MIT Fall 2025

4.S14
Designs for the Third Age: Architecture of Longevity

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Room: 10-485
Tues.10am-12pm

If Maria Montessori designed the tools and environment to meet the cognitive and physical stages of children, how might we similarly design our environment to meet the needs of Bernice Neugarten refers to as the "Young-Old"?

This workshop involves collecting, analyzing and drawing examples of designs for older adults. Students in this course will help build a design index useful to help navigate the unprecedented "Silver Tsunami" (a.k.a "Edlerboom") that the United States and other industrialized countries have never before encountered. We will work collectively leveraging our skills as designers along with interdisciplinary experts (gerontologists, scientists) to develop a variety of new designs across three 'scales': the body, the room, and the city, that can aid in alleviating the double housing and care crises that financially cripples 90% of older adults. Unless redressed, these financial burdens will in turn, fall on the shoulders of younger generations.
How can we use design to reframe this opportunity and shape our environments to fully embrace the cognitive, perceptual, and physical changes of humans across all ages — and thrive at each stage?

Overview

Can design aid us in aging? Can design, across multiple scales, allow older adults to better navigate and participate in environments that increasingly pose obstacles and challenges? How can designers integrate new technologies into artifacts, architectural spaces and urban systems to support aging populations with equity and accessibility?
Have you ever considered where you would live when you're older? Will that environment, within and outside the home, be suited to accommodate the needs of older adults? And furthermore, can

the design of these environments empower older adults to remain confident, independent, and engaged in the world around them.

Workshop Scope

1) Research / Data Collection

Of the following topics: "Silver Tsunami"/ "Silver Boom" and the emergence of the Third Age; . changes in the human body with aging, including mobility, strength, and sensory abilities; cognitive changes and common health issues and diseases associated with aging.

2) Analysis of Precedents / Case Studies/ Design Examples

Collect, analyze, and visually document examples of designs for older adults from around the world. Consider artifacts, home spaces, and urban environments that respond to elders 'physical, cognitive, and social needs.

3) Design Proposals Across Three Scales

- Create diagrams and new design concepts addressing elders 'needs at multiple scales:
    - **Body:** artifacts, accessories, wearables, mobility aids, sensory devices (e.g., walking sticks, hearing devices, bathroom accessories,).
    - **Room/Home:** space layout, ergonomics, furniture, fixtures, materials, finishes, etc.
    - **Street/City:** street scape, walking routes and distances, identifying existing barriers and designing public spaces that encourage elder activity. With awareness to often opposing needs of different age groups using public space (elders often seek active, busy urban settings, while younger people tend to prefer quieter, 'passive' spaces).

Schedule

9/9: Introduction: Framing the Problem & Research & Data Collection

Introduction to workshop theme & presentation of the Carehaus model

Assign research themes: "Silver Tsunami"/ "Silver Boom" and the emergence of the Third Age; . changes in the human body with aging, including mobility, strength, and sensory abilities; cognitive changes and common health issues and diseases associated with aging.

Focus: Reflection on design challenges in aging; understanding course scope.

9/16: Analysis of Precedents / Case Studies

Presentation of research (10 – 15 minutes presentation) & submit 2 page summary

Assign collection of precedents based on type and place of activity: analyzing examples from around the world of elder-focused design, evaluating artifacts, home environments, and urban spaces.

Focus: identifying and categorizing spatial problems and obstacles in order to identify opportunities for design.

9/23: Diagraming & Design

Presentation of case study analysis

Focus: define criteria for evaluating features and characteristics, guidelines for design on the scale of the body

Start design work on **Body Scale**

9/30: No class

10/7: Review of design work on the body scale: artifacts, wearables, mobility aids, and sensory devices. Diagram and propose designs addressing physical and cognitive needs. Peer/guest feedback and design iteration.

10/14: Room/Home Scale

Begin design work on the room/home scale: space layout, ergonomics, furniture, fixtures, materials, finishes, etc. Create diagrams and prototypes for home interventions. Peer/guest feedback and design iteration.

Focus: Floor plans, spatial diagrams, and home-scale design proposals; ergonomic and spatial reasoning.

10/14: Review of design work on the room/home scale

11/4: Urban Scale

Begin design work on the urban scale: identify an urban space as site of intervention to explore urban livelihood of older adults: walkability, barriers, distances, etc.

Focus: Urban mapping diagrams; conceptual city-scale design interventions.

11/11: Holiday. No class

11/18: Review of design work on the urban scale

11/25: No class

12/2: Preparation of Design Catalogue

Synthesize designs across all three scales. Finalize booklet/catalogue of designs.

Outcome

By the end of the course, students will collaboratively produce a **booklet and catalogue of new design proposals** at the scale of the body, the room/home, and the street/city, serving as a pattern book and design approach for the Third Age. More importantly, students will leave with a deeper understanding of how aging reshapes the relationship between people and their environments, and how thoughtful design can ease that transition. Along the way, they will gain practical skills in collaborative research, diagramming, and translating data into design proposals. This work is not only about designing for older adults, but about recognizing aging as a universal process that affects society as a whole. Students will learn to see aging as an opportunity for creativity, empathy, and innovation — developing the ability to design inclusive spaces and artifacts that support participation, confidence, and dignity across all stages of life.

Course Materials

Selected Readings

Coughlin, Joseph F., and Luke Yoquinto, editors. *Longevity Hubs: Regional Innovation for Global Aging*. The MIT Press, 2024.

Elana Hodara, S. (2024). "Longevitytech: Bridging Immersive Media and Design for Longevity". *diid*, *1*(82). https://doi.org/10.30682/diid8224f

Gissen, David. *The Architecture of Disability: Buildings, Cities, and Landscapes beyond Access*. University of Minnesota Press, 2023.

Frenzel, Alexander; Binder, Hans; Walter, Nadja; Wirkner, Kerstin; Loeffler, Markus; Loeffler-Wirth, Henry, *The Aging Human Body Shape*, npj – Aging and Mechanisms of Disease, www.nature.com/npjamd

Lange, Alexandra. *The Design of Childhood: How the Material World Shapes Independent Kids*, Bloomsbury, 2018.

Pan, S., Sarantou, M. and Miettinen, S. (2019). *Design for Care:* How the "Good Old Days" can Empower Senior Residents to Achieve Better Services in an Aged-Care Institution. The International Journal of Design in Society 13 (2): 25-40.

Pei, X., Sedini, C., & Zurlo, F. (2019). *Co-designing a Walkable City for the Elderly through System Thinking Approach.*

Scott, A. J. (2024). *The Longevity Imperative: How to Build a Healthier and More Productive Society to Support Our Longer Lives (First U.S. edition). Basic Books.*

Segal, Rafi, and Marisa Moran Jahn, *Design & Solidarity*, "Carehaus" chapter, Columbia University Press, New York, 2023.

Sarah Herden *(specific reading TBD, related to universal design and urban environments)*

Guest Speakers/ Reviewers

Sheng-Hung Lee – industrial designer and scholar,

Marisa Moran Jahn – artist, film maker, co-founder of Carehaus

Dr. Thomas Kudjoe – medical professional

Films

***Where We Grow Older,* 2023, Daniel Schwartz, 30 min. Documentary**
Explores how urban design and housing models in Barcelona (Alí Bei) and Baltimore (Carehaus) are adapting to the needs of an aging population.

***Moriyama-San*, 2017, Ila Bêka and Louise Lemoine, 63 min. Documentary**
Explores Yasuo Moriyama's life within his architecturally unique Tokyo home, highlighting how thoughtful spatial design can support autonomy, daily activity, and quality of life in later years.

***A Man Called Ove*, 2015, Hannes Holm, 116 min. Drama**
An aging widower's solitary life changes when new neighbors move in, leading to unexpected friendships and personal growth.

Course Expectations and Policies

Attendance and active participation for the duration of all sessions is mandatory and will highly contribute to your development as a designer and critical thinker.
Greater than two absences from sessions without medical excuse supported by a doctor's note or verifiable personal emergency could result in a failing grade or a NE for the course; those missing more than 3 classes during the semester will receive a fail or NE.
Persistent lateness will also contribute to a lowered final grade. If you may miss a session or deadline, please reach out to us and we will find ways to accommodate it.
Collaboration is an essential part of the design profession. This workshop thus encourages a highly collaborative environment of sharing thoughts, tools and references.

Inclusivity Statement

MIT values an inclusive environment. We aim to foster a sense of community in this classroom and consider this classroom to be a place where you will be treated with respect. We welcome individuals of all backgrounds, beliefs, ethnicities, national origins, gender identities, sexual orientations, religious and political affiliations – and other visible and non-visible differences. All members of this class are expected to contribute to a respectful, welcoming, and inclusive environment for every other member of the class. If this standard is not being upheld, please feel free to speak with me.

Academic Integrity Statement

In this course, I will hold you to the high standard of academic integrity expected of all students at the Institute. I do this for two reasons. First, it is essential to the learning process that you are the ones doing the work. Failing to do the work yourself will result in a lesser understanding of the content, and therefore a less meaningful education for you. Second, it is important that there be a level playing field for all students in this course and at the Institute so that the rigor and integrity of the Institute's educational program is maintained.

Violating the Academic Integrity policy in any way (e.g., plagiarism, unauthorized collaboration, cheating, etc.) will result in official Institute sanction. Possible sanctions include receiving a failing grade on the assignment or exam, being assigned a failing grade in the course, having a formal notation of disciplinary action placed on your MIT record, suspension from the Institute, and expulsion from the Institute for very serious cases.
Please review the Academic Integrity policy and related resources (e.g., working under pressure; how to paraphrase, summarize, and quote; etc.) and contact me if you have any questions about appropriate citation methods, the degree of collaboration that is permitted, or anything else related to the Academic Integrity of this course.

Mental Health

As a student, you may experience a range of challenges that can interfere with learning, such as strained relationships, increased anxiety, substance use, feeling down, difficulty concentrating and/or lack of motivation. These mental health concerns or stressful events may impact your ability to attend class, concentrate, complete work, take an exam, or participate in daily activities.
Graduate Students: Please reach out to the deans for personal support in the Office of Graduate Education.