Inclusive Architecture: Barrier-Free Design in African and Italian Contexts

By

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Duration: 12 hours (4 x 3-hour modules)

Target: Architecture and Design Students

Teaching Mode: Lecture + Comparative Discussion + Group Work + Case Study Analysis

Course Overview

The Barrier-Free Design Course explores how design can remove barriers and promote accessibility for all. It introduces key concepts-Universal Design, Design for All, Inclusive Design and Barrier-Free Design- and examines how cultural, policy, and resource differences shape their application in the African and Italian Contexts. This comparative analysis is to help students appreciate the universal problem of inaccessibility of the built environment across the two regions.

Through four modules, students will be exposed to the foundations of inclusive design, analyse Africa's socio-cultural and infrastructural realities, explore inclusive technical education and health care delivery in the Ghanaian context, understand dementia care in African setting, and evaluate how material choices affect accessibility. Additionally, comparative case studies will highlight both the preservation of accessibility in heritage contexts and the creation of inclusive environments in resource-limited settings.

This course blends lectures, practical exercises and discussions to connect theory with real-world solutions. Thus, students are challenged to be "universal designers" in their approach to design. By the end of the course, students will understand core inclusive design principles and be able to adapt them to diverse cultural and material contexts, equipping them to design and appreciate spaces that uphold accessibility as a universal right, even in resource limited settings.

Course Objectives

- To introduce inclusive and barrier-free design concepts from both African and Italian perspectives,
- To analyses contextual challenges, cultural values, and policy frameworks shaping inclusive design in each region.
- To apply inclusive design principles to technical education, healthcare(dementia) delivery and material selection with cross-continental comparisons.
- To build intercultural awareness in design thinking.

Specific Learning Outcomes

By the end of this course, students should be able to:

1. Define and differentiate key concepts of in inclusive architecture.

2. Identify and critique accessibility challenges in African(Ghanaian) and European(Italian) contexts.

3. Appreciate and apply inclusive design principles to technical education and dementia care design

4. Evaluate and select materials that can balance accessibility, sustainability, and local availability.

5. Compare and adapt design solutions across Africa/Ghana and Italy.

Course Structure

Module	*1: The Concept of Inclusive Architecture*	*2: Barrier-Free in the African Context*	*3: Barrier-Free in Healthcare Delivery*	*4: Barrier-Free in Material Selection*
Date	Monday, 22nd September	Monday, 29th September	Thursday, 2nd October	Wednesday, 8th October
Time	14.30-17.30	14.30-17.30	14.30-17.30	14.30-17.30
Place	Aula Seminari DICATAM	Aula Seminari DICATAM	Aula Seminari DICATAM	Aula Seminari DICATAM
Focus	Foundations and comparative frameworks	African perspectives, challenges and comparisons to Italian constraints	Inclusive healthcare facility design, dementia care and cross-context learning	Materials as a determinant of inclusivity, safety, and sustainability.
Content	**A. Types of Inclusive Architecture:** *>Universal Design >Inclusive Design >Design for All >Barrier-Free Design* **B. Italian Context:** *> Legge 13/1989 & DM 236/1989 > Accessibility in heritage-rich urban centres (Rome, Florence)* **C. Afrocentric Issues** *> Locally developed definitions of Inclusion > Accessible TVET in Ghana >Community-centred spatial narratives (Ubuntu philosophy) >Role of informal settlements in shaping accessibility debates*	**A. African Conceptual Lens:** *>Accessibility as social justice and human rights >Ubuntu & community-based design* **B. Issues/Challenges:** *> Weak policy enforcement > Rural-urban divide in infrastructure > Terrain, climate and disaster resilience* **C. Comparative Note:** *> Italian challenges with heritage buildings vs. African challenges with basic infrastructure provision > School in Italy vs. School in Ghana > Accessible TVET in Ghana*	**A. Adequacy & Inclusion:** *>Donabedian SPO framework in healthcare design >Multigenerational, disability, and cultural considerations* **B. Dementia at Home & in Facilities:** *> Italian example: Monza Alzheimer Village, Italy > African adaptations in dementia care (low-resource but high social integration)* **C. Afrocentric Issues** *> Locally developed definitions of Inclusion >Community-centred spatial narratives (Ubuntu philosophy) >Role of informal settlements in shaping accessibility debates*	**A. Problems of Material Selection:** *>African: cost, availability, durability, maintenance >Italian: heritage preservation, regulatory constraints, sourcing* **B. Role of Materials:** *> Tactile, acoustic, and visual properties > Use of contrast for low-vision users > Cultural acceptance of certain materials* **C. Comparative Discussions:** *> African local materials: compressed earth blocks, bamboo, laterite > Italian local materials: stone, terracotta, marble, timber*

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Case Studies	- Accessibility adaptations in Italy: museum etc. - Pedestrian Bridge at Tech Junction and Market access	- Makoko Floating School, Nigeria (inclusive thinking in informal settlements) -Accessibility adaptions in Rome or Venice (bridges, vaporetto etc)	-Tamale Teaching Hospital, Ghana - accessibility -Alzheimer Village, Monza; spatial familiarity and wayfinding cues	- Burkina Faso Community Centre using local earth bricks - Adaptive reuse of Milan Industrial buildings with inclusive flooring systems
Discussion	"Which is harder: preserving heritage while adding accessibility(Italy) or creating accessibility from scratch in low-resource contexts (Ghana/Africa)? Why?"	"In which context does community participation have a bigger role in making spaces inclusive – Africa/Ghana vs. Italy"	" Is dementia-friendly design in low-resource settings a luxury or a necessity"	"If you could only use local materials, which context offers greater flexibility for inclusive design - Africa or Italy"
Activity	**Barriers Identification Exercise:** Students in groups choose two public buildings (1 in each context – Italy and Africa) and list 5 accessibility features and 5 barriers	**Barrier Mapping:** Groups map an Italian heritage site and an African public-school building, annotate barriers, and propose adaptive solutions	**Design Challenge:** Students design a dementia friendly patient ward- one for an African city hospital and one for an Italian small-town hospital – compare spatial priorities	**Innovative Material Selection Matrix:** Students choose materials for two scenarios – rural African Clinic and Italian Heritage Museum retrofit; and justify their choices based on safety, accessibility and sustainability
Suggested Readings	- Imrie, R. & Hall, P. (2001). *Inclusive Design: Designing and Developing Accessible Environments.* - WHO (2011). World Report on Disability (Ch.6) - Italian Ministry of Infrastructure (2019). *Accessibility Guidelines*	- UN-Habitat (2020). *People-Centred Urban Design in Africa.* - Garofolo, I., Giulia Bencini, G., Arenghi, A. (2022). T*ransforming our World through Universal Design for Human Development.* IOS Press	- Marquardt, G. et al. (2014). *Dementia-friendly design guidelines*. - Penchansky, R. & Thomas, J.W. (1981). *The Concept of Access*.	- Cradle to Cradle® case studies on inclusive and sustainable materials.