

In construction and the construction community

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Introduction

One in four people currently aged from 20-29 will be diagnosed with a physical disability before reaching retirement. To accommodate all humans in an achievable goal of equity, the United States Department of Justice has established the Americans with Disabilities Act (ADA) that guarantees: "Individuals with disabilities may not be denied full and equal enjoyment of the goods, services, facilities, privileges, advantages, or accommodations."

The inclusion of the ADA has grown since its introduction in 1990. Accessibility in the built environment is essential since 80% of an individual's time is spent indoors. Therefore, the regulations help determine how old buildings must be altered and how new ones must be constructed.

However, despite honest efforts in compliance and inclusion, many projects fall short of what is required by the ADA due to costs and/or quality.

Methods

Numerous studies are available and were utilized to demonstrate the current implementation practices and associated costs with ADA Compliance. By performing a literature review, a baseline of information was developed and used to compare techniques to current building construction. Data from relevant case studies and data from Brasfield & Gorrie General Contractors were used to perform an analysis of current challenges.

Data was collected from both online sources and company data from Brasfield & Gorrie. The numbers have been rounded for clarity but continue to represent the trends found during research.

Peer reviewed journals and online sources support any claims that are made within this presentation.

Results

Many new buildings around the world are testing out new accessibility features to allow for equal enjoyment of facilities to those with a variety of physical disabilities. Some of these technologies are cheap alterations, but others can require dedicated time and planning before the construction even begins. Although, for some contractors, implementation of accessibility compliance is more about checking boxes as opposed to finding real solutions. The following charts show that doing more than satisfying a requirement can present substantial cost increase and added effort.

By making accessibility an important item of the initial construction phase, owners can save both time and money. Otherwise, renovating a space at a later time to local accessibility standards can create costs that could nearly triple new construction costs.

When owners, designers, and builders find new techniques and structures to be more inclusive and allow participation of those with accessibility restrictions to be involved with the preconstruction process, the project team can create a manageable, cost effective, and aesthetically pleasing built environment.

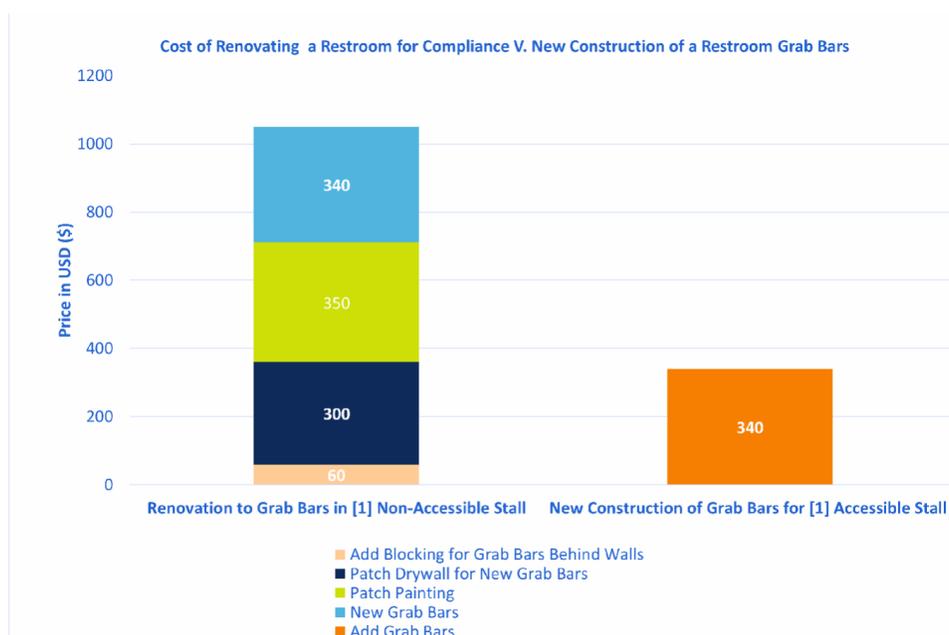
Costs of Accessibility

Sometimes, it can be difficult when owners and designers are faced with the costs associated with accessibility. The price tag can quickly exceed the initial budget. Altering the mindset during the design process, however, can drive down prices and create more realistically feasible prices.

Standard Item	Standard Item Cost	ADA Compliant Accessible Item	ADA Item Cost	Added Cost
Prefabricated Restroom Partitions (3 sides)	\$779	Prefabricated ADA Compliant Restroom Partitions (3 sides)	\$863	\$84
Wall Mounted Fountain	\$2,260	To Lower an Existing Wall Mounted Fountain (+\$713)	\$2,973	\$713
Parking Space *based on 180 ft ²	\$278*	Parking Space w/ Pole Mounted Signage + Concrete Curb	\$1,250	\$972
No Grab Bar	\$0	Grab Bar in New Construction	\$340	\$340
Restroom Sink Pipes	\$66.38	Restroom Sink Pipes with ADA Pipe Covers	\$106.94	\$40.56

Item Costs (Build, 2020) (E.H. Pechan & Associates, Inc, 2007) (One Point Partitions, 2019)

Accessibility features can cost less while still being the more inclusive option. For example, the installation of a grab bar in a restroom can be cheaper when it is included in new construction instead of as a renovation in an existing restroom. Renovations require removing work in place and patching it when completed. Planning to add grab bars in the restrooms beforehand saves hundreds of dollars: this doesn't include other renovations that can be included in a restroom renovation. Other costs can include moving partitions, moving piping within the walls, and sometimes demolishing walls to make the space compliant. Below is a visual representation of the savings an owner can experience:

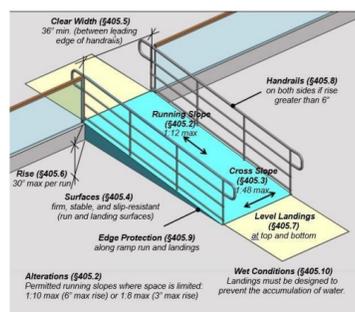


Costs of a restroom Renovation versus New-Construction (Brasfield & Gorrie, 2019)

Challenges in Construction



Integrated ramp into a set of stairs (Twisted Sifter, 2012)



A ramp with proper dimensions (U.S. Access Board, 2010)

Despite honest efforts in compliance and inclusion, many projects fall short of what is required by the ADA. Often, the effort is visible but not legally sufficient. Through the lack of inclusion and planning, some of these well-intentioned mistakes can cause setbacks to both schedule and cost savings. When issues with compliance are discovered on the front end, owners can avoid removing work in place and ensure that the structure's aesthetic is not compromised in the process as well.

For example, a ramp within stairs may seem to satisfy an accessibility requirement, but it is actually dangerous. The ramp would be open on both sides without railing, allowing someone in a wheelchair to fall off or fails to provide someone with a cane adequate support. The designer may make a ramp longer than 30 feet with a slope greater than 1:16 —this is noncompliant and would require costly adjustments before being considered ADA compliant.

Other common examples of errors in compliance are (U.S. Department of Justice, 1997):

- Ramps are both steep and have unprotected sides
- Landings where ramps change direction are too small
- Lack of clearance to maneuver around doors
- Objects protrude into walkways creating collision hazards

Conclusion

The Americans with Disabilities Act, specifically its monetary effect and implementation in construction methods in the United States, needs to be upgraded for effective techniques. The goal is to persuade owners and architects to devote resources to designing accessible buildings to create cost effective and aesthetically pleasing accessibility features to benefit everyone.

While designers are showing efforts towards accessibility inclusion, there is room for improvement in creating a perfectly accessible world.

Purposeful inclusion of accessible design into a project can improve not only the quality of life for our disabled neighbors, but also the overall quality of the project and the bottom line.

References

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Acknowledgements

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