QUESTIONNAIRE FOR ACCESIBILITY AUDIT OF COLLEGE/ UNIVERSITY CAMPUS TO ASSESS ITS ACCESIBILITY TO THE STUDENTS WITH DISABILITIES PURSUING HIGHER EDUCATION.

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Abstract :

1.0 Objectives:

1. To enumerate the parameters of barrier-free environment for the students with disabilities.
2. To prepare a questionnaire to gauge the parameters of highly accessible barrier-free environment and assistive technology in the college/university campus.

1.1 Keywords -

1.1.1 Students with disabilities: "The Persons with Disabilities (Equal opportunities, Protection of Rights and Full Participation) Act, 1995" has specified seven categories of disability. In the "Rights of Persons with Disabilities Bill, 2012", there is an extended list including 17 types of disabilities. For the present study the disabilities as has been specified in relevant schedules have been grouped broadly into five major categories:

(a) Wheelchair users (b) People with limited walking abilities (c) the sightless (d) the partially sighted (e) the hearing impaired

1.1.2 Structural Audit:

Structural Audit is an overall health and performance checkups of a building like a doctor examines a patient. It ensures that the building and its premises are safe and have no risk. It analyses and suggests appropriate repairs and retrofitting measures required for the buildings to perform better in its service life. Structural audit is done by an experienced and licensed structural consultant. (International Journal of Civil Engineering Research. ISSN 2278-3652 Volume 5, Number 4 (2014), pp. 411-416 © Research India Publications http://www.ripublication.com/ijcer.htm)

However, in the present context we need to examine of college/university campus to assess the degree of accessibility of locations, learning resources and assistive technology to the students with disabilities. Such audit should be conducted in order to analyse and suggest appropriate repairs and measures required for the buildings and overall campus to create barrier-free environment and facilities suited to the special needs of students with disabilities.

2.0 INTRODUCTION

2.1 Persons with Disabilities Act, 1995:

In 1992, India adopted the Proclamation on the Full Participation and Equality of People with Disabilities in the Asian and Pacific Region. As a signatory of this proclamation, India's Ministry of Law, Justice and Company Affairs proposed an act to safe guard the rights of Persons with Disabilities (PWD). On the 1st of January 1996 the Government of India passed the" Persons with Disabilities (Equal Opportunities, Protection of Rights and Full Participation) Act 1995. This act focuses on necessary steps to be taken by government and local authorities for giving equal opportunities as well as special facilities to the persons with disabilities. This includes free elementary education, assistive technologies and special aids, training of special teachers, employment etc. The said act has made it mandatory to provide free elementary education up to the age of 18 years to the children with disabilities.

2.2 National Policy for Persons with Disabilities, 2006:

National Policy for Persons with Disabilities has been announced in February, 2006. The National Policy recognizes that Persons with Disabilities are valuable human resource for the country and seeks to create an environment that provides them equal opportunities, protection of their rights and full participation in society. The focus of the policy is on (a) Prevention of Disabilities and (b) Rehabilitation Measures.

The salient features of the National Policy are:

i. Physical Rehabilitation, which includes early detection and intervention, counselling & medical interventions and provision of aids & appliances. It also includes the development of rehabilitation professionals.

ii. Educational Rehabilitation including vocational training and

iii. Economic Rehabilitation for a dignified life in society.

It also presents Guidelines and Space Standards for Barrier Free Built Environment for Disabled and Elderly Persons

Barrier-free environment enables people with disabilities to move about safely and freely, and use the facilities within the built environment. The goal of barrier free design is to provide an environment that supports the independent functioning of individuals so that they can participate without assistance, in everyday activities. Therefore, to the maximum extent possible, buildings / places / transportation systems for public use will be made barrier free. Central Public Works Department under the Ministry of Urban Development has issued guidelines in this regard.

However, the barriers in accessibility to physical as well as academic resources do not encourage the students with disabilities to take regular classes. Possibly there are compromises pertaining to the choice of subjects which can be learnt in distance mode.

2.3 Access to Grants to make Higher Education Campuses Disabled Friendly:

3 percent of seats in all Indian Universities and colleges are reserved for candidates with disabilities, eligible to apply for admission irrespective of the percentage of marks in all of the programmes of studies and who have passed the qualifying examination.

In UGC's, "Guidelines Facilities for Differently -Abled persons", it has been stated that the persons with disabilities need special arrangements in the environment for their mobility and independent functioning. And that many institutes have architectural barriers that disabled people find difficult for their day to day functioning. Hence, it is recommended that the universities and colleges should address this problem according to the Persons with Disabilities Act 1995 and ensures that all existing structures as well as future construction projects in their campuses are made disabled friendly.

According to UGC's XIth Plan guidelines, UGC will make a one-time grant of Rs 5 lakh per University/college to improve physical accessibility. UGC will provide an ad hoc one-time grant of up to Rs 3.0 lakh for procurement of special devices required for providing suitable learning experiences to the Persons with disabilities.

Although the Government of India has attempted to create policies that are inclusive for people with disabilities, their implementation efforts have not resulted in an inclusive system of education, nor have they reached their goal of "education for all" across the country. The Government of India needs to bridge the gaps in their education System to build a strong system of inclusive education in India.

Education for students with disabilities has long been a serious cause of concern in India, as also in other countries around the world. A person with a disability studying in Mainstream educational institutions in India experiences many difficulties in navigating Through the obstacle course of the Indian educational system. Problems exist in many areas– course content, staff, facilities, resources as well as the educational and examination process. The relative physical inaccessibility of educational institutions, unavailability of accessible content in different languages, lack of trained and sensitive teachers, and the lack of awareness about developments in enabling technologies have hitherto rendered the educational environment itself rather difficult to access. Also, the unavailability of digitized course materials in the accessible formats and present examination system are the additional problems.

Thus the educational experience often becomes a nightmare for a student who is disabled.

3.0 Accessibility for the Disabled – Providing a Barrier Free Environment:

In "UGC GUIDELINES FACILITIES FOR DIFFERENTLY -ABLED PERSONS" it has been stated that the persons with disabilities need special arrangements in the environment for their mobility and independent functioning. And that many institutes have architectural barriers that disabled people find difficult for their day to day functioning. Hence, it is recommended that the universities and colleges should address this problem according to the Persons with Disabilities Act 1995 and ensures that all existing structures as well as future construction projects in their campuses are made disabled friendly. Universities and colleges are expected to address to the needs of persons with disabilities.

"National Policy for Persons with Disabilities, 2006", has given guidelines and Space Standards for Barrier Free Built Environment for Disabled and Elderly Persons.

Barrier-free environment enables people with disabilities to move about safely and freely, and use the facilities within the built environment. The goal of barrier free design is to provide an environment that supports the independent functioning of individuals so that they can participate without assistance, in everyday activities. Therefore, to the maximum extent possible, buildings / places /

transportation systems for public use will be made barrier free.

Central Public Works Department under the Ministry of Urban Development has issued guidelines in this regard.

We can set the parameters for enhancing the accessibility of colleges/universities to the students with the disabilities based on two major paradigms:

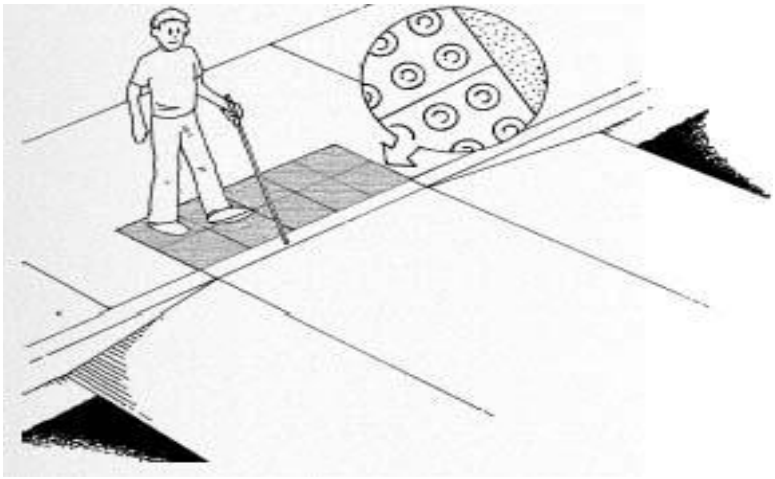
1. Architectural Design Considerations
2. Assistive Technology
3. **3.1ARCHITECTURAL DESIGN CONSIDERATIONS:**

3.1.1Pathways, obstructions

- Obstructions like street furniture, traffic signs, direction signs, street plans, bollards, plants, trees, advertising signs, etc.should be placed outside the path of travel wherever possible and should be easy to detect, and if possible, should be placed along one continuous line.
- Protruding elements should be avoided.
- The minimum width of a clear unobstructed path should be 0.90 m.
- Spaces below ramps and stairs should be blocked out completely by protective rails or raised curbs or marked with a tactile surface.

3.1.2 Signage: include direction signs, signs of locality, street names and numbering, information signs, etc.

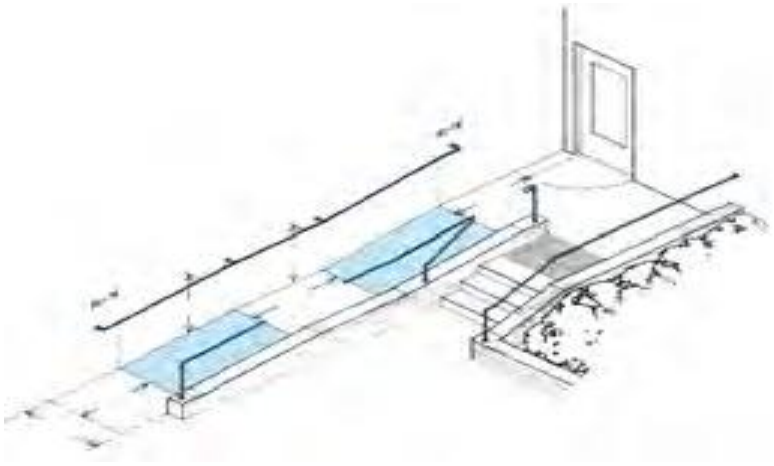
- All types of signs should be visible, clear, simple, easy to read and understand, and properly lit at night. Accessible spaces and facilities should be identified by the international symbol of accessibility. The symbol is composed of a wheelchair figure with either a square background or a square border. For completely accessible buildings, it is enough to have one explanatory sign at the entrance.
- Graphic or written directions should be used to indicate clearly the type and location of the available
- Signs can be wall-mounted, suspended or pole-mounted.
- Street pavements, pedestrian passages in open spaces and recreational areas, pedestrian underpasses and overpasses are all considered pathways or ramps.
- The path of travel should be easy to detect by a sightless person using a long white cane. Natural guide lines guide strips are used to help identify travel routes.
- A guide strip is a line means constructed in or on the road surface to facilitate orientation forsightlesspedestrians.



A 610 mm (24 in) strip of detectable warnings should be installed at the edge of a raised crosswalk to identify the transition between the sidewalk and street.
(U.S. Department of Transportation, Federal HighwayAdministration@www.fhwa.dot.gov.)**3.**

1.3 Ramps, elevators and platform lifts:

- To provide ramps wherever stairs obstruct the free passage of pedestrians, mainly wheelchair users and people with mobility problems.
- Ideally, the entrance to a ramp should be immediately adjacent to the stairs.
- To provide well-dimensioned elevators, that disabled people can use conveniently.
- Platform lifts are special passenger-elevating devices for the disabled. Platform lifts can have either a vertical or an inclined movement.



(Handbook for Barrier free and Accessibility, Published by Directorate General, CWPD, 2014. URL:http://cwpd.gov.in)

3.1.4 Staircases, corridors, doors:

- To provide safe and well-dimensioned staircases for the comfort of all people, especially those with mobility problems.
- To install adequate railing, wherever needed for the comfort and safety of all people, especially those with mobility problems.
- To provide accessible and easy-to-find building entrances.
- To provide sufficient space to manoeuvre a wheelchair between two sets of doors.

5. Rest rooms, washrooms:

- To provide sufficient accessible space inside rest rooms, with all fixtures and fittings being within easy reach.

6. For hearing Impaired People:

- Managing in situations involving the speech messages, verbal transmission and interaction use clearly written messages especially in emergency situations.
- Install induction loops in assembly halls.
- For not hearing door, elevator and emergency provide flashing light signals.

3.2 Assistive Technology:

Table No. 1: Access Technologies for Vision Impairment:

Sr. No.	Learning Activity/Tools	Applications
1.	Scan, OCR and Read	Ordinary scanner is used to scan the text book thus creating image file of each page. Optical Recognition Software like ABBY fine reader is used to extract the text from the image and read using screen reader such as Non-Visual Desktop Access. Programmes are Kurzweil 1000, OpenBook, KNFB Mobile reader (phone-based system),ZoomEx. Stand alone scanning machine like SARA Scanners:Basic, high speed, A5 size and Automatic Document Feeder (ADF) types of scanners
2.	Taking Notes in Classroom	Laptop, Netbook, Screen readers with earphones, Smart phones with Qwerty keypad, Plex Talk Player to record notes on Fly. Braille Note Taker
3.	TACTILE DIAGRAMS/ Tactile Graphic Production system	Tactile Diagrams are of great help to teach concepts to students with vision impairment particularly, subjects like Geography, Computer Science, General Science or any content that requires the use of diagrams in class room
4.	**DAISY:**Digital Accessible Information System	The DAISY is ultimate solution to see printed material in accessible formats once the digital book is developed using DAISY standards, same can be produced in any accessible format, such as Braille, Large print, MP3 and so on.
5.	Computer-based screen readers	Softwares that can read aloud with multiple languages like English, Hindi and Marathi, etc Some screen reader programmes: JAWS, Supernova, NVDA, ORCA, VoiceOver, etc
6.	Screen magnifiers	Computer-based Screen magnifiers which zoom screens for low vision and partially sighted users such as MAGic, Zoom Text, Supernova, etc
7.	Screen readers for phones	TALKS, TalkBack, etc
8.	Text-to-Speech (TTS)	English Indian accent Sangeeta, Hindi TTS, Lekha and CDAC Marathi.
9.	Dictation software	Dragon naturally speaking software with screen reader
10.	Electronic low vision aids	CCTV systems and video magnifiers such as Prisma, Ruby, Camera Mouse, Bonita, Smart view Pocket, etc
11.	Braille Production System	Allows for electronic conversion and embossing of Braille in multiple languages –Shree-Lipi Braille, Duxbury and Winbraille programmes. Braille

		embosser Index 4x4 PRO and Braille typewriters like Mountbatten Pro and Perkins Brailler
12.	Applications for keyboarding and spelling training:	Softwares assisting keyboarding and sharpening of spelling – Talking Typing Teacher Software, Speaking Spelling, Enable India Spelling Tool programme
13.	Math Aids:	Standard and scientific talking calculators Mac Book Pro: A Macintosh machine which has a built-in screen reader and screen magnifier programme VoiceOver
14.	Other talking devices:	Colour recognizer, Blood Pressure Monitor, Thermometer, Personal Weighing Scale, Kitchen Weighing Scale, Wrist watch, clock, Pen Friend talking Labeller

Table No. 2: Access Technologies for Hearing Impaired

Sr. No.	Tools/ Technological aids	Applications
1.	Cochlear implants	(surgically implanted electronic devices that directly transmit sounds to the auditory nerve) are now available for those who don't benefit from hearing aids
2.	Assistive Listening Devices (ALD)	ALDs are designed to provide quality sound amplification by cutting out the extra noise in class rooms and auditoria and transmitting only the sound from the speaker (teacher) to the student. The best ALDs use FM technology.
3.	Use of Multimedia in classroom teaching	benefits the hearing impaired student enormously. Interactive technology is now available. Speech exercises designed for the requirements of individual child are available and can be used and stored on the computer.

4.0 Questionnaire for assessing the campus accessibility to the students with disabilities:

1. Does your College/University has the students with disabilities pursuing higher education
   Yes ☐
   No ☐

   (Give the Department-wise list of students with disabilities indicating type of disability)

2. Are you aware of the provisions made for the students with disabilities in "People with Disabilities Act, 1995"?
   Yes ☐
   No ☐

3. Do you have a copy of this act in your library or office?

Yes ☐

No ☐

4. Do you communicate to the masses about the provision of reservation of admissions for the students with disabilities?

Yes ☐

No ☐

(If yes, provide information about the programmes/strategies adopted for promotion of admissions of the students with disabilities.)

5. Do you provide special infra-structural facilities for the students with disabilities according to their specialised needs?

Yes ☐

No ☐

Under construction ☐

Planned in future ☐

6. Are you aware of Guidelines Facilities for Differently-Abled Persons, 2012 given by UGC?

Yes ☐

No ☐

7. Are of aware of one time grant upto Rs. 5 lakh provided by UGC for building infra-structural facilities like ramps, rails, special toilets and for making changes in the existing structures?

Yes ☐

No ☐

Has availed the grant ☐

Has applied for the grant ☐

8. Are you aware of ad hoc one time grant of Rs. 3 lakh given by UGC for availing the assistive technology such as low-vision aids, scanners, mobility devices etc?

Yes ☐

No ☐

Has availed the grant ☐

Has applied for the grant ☐

9. Have you established a special unit for meeting the objectives for the students with disabilities in your college/university as recommended by UGC?

Yes ☐

No ☐

10. If yes, is there a faculty member appointed as a co-ordinator of such unit?

Yes ☐

No ☐

11. Is the co-ordinator paid a monthly honorarium of Rs. 3000?

Yes ☐

No ☐

12. Have you appointed an honorary placement officer among the faculty members in order to ensure the placements of the students with the disabilities?

Yes ☐

No ☐

13. Is the Special Placement officer paid the honorarium of Rs. 2000 per month?

Yes ☐

No ☐

14. Have you taken deliberate efforts to remove architectural barriers from the college/university environment so as to make it accessible to the students with special needs?

Yes ☐

No ☐

Partly ☐

In Process ☐

15. Provide the checklist for enumerating the architectural facilities in the campus.

a. Ramps/rails for every department ☐

b. Platform lifts ☐

c. Spacious corridors for manoeuvring the wheelchair ☐

d. Special barrier-free side-walks for visually disabled students ☐

e. Strip of detectable warnings installed at the edge of a raised crosswalk to identify the transition between the sidewalk and street. ☐

f. Special toilets ☐

g. All fittings and fixtures in the rest rooms/washrooms within easy reach ☐

h. Flashing signals for hearing impaired in emergency situations at the doors/lifts ☐

16. Checklist for Appropriate Signage as per International norms

a. Braille and tactile guidepath from the entrance to available facilities like toilets/lift/facilities ☐

b. Braille signage for indicating directions on roads ☐

c. International Symbol of accessibility for access to places and available facilities ☐

d. Sign for hearing impaired if assistive learning system is provided ☐

e. Braille and tactile floor plan of a building ☐

f. Easy to read and clear signs installed at appropriate height ☐

g. Prominent signs with high colour and luminous contrasts ☐

h. Provision of voice messages for giving information to the visually impaired ☐

i. Visual display board in the waiting areas ☐

j. Verbal announcements for conveying information on visual display board ☐

17. Checklist For Assistive Technology For Visual Impairment:

a. Scanners and screen readers ☐

b. Laptop/Net book with screen readers and earphones ☐

c. Braille Note-taker ☐

d. Digital accessible information System(DAISY) for converting printed material in accessible formats ☐

e. Software that can read screen in multiple languages ☐

f. Screen Magnifiers for students with partial visual impairment ☐

g. Text to speech application ☐

h. Braille Production System for converting printed material into Braille ☐

i. Scientific Talking calculators ☐

18. Checklist for Assistive Technology for hearing impaired:

a. Tactile diagrams for hearing impaired ☐

b. Assistive Listening Devices that transmit only desired sound to the listener by cutting off extra sound ☐

c. Cochlear implants ☐

d. Computer-based Speech Exercises ☐

4.1Analysis of Responses:

It is recommended to note down the positive and negative aspects pertaining to accessibility and supportive technology for the students with disabilities. A detailed report should be prepared after analysing a response to every item of the questionnaire. Report should specifically mention the lack of awareness; facilities etc and suggest the measures to be taken. Also, the appropriate resources for procuring certain grants, facilities, available technologies can be recommended by the researcher undertaking such audit.

5.0 Bibliography and References:

1."Enabling Access to Persons with Disabilities to Higher Education and Workplaces", Journal by IIMB, 2012

2. "Accessibility to Disabled- Design Manual for Barrier free Environment",Enable, Secretariat for the Convention on Rights Of Persons With Disabilities, United Nations, 2006.

3. "Draft Rights of Persons with Disabilities Bill", 2012

4. The Persons with Disabilities (Equal Opportunities, Protection of Rights and Full Participation) Act, 1995

INTERNET REFERENCES

1. www.ugc.ac.in

2.www.un.org/esa/socdev/enable/designm/intro.htm

3. http://www.ncpedp.org/eductn/ed-isu2.htm

4. www.socialjustice.nic.in

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