



Foundations of Accessibility in Design

“Disabled people are the real hackers of society. It’s a way of being, to carve out, negotiate, and navigate through this world.”

— Riva Lehrer in an interview with Alice Wong, Author of Year of the Tiger

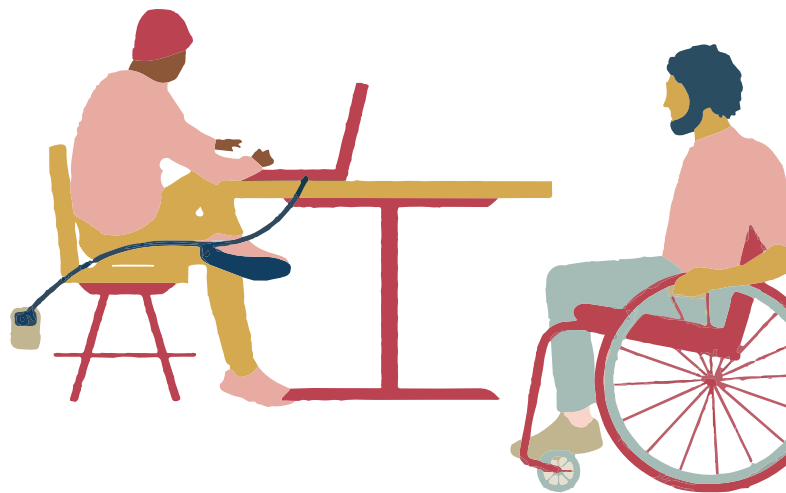
A section of the Perkins&Will Disability Inclusion series

Note: Color choices have been reviewed for accessibility and this document uses alt text. The document's font, Atkinson Hyperlegible, was chosen due to its demonstrated increased accessibility for readers.

Why Should You Care?

The requirement for accessible built environments has been enshrined into numerous laws and regulations, most notably in the passing of the landmark U.S. Americans with Disabilities Act in 1990. **These laws ensure that people with all types of disabilities have access to spaces and the ability to use services and participate in public life.** See the Disability Inclusion Series Timeline on PRECEDE if you're interested in this progression of laws!

Many countries have their own notable laws regarding disability rights, like the U.K.'s Equality Act 2010¹ and the Accessible Canada Act 2019². In fact, since 2002, 180+ countries have passed disability civil rights laws inspired by the ADA³.



Disclaimer

This document will focus on the basics of accessible requirements in the built environment. **It is important to remember that these requirements are the baseline, and that merely providing access to a space is not equivalent to providing full inclusivity.** The full purpose of accessibility is to enable a diverse group of people to engage in the meaningful activities a space is designed to support. There are many more fun and interesting things we can do as a society to create more inclusive experiences for all.

Disambiguation

The ADA was passed in 1990, and the ADA Accessibility Guidelines (ADAAG) were published in 1991. The ADAAG contains design requirements for accessible spaces and elements. "ADA" refers to the law, but "ADAAG" refers to the design guidelines. In 2010, ADAAG was updated to the ADA Standards for Accessible Design. This 2010 version aligns with the numbering system of typical US building codes.

Building Blocks of Accessibility

It is important to understand how codes and standards work together to create basic inclusivity in the built environment. The following are U.S. based codes and standards that apply to buildings. A typical building project in the U.S. will reference the ADA, A117.1, and the IBC. What's the difference between these documents?



Americans with Disabilities Act (ADA)

The ADA is the “Why?” of basic inclusive design. The ADA is a U.S. federal law that ensures inclusion within the built environment. The ADA Standards outline the specific requirements of the law — both scoping and technical — for accessible design. While not a building code, these standards apply to public spaces and must be followed. The ADA has five parts, called Titles.

Title I - Employment - Access to workplace.

Employers are required to provide reasonable accommodations for employees with disabilities. For example, if an employee needs a different type of desk to perform their job effectively, the employer is obligated to provide it.

Title II - State/Local Government Activities

All programs, services, and activities provided by state and local governments must be accessible to people with disabilities – whether or not a public service receives federal funding. This includes everything from public schools and transportation to voting locations, courtrooms, parks, and municipal buildings.

Title III - Public Accommodations

Private businesses and nonprofit organizations that serve the public must provide equal access to people with disabilities. This includes removing physical barriers when possible, offering auxiliary aids and services, and making reasonable modifications to policies or procedures to ensure full participation.

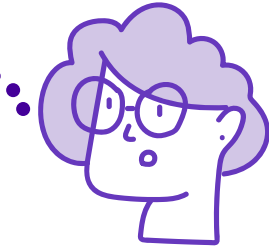
Title IV - Telecomms Relay Services

Ensures that individuals with hearing or speech disabilities can communicate by telephone through Telecommunications Relay Services (TRS). This includes services like TTY (teletypewriter, aka a text telephone), video relay, and closed captioning.

Title V - Miscellaneous Provisions

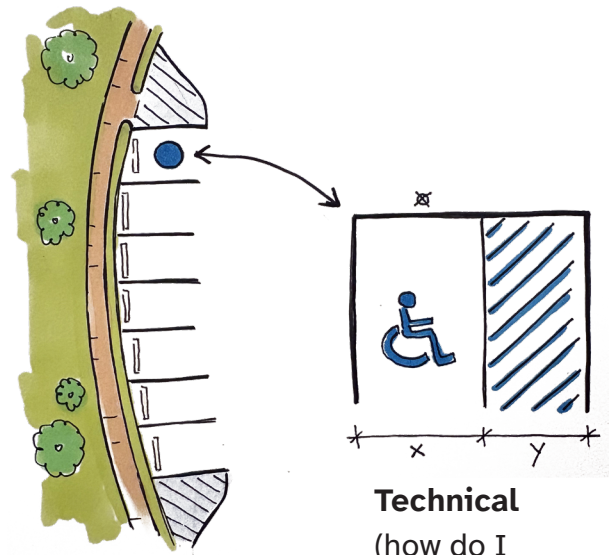
Contains important legal and administrative details that support the enforcement of the ADA. It includes protections against retaliation for asserting ADA rights, explains how the ADA interacts with other laws, and clarifies definitions and conditions (such as what qualifies as a disability). This title helps ensure the law is applied fairly and consistently.

Where?..



International Building Code (IBC)

The IBC is the “Where?” of basic inclusive design. The International Building Code (IBC) describes the **scoping requirements** (quantities, dispersion, etc.) of accessible elements within the built environment. A version of A117.1 (see below) is adopted with the IBC and provides the technical requirements for accessible elements.



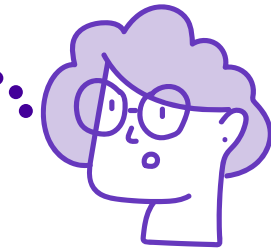
Scoping

(which of these parking spaces must be accessible?)

Technical

(how do I make these parking spaces accessible?)

How?..



ICC A117.1 Standard for Accessible and Usable Buildings and Facilities

A117.1 is the “How?” of basic inclusive design. ICC A117.1 Standard for Accessible and Usable Buildings and Facilities describes the **technical requirements** of accessible elements. It is adopted as part of a building code, typically a version of the IBC. A117.1 is updated periodically as we expand our understanding of how people with disabilities navigate the built environment. As such, the A117.1 often includes enhanced requirements for accessibility that are beyond the requirements of the ADA.

Scoping versus Technical Requirements

Scoping documents describe the scope, or breadth, of an element that is required to be accessible. For example, a scoping document may require that 5% of the parking stalls within a lot be “accessible”. The scoping document will not give details on how to make the stalls be “accessible” – that’s left to the technical document. The technical document will give the requirements for how to make an element accessible. For the example above, this would include noting the requirements for parking stall and access aisle dimensions, the location for any required signage, etc.

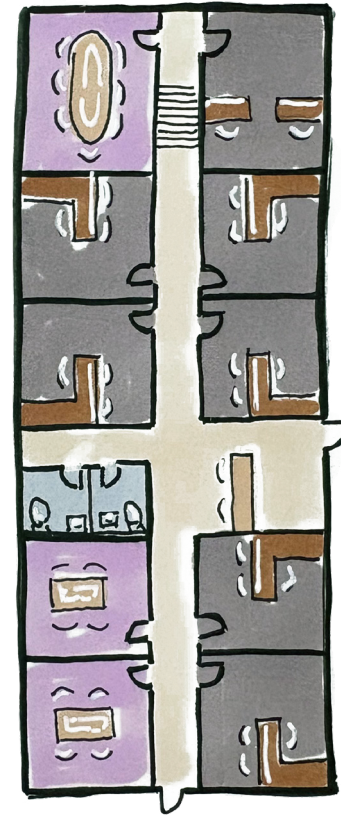
Beyond the Basics

In 2010, there was an overhaul of the 1991 ADA guidelines to reflect the improved understanding of how people with disabilities move through, and use, spaces. The 2010 ADA is a law by which new public buildings must comply.

Depending on various factors, renovations within existing buildings may not be required to abide by the 2010 ADA. There are several key concepts related to this idea, outlined within the 2010 ADA Standards for Accessible Design. The concepts below have further nuances than we can easily outline here – we encourage you to investigate as you see fit!

Disproportionality

Alterations made to provide an accessible path of travel to the altered area will be deemed disproportionate to the overall alteration when the cost exceeds 20% of the cost of the alteration to the primary function area. Note that there is still a duty to provide basic accessible features in the event of disproportionality⁴. While disproportionality may affect our project, it is important that we still do our utmost to provide inclusive environments.



This floor plan depicts the example of Disproportionality, noted below. The two rooms at plan north are accessible only via stair.

Example of Disproportionality

A building is renovating two offices that can only be accessed via a narrow stair. Egress requirements at this location do not allow for a chair lift to impede the stairs. Alterations to make these offices be along an accessible route might be deemed disproportionate to the overall renovation cost because it would require expensive structural machinations. In this case, it might be recommended that an office along an existing accessible route be provided, where users who could not access the original two offices would be accommodated.

Beyond the Basics

Technical Infeasibility

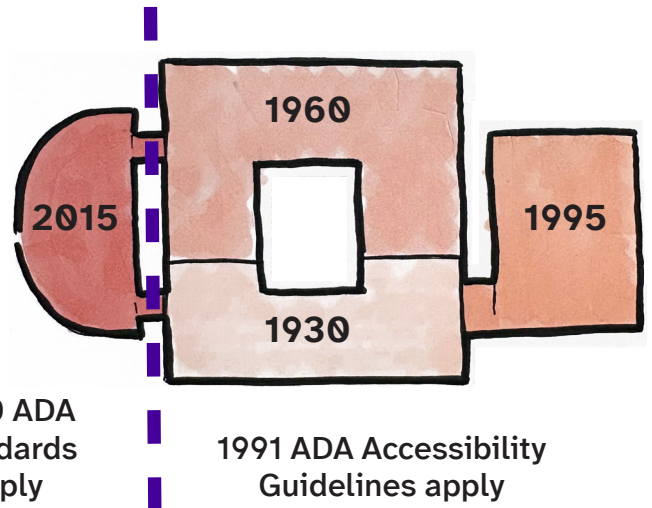
In alterations, where compliance with applicable requirements is technically infeasible, the alteration shall comply with the requirements to the maximum extent feasible.

Example of Technical Infeasibility

An existing stair needs handrails on both sides. A compliant accessible stair requires handrail extensions at both the top and bottom of the stair. If the required length of handrail extension would block a door, the egress path, or any other important building component, it would be technically infeasible to require the handrail extension at the existing condition. In this case, we should provide the maximum handrail extension possible before it blocks an important building component.



This elevation depicts the noted example of Technical Infeasibility. The dashed line shows the accessible bottom extension for a handrail, where the handrail would end if the door were not located as such.



2010 ADA
Standards
apply

1991 ADA Accessibility
Guidelines apply

This building plan depicts the noted example of Safe Harbor. The dates of the building additions are labeled - an original building in 1930, then building additions in 1960, 1995, and 2015. The dashed line shows the delineation between the application of the 2010 ADA Standards, on the left, and the 1991 ADA Accessibility Guidelines, on the right.

Safe Harbor

If a public entity has constructed or altered elements to be accessible in accordance with the 1991 ADA Standards before March 15, 2012, they are not required to retrofit such elements to be in compliance with the 2010 ADA Standards.

Example of Safe Harbor

A building has an existing accessible single user toilet room constructed in 1995. The dimension between the adjacent wall at the toilet and the lavatory is 36". While this does not meet the required 60" dimension in the 2010 ADA Standards, it does comply with the 1991 ADA Accessibility Guidelines. The bathroom can be renovated and does not need to be enlarged to be considered compliant.

Case Study

Table Clearances

Many people don't realize that common furniture choices are inaccessible. We should work with the client so that they understand the requirements for accessible furniture. Additionally, furniture manufacturers typically have limited options when it comes to meeting accessible compliance. **As an industry, we need to do better and push furniture manufacturers to provide more accessible options.**

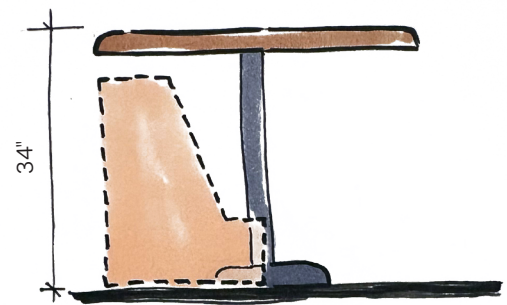
Typically, 5% of each seating type, with a minimum of (1), must be accessible. This means that a restaurant with two types of seating – say, a 4-person table and a long communal table – will need to make sure that they provide an accessible version for each table type.

Bar seating is also typically identified as a separate seating type, and an accessible portion of the bar should be provided. **As bars are built-in elements, it is our duty to make sure that this accessible seating is provided.** Some codes also require that there be a location for a companion seat next to the accessible seat at the bar, which widens the accessible portion. Do your research! **Remember that providing minimally compliant accessible elements does not equate to providing an inclusive experience.**

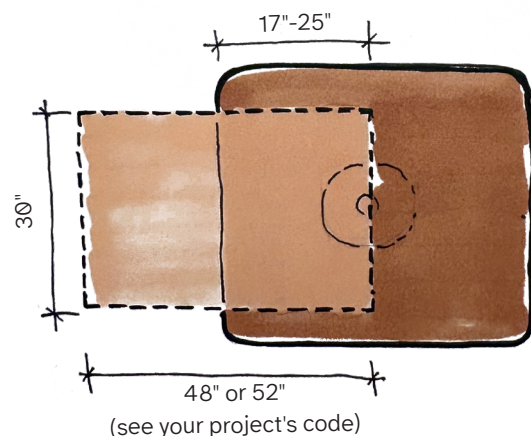
Accessibility Requirements

Even if they are at an accessible height, tables with star bases and/or pedestal bases are typically not accessible because they do not provide the required knee and toe clearance for a wheelchair user. A compliant accessible table includes compliant:

1. Clear floor space
2. Dining surface height
3. Knee and toe clearance



Section of a pedestal table, showing accessible knee and toe clearance. One can see that the dashed line showing the clearance is impeded by the table base.



Plan of a pedestal table, showing accessible clear floor space. The clear floor space should overlap the table edge by 17"-25" to provide accessible dining.

Key Takeaways

- ! Know your codes. Bookmark those you use most. Every project is different – get comfortable with asking your PA/PM for the appropriate references.
- ! Remember that states and localities may have their own codes and standards which go beyond baseline documents, such as the Massachusetts 780 CMR, Texas Accessibility Standards, Illinois Accessibility Code, etc.
- ! **Remember that the ADA is the bare minimum of accessible design.** Consider options for more inclusive design strategies.
- ! Familiarize yourself with the updates to A117.1. IBC 2021 and later editions have adopted the 2017 A117.1, which has larger clearances and requirements for accessibility than the 2009 edition with which most designers are familiar.
- ! **Understand that providing access does not equate to providing inclusion.** Further documents within this series expand upon this idea.

Dig Deeper

Check out these resources to learn more!



- **Drunk History - Judith Heumann's Fight for Disability Rights**

A delightful, succinct retelling of the U.S. disability rights movement.



- **U.S. Access Board - Guide to the ADA Accessibility Standards**

A guide with Frequently Asked Questions, animations, and other helpful graphics to educate users about the intricacies of the ADA.

- **Seyfarth Shaw LLP - ADA Title III**

A legal blog with well-written rundowns of accessibility case law and news.

Authors' Note

This document is primarily US-centric. This is in part due to the authors' lived experience and knowledge base. We acknowledge that disability inclusion is a global issue, and hope that this work can be expanded upon and applied from an international perspective.

We welcome feedback! If you have any questions or insights to add, or you are interested in learning more, please reach out to the primary author: **Kate Dailey** (Project Architect, Perkins&Will).

Special Thanks to our Internal Contributors: Giovanni Carter-Davis, Bri Dazio, Danielle Baez, Erika Eitland, Sam McChurch, Larissa Sattler, Patrick Reinhard, Jacob Williams.

In addition, we want to honor the rooted and invaluable feedback from our Community Insight Partners: Nicholette Driggs, Absolutely Accessible Kent; Whitney Hill, SPORK! Director; Francisco Lasta, OTR/L, Assoc. AIA, Inclusive Design Lead, GFT. It was critical that we collaborate directly with the perspectives of members of the disability and advocate community.

How to cite: Dailey, K. (2025) *Foundations of Accessibility in Design*, Perkins&Will, PRECEDE: Disability Inclusion Initiative. www.precede.perkinswill.com.

Endnotes

1. <https://www.levelaccess.com/blog/united-kingdom-accessibility-requirements/>
2. <https://laws-lois.justice.gc.ca/eng/acts/A-0.6/page-1.html#h-1153395>
3. <https://www.npr.org/sections/goatsandso-da/2015/07/24/425607389/how-a-law-to-protect-disabled-americans-became-imitated-around-the-world>
4. ADA ref 28 CFR 35.151

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