

Practical and Universal Design for Indian Interior Design

Ridhima Chauhan^{1*}, Deepti Pande Rana²

Abstract

Accessibility and universal design in Indian interiors are essential for creating inclusive spaces that cater to all individuals, regardless of ability. These principles ensure that environments are usable by everyone, including people with disabilities, and enhance overall comfort and functionality. In the Indian context, integrating accessibility and universal design into interiors is particularly important due to the country's diverse population and the growing emphasis on inclusivity. This approach involves implementing features such as ramps, tactile signage, adjustable furniture, and assistive technologies in both public and private spaces. By adopting these practices, Indian interiors can become more equitable, fostering a sense of belonging and independence for all users. The incorporation of accessibility and universal design not only complies with legal mandates, such as the Rights of Persons with Disabilities Act, 2016, but also promotes social inclusion and enhances the overall quality of life.

Keywords: Accessibility, universal design, Indian interiors, inclusivity, disabilities, ramps, tactile signage, adjustable furniture, social inclusion, equity

INTRODUCTION

The integration of accessibility and universal design in corporate office interiors is increasingly recognized as a key factor in promoting inclusivity and productivity. In India, where the corporate sector is rapidly expanding, there is a growing awareness of the need to create work environments that are accessible to all employees, including those with disabilities. As the Indian corporate landscape continues to evolve, the focus on creating inclusive and accessible work environments is gaining momentum [1].

Accessibility and universal design are increasingly becoming critical components of corporate office interiors in India (Figure 1). As the corporate sector expands, and global standards of inclusivity become more prominent. Indian companies are beginning to recognize the importance of creating workplaces that accommodate employees of all abilities [2]. This extended case study explores how these principles are being implemented in Indian corporate office interiors, showcasing best practices, challenges, and the resulting impact on employees and organizational culture.

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BACKGROUND

India, with its diverse population and rich cultural heritage, presents unique challenges and opportunities in the realm of interior design. As the country progresses towards modernization, there is an increasing need to ensure that public and private spaces are accessible to all individuals, regardless of their physical abilities [3]. India's business environment is rapidly evolving with a focus on diversity and inclusion. The Rights of Persons with Disabilities (RPWD) Act, 2016, has been instrumental in pushing for accessibility in public spaces, including corporate offices. However, translating legal requirements into practical, user-

friendly design solutions poses significant challenges [4]. Offices in India often reflect a blend of modernity and tradition, with a focus on aesthetics and workplaces.

The challenge is to integrate accessible features without compromising on this content. This case study focuses on how a leading Indian corporation, Wipro Limited, tackled these challenges in their headquarters in Bangalore [5].

LITERATURE REVIEW

Understanding Accessibility and Universal Design in Corporate Settings

Accessibility ensures that workplaces are accessible and usable by workers with disabilities. This includes physical access (e.g., ramps, elevators), sensory input (e.g., visual and auditory cues), and environmental factors (e.g., clear signage, appropriate lighting).

Universal design goes beyond accessibility to create an environment that everyone can use, regardless of age, ability, or background. In a business setting, this means workplaces that meet diverse needs, encourage collaboration, and maximize productivity (Figure 2).

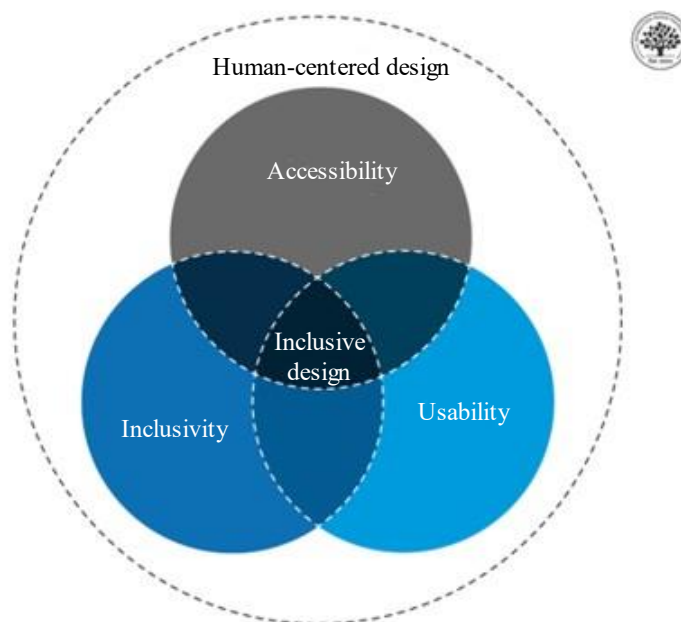
The Importance of Accessibility and Universal Design

Accessibility refers to products, equipment, services or environments designed for people with disabilities. Universal design aims to maximize the benefits of creating an environment that everyone can use without requiring any modifications or special designs. The importance of these ideas in interior design is that they can improve the quality of life for everyone by creating a sense of unity and harmony.

Current Penetration Status of Interior Design in India

Legal framework

India has made significant progress in promoting accessibility through legislation such as the Rights of Persons with Disabilities Act, 2016 (Figure 3). This act mandates the incorporation of accessibility features in public buildings and spaces [6].



Interaction design foundation
interaction-design.org

Figure 1. Inclusive design flow chart.

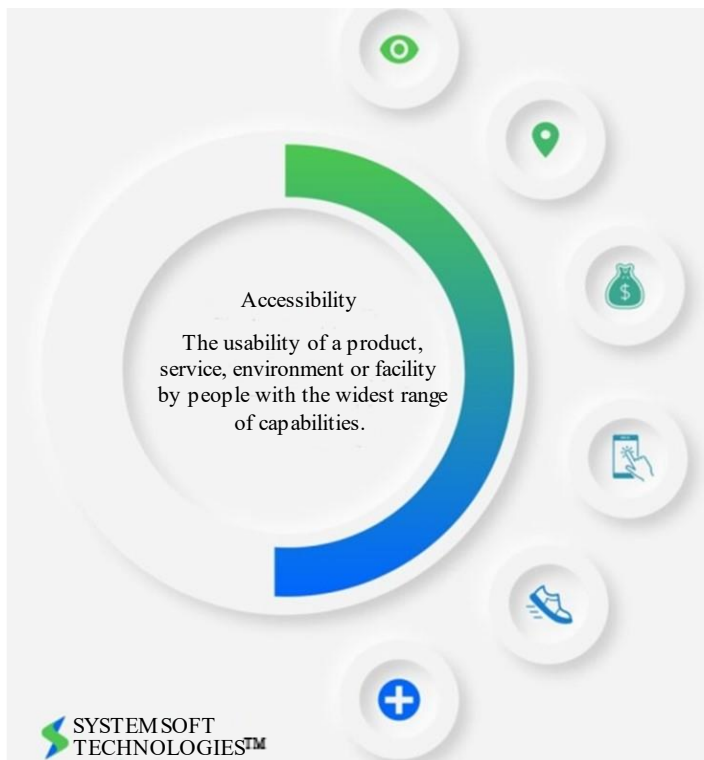


Figure 2. Terms of accessibility.

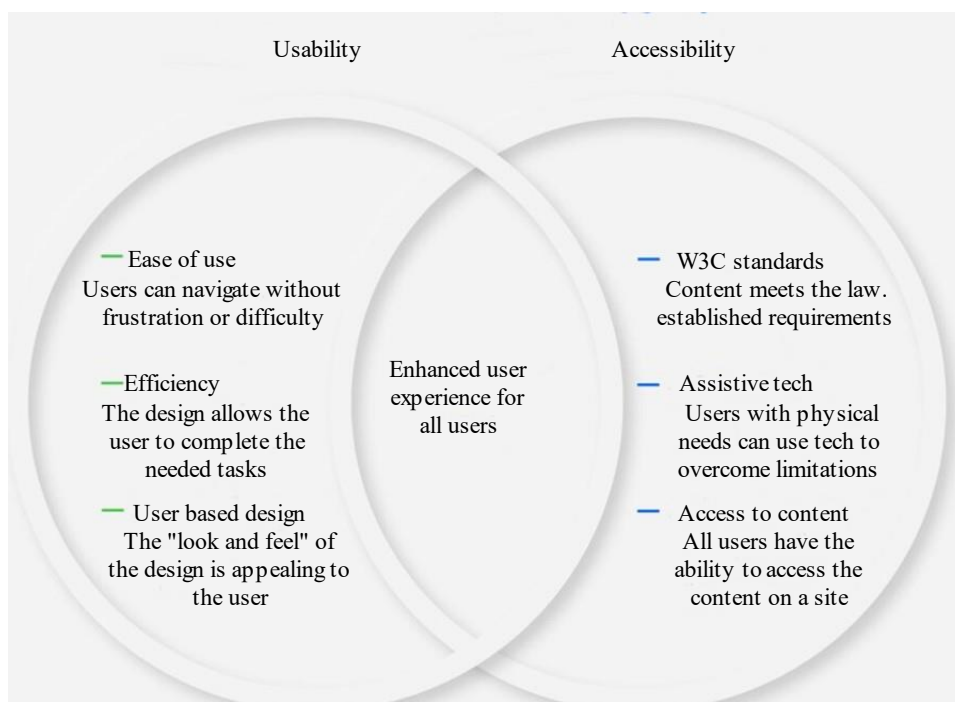


Figure 3. The importance of accessibility design.

Existing Challenges

Despite the legislative efforts, the implementation of accessible design in Indian interiors faces several challenges:

- *Lack of awareness and training:* Many designers and architects lack awareness and training in accessibility and universal design principles.

- *Economic constraints*: Budget constraints often lead to the exclusion of accessibility features in design projects [7].
- *Cultural factors*: Traditional Indian architectural styles and cultural preferences can sometimes conflict with modern accessibility requirements.

Principles of Universal Design

Equitable use

Designs should be useful and marketable to people with varying abilities, for example, creating step-free access so that both able-bodied and those with disabled people can access the site (Figure 4).

Adaptability in Utilization

The design needs to cater to a variety of personal preferences and capabilities (Figure 5). An illustration of this concept is the use of adjustable furniture and fixtures.



Figure 4. Equitable use in universal design.

2: Flexibility in use

The design accommodates a wide range of individual preferences and abilities.



Figure 5. Flexibility in use in universal design.

Easy and User-Friendly Utilization

The design should be straightforward to grasp, no matter the user's background, expertise, language abilities, or present focus level (Figure 6) [8].

Ensuring Information is Noticeable

The design ought to effectively convey essential information to the user, irrespective of ambient conditions or the user's sensory abilities (Figure 7).

Error Tolerance

The design aims to reduce risks and mitigate the effects of unintended or accidental actions (Figure 8).

Minimal Physical Exertion

The design should be easy to use effectively and comfortably with little to no tiredness (Figure 9).

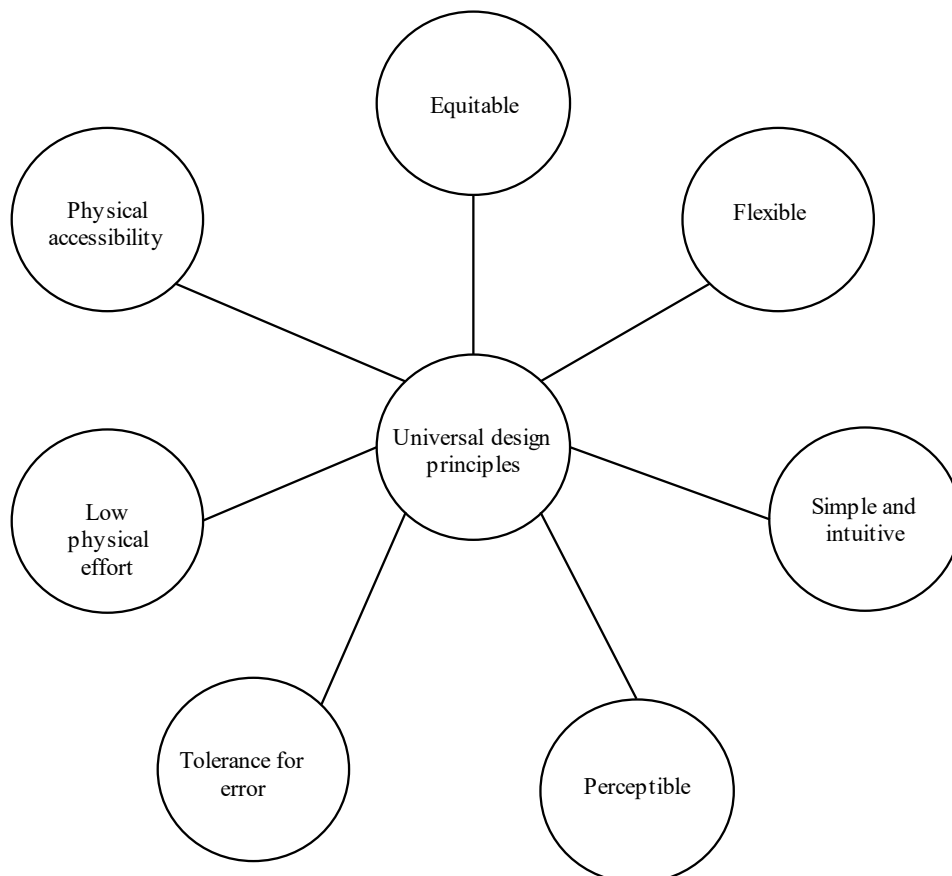


Figure 6. Principles of universal design.

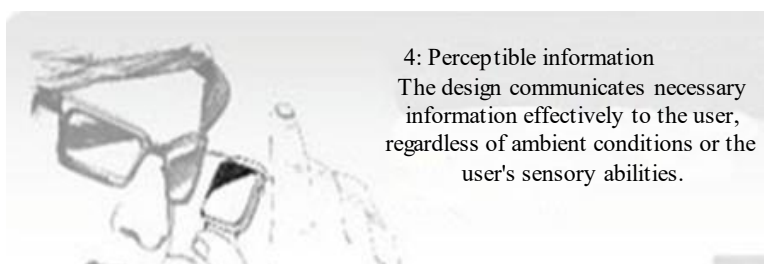


Figure 7. Perceptible information in universal design.

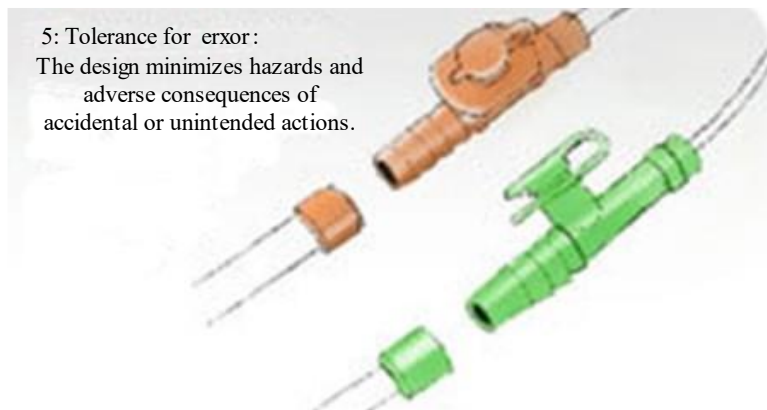


Figure 8. Acceptable error margins in universal design.



6: Low physical effort:
The design can be used efficiently and comfortably and with a minimum of fatigue

Figure 9. Use of lower body in universal design.

Size and Space for Approach and Utilization

Appropriate size and space must be allocated for approach, reach, manipulation, and utilization, irrespective of the user's body dimensions, posture, or mobility [9].

DESIGN STRATEGIES FOR ACCESSIBILITY AND UNIVERSAL DESIGN

Entrance and Lobby Design

- *Ramps and automatic doors:* Corporate offices must provide step-free access through ramps with appropriate gradients, automatic doors, and tactile indicators. These elements ensure that individuals with mobility impairments can enter the building independently.
- *Reception desks:* Desks should be at a height accessible to individuals in wheelchairs, with sufficient knee clearance. Information counters should include hearing loops for individuals with hearing impairments.
- *Wayfinding:* Clear signage in multiple formats (text, braille, pictograms) and audible wayfinding systems help visually impaired individuals navigate the space (Figure 10).

Interior Layout and Circulation

- *Corridors and pathways:* Corridors should be wide enough (minimum of 1.5 m) to accommodate wheelchair users and have tactile flooring that aids navigation for the visually impaired. Turning radii at corners and intersections should be sufficient for easy manoeuvrability [10].
- *Elevators and staircases:* Elevators must be large enough to accommodate wheelchairs and have braille buttons and audible floor indicators. Staircases should include tactile warnings at the top and bottom and handrails at two heights for varying user needs.

Workstations and Meeting Rooms

- *Height-adjustable workstations:* Workstations should be adjustable to cater to different body types and abilities, allowing employees to work comfortably whether seated or standing.
- *Inclusive meeting rooms:* Meeting rooms should be equipped with hearing enhancement systems, adjustable lighting, and furniture that accommodates wheelchair users. Tables should have sufficient knee clearance, and remote conferencing tools should be accessible.
- *Quiet rooms and wellness spaces:* These rooms should be accessible and designed to accommodate the sensory needs of individuals with conditions such as autism or anxiety disorders. Features might include soundproofing, adjustable lighting, and calming colour schemes.

Restrooms and Common Areas

- *Accessible restrooms:* Restrooms should be designed with larger stalls, grab bars, lower sinks, and emergency pull cords. The layout must allow easy access for wheelchair users and people with other mobility challenges.
- *Pantries and cafeterias:* Counter heights should be accessible, with space for wheelchair users to navigate. Food displays should be reachable, and visual or audible systems should be in place to assist those with sensory impairments (Figure 11) [11].



Figure 10. Accessible staircase for all.



Figure 11. Accessible restroom facilities for all.

Technology Integration

- *Assistive technologies:* Incorporating technologies such as voice-activated systems, screen readers, and adaptive keyboards ensures that digital workspaces are accessible to all employees.
- *Smart building systems:* Automation of lighting, temperature, and security systems that respond to voice commands or mobile applications enhances accessibility for individuals with physical impairments (Figure 12) [12].

Emergency Egress

- *Accessible exits:* Emergency exits should be accessible, with clear signage, tactile indicators, and auditory alarms that cater to various disabilities.
- *Evacuation chairs:* These should be available, and staff trained in their use to assist individuals who cannot use stairs during emergencies.

CHALLENGES IN IMPLEMENTATION

Awareness and Education

- Many corporate entities in India still lack awareness of the importance of universal design. Training and education are needed for architects, designers, and facility managers to understand and implement these principles.

Cost Implications

- Initial costs of implementing accessible design can be high, particularly in retrofitting existing buildings. However, the long-term benefits of inclusivity, employee satisfaction, and compliance with legal standards often outweigh these costs.

Cultural and Social Barriers

- Stigmatization of disability and a lack of understanding of the diverse needs of individuals can hinder the adoption of universal design. Creating a more inclusive culture is essential for the success of these initiatives [13].

Regulatory Compliance

- Ensuring compliance with the Rights of Persons with Disabilities Act, 2016, and other relevant guidelines can be challenging due to varying interpretations of the law and enforcement across different states (Figure 13).

Impact and Outcomes

- *Employee satisfaction:* Using international standards increases employee satisfaction, especially for employees with disabilities. Employees report feeling more valued and included in their workplaces.
- *Increased productivity:* Productivity increases as employees can work more easily and efficiently. The inclusive design also promotes collaboration among team members, as spaces are more adaptable to diverse needs.
- *Corporate reputation:* Infosys's commitment to accessibility and universal design has strengthened its reputation as a socially responsible company. It has set a precedent in the Indian business community, encouraging other companies to adopt similar practices.
- *Awards and recognition:* Infosys has received several awards for its efforts in creating an inclusive workplace, including recognition from disability rights organizations and industry bodies.

Strategies for Improving Accessibility

Education and training

Incorporating accessibility and universal design education into the curriculum for architecture and interior design students can create a generation of professionals who prioritize inclusivity in their projects.

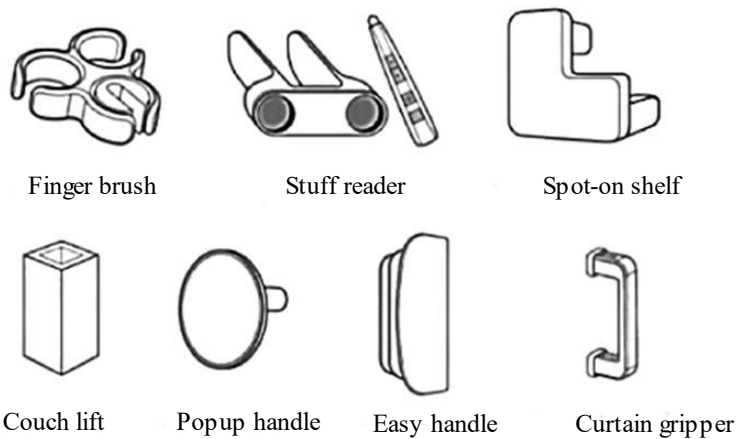


Figure 12. Upgraded accessible design.



Figure 13. Creating more accessible spaces.

Government Incentives

Providing financial incentives or subsidies for projects that incorporate accessibility features can encourage developers to adopt these principles.

Community Engagement

Involving people with disabilities in the design process ensures that their needs are adequately addressed and that the final design is truly inclusive.

Challenges and Lessons Learned

1. *Retrofitting older buildings:* Retrofitting accessibility features in older buildings proved to be a complex and costly process. However, Infosys tackled this challenge by prioritizing the most essential upgrades and integrating them into regular maintenance schedules.
2. *Balancing aesthetics and functionality:* Maintaining the aesthetic appeal of the campus while implementing accessibility features required innovative design solutions. For example, ramps were designed to blend seamlessly with the surrounding architecture, and tactile indicators were incorporated into the flooring design.
3. *Cultural adaptation:* Incorporating universal design within the context of Indian culture and aesthetics was a key focus. Infosys achieved this by working closely with local artisans and designers who understood the cultural significance of certain elements while ensuring they met accessibility standards.

Recommendations for Enhancing Accessibility and Universal Design in Corporate Offices

1. *Incorporate accessibility from the start:* Integrate accessibility and universal design principles from the early stages of office design and planning, rather than treating them as afterthoughts.
2. *Involve stakeholders:* Include employees, especially those with disabilities, in the design process to ensure that their needs are met.
3. *Invest in training:* Provide ongoing training for employees on how to utilize accessible features and foster an inclusive workplace culture.
4. *Regular audits and feedback:* Conduct regular accessibility audits and seek feedback from employees to identify areas for improvement and ensure that the office remains inclusive as needs evolve.
5. *Leverage technology:* Utilize the latest assistive technologies and collaborate with experts to ensure that the office environment is not only accessible but also innovative and adaptable (Figure 14).

CASE STUDY ANALYSIS OF CORPORATE OFFICE

- *Live Case Study:* Urbanic Co-working Space
- *Location:* 7th floor Urbanic building, Vibhuti Khand
- *Project type:* Corporate office
- *Area:* 5,500 ft².

Project Objective

- Fostering a productive and inspiring work environment.
- Incorporate cutting-edge technology, efficient space utilization, and innovative design elements.
- Showcasing its commitment to quality, sustainability, and urban development (Figure 15).



Figure 14. Enhancing accessibility and universal design.

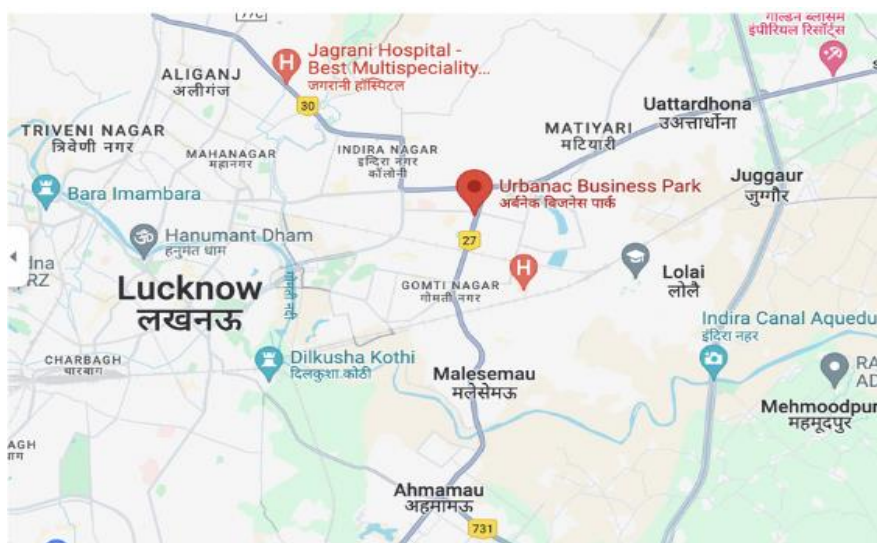


Figure 15. Site location.

Design Consideration

- Reception.
- Waiting Area.
- Lobby.
- Co-working Space.
- Conference Room.
- Manager's Cabin.

Universal Design Elements

- Spacious aisle.
- Open and adjustable working space.
- Wooden non slippery tiles.
- Easily accessible handles.

Conference room: The conference room layout allows for easy access to all areas, with wide aisles and moveable chairs (Figure 16).

Lobby area: The waiting area is spacious, with comfortable seating arrangements that cater to people of all abilities. Chairs with armrests provide support to people who need support while sitting or standing.

Entrance: The reception area at Chinmay Associates is designed with accessibility in mind. The space is free of obstacles, with clear pathways that allow smooth movement.

Co-working space: The co-working space is inclusive, with adjustable desks that cater to users of different heights, including those in wheelchairs (Figure 17).

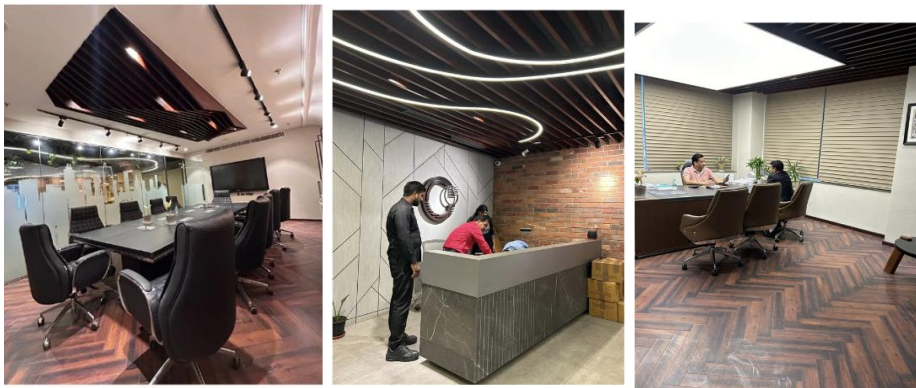


Figure 16. Reception and conference room affiliated with accessible design.

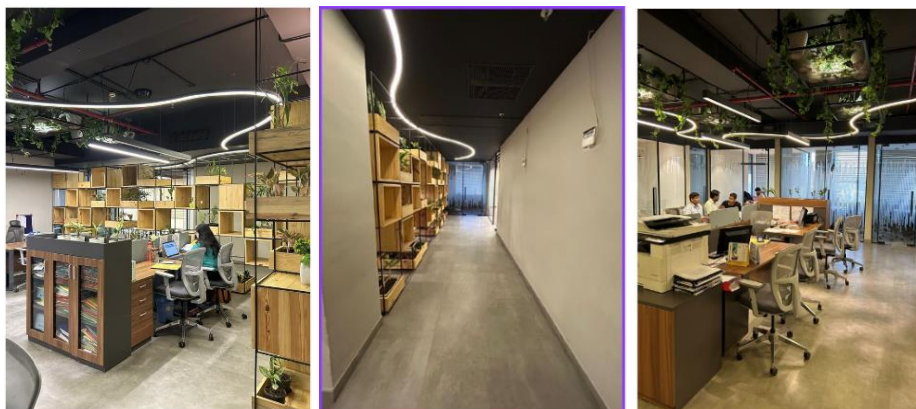


Figure 17. Co-working spaces along with wide entrance for easy access and movement.

CONCLUSION

The mixing of accessibility and universal layout into corporate workplace interiors in India is essential for growing an inclusive and effective work environment. Companies like Infosys and Microsoft are leading the way by demonstrating how these principles can be effectively implemented to benefit all employees. While challenges are constant, the adoption of these design principles is not only a legal obligation but also an ethical imperative but also has a strategic benefit in today's various and aggressive business panorama. Implementing accessibility and universal design in Indian corporate offices is not just a legal requirement but a strategic initiative that fosters inclusivity, enhances employee well-being, and drives organizational success. As more companies recognize the value of accessible design, the landscape of Indian workplaces is set to become more inclusive, diverse, and productive. The journey towards universal design in India's corporate sector is ongoing, with continuous improvements and innovations paving the way for a more inclusive future.

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