individuals, organizations, and companies. Firstly, I would like to thank Michael Grice, Justin Cooper, and Cathleen O'Brien for introducing to me their astounding work in organization and activism, sharing experiences, offering ideas, and constantly remembering to take care of ourselves, each other, and laugh at all costs. Their mentorship through this research project cannot be appreciated enough. This research project and book is the result of Myefski Architect's Kompas Fellowship, a year-long independent research position combined with rigorous work experience on company projects. I would like to thank Myefski Architects for this opportunity, providing an open platform for conversations that challenge contemporary design methodologies, and for their growing efforts to provide higher levels of accessibility in all of their projects.

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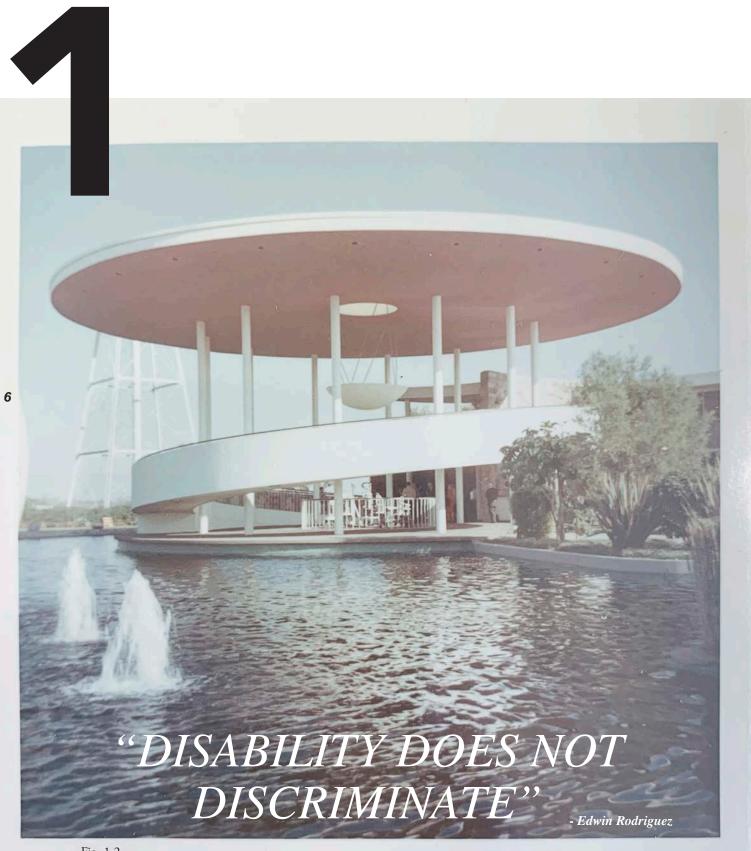
Access Living, and its numerous employees, members, and affiliates, must also be acknowledged for their expansive work towards disability rights, human rights, social justice, housing, healthcare, education, and so much more. Their support was instrumental in my approach to organize the discussion on architecture and accessibility, securing event space and helping to coordinate ASL translators. Additionally, their Young Professional's Council deserves a shout-out for creating a collaborative platform for networking, learning, and building allies.

I would also like to thank Chicago's Blind Service Association for their friendship, eagerness to contribute design ideas, and for the sense of community that I gained through volunteering. I look forward to continuing my participation there for as long as I can.

Additionally, I would like to thank all of the other individuals who lent their time, energy, support, or who have otherwise inspired this body of work directly or indirectly: Karen Tamley, Chris Downey, Edwin Rodriguez, Evelyn Woodson, Aziza Nassar, Adam Ballard, Tim Paul, Kenneth Flynn, Antonio Sanders, Amber Smock, Jack Catlin, Dick Lehner, Sally Cooper, Bill Green, Dena Bell, Josh Wilmoth, Bill Worn, Heidi Wang, Elizabeth Godbold, Lisa Williams, Samuel Mordka, Charlie Petrof, Greg Polman, Trish Girdwood, Leah Levinger, Daisy Feidt, Michelle Sablack, Carl Lewis, Dawn Gilpin, Celeste Adams, Robert Adams, and each founding, current, and future members of the Initiative for Inclusive Design at the University of Michigan.

Lastly, I take this opportunity to recognize Marca Bristo, who passed away this morning, September 8, 2019. Her influence, leadership, and accomplishments within and beyond the disability community cannot be expressed profoundly enough. Having been the founder, President and CEO of Access Living, she will be forever remembered for her significant contributions to our collective society.

> "The things we advocate for are not just for a marginal group of people, they're for society as a whole. Disability affects all of us." - Marca Bristo



INTRODUCTION

When architectural accessibility is overlooked, physical barriers become social barriers. Cultural stigmas of disability have become so deeply embedded into our social and physical environments that architects, designers, and urban planners often fail to recognize the extent to which these constructs affect the health, safety, and independence of people with disabilities. Accessibility is more than an accommodation, service, or requirement; it is the presence of agency, independence, and dignity.

The reality of this argument is one that does not affect my every day life as a non-disabled person, and it must be understood that I do not speak on behalf of the disability community - I speak as an ally whose sole intention is to help amplify the voice of the disability community in any way that I can. As a citizen and designer, it is my responsibility to recognize how I can contribute to this cause with the tools, opportunities, and experiences available; it is through this book that I hope to encourage architects, designers, and students to recognize their potential to do the same.

What began as a general inquiry into the history of architectural accessibility, quickly expanded to include Chicago's current context of housing, development, and politics. Throughout several months of leading interviews with the various stakeholders of affordable accessible housing, participating and volunteering in various organizations, forums, events, and discussions - and hosting one of my own - I grew awareness of the complexity of issues surrounding disability rights and housing. But more importantly, I observed the overwhelming power of advocacy to instigate structural change.

My question then became, could design enhance advocacy?



"DISABILITY RIGHTS ARE HUMAN RIGHTS"

Fig. 1.3



ARCHITECTURAL ACCESSIBILITY

PAST, PRESENT, AND FUTURE

The history of architectural accessibility is inextricably linked to the Disability Rights Movement and its continuous fight for human rights. The process by which America arrived at its current level of accessibility has been a long, and on-going battle that would not exist without tremendous efforts from numerous activists, organizations, institutions, and allies. In addition to the sheer determination, persistance, and success of this movement, several historical events also accelerated America's progress towards a more accessible country.

This chapter calls attention to a few of these events, such as World War II, The Civil Rights Movement, as well as the work of a several individuals and their influence on disability-related policy. These stories are highlighted in an effort to celebrate our country's progress towards accessibility and underscore the importance of addressing these issues at the federal level.

Next year will mark the 30th anniversary of the passing of the Americans with Disabilities Act, and it is evident that we have made progress towards a more accessible environment. However, the momentum of the narrative outlined in this chapter proves that there is much more that can be done, and must be done, in order to ensure equitable access to all.

HISTORY OF ARCHITECTURAL ACCESSIBILITY INDIVIDUALS, EVENTS, AND POLICY

Public Law 90-480 905 Corgress, S. 223 Aurora 12, 1965

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10



Fig. 8

CELEBRATING ARCHITECTS WITH DISABILITIES *PIONEERS OF THE ACCESSIBLE ENVIRONMENT*



CHRIS DOWNEY, AIA

"Chris Downey's work focuses on enriching the environment for the visually impaired. His projects, from rehabilitation to cultural centers, reflect his 20 years of traditional sighted architectural experience and ongoing practice since losing sight in 2008. Chris also serves on the California Commission on Disability Access, teaches at UC Berkeley, and speaks internationally." ³

Fig. 9

12



KAREN BRAITMAYER, FAIA

"Karen Braitmayer is the founder and managing principal of Studio Pacifica. Under her leadership and direction, the firm has grown in stature and scope over the 20-plus years. Early in her career, it occurred to Karen that – as an architect and a wheelchair user – it was possible for her to make a unique contribution to the field. Her professional focus on accessibility and her advocacy efforts for inclusion certainly did just that. ⁴

As a registered architect, Karen was admitted to the prestigious College of Fellows by the American Institute of Architects (AIA). She was appointed by President Barack Obama to the United States Access Board, a policy appointment she continues to hold today. Karen is also an active volunteer and non-profit board member." ⁴



RON MACE, FAIA

"Design pioneer, wheelchair user, and coiner of the phrase "universal design" whose work was instrumental in the passage of national legislation prohibiting discrimination against people with disabilities, such as the Fair Housing Act of 1988 and the Americans with Disabilities Act in 1990." ⁵

Fig. 11



MICHAEL GRAVES

"I believe well-designed places and objects can actually improve healing, while poor design can inhibit it," said Graves, who recently passed away in 2015. "Designers, he says, must understand the physical implications of not being well: "This became very real to me after my illness, so since then I've asked my design team to spend a week in a wheelchair."" ⁶ Graves has significantly influenced the design of hospitals, healthcare facilities, in addition to numerous industrial products that will forever be remembered for their imagination, function, and service to the human body.



Fig. 12

Jack Catlin, FAIA

"Jack has been a pioneer in creating environments for people with disabilities by promoting design elements in the built environment that advance a more inclusive, sustainable society. He was appointed in 1994 by President Clinton to the U.S. Access Board, and was the first practicing architect to serve as Chair. His experience with the needs of the disability community and his understanding of the ADA have been instrumental in developing federal, state, and local accessibility codes that have significant implications for the design and building industries." ⁷

Fig. 13

ADAPTIVE INDIVIDUAL VS. ADAPTIVE ENVIRONMENTS INTERROGATING THE SCOPE AND IMPLICATIONS OF ADAAG

Many architecture students, faculty, and practicing architects' first introduction to disability is through federal guidelines, such as ANSI 117.1 and ADA Accessibility Guidelines (ADAAG), which are seldom a part of architectural curricula. While these documents do include technical specifications for the blind, deaf, and persons with mobility disabilities, Carl Lewis, Teaching Assistant Professor of Architecture at the University of Illinois at Urbana-Champaign, and previously a tenured member of the U.S. Access Board appointed by President Bill Clinton, admits that ADAAG is primarily a document in service for wheelchair uses. He believes this is mainly because of the strong voices of disabled war veterans, who, on UIUC's campus and beyond, fought collectively for wheelchair accessibility guidelines. While this dominant voice explains why most of the guidelines are directed towards wheelchair users, it also hints towards how it may have over-powered the inclusion of other technical specifications for persons with various other disabilities to the same degree.

Given that the initial scope of ADAAG was largely fought for – and designed for – war veteran wheelchair users, it is important



Fig. 1.4

to understand how their overall level of fitness, relative to that of other wheelchair users, was much greater due to their physical training. This history puts pressure on the fundamental level of strength, primarily upper-body, written into the guidelines and exposes the fact that, in my experiences, very few of these guidelines are actually usable by persons with disabilities. Therefore, while these documents do serve a large number of wheelchair users, there remain innumerable opportunities to improve these specifications for a wider number of individuals.





Until the built environment began to see significant physical changes in response to the new accessible standards, persons of disabilities wereand still are in many spaces-abject to the physical constraints of their surroundings. The photo above illustrates a radical alternative to this condition in which the wheelchair user risks their safety in order to bypass a common obstacle to public space - the stair. This situation, in which the body is reactive, should be contrasted with the belief that bodies should instead be active agents on their surroundings, as manifested in Robert Adam's paradigmatically revolutionary project, *The Asclepius Machine*, shown on pages 26-27. It is with this understanding exclusively that architects and designers wield the potential to surpass the fallible hope that greater accessibility will and must result from stronger enforcement and guidelines alone.

SIGNAGE AND SIGNIFIERS IMPACT OF SEMIOTICS ON THE SUBCONSCIOUS

The social impact of semiotics (the study of signs and symbols) cannot be underestimated. Signs and symbols, compared to the signified thing itself, are by nature a generalized reduction of the original thing. Nobody will express negative sentiment towards symbols of fruits, vegetables, etc., but when this process intervenes with the critical debate on human identity and body politics, many people are personally affected.

For example, the international "handicap" symbol, Fig. 17, was designed to create a universal sign that would be instantly recognized as an accessible space. However, in the process of reducing a function into a symbol, the design reduced the image of the human body to nothing more than a rigid, life-less stick-figure with amputated hands protruding outward.

As a result, this sign perpetuates a psychosocio assimilation between disabled bodies and weakness, slowness, if not complete immobility. For many wheelchair users, this could not be any less the case.

In response to this argument, I have heard

Fig. 1.7

a few people try to deny the sign's negative connotations, stating that "it's just a sign." Of course it is, but the point is that it operates subconsciously, masking the variety and diversity of the physical human condition and ability of the disability community.

In 2010, Sara Hendren created "The Accessible Icon Project" to redesign this symbol, Fig. 18, in response to "the politics of disability, access, and inclusion." ⁸

What is most important about this project, identifying and contesting the statusquo, Hendren and her team demonstrate the power of challenging not only the symbols, but the culture that produced them.⁸ Lastly, this

project is another example of the embodiment of the disability rights mantra, "nothing about us without us." ⁸









E

I

17

Fig. 17

Fig. 15

6

3

Fig. 18



AROUND THE CITY COMMON OBSTACLES ON THE MARGIN OF THOUGHT

The following images represent only a few of the innumerable examples of architectural barriers found within the city. Whether as a result of rushed planning, carelessness, or forgetfulness, or simply lack of awareness, all of these instances can be avoided by involving people with disabilities in the planning of architectural and civic space.

While the definition of a barrier varies extensively among individuals, becoming more aware of the different forms they take on will allow more designers, and citizens, for that matter, to take action to improve the built environment for our collective community.

My intent of showing the proceeding images is twofold:

1. Demonstrate the extent to which physical barriers proliferate the urban environment of Chicago.

2. Encourage architects, designers, and urban planners to think more carefully about the attention to detail, location, and maintenance they specify in their plans.



If any of these look unfamiliar to you, I encourage you to look for them around the city. You may be surprised to find that such obstacles can be found on every block, within every building, and between every destination.



















HOWEVER,

There are also some good examples that we can draw inspiration from. Both in the sense of practicality and invention, these photos reflect a higher level of consciousness towards the experience of way-finding and navigation.

By terminating a handrail with a clear physical form, the user more intuitively understands that they have arrived at the base of the stair. Unlike on the previous page, this braille marker is built into the path of the hand for a blind user, reducing the potential that the user will never even notice the accommodation that was "designed" specifically for them.

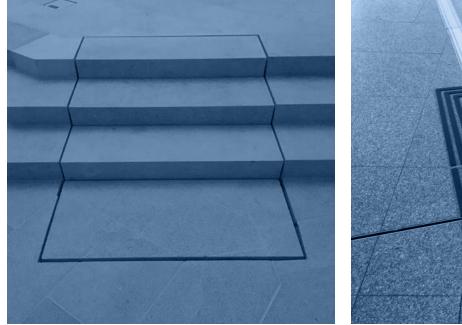
The collapsible staircase to the right, in a church-converted-museum in Lyon, France, is both an aesthetically pleasing and practical idea that provides an equitable sequence through space, from the nave to the alter. However, in this case the user is still dependent on someone else to activate the ramp. Why not make it spontaneously unfold?





On campus at University of Illinois at Champaign-Urbana, UIUC, painted markers and truncated surfaces not only demarcate car traffic, but also bike traffic. Additionally, the fencing serves to guide those with lower vision safely and directly to the bus entrance.

Bottom right: Not only is this raised-line path durably constructed, it is beautifully detailed on center with an expansion joint. Thus, it blends into the architecture using existing elements to strengthen its purpose. If the tactile signage is clear, then why did they still spend money on visual signage? Who is it for?





FOR EXAMPLE,

The MAC House, by So & So Studio, is a brilliant combination of design collaboration, aesthetic beauty, and intuitive function. Designed for a blind woman in Thiene, Italy, the architects "worked directly with the client to map out her daily habits and typical path" along a central corridor. ⁹

"This ensured an intuitive organization of the home and helped to ease the transition of daily activities between her two houses; old and new." ⁹

To augment the her ease of orientation within in the house, the team integrated a glyphic language of stone slabs into the wood floor. This map-like system promotes efficient circulation and minimizes a labyrinthine effect. ⁹ While deritives of this "glyphic language" exist in some spaces (as shown on the previous space), a larger implemtation of this spatial dictionary has yet to be explored to accurately determine its capacity to serve a greater number of users at a larger scale.

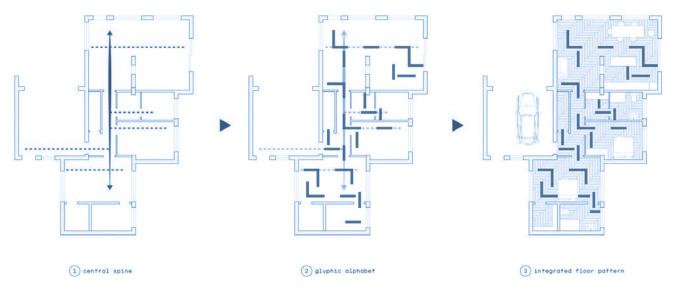




Fig. 20



Fig. 21



stop



continue

functional connection

39



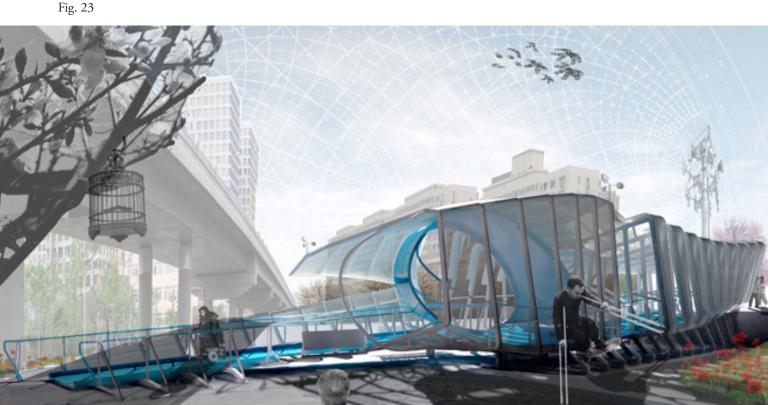
directional indicator

multidirectional functional combination

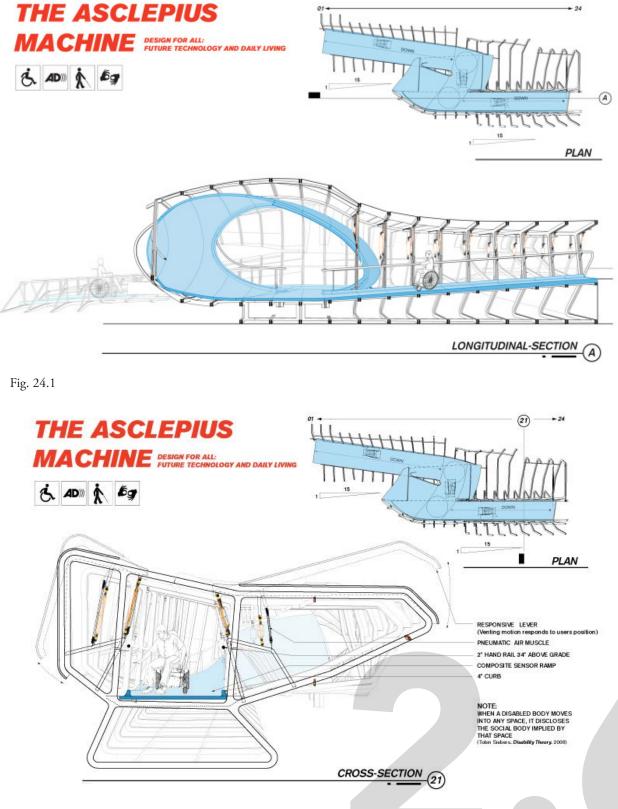
REPRESENTATION / PROJECT REFERENCE

Robert Adams' influence on design, making, and critical disability theory cannot be overemphasized. Assistant professor of architecture at the University of Michigan's Taubman College of Architecture and Urban Planning, Adams has revolutionized architectural discourse on accessibility through this, and many other projects, essays, and design studios.

"Spontaneous Mutations, Genetic Deletions, Adaptive Environments and Assistive Technology in the Compression of Developmental Time, or Crawling Sticks and Other Architectural Accoutrements, Actants and Apparatus situates agendas and acts of making that explore the relational mechanics between genomics, architecture, and urbanism for extending the operative range of the body regardless of ability. The project objective is to revise cultural codes. Through making devices and environments that produce a more actionable architecture, responsive to a wider range of sensations and forms of urban euphoria, the project moves beyond current lowest-order engineering solutions to accommodate people with disabilities." ¹⁰



26



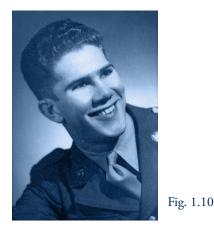
UNIVERSITY	ARCHIVES
APPLIED LIFE	STUDIES
REHABILITATION EDUCATION	SERVICES DIVISION
TIMOTHY J. NUGENT PAP	ERS, 1939-2007
Lectures, Conferences,	Events, 1950-62 -
Human Sexuality Sympos	ium, 1975, 1983
16/6/20	18
SERIES NO.	BOX NO.
UNIVERSITY OF ILLINOIS	

Fig. 1.8

Fig. 1.9



TIM J. NUGENT ARCHIVE



When WWII ended disabled war veterans sought to continue their education under the GI Bill, numerous physical and societal obstacles prevented their inclusion within the academic and social sphere. When the only program for students with disabilities at the time - the Galesburg Campus of the University of Illinois - was closed, the current Dean offered Timothy J. Nugent the opportunity to find a new location for the program. When the University of Illinois at Champaign-Urbana accepted 14 students in wheelchairs, this program became one of the first and largest programs of its kind. ¹¹

"Over the next twenty years, Dr. Nugent pushed the University to accommodate students with disabilities beyond enrollment in the curriculum. He founded the Division of Disability Resources and Education Services (DRES) and opened a new Rehab Center for the disabled students" which is now located at the center of campus in Timothy J. Nugent Hall, and hosts the Beckwith Residential Community, designed specifically for students with severe disabilities and their student-caregivers. ¹¹

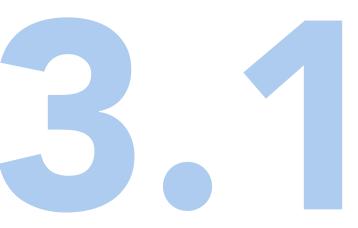
When I visited campus to meet with Carl Lewis and visit this building, I stumbled across one of the largest centers of knowledge and documentation on the history of accessibility - the UIUC archives. The following images and documents are reproduced here to demonstrate the extensive work, research, funding, and determination that significantly shaped our physical environment and mark the first steps towards creating a more inclusive environment.

PARIS - 1975 D.R.E.S. TRAVEL ABROAD

The photographs and news strip document one of the first travel abroad programs ever launched in the United States, as a part of the D.R.E.S. program under the direction of Tim J. Nugent. This trip marks a huge step for students and travelers with disabilities, by substantively dismantling and establishing a new level of possibilities for students and persons with disabilities.







Note: All following images are from the Timothy J. Nugent Archive and correspond to the citation for Fig. 1 at the end of this book.



Mary D. Ockay, Public Relations Manager Midwestern Region • 2010 Prudential Building Chicago 60601 / 782-6111, Ext. 616 January 29, 1975

Air France passenger service agents, Peter Kafer (far right) and Renee Dulkin background), assist at the check-in of six disabled students from the University of Illinois rehabilitation-education center prior to boarding an Air France jet for Paris and a semester of study abroad.

They, along with three non-disabled students, are participating in a pilot study program fointly sponsored by the University of Illinois and the Franco-Scandinavian Institute in Aix-en-Provence, France, which has special facilities for handicapped students.

The project is being financed through a collection of trading stamps by the World Community Service Committee of the Champaign Rotary Club, churches, local civic croups and individuals, in addition to cash contributions.

















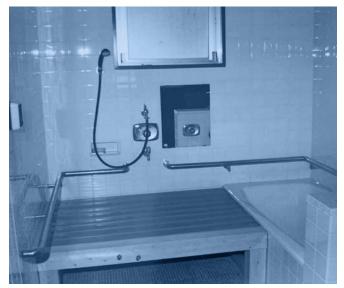


Based on the titles and information written on the back of these photographs, it is my assumption that this building, a rehabilitation center, served as both an example and inspiration for the Beckwith Residential Community. Of particular interest are the unique grab-bar configurations that allow for more confident transfers, along with the platforms adjacent to the plumbing fixtures, as well as other cultural differences among various bathing and cleansing processes.





















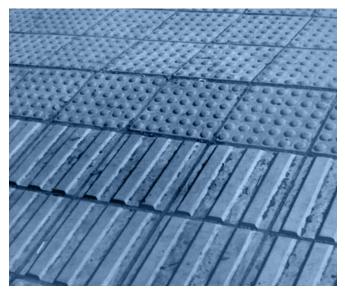




















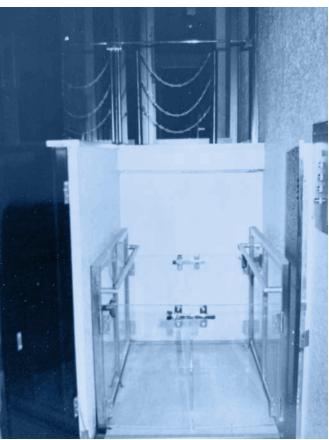




This and the previous spread represent numerous examples of Japan's advancement towards an inclusive environment. The tactile paving blocks we see on sidewalks everywhere now, were invented in Japan by Seiichi Miyake, where they were first implemented in a school for the blind in Okayama City, in 1967. ¹² Note the various locations of handrails that line the hallways, sliding doors, wheelchair seating location, and the personal lift to the right–a fairly common solution to providing an accessible route in renovated spaces.







UIUC ~ 1975 UIUC CAMPUS ADAPTATIONS

With the increasing numbers of students with disabilities on the campus of UIUC then came increased pressure on the physical environment to conform to the new student demographic. It is incredible to see how far the levels of accessibility have come since this point. This campus continues to lead the movement towards making education accessible.

















NUGENT HALL - PRESENT HOME OF THE D.R.E.S. PROGRAM

The result of Timothy J. Nugent's impact on the campus of UIUC still resonates today, with the recent construction of the new location for the D.R.E.S. program in 2010 and its ongoing, unparalleled accommodations for students with disabilities. This housing model itself is the first of its kind, as it is designated for a mix of students with and without disabilities, some of whom are in the Honors Living-Learning Community and provide personal care to students with severe disabilities whom live on the ground floor. This building serves as the new home for The Beckwith Residential Community, which Nugent also started. Every element of this building was considered relative to its function for students with disabilities, from low, push-button locations, mailboxes, window heights, drop-off locations, and most importantly, complete integration with student life on campus.



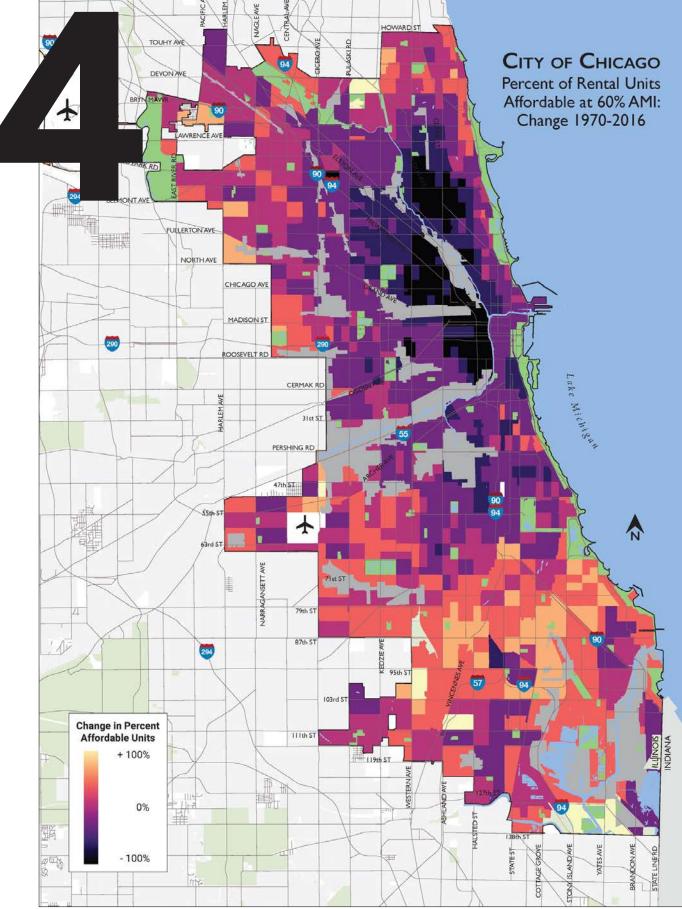












Chicago's affordability is declining, especially in the majority white North Side.

AFFORDABLE ACCESSIBLE HOUSING

The Americans with Disabilities Act established the goal of "equality of opportunity, full participation, independent living, and economic self-sufficiency" for persons with disabilities nearly thirty years ago. However, accessible affordable housing remains a critical barrier between persons with disabilities and this promise. In 2011, a U.S. Department of Housing and Urban Development study found that, "currently less than five percent [of housing] is accessible for individuals with moderate mobility difficulties and less than one percent of housing is accessible for wheelchair users. ¹³ In 2018, the Chicago Area Fair Housing Alliance released another seminal report, *A City Fragmented: How Race, Power, and the Aldermanic Prerogative Shape Chicago's Neighborhoods*, explicitly demonstrating that "the City of Chicago has neglected to fulfill its civil rights obligations by failing to ensure more equitable family affordable housing opportunities and balance the power dynamics involved in community planning." ¹⁴

Given the current overlap of disability status, low-employment, and lowincome rates, the combined effects of this current context significantly impact persons with disabilities by creating disproportionately limited housing, economic, and social opportunities.

In an effort to understand the role of the architect within this issue and strategize new ways for architects and designers to contribute their experience and knowledge, I began my fellowship interviewing numerous stakeholders of affordable accessible housing and then organized a discussion to gather these disparate entities around the same table. Through this inquiry, it became clear that while the role of the architect may not include direct influence on policy, zoning, or regulations, we do posses the ability to fortify the relationships among these entities, expand the scope of the design process, further our awareness of funding sources and tax credits, and encourage developers to follow our lead.

CITY OF CHICAGO New Construction Multi-Family Housing and Ward Level Zoning Advisory Committees

The images shown here and on the following page illustrate how the aldermanic prerogative, zoning advisory committees, downzoning, and landmarking create unequal distribution of new affordable housing across Cook County. On this page, the blue dots represent how ward level zoning committees (ZACs) have effectively avoided new construction of affordable multi-family housing in their wards, which thus creates not only unequal distribution, but also concentrations of low-income and accessible housing within specific neighborhoods.

BELMONT AV

TOUHY AV

DEVONAN

Downzoning, the "rezoning to a more restrictive classification with respect to either F.A.R. or minimum lot area per dwelling unit which limits the amount of floor area and number of dwelling units allowed on a site" is thus an effective method used to limit density of new construction, which is instrumental in creating smaller, yet more affordable units. 14

953

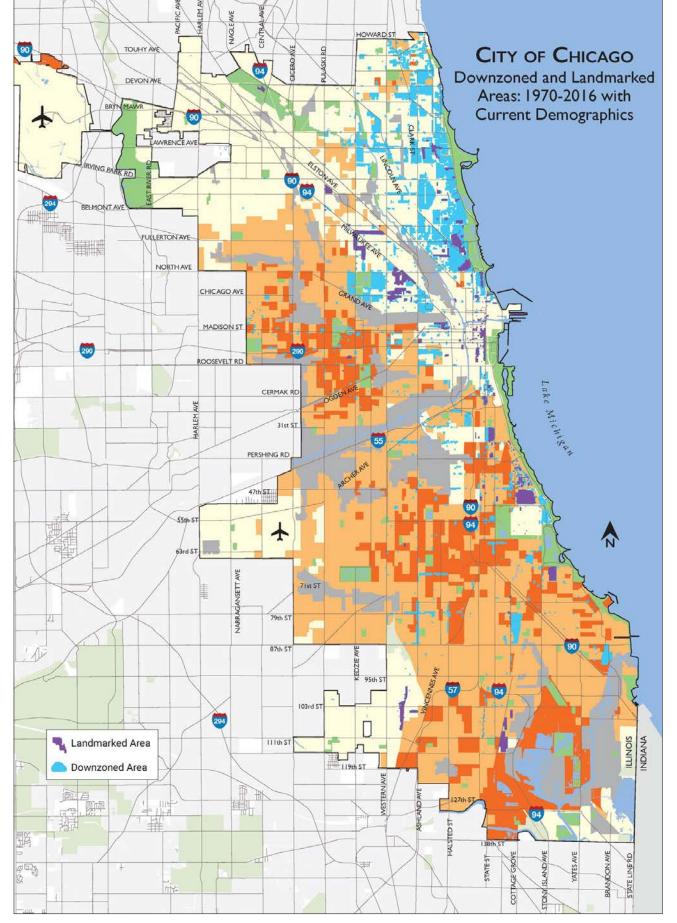
Lake Michtgan CERMAK RE 31st SI SHING RD h ST 71st ST 79th ST 87th ST 95th ST 103rd 51 294 ILLINOIS IIIth ST -119th ST No ZAC Informal ZAC Formal ZAC

HOWARD ST

90

Aldermen predominately use ZACs to prevent housing development in their wards.

NDIANA



Downzoning and landmarking are overwhelming used in the affluent, north lakefront wards.

45

5150 JEFFERSON PARK A PRECEDENT FOR AFFORDABLE ACCESSIBLE HOUSING



Fig. 26.1

Amid the context of political, geographic, and historical battles for affordable housing, there are a few examples of affordable accessible housing developments that serve as both inspiration for and a manifestation of the progress that individuals and organizations are making towards this issue. The recently approved project on 5150 N. Northwest Highway is one of these examples, whose full story demands further attention and can be read in the CAFHA report cited within this chapter. The difficult process through which the supporting community went through in order to get this building is sadly reflective of not only the unaccommodating structural mechanisms of aldermanic power, but also that of the hostility, racism, and abelism found across Chicago in neighborhoods in opposition of new construction of affordable and accessible housing.

The Chicago Housing Initiative (CHI), and the Disability Rights Action Coalition for Housing (DRACH) deserve significant recognition for their incredible persistence and resilience throughout their multiple year-long fight for their rights to affordable and accessible housing. "In September, Lightfoot called the project the "exact kind of neighborhood-driven project needed to address the gentrification and housing insecurity that "Forty-five of the 75 apartments will be set aside for Chicago residents making no more than 60 percent of the area median income, which is \$47,400 for a family of four. Fifteen apartments will be set aside for those who earn no more than 30 percent of the area median income, which is \$24,600 for a family of four, while 15 apartments will be rented at the market rate. Veterans will get prioritized for placement in the units, all of which will be constructed to be accessible for people with disabilities. They will rent for between \$200 and \$2,000 per month," said Josh Wilmoth, CEO of Full Circle Communities, the developer of this project. ¹⁵

In March, the Chicago Housing Authority agreed to subsidize 40 percent of the building's units with \$21.5 million worth of housing vouchers during the 30 years. The agreement calls for 20 of the building's tenants be taken from the CHA waiting list and 10 units set aside for homeless veterans." ¹⁵ Access Living Housing Community Organizer, Cathleen O'Brien, said the units would be ideal for disabled people, because they are accessible and located near public transportation as well as shops and stores.

"This is a very, very, very important development," O'Brien said. "We do believe this sets the stage for others like it." ¹⁵



Fig. 26

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Discussion on Architecture + Accessibility. Access Living. 29 May 2019



ROUND-TABLE DISCUSSION: ARCHITECTURE AND ACCESSIBILITY

Throughout the first few months of my fellowship I lead interviews with numerous stakeholders of affordable accessible housing in order to better understand the role of the architect in creating affordable accessible housing. At each conversation I was amazed to learn of the tremendous amount of work that is being done by other disciplines to confront this issue. But this work is not easy, given the difficulty of securing funding, deflecting opposition from unsupportive communities, avoiding geographic and environmental setbacks, and negotiating the aldermanic prerogative. However, organizations and companies such as Chicago Housing Initiative, Full Circle Communities, LLC., IFF's initiative, Home First Illinois, Access Living, WJW Architects, Landon Bone Baker Architects, as well as a few individuals at IHDA, have identified and pursued numerous strategies to confront this issue and successfully make progress towards equitable housing opportunities in Chicago.

During these interviews and other conversations about housing, it became clear that despite the independent successes of these entities, there remains a disciplinary cleft between consumers, developers, and architects. Thus, I began to organize a discussion about architecture and accessibility to not only share knowledge across these various fields, but to strengthen the relationships between them. On Tuesday, May 29, 2019, roughly fifteen stakeholders of affordable accessible housing joined me at Access Living for a two-hour discussion on our roles and potential. The following transcription of the meeting highlights a few of the significant topics we discussed, demonstrating the complexity of the issue of housing, and serving as an introduction to the work and efforts currently being done to address it.

Thanks to the immense support and guidance from Mike Grice, Cathleen O'Brien, and Justin Cooper, as well as other DRACH members from Access Living, I am confident that this will be one the first of many inter-disciplinary conversations about affordable accessible housing that involves designers, consumers, and developers. But there is still so much work to be done.

ROUND-TABLE DISCUSSION: A TRANSCRIPTION OF SIGNIFICANT TALKING POINTS

ON ACCESSIBLE FEATURES IN MULTI-FAMILY HOUSING:

We should use "modular kitchen systems that are easy enough to disassemble and reassemble. Mechanized is too expensive. How do you make them completely customizable, like an Elfa closet?" The strategy is thus; good design, desirable products, mass production, adaptability / affordability. **These are "benefits that everyone can enjoy and appreciate."** . . . "I think this is something that would appeal to developers at large, but then you come back to the challenge of getting it code compliant across national, international, municipal, state, city codes...is this something that the unions will approve, because this is a new prefab modular thing? . . . so there become other challenges in the way of trying to do something that **I think we as a collective community could all buy in on beyond just disability advocacy."** - Josh Wilmoth (JW), Developer, Full Circle Communities

DEAF FRIENDLY SPACES:

"Illinois is facing multiple consent decrees surrounding institutionalization under Olmstead. In Arizona, there was a development that was designed and targeted for persons who were deaf, and advocates sued, saying that the residents were being institutionalized, even though the residents–almost unanimously–wanted to stay there, and were thrilled with the opportunity to have deaf employees, management working there, communicating that this is a safe space for them." While advocates said you need to live in a more integrated scenario - the consumers said they actually feel more comfortable here. - JW

ON PROVIDING ACCESSIBLE HOUSING:

We provide preference for persons with disabilities, we provide units that are universally designed to serve the widest possible array of needs - generally physical needs, whether its sensory or physical impairment, but if 100% of applicants have a developmental disability or mental illness - which is also a disability, we still provide the unit even if the user doesn't meet the features of the unit." . . . "We have at this point, the better part of 700 units that are fully accessible or adaptable through either on the ground or under construction in the Midwest or Florida, 15% are occupied by people who need that level of design...at this time. They can age in place, and that is great, but we are also designing for people that aren't living in our units." . . . "As a non-profit, we only design and own things that are affordable. However, we calculated that **we spent about \$8,000 more a unit** to provide raisable / lowerable counter tops, etc. On a \$10,000,000 project this cost \$250,000." - JW

"How much would rent go up?" - Evelyn Woodson (EW), DRACH member

"They have properties that are as low as \$200/month including utilities to \$2000/month including utilities and everything in between. Some are rental assisted (you pay 30%)" - JW

ON THE DESIGN PROCESS:

"Jack, what was the process for designing this building, Access Living? What was your strategy for making it accessible, and do you think this strategy can be applied to housing?" - Ellis Wills-Begley (EWB), organizer, Myefski Architects

"Residential buildings are much different than a commercial office setting. It's much easier to design an accessible office setting than residential building. What Access Living did was to bring in people / across disabilities, experts on Universal Design and accessibility, and their own employees, and sat in a room not unlike this, and sat for a full day, and developed a matrix with major building elements in this building and major disabilities and looked at the intersection of all of those. For example, someone with a visual impairment was one of the major disabilities, and the entrance was one of the major elements. At that intersection, we would spend time talking about...what is a good idea of how to design an entrance for visually impaired, then we move on to hearing impaired mobility impaired, and that became a road map for the design of this building. And it worked out. You know, design is a process - you don't come up with the design, then do the drawings, its a process that you end up with. The starting point was this road map, but we discovered an awful lot through the process. How you do that in a residential building, where you don't know where your user is going to be, is a huge challenge." - Jack Catlin (JC), FAIA, Architect, LCM Architects, wheelchair user

ON COST / INTEGRATION / OTHER ACCESSIBLE FEATURES:

"If your approach is to **maximize the amount of accessibility,** it does raise the cost a little bit, but not a lot as you (JW) point out. I would wonder ... for the folks who don't need the high end adaptability features, how do they feel about living in a building that is primarily designed for people with disabilities?" - JC

"Well, not to my knowledge. The overall design aesthetic was to allow the space to meet the needs of the individual. So we started with 100% accessibility in **the design** - as defined by what? (JC) - under all of the various items, under the most restrictive codes. So 100% of the units are accessible, and they are adaptable to be "less accessible upon request. So if someone who is otherwise able-bodied wants to rent a unit and qualifies, does not want their counter tops at a lower height, we can raise all of that, or the base cabinet reinstalled, if they don't want 9" toe kicks, we can drop them down to 4. We can do all of those things. Nobody has, by and large, asked us to. On one hand, there have not been a lot of request to reduce the accessibility of the units, and on the other hand, there is such a strong need for affordable housing at large that, at some point, being able to get the unit at all is enough, then great if these other things are also needed, but all I needed was the affordability." - JW

"Do you have a standard for dwelling unit accessibility?" - EWB

"We start with a Type A dwelling unit, and if and to the extent - though this is not universal - we have some that are deliberately Type B, Type C; they all have the same turn radii, and can be adapted but not as quickly or as cheaply."- JW

"Do you provide signaling devices, conduit?" - JC

We have units that have already built in light initiation and notification, and then we build in conduit. I have not actually encountered speaking devices - refrigerator or microwave that talks. I really like that concept. This goes back to what I said about the overall benefit. All of these things are theoretically available with enough money. Its about streamlining it down to where everyone can recognize the value such that they are produced in mass, and we all then gain the benefit of it." - JW

ON AFFORDABILITY:

And thats where I think to solve this problem, its not just a design issue, its an affordability issue... The city of Chicago is developing a new building code trying to get, instead of the FHA Type 'B' units trying to get 100% Type 'A', which is going in the direction of FCC. We don't know if the City is going to approve it, but we're going to give it a shot. That would help, but most of the new buildings being built are not affordable. And that becomes a problem, but this code–Chicago Building code–would apply to any buildings over 4 units. So these are pretty small buildings. I'm curious to see if we can pass this, 100% Type 'A' and adaptability, if this would provide a better environment for people with disabilities? I don't know. We did a study; it would cost 1-2% more to make a unit meet Type 'A'. We think that is a reasonable thing to do. - JC

ON GUIDELINES:

How can we further design collaboration processes to expand the definition of the Type 'A' unit? - EWB

In terms of developing the Type 'A' - I can use the Access Board and the 2010 Accessibility Standard Type 'A'. **The Access Board is 25 people appointed by the President, of which 13 have to have a disability.** You have a majority of PWDs on the board, and they are the ones who develop the standards. They have advisory committees that are made up of hundreds of people across the country, with a particular emphasis on PWDs that advises the Access Board, then the Access Board writes guidelines, which are then adopted by Federal agencies. (Justice department adopts the requirements for a title 2 dwelling unit, such that if a development uses Federal funding, a certain percentage has to meet these requirements)." - JC

ON INDUSTRY:

"While there are many PWDs involved in this development process, there has to be a balance with the industry side as well. **With each new iteration of the building code, there is a slightly higher level of accessibility."** - JC

ON PROVIDING ACCESSIBLE FEATURES / FUNDING:

"If the development is built using Federal Funding, then the building has to comply with Section 504. Section 504 says that if you move into the unit, and you need a reasonable accommodation for your disability, then the Federal Government would pay for that accommodation. There is a base, which is fundamentally Type 'A' unit, a fairly high level of accessibility, and beyond that, the Federal Government will pay for the accommodation." - JC

Federal Government requires 5% of units to be Type 'A' International Building Code (IBC) requires 2% to be Type 'A'

"But there is no requirement to reserve those units for PWDs." - EWB

"Yeah, that is what I'm talking about. If you want a place to live, that is not currently accessible, they should be able to adapt and make those accommodations and remodel to fit those needs. I just feel like it should be more flexible in terms of adaptability." - Antonio Sanders (AS), DRACH member

"Three months should be enough time to make it accessible. **The government should stop and think about all the people.** They shouldn't think that everyone's the same, that we don't need to worry about people in wheelchairs because they can find another place. They need to stop that. **Because people need to feel**

comfortable in their own home, and they have that right. That's what I'm going towards. Especially for old buildings. I need lights so I can see that someone's at **the door, lights for emergency systems.** These old buildings don't have that. I feel like new buildings are catching up to that, but they are more expensive. It feels like if you need accessibility, you have to pay more. And you really need to think about lower income individuals who need that accessibility as well. I notice that rich people can live wherever they want. But low-income individuals' housing options are limited because we can't afford it. There are less options for us and that doesn't seem fair. And it just feels like the lower income people are just dismissed and not cared for." - AS

ON SHELTERS:

"There are 40 some shelters the city funds for homeless individuals, and there is only one that is accessible. As such, no person in a wheelchair gets a bed in another shelter, because they don't set aside that one shelter for people with disabilities, and you just have no chance in that setup of getting one of the beds thats accessible when you present yourself at one of these shelters. It's going to take hundreds of years for the codes that have been written to finally work their way though the housing stock enough so that you're in a different setup. CHA is offering exception rents for the vouchers going into the \$3,500/month rate if you need an accessible unit. I'm a lawyer, and I can't afford that." - Charlie Petrof, Access Living Litigator

ON ENFORCEMENT:

"Your point about the shelters - that sounds like that's a city program, so that's covered by title II.

"...And we have a lawsuit about that" -CP

"...And so programing accessibility is a part of that. So it's enforcing the laws." -JC "Enforcement's huge, and we have that lawsuit." - CP

"There's a lot of effort-you know this-to make sure you comply with the laws. It's not the codes, its the enforcement of Title II." - JC

"Well it's enforcement, but the housing stock didn't get built in any particular year. And so a lot of what's out there is old." - CP

"But programming accessibility affects any age of building under 504." - JC "The 504 suit has also been filed." -CP

"Then you're doing the right thing! My point is that it's not the code that's the problem, it's the lack of enforcement of a civil rights law." - JC

ON ADMINISTRATION / MANAGEMENT:

"If you go to the sales department of a high rise and **ask to see an accessible, lake view apartment, they don't know where those 20% of units are**. They don't know.

Same thing with the hotel. You call the person at the front desk and they don't know! And that is a common problem–trying to find those 20% accessible units. The sales force team, they don't know." - JC

"I know where they are, the owner and the developer knows where they are, but I have no idea why that doesn't extend any further." - EWB

"So there's a lot of disconnects going on..." - JC

"I agree with you Jack. I think the codes and standards are in place." - Elizabeth Zaverdas, Associate Architect, Accessibility Specialist at LCM

"From the code and standard perspective, I think that's true. And I think that from the Government side in terms of programs, there may be a lack there. LA's getting sued—and I think **its a common problem for large municipalities, for a lack of affordable and accessible housing, or even just affordable housing."** - JC

"They just settled. The affordable housing that it had, didn't comply with 504. So they have to go back and adapt a bunch of units. And this will happen here in Chicago too when the suit gets enough fire power." - CP

"Having worked in facility management...the information seldom gets to the person answering the phone or the person at the front desk." - Unknown

ON DISTRIBUTION OF AFFORDABLE / ACCESSIBLE UNITS:

"If someone comes in and wants the accessible unit, there's no reason not to sell it to someone." - JC

"But for affordable housing, there is a wait-list. You come up on that wait list not based on your disability but based on which time they assign you. **So the chances that an accessible unit is available at the time that you need one is highly unlikely.** Which are now somewhere around 5-10 years. So if you've managed to keep your contact information on that list - long enough that you've made it to the top of that list - there are slim odds that its going to be an accessible unit. There's that misalignment too." - CP

"It's not just about having the database of accessible units for the city, its having the database of affordable units for the city, and then allowing prospective tenants to be informed about where they could go for affordable units, then have that somehow marry up with their needs for accessibility and those units." - Kate Gonzalez, Associate Principal, LCM Architects

"It's like they should be separate lists. **But these lists are talking about homelessness.** And people who need this housing—yes, Evelyn—have nowhere else to go. So like you're saying, this family doesn't get housing because they don't have a disability, and this family will get housing because they do have a disability, and maybe that's something we need to push for, but that's a heavy decision...

You cannot be approved for an affordable unit because there's a bankruptcy in your past, even though the reason you need affordable housing is because of a bankruptcy when you had a medical crisis. I mean there are a million of these complicated factors.

SSI is a pretty good indicator in the low-income community of a good chunk of the disabled population. But you're not going to identify who's going to need an accessible unit that way, because its all the identified disabilities that collect SSI. **So how do you identify who really needs that type of unit?**" - CP

ON DIGNIFIED HOUSING / PROCESS TO CREATE:

"To start a discussion on the question you asked, Ellis, **"How do you create more dignified housing?"**...From my perspective, and I've grown up in the code community–its a two part answer. It's building codes that are enforced, and are practical and affordable for developers to build. And paired with that is a requirement for accommodations...but I think most people aren't aware of that. **Most of the users aren't aware that, and most of the builders and developers aren't aware of that -the fact that they have an obligation to provide a reasonable accommodation.** Under the FHA, the resident asking for the accommodation pays for it. Under the 504, the Government pays for it. But I think **those two things working hand in hand –good and enforceable standards (codes) and accommodations–you get a basic unit that meets the basic needs of 80% of the people and then the accommodation kicks in and it takes you up to 95% of your needs. I don't know if anybody is going to meet 100% of the needs...In terms of a comprehensive answer...those codes need to be informed by people with disabilities,** and at the federal level, they are. Maybe not at the state level." - JC

"The MOPD budget for accommodation in housing is \$15,000 annually. Period. For all city-wide work." - CP

"Well, you've pointed out the short cut: If people knew they had the right to request accommodations, reasonable accommodations, and builders were aware of that, I think some of these disconnects would go away. I don't know how that's ever going to happen because there's too many parties involved, and the more the Government gets involved, the more difficult it becomes." - JC "A microwave that talks, a fridge that talks. Can these things be provided through a reasonable accommodation?" - EW

"FHA forces that cost onto the tenant. If the apartment is under 504, the government would pay for it. But not all affordable housing units are under 504." - CP

ON GOVERNANCE / TRANSITION OF A NEW MAYOR:

"This would be a great time for Access Living, MOPD, and other disability organizations to affect change." - JC

"There is a little update: they did invite Marca Bristo to be a part of the Housing Transition Committee, but they held the meeting on the second floor of a building that could only access the second floor by stairs. The larger message we're getting back is that **this Mayor is not connecting the need between accessibility and housing. We just have to do more interconnecting among our various activities so that we can work this change."** - CP

END



ARCHITECTURAL COMPONENTS OF ACCESSIBILITY:

ACCESSIBILITY CONSIDERATIONS BEYOND ARCHITECTURAL CODE

THE URBAN SCALE

- Sloping sidewalks create uneven exertion of strength.
- Obstacles in the middle of sidewalks. (Mel)
- Lack of signage for intersections / paths.
- Accessibility should extend from point of arrival and throughout the entire experience, not only within the building envelope. (Ed Roberts)

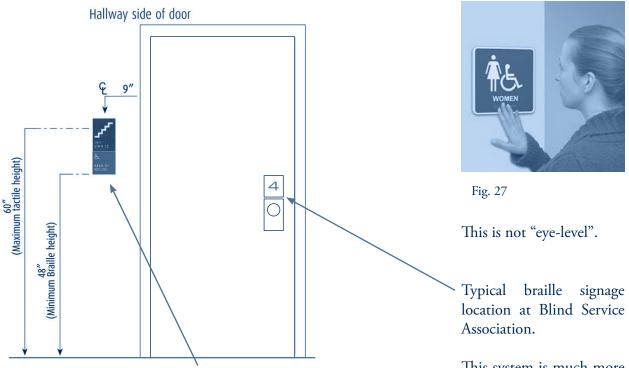
THE BUILDING FLOORING:

- High nap decreases mobility for wheelchair users, low nap increases mobility. (Jack Catlin)
- "Closed loop pile carpet" with low emitting materials should provide balance between various types of traction and gliding. (AL)
- Tight narrow stripes with high contrast reduce seizure triggering. (KC)
- While big organic patterns are good for hiding wear, this may also trigger seizures too. (Kerri Callahan)
- See Lees' Design Scene carpet tile.
- Glossy floors great for wheeled devices, poor for crutches.
- Transitions from surface to surface.
- Durable materials that are not prone to stains from wheels. (JC)
- Carpet to tile transitions should be seamless, and account for material thicknesses in section before construction. (LCM)
- Use porcelain, not ceramic, as it is more durable. (LCM)
- Spec tiles for 24x24 to reduce # of intersections. (LCM)
- Use textured surface with a matte finish to improve traction. (LCM)

SIGNAGE:

• "The design [should communicate] necessary information effectively to the user, regardless of ambient conditions or the user's sensory abilities." (Barbara Knecht, R.A.).

- Room Numbers are placed at "eye-level," which for blind people is at the level of the hand. (Sally Cooper)
- Doorbells should be lighted. (Antonio Sanders)
- Restaurant pick-up orders to be lighted.
- Emergency lights in old buildings.



Typical braille signage specified by ADA. This system is neither intuitive or consistent. Furthermore, there is not a clear standard for this placement, due to guideline exceptions for unique situations. This forces a braille reader to feel their way across all sides of a new door, searching for consistency and clarity with unnecessary effort. This system is much more intuitive, as it is placed along the direct path of the hand to the destination to locate and read. (-40°)



WAY-FINDING:

- Views help to orient user.
- Similar floor plans.
- Short distances to travel aid those with lower mobility. (AL)

• Rounded / transparent corners to allow less precise maneuvering for people who use wheelchairs or walk with difficulty. (Barbara Knecht, R.A.)

• Contrasting wall colors assist in way-finding. (LCM)

• "The six inch wide border [of carpet tile], aids people with low vision to locate the wall/floor intersection and be outside of the 4" allowed for protruding objects under ADA." (Kerri Callahan)

ENTRANCES:

• Single entrances with automatic sliding doors allow everyone to enter equally. (AL)

- Air curtains prevent energy loss while doors are open.
- See Stanley Dura-Glide 2000. (LCM)

• Vestibule should provide a seamless transition onto a permanent walk-off mat to prevent moisture, dirt and pollutants from entering the building. This helps with maintaining good air quality. (AL)

• See Lee's First Step walk off mat. (LCM)

LIGHTING:

• Lights should not flicker. (ADAPT)

• Lights should permit visual communication, and be adjustable by the individual user, including shading systems. (AL)

- Light switches should be operable by foot.
- Low glare and indirect lighting, lower contrast rations improve visibility.
- See Lutron Electronics Co. Inc's EcoSystem product line. (LCM)
- If using fluorescent, also use dimming ballast to reduce flicker. (LCM)
- See Lutron's Sivoia QED Shading System. Maximum daylight and maximum heat retention. (LCM)

• See "Twelve Fixture" lighting product. Focal Points lighting offers indirect lighting solutions, which improve visibility for those with light sensitivities. (LCM)

• See Sieben Energy Assocs.

WORKSPACE:

- Furniture components should be easily moved for personal preference.
- All cabinets should be reachable. (LCM)
- Independently controlled task lighting. (LCM)
- Comfortable seating / desk clearances. (LCM)
- Adjustable desk height with button. No assistance, less error. (LCM)
- Acoustic panels, and glass partitions allow greater daylight and visibility.
- Partitions should be low enough for wheelchair users to socialize. (KC)



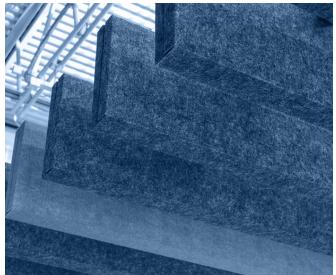


Fig. 28

Fig. 29

FURNITURE:

- See Steelcase / Answer system. (LCM)
- Recycled material also reduces the amount of off-gassing and odors, also making it more sustainable.
- Pedestal tables are better than legged tables for wheelchair users. (KC)

CIRCULATION:

- Large buttons on elevator. (LCM)
- Doors and controls at either end of elevator. (AL)
- Sidewalk provides loading ramp in front of building. (AL)
- Railings to have horizontal frits in glass for low vision. (LCM)
- Railing footers should be installed for cane detection. (LCM)
- Each stairwell should be equipped with an evacuation chair. (LCM)
- Large areas of rescue for multiple users in wheelchairs. Or, place a fire door on a room adjacent the stairwell to provide alternative space for shelter during an emergency. (LCM)

• Egress windows must also be accessible, and not require more than 5lbs to operate. (JM)

MECHANICAL, ELECTRICAL:

• Air quality and product emissions disproportionately affect some individuals. (BK)

• See TTY (Telephone Typewriter) Systems by Ultratec.

THE ROOM BATHROOM:

- Stalls handles shouldn't require significant grip strength/twisting capabilities.
- Faucets should not require touch, as prosthetics would be incompatible.
- See Sloan "Hands free" fixtures. (LCM)
- Toilet lids should have handle to lift without touching underside. (SN)
- Remove doors if possible.

KITCHEN:

• Storage should be low enough to access from a seated position. (LCM)

MATERIALS:

• High noise reduction coefficient (NRC) Ceiling Tiles to help reduce ambient noise in workspaces. (LCM)

• See GreenGuard Indoor Air Quality Certified textiles, paints. This is a necessity for individuals with allergies and chemical sensitivities.

"ABANDON RETROACTIVE CONVERSIONS! GET IT RIGHT DURING CONSTRUCTION"

-Edwin Rodriguez

PROCESS:

• Host a charrette / symposium / cantina to voice needs.

• By specifying furniture during the beginning of schematic design, spaces can be dimensioned to accommodate mobility needs before construction, and ideal products can be chosen specific to space with confidence that corridor and offices are appropriate for the furniture. (LCM)

• Consider "range of possible needs, not by applying conventions and standards that too often meet the needs of the fewest." (BK)

• "Product selections that emerged from an intensely user-oriented design process." (BK)

• "Access Living and LCM Architects organized a design symposium that brought together experts in Universal Design and a representative group of disabled users." (BK)

1. Describe barriers.

2. Discuss solutions or describe how it could be improved.

3. "Confirm compliance with every type of user."

4. Compile into cohesive document. (LCM)

- "Question how mobility, perception and cognition would shape the workstations, conference rooms and entrances." (BK)

- When compiling specifications for any project, list several different products (ADA/LEED) in order to provide competitive pricing for clients.



DESIGNING AN INCLUSIVE ENVIRONMENT

UNION STATION TO SPRINGFIELD

Advocacy is the greatest force behind changing disability-related policy. This is why each year members, employees, allies, and affiliates of Access Living travel from Chicago to Springfield to advocate for Disability Rights at the State Capitol. The trip to Springfield is of immense significance for the disability community, as it is the direct link between citizen and government. On these trips, participants speak directly with legislators and distribute pamphlets to promote policies and improve access to basic civil rights, such as education, healthcare, employment, Supplemental Security Income (SSI), safety, housing, and so on.

This May, I had the opportunity to join and participate in one of the Access Living sponsored "Advocacy Days," in Springfield, Illinois, along with roughly 25 other centers for independent living (CILs). We filled the space beneath the dome of the Capitol during two separate rallies, where the number and energy of individuals present sent echoes throughout the entire building.

Outside of these major events, groups of individuals not only make this all-day trip roughly five to seven times a year to address other issues, but also travel to the Washington D.C. to address national concerns.

However, much of the route from Chicago to Springfield, and Chicago to D.C., remains inaccessible to persons with disabilities. This means that the ability for someone with a disability to participate in the democratic process, advocate for their own rights, and be seen in civic space is significantly reduced. In response, this proposal strives to improve the overall accessibility of the trip to Springfield, in an effort to promote greater advocacy and increase representation of the disability community at the capitol.

A DESIGN PROPOSAL TO IMPROVE ACCESSIBILITY, PROMOTE ADVOCACY, AND INCREASE REPRESENTATION OF THE DISABILITY COMMUNITY AT THE CAPITOL

CHICAGO UNION STATION DIAGRAM OF ACCESSIBLE ROUTES TO THE PLATFORM

This diagram highlights the various routes to the Amtrak platform that are used by all passengers. Through several and conversations walk-throughs about this space, my intention is to experience, document, and gain a better understanding of the term, "accessible route." What this exercise resulted in was a much more complex understanding of various how individuals navigate through space, whether by deliberate choice, or by default.

Passengers arriving by foot can choose one of the several main entrances. Those who arrive by PACE, Chicago's para-transit system, are dropped off at one designated loading area, and must enter via the East side of South Canal Street. All other accessible routes are only practical for passengers who arrive by bus or sidewalk, though these routes are almost three times the distance to the platform.

In conversation with Edwin Rodriguez, who is legally blind, Edwin commented that his preferred means of entrance

is also along the South Canal Street entrance, as it not only leads him directly to the restrooms, but also to the main meeting location where the group assembles before every trip to Springfield. Despite the high levels of noise and foot traffic at this location, it can be easily found because of an acoustic landmark – a running fountain. Whether busy or quiet, this feature allows blind or visually impaired travelers to orient themselves to the space, and gain confidence over where they are in the station.

"EVERYONE BENEFITS FROM ACCESSIBILITY"

-Edwin Rodriguez

CHICAGO UNION STATION OBSERVATIONS ALONG THE ROUTE TO THE TRAIN



Completed in 1925, Union Station is one of the largest train stations in the U.S. In fiscal year 2018, Union station ridership reached 3,293,640, a number of passengers that includes a variety of individuals with mobility impairments, intellectual disabilities, child-bearing parents, seniors, nursing mothers, as well as cyclists and travelers with heavy luggage.¹⁶ Recently a \$22 million renovation was completed to repair the glass skylight over the Great Hall, however, there are still numerous functional issues that remain pressing issues for frequent passengers. This raises the question as to how buildings like this can best provide the functional needs of its users, as well as the maintenance of structural needs. Could some of this money been used to provide better signage? A more efficient boarding process for passengers in wheelchairs? Accessible restrooms on the trains?

It goes without saying that historic buildings must be repaired at some point. But how we bring them into the current context of urban demands, user experience, and accessibility concerns, must be considered an integral aspect of all new designs, developments, and renovations. To do this equitably and avoid additional costs of retroactive conversions, corporations like Amtrak must include people with disabilities in the design process.













Back-Tracking Route

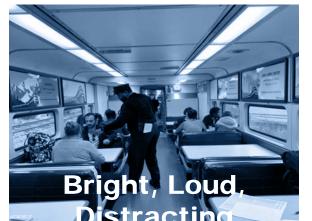












ABOARD "ACCESS EXPRESS" RIDING TO SPRINGFIELD STATION

For this trip, Access Living reserved two cabs, one of which that had all seats removed in order to accommodate the number of passengers in wheelchairs. While this accommodation created sufficient space for the passengers using wheelchairs, it segregated the group into separate sections, one for passengers in wheelchairs and another for everyone else. In the "accessible" section, there were no seats for other passengers to be comfortable, work, eat, rest, etc, encouraging non-wheelchair users to ride in the dining car, where the tabled seating was good for some activities but an obstacle for others. And though this was a dining car, there was no one at the counter to serve food - a potential issue for any rider with diabetes requiring additional calories on their trip.

Despite the physical space, there was little social space for passengers to be next to their personal assistants, move to a different location, eat or work over a surface, or hold an audible conversation, let alone use the restroom. Amtrak restrooms are completely inaccessible to most wheelchair users, as there is no turning radius, floor clearance, grab bars, or accessible plumbing fixtures. It is unacceptable for paid riders to have to wait almost four hours without using the restroom, wash their



hands, etc. Additionally, the electrical outlets are below reach range, preventing many users from charging their own chair, cellphone, or computer.

Upon the arrival at the Springfield Station, passengers in wheelchairs are required to alight the train via the manual lift, which is nothing more than a glorified boat hoist topped with a flat surface. This process takes about three Amtrak employees to complete over a course of about 2.5 minutes per person, or roughly 30 minutes for the entire group. Meanwhile, the passengers are exposed to the elements and revoked of their control over speed, privacy, and safety. While Amtrak checked their boxes of "accessibility accommodations", it is evident riders had little control over their experience and comfort. However, it is at this point of observation where architects will recognize the potential to address such issues through design. By doing so, we can replace physical barriers with social opportunities.

"AS A PAYING CUSTOMER, YOU SHOULD HAVE THE SAME LEVEL OF COMFORT"

-Evelyn Woodson



GETTING AROUND THE CAPITOL NAVIGATING THE DEMOCRATIC PROCESS

Soon after we alighted the train, I immediately noticed what everyone meant when they said that the Capitol was inaccessible. From high thresholds at railroad crossings, fading edge detection at curb cuts, to a segregated access ramp at the main entrance of the building, it was easy to understand why several members in the group chose to take a cab.

Just because there is a ramp does not mean that it offers an equitable experience. Similar to that of Union Station, the accessible entrance has the potential to provide a much more exciting and dignified experience for those who chose to use it. Why not plant more vegetation here? Why not make it out of the same materials as the steps? Why not provide a place to rest along this longer route?





The Capitol building itself provides a completely different set of barriers that directly affect the degree to which individuals can independently advocate for their right to speak directly with legislators, rally, and hand out information regarding their positions. For example, long tunnels, useless push-buttons, and lack of signage makes navigating the Capitol physically strenuous and less-than intuitive. In events like the one I experienced, these obstacles are amplified by the high numbers of advocates and allies. Therefore, it is of great interest of the State of Illinois to improve the accessibility of its dominant civic space and increase the desire and ability of its residents to participate in its democratic process.



SPRINGFIELD STATION EXISTING STATION PER MAY 2019

Similar to all other stations between Chicago and here, Springfield station bares an uncovered platform and lacks a flush transition onto the train. This is to say that the need to redesign Springfield Station can be multiplied by the number of other typologically comparable Amtrak stations, not only in Illinois, but across America.

Chicago's METRA and CTA entities have already addressed many of these issues - not to mention pioneering countries such as Switzerland, Japan, and Denmark - by either lowering the train itself or raising the platform. However, given the existing infrastructure at these numerous stations, I believe it is more practical to create a replicable, above ground platform that neither requires penetrating the ground or closing, allowing passengers to travel during the process of construction.



On the .4 mile path to the Capitol from the station, there are four street crossings, none of which have audio signals for the blind or visually impaired. Despite debate around the ideal form of this accessible feature, the need to address these specific instances must also be considered if a project like this were to come to fruition. As a whole, this project intends to demonstrate that accessibility does not begin at a building's front door,

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rather it is a continuous attention to every detail from the moment you



PROJECT INSPIRATION EXAMPLES OF RAIL ACCESSIBILITY

As mentioned previously, there are numerous precedents of accessible and desirable rail transportation, which have become integral design components within my proposal for a more accessible Amtrak experience. In order to achieve an inclusive and dignified experience for all, we must make deliberate, human-centered design decisions that consider every aspect of human perception, such as light, sound, smell, taste, and touch. While the minute aspects of each of these are outside of the scope of this project, the images below and at right highlight several instances where design addresses the needs of the body first, and as a result produces a function that is more intuitive for every user.

Choice is of paramount value when designing an inclusive space. By providing multiple seating locations or orientations, passengers gain greater control of their environment. In the same sense, providing various lighting and acoustic conditions allow individuals with greater sensitivities towards light or sound to be more comfortable.

While some of these features may seem more like luxury than accessibility, the absence of specific considerations can be a determining factor behind someone making this trip or staying home. For example, covered platforms reduce the stress and discomfort of having to wait in the snow or rain while the rest of the group boards or alights. Additionally, in the same way that people chose to go to a restaurant







based on the acoustics of the space, people would also make such decisions as to where they want to sit on a train based on their mood, and / or sensitivity to noise.

The bottom left image is an example of a new product that considers the impact of sensory environments on people with various sensitivities to sound. In speaking with the designer of this product, Jean-Pierre Lux, he claims that these spaces provide the sense of privacy and refuge within the workplace that allow people to focus without distraction from their surroundings. I can easily imagine how train passengers would flock towards these kinds of spaces in order to make private phone calls, escape from the sound of crying infants, play cards, have a quiet conversation, or console someone who may simply be having a rough day.



Fig. 35



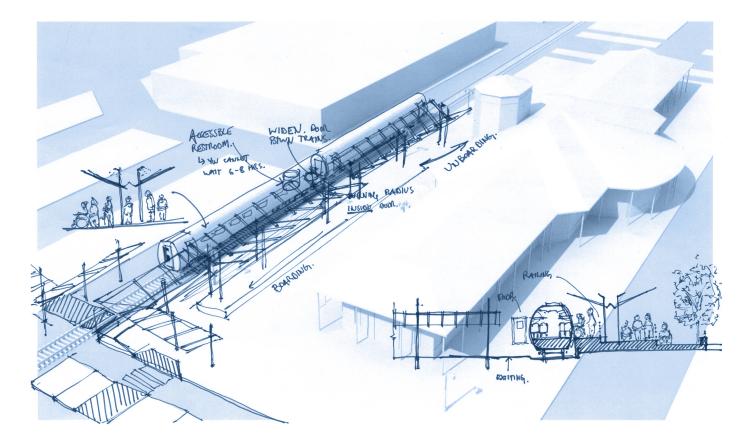




ON COLLABORATIVE DESIGN DESIGN PROCESS / SKETCHES

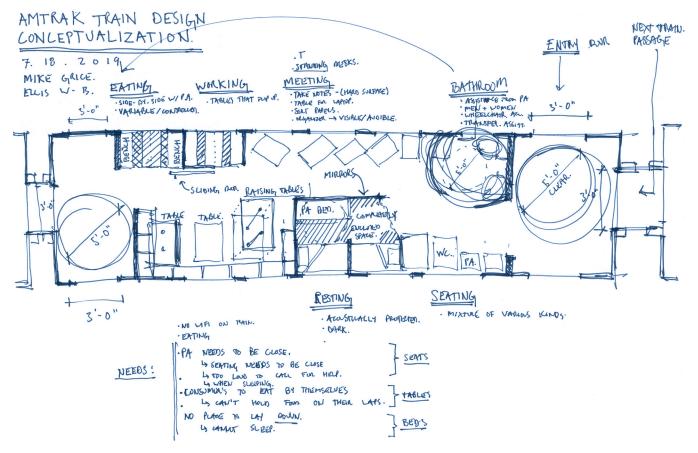
Inclusive design cannot be achieved alone. If the success of a project is determined by the number of people who chose to use it - rather than the cost saved or speed of construction - then it will forever be impossible to create something that truly works for everyone without involving people other than yourself in the process.

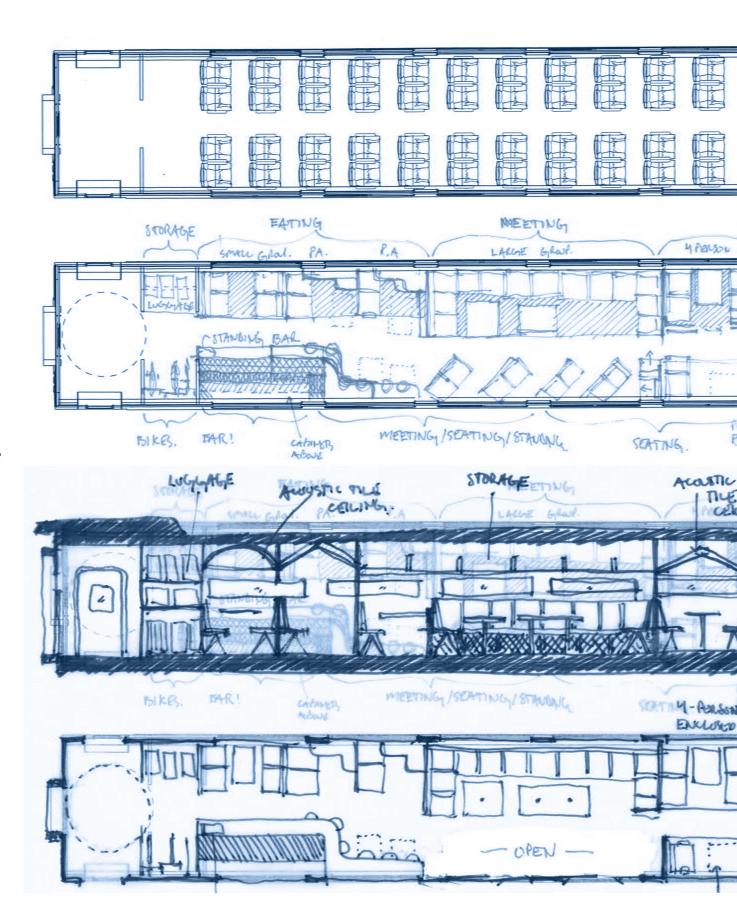
Charles and Ray Eames understood this fully when they created their most successful pieces of furniture, using a simple but incredibly effective design methodology; observe, question, design, reject, re-design, and so on, until arriving at a form that simply feels right to almost anyone that uses it. It is in this spirit that I have been working to design this project - in collaboration.

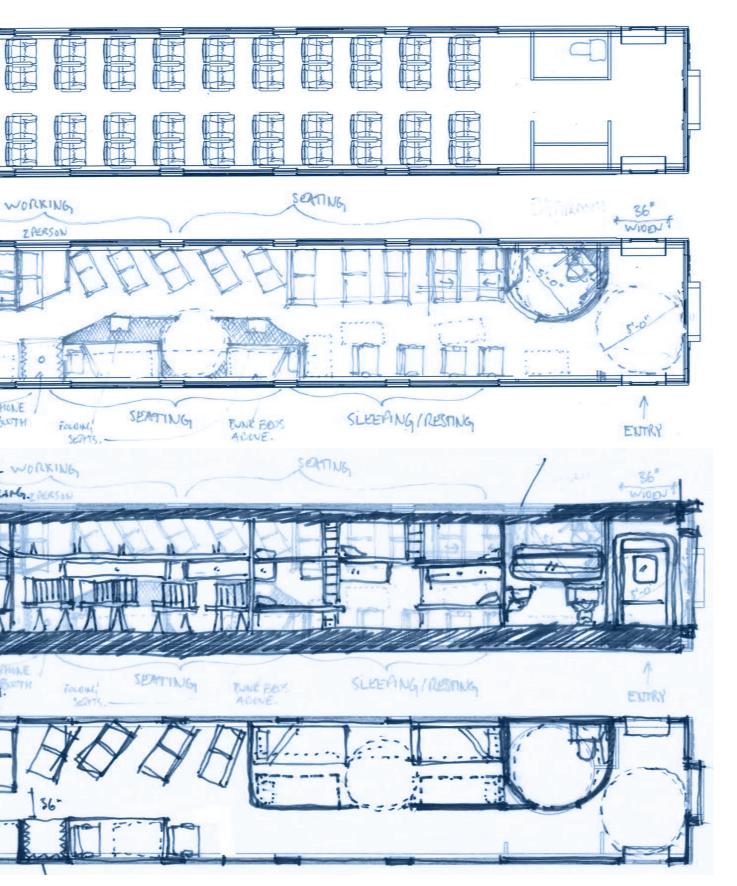


The Disability Community mantra, "NOTHING ABOUT US WITHOUT US," is as a call to action, not only to policy makers and healthcare providers, but also to architects and designers. It is our responsibility to confront the existing multitude of barriers produced by non-human centered design methodologies, and address them through collaborative design processes, should we continue to call our spaces, "accessible."

The sketches below and on the ext spread document a conversation / charrette with Mike Grice, a long-time activist, who has also been an incredible mentor throughout my fellowship year. During our discussions we identified the spatial requirements of various types of activities and began organizing them within the space. At first, Mike claimed he was not a designer, but only after a few minutes was it clear that his ideas were the main drivers behind the layout and function of the space.



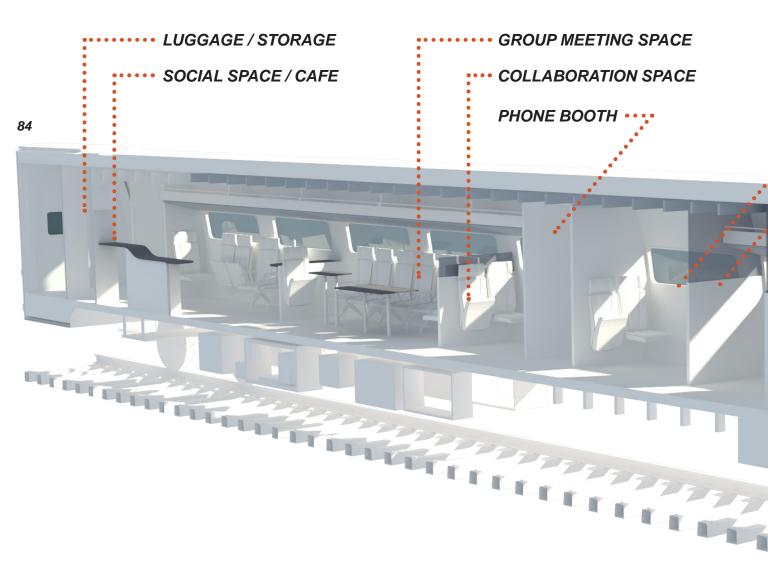


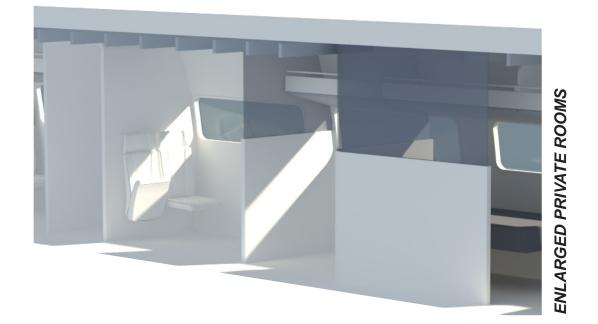


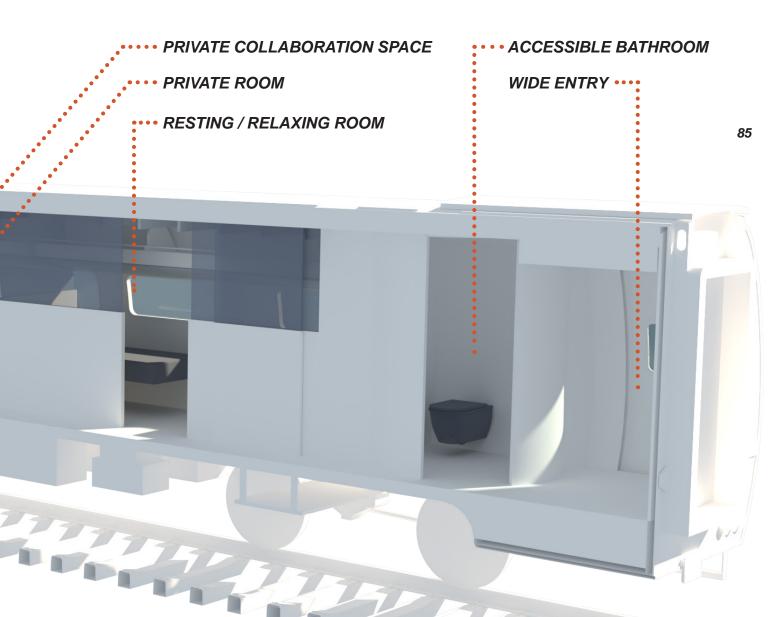
THE ACCESSIBLE SECTION PERSPECTIVE DIAGRAM

After working with Mike Grice to determine which specific spaces would create an ideal experience during the trips to Springfield (or beyond), I met again with another friend and collaborator, Evelyn Woodson to focus more on the details of each space. We adjusted the lighting conditions, degrees of privacy, and added other features such as drop down tables, foldable chairs, and acoustic baffling. As we continued designing together, we shared experiences regarding the trip to Springfield, and translating each new idea into physical form.

Though the number of collaborators on this project was limited by the amount of time we each individually had to give, it is my greater intention to show how the collaborative process is the most effective way to arrive at a product that is equally usable, equitable, and meaningful for each user.







THE CAFÉ / LOUNGE INTERIOR PERSPECTIVE AND VIGNETTES

To redesign this space would be to shift our understanding of accessible transportation. This space could be one of collective dignity, in which passengers are excited about traveling across the country to advocate, lobby, explore, etc., rather than deterred. And by updating the current image and sentiment towards Amtrak travel, people would prefer to travel by rail, because it is simply more comfortable, thoroughly designed, and pleasurable than its alternatives. While this project focuses on design strategies that would create an ideal form of accessible transportation to Springfield, it should also be noted that these design ideas could be applied to other passenger cars to obtain a higher capacity if needed.

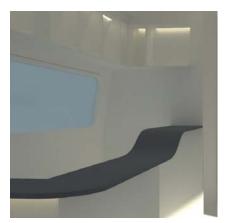




Hanging acoustic baffling throughout the train significantly reduces the amount of ambient noise on the train and diffuses direct lighting from the LED strips above by narrowing the amount of light that is visible at further distances.



Sound panels beneath the overhead storage optimizes the ability for small groups of people to have quiet conversations, filtering out exterior noise and limiting reverberation throughout the café, the most heavily occupied space on the train.



Staggered counter top heights at the bar provide access to individuals in both seated and standing position, increasing the independence with which individuals can order, receive, and consume food and drinks on this trip.



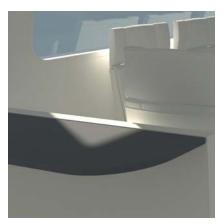
Foldable seats allow spontaneous transformation of the space, and the combination of wheelchair seating with typical seating. Rotating chairs also lend users greater control over their environment, view, and conversation.



Row seating along the wall creates a social space for gathering by orienting seating towards the center of the space for seated passengers. Adjustable height tables enable persons in various sizes and types of wheelchairs as well as passengers of various heights and sizes to engage and utilize their surroundings.



Folding tables along the wall, places between the windows can be easily lowered into place should additional work surfaces be required.



All corners directly adjacent to the path of travel are rounded in order to reduce pinch points of passenger traffic and potential hazards of injury for someone with low vision.



Semi-transparent polycarbonate panels can be used to divide spaces, provide degrees of visual privacy, and reduce the transmission of sound from one space to the next.



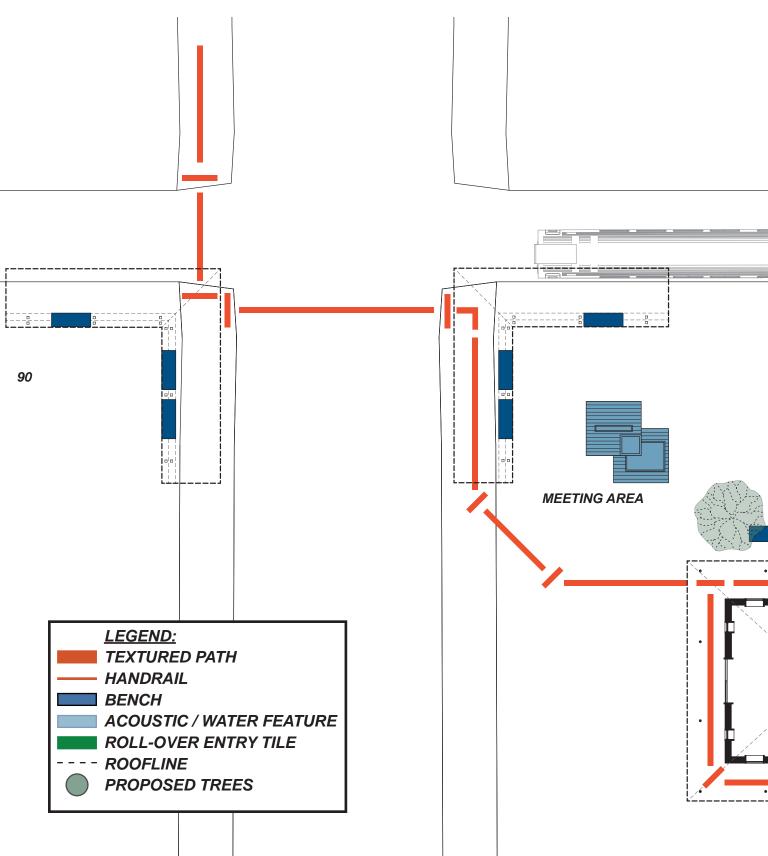
THE MEETING SPACE INTERIOR PERSPECTIVE AND VIGNETTES

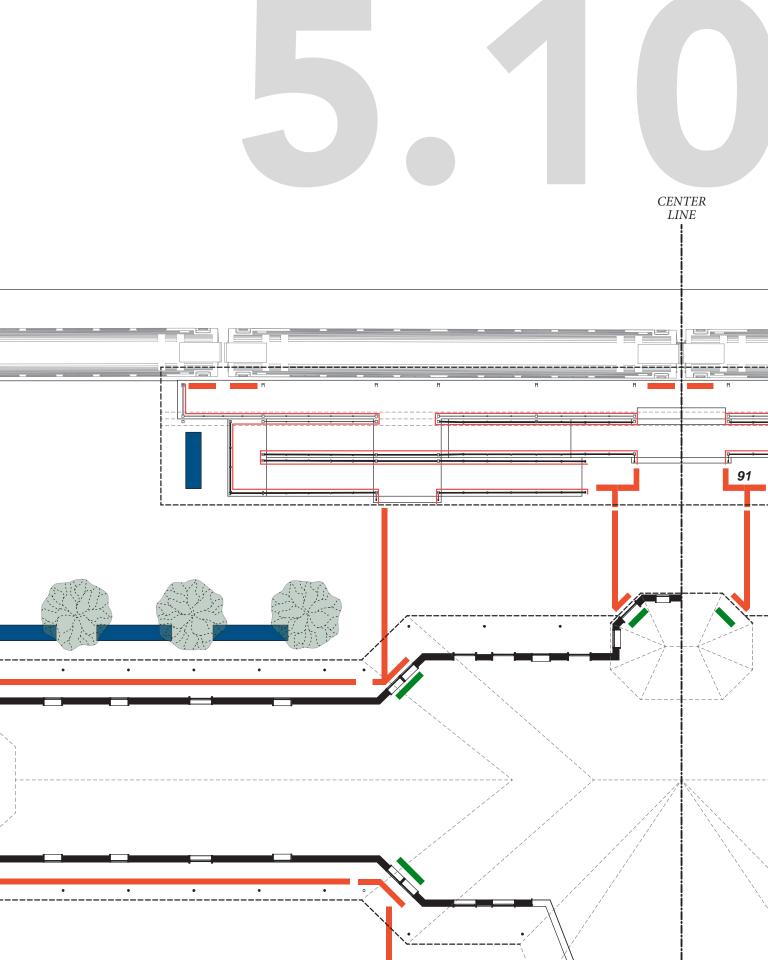
Access Living is the hardest working organization I've ever encountered. But they always know how to celebrate their accomplishments and have a good time. While the meeting space may be used in the mornings in order to finalize the day's schedule or distribute information to the participants, it can also be transformed into a larger space for social gathering. With increased floor area and additional flexibility of movable tables, foldable chairs, this space opens up the possibilities of numerous other uses for a train cab with these features. With greater accessibility, comes greater opportunity.



SPRINGFIELD STATION PROPOSAL

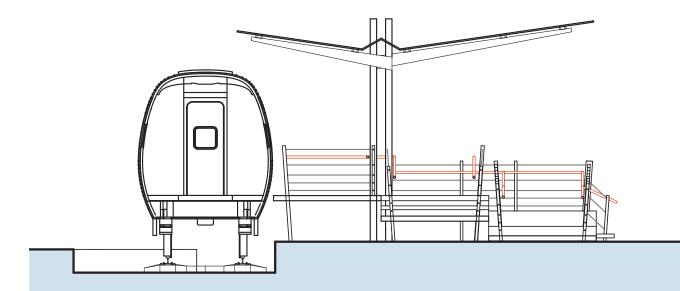
PLAN DIAGRAM OF PLATFORM, FUNCTION, AND FEATURES





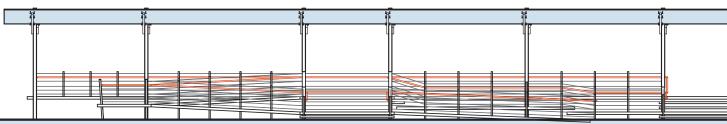
SPRINGFIELD STATION PROPOSAL

AN ACCESSIBLE PLATFORM AT SPRINGFIELD STATION

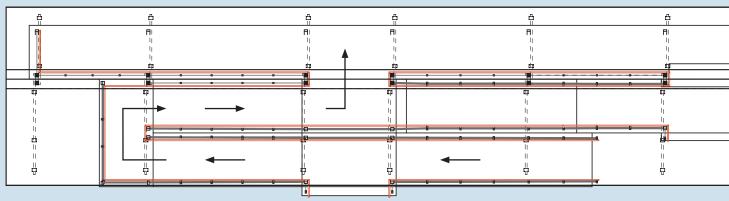


CROSS SECTION - PLATFORM

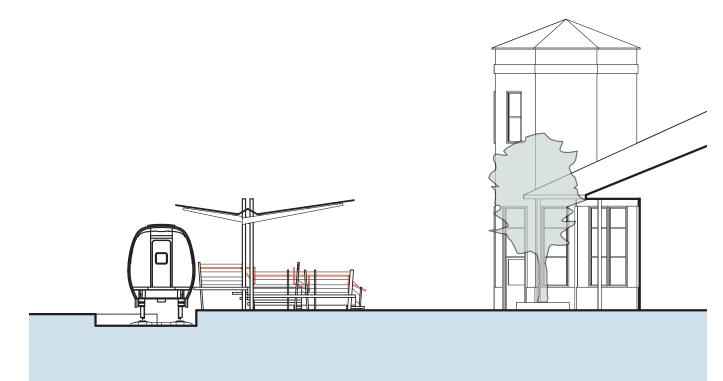
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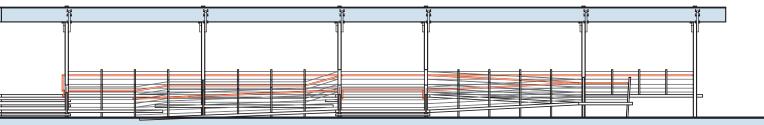
EAST ELEVATION

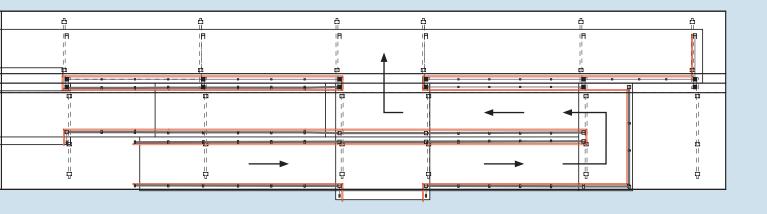


PLAN VIEW - PLATFORM



CROSS SECTION - STATION





SPRINGFIELD STATION PROPOSAL *PROPOSAL FOR AN ACCESSIBLE SPRINGFIELD STATION*

As passengers alight the train, some choose to gather under the open sky, others underneath the shade of the trees. Some people prefer to retreat when surrounded by a large open space, while others thrive off of it. Whether young, old, disabled, or non-disabled, all humans desire comfort, prospect, and refuge to different degrees.

In my experiences, within the most active types of space, i.e. restaurants, schools, hospitals, airports, you can always find someone lingering in the margins, behind a column – essentially using space in ways other than anticipated. How then, can designers design in anticipation for "mis-use," knowing that people always find new forms of spatial appropriation?

We can begin by dismissing the assumption that all bodies are alike, and embracing the idea that no two minds prefer the same thing. Therefore, it is up to designers to provide options, such that users can chose which one works for their body, rather than having to conform to rigid physical or social standards.

By building in multiple uses for various body types, the enveloping space becomes a dynamic platform for the true collective body - free to wander, wait, dance, rest, and live.







SPRINGFIELD STATION PROPOSAL PROPOSAL FOR AN ACCESSIBLE PLATFORM

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This platform provides multiple ways of accessing the platform while maintaining a clear path and sufficient room for high numbers of passengers to simultaneously board and alight the train. As illustrated on the plan drawing, both ramped and stepped entrances are lined by a continuous handrail to guide individuals from the ground to the door of the train. By providing additional space on the non-ramped surfaces, passengers are able to wait for their train without straining or slowing down movement.



SPRINGFIELD STATION PROPOSAL ROLLING UP THE PLATFORM

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Another benefit of creating a wider and more gradual sloping ramp is communication. Typically, access ramps are only adequate for one-way pedestrian traffic, meaning that people who sign in order to speak are unable to continue a conversation while moving through space. Adequate width is equally important for wheelchair uses, who may not be traveling in the same direction, or who may simply want to ride side by side with someone else.

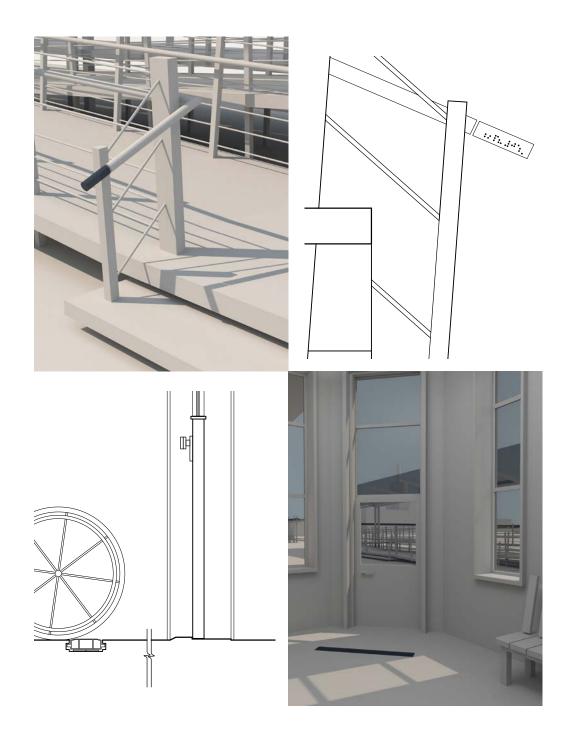
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SPRINGFIELD STATION PROPOSAL ACCESSIBLE DESIGN FEATURES - NAVIGATION AND WAY-FINDING

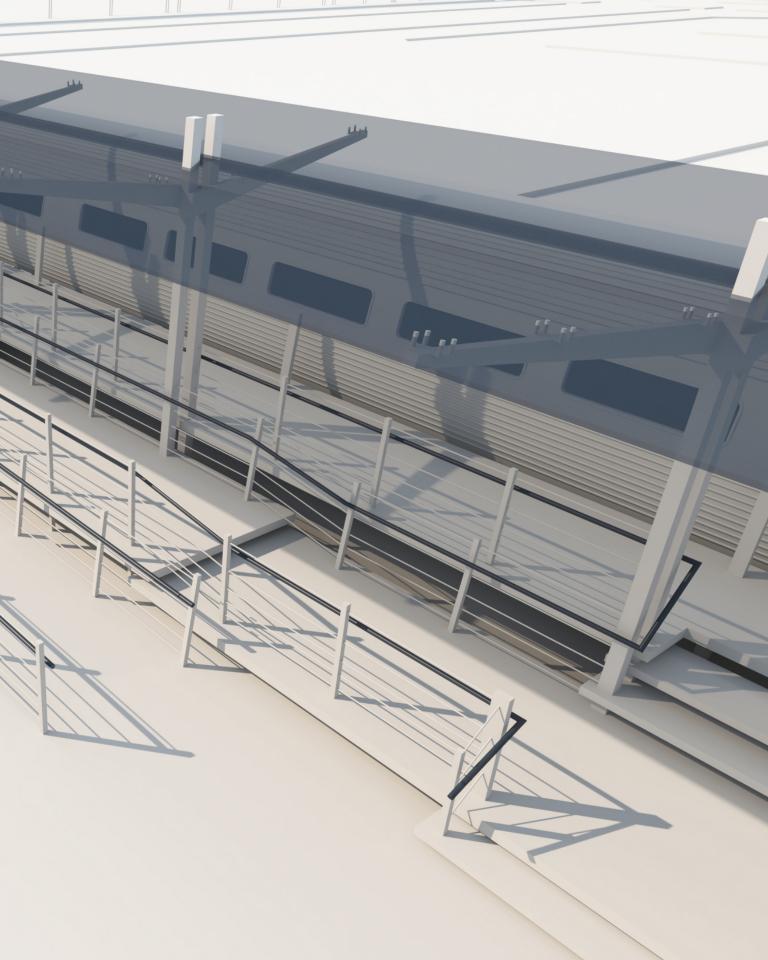
"If you can find the signage, you most likely already know where you're going," said Edwin Rodriguez, reiterating the fact, demonstrated in Chapter 2.5, that braille signage is often just as hard to find as the destination itself. However, audible landmarks, such as fountains, trees, or wind chimes, augment blind and visually impaired travelers' ability to easily orient themselves to their surroundings, relative to a specific point in space.

The image of the fountain below represents several design concepts: An audible water feature to signal the center of the plaza during the summer, Grass-like wind chimes that provide a similar effect throughout the year, Varied heights of a seating surface to accommodate different body sizes / heights, rounded corners to reduce painful collisions with the architecture, and lastly a water basin that extends to the edge of the structure, so that wheelchair users may also enjoy the sensation of being close to the water.











ACCESSIBLE:

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Equitable experience, the ability to chose how you engage with the built environment.

AFFORDABLE HOUSING:

A housing unit that costs 60% or less of the area median income (AMI). This term was preceded by a term with stronger negative connotations, lowincome.

AFFORDABLE REQUIREMENT ORDINANCE (ARO):

In 2003, when Chicago lacked nearly 49,000 affordable units, City council passed the first iteration of the ARO, which was revised in 2007 and again in 2015 (CAFHA, 43).14 If a developer is granted a higher F.A.R.; a zoning change from non-residential to residential, is permitted to provide residential uses on the ground floor; purchases city land; or, proposes a building on a Planned Development (PD) in a downtown zoning district, they are required to do one of two things: 1. Set aside 10% of the building's units for affordable housing, or 2. Pay a fee-in-lieu of \$100,000 per unit. If the developer receives City or TIFF funding for this purpose, the minimum percentage of affordable units is increased to 20%, or the developer is required to pay the \$100,000 per unit (CAFHA, 43). 14

ALDERMANIC PREROGATIVE:

The authority to shape neighborhood demographics, zoning, housing, and development typologies, and evade citywide mandates, such as the ARO; over time, this has resulted in the "concentration of family affordable housing outside of predominantly white and low-poverty areas...therefore [creating] geographic boundaries, limiting where low-income families, and predominantly black and Latinx households, can live in the City of Chicago" (CAFHA, 4). ¹⁴

COMMUNITY BENEFIT AGREEMENT (CBA):

A contract signed by community groups and a real estate developer that requires the developer to provide specific amenities and/or mitigations to the local community or neighborhood. Site-specific community benefits agreements (CBAs) ensure that particular projects create opportunities for local workers and communities. Often, however, these projects change the city's development paradigm; when decision makers realize what well-considered projects with specific benefits attached can bring to the community, the city enacts community benefits policies that set the stage for lifting thousands of people out of poverty. ¹⁷

DOWNZONING:

"Rezoning to a more restrictive classification with respect to either floor area ratio (F.A.R.) or minimum lot area per dwelling unit (M.L.A.) which limits the amount of floor area and number of dwelling units allowed on a site" (CAFHA, 35). ¹⁴

EXCEPTION RENTS:

A Public Housing Authority (PHA) may pay more than the regular payment standard for a unit if you have a disability and the unit is accessible to you. CHA may pay up to two and a half times the regular amount for an exception rent. For example, a onebedroom voucher is normally worth up to \$1,649. If I have a disability and find a unit that is accessible, a PHA may pay up to \$2,748 for a one-bed unit. ¹⁷

GROUP HOMES:

An establishment that houses four or more people with disabilities in a segregated setting. ¹⁷

H.R. 620:

"...Requires the Disability Rights Section of the Department of Justice to develop a program to educate state and local governments and property owners on strategies for promoting access to public accommodations for persons with a disability. The program may include training for professionals to provide a guidance of remediation for potential violations of the ADA.¹⁸

U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT (HUD):

"HUD is a cabinet-level agency. Formed in 1937, HUD's responsibilities are primarily: To protect housing consumers, To encourage production of affordable rental housing, To prevent and punish discrimination in housing. The Fair Housing Act of 1968 gives the department most of its authorities to punish discrimination in housing". 12

HOUSING CHOICE "SECTION 8" **VOUCHER:**

"...created the first opportunity to potentially eliminate local government veto powers over the siting of public housing," however, despite laws and regulations formed to mitigate discrimination, "voucher holders, especially black voucher holders, experience rampant discrimination in the housing market" (CAFHA, 17). 14

INDEPENDENT LIVING:

The ability to live in the community, outside of an institution. While individuals in independent living situations may still require a personal assistant, they are in control of their daily schedule, routine, meals, and free to live as they choose, unlike most institutional settings.

MIXED FAMILY HOUSING:

Mixed family housing, compared to single family housing, is essentially a building that contains several units that can be inhabited by more than one family.

NIMBY:

An acronym for "Not In My Backyard." The term, coined in the 1980s, is used to describe citizens that oppose proposed real estate developments in their neighborhood or town. 19

OPPORTUNITY FUND:

Where a developer is required to follow the ARO, the subsequent money goes into this City fund designated for subsidized rent or affordable housing developments (CAFHA, 43). 14

PUBLIC HOUSING:

Housing owned by a local or central government. Also referred to as "the projects," in reference to the period of experimental housing development in the 30's through the 60's.

PLANNED UNIT DEVELOPMENT (PUD):

The term Planned Unit Development (PUD) is used to describe a type of development and the regulatory process that permits a developer to meet overall community density and land use goals without being bound by existing zoning requirements...[which] may include provisions to encourage clustering of buildings, designation of common open space, and incorporation of a variety of building types and mixed land uses. 20

SUPPLEMENTAL SECURITY INCOME (SSI):

Supplemental Security Income (SSI) is a Federal income supplement program funded by general tax revenues (not Social Security taxes): It is designed to help aged, blind, and disabled people, who have little or no income; and it provides cash to meet basic 105 needs for food, clothing, and shelter. ²¹ In 2019, the monthly amount is \$771. 22

SOCIAL HOUSING:

Rental housing owned / maintained by the state, nonprofit organizations, such as Full Circle Developments, with the primary intent to create equal housing opportunity.

TIERED RENT:

When the amount of rent you pay depends on a rage in which your income falls. 17

WORKFORCE HOUSING:

What is generally understood as housing designated for individuals living in areas with proximity to their work, whose income is somewhere between the 60% and 120% of the area's median income (AMI). One common issue with this definition is that it somewhat implies that affordable housing is thus for individuals who are not a part of the workforce. ¹⁷

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Fig. 1.11



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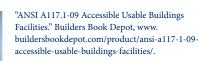




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Fig. 26

Fig. 24



Fig. 27

