This book anthologizes the work of undergraduate students who completed a Spring 2020 design studio course led by Professor Edgar Stach, PhD. A course that began as a studio regarding smart-cities evolved as students and faculty from both Jefferson University and Sheba Medical worked together analyzing Sheba’s existing medical campus in Tel Aviv, Israel. Together, this multidisciplined team expanded the original focus by asking how smart-cities and emerging design could better serve the health industry. Students considered various problems related to patient care, campus organization and hierarchy, cross-discipline communication, and ultimately proposed solutions to better connect the patient and a community to the medical facility.
Sheba City of Health

Design 10 Studio - Spring 2020
Professor Edgar Stach, PhD
This book features student design projects developed during the first collaborative studio between Thomas Jefferson University and several partner institutions in Israel in the 2020 spring semester. Ranging from the device to the urban scale, students from Thomas Jefferson University explored and developed design solutions for the City of Health at Sheba Medical Center in Tel Aviv, Israel. The collaborative studio developed concepts for a new master plan for the medical campus, and developed the architectural design based on population health studies, connected environments, and new technologies while focusing on aging in place and the development of an integrated community.

This publication has been made possible thanks to the contributions of many individuals to this studio. I wish to express my sincerest gratitude. I am also indebted to Tal Einhorn, the chief architect from Sheba Medical Center, for her guidance and providing invaluable materials and documents about the Sheba Medical Campus. I would like to thank Eyal Zimlichman, Deputy General Director, Chief Medical Officer, and Chief Innovation Officer, for supporting this collaboration.

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-Professor Edgar Stach, PhD
May 2020

Supported by data and smart technologies, Smart and Healthy Cities is an emerging paradigm in the development of urban environments that are more efficient, healthier, and livable which facilitate social integration across diverse demographic and age groups. This knowledge domain spans various disciplines and scales and investigates the intersection of the built environment (urban planning, infrastructure, buildings, recreational spaces), population health (public health, environmental issues), and technology across a range of topics. Integrated into buildings and city systems, sensors, and controls monitor all aspects of life and are set to transform the urban landscape. This transformation will affect the entire city as a system, spanning from buildings, transportation, environment, and infrastructure, to utilities impacting how we live, work, and play in cities. This increased emphasis on multiple aspects of smart cities responds to current social-economic and ecologic pressures such as climate change and air pollution. This collaborative studio is conceived as an aggregator and facilitator of transdisciplinary research and education that will drive the future of our cities with regard to age-diverse populations.

Thomas Jefferson University is a comprehensive university with preeminence in transdisciplinary, experiential professional education, research, and discovery located in Philadelphia. The university has been at the forefront of healthcare since 1824 and has developed a regional, national, and global reputation as a center for excellence in health services, interprofessional medical education, and research. With its broad portfolio of degree programs and faculty experts in the architectural fields, the Jefferson College of Architecture and the Built Environment provides a dynamic approach to education with an emphasis on social equity, sustainability, and design excellence. Jefferson’s Institute for Smart and Healthy Cities is at the forefront of research and discovery for the development future cities.

The Jefferson Israel Center was inaugurated in June 2018. Its mission is to create new and collaborative medical, educational, social, business, and public sector models harnessing innovation to improve life for Americans and Israelis, with promise for worldwide export. The Center builds on years of academic collaborations and on developing relationships between Jefferson physicians and leading institutions in Israel, including the Weizmann Institute of Sciences, Technion-Israel Institute for Technology, Hebrew University of Jerusalem, Tel Aviv University, and Ben Gurion University. Jefferson has also signed memorandums of understanding for academic collaboration with each of the major medical centers in Israel including the Sheba Medical Center in Ramat Gan, Hadassah Medical Center in Jerusalem, and the Sourasky Medical Center in Tel Aviv.

Since Jefferson merged with Philadelphia University, we have been able to go beyond biomedical education into specialties such as architecture, design, and textiles. The projects presented here attest to the outstanding success of our vision maturing into high quality graduation projects of design and architect students. The projects are the first fruits of the collaboration between student teams at our East Falls campus and Israeli teams at the Shenkar College of Engineering and Design, the Bezalel Academy of Arts and Design, and the architect teams at the Sheba Medical Center.

The Sheba Medical Center, founded 1948 at Tel HaShomer, is the largest hospital in Israel and ranked as the 10th-best hospital in the world. Sheba has 7,300 healthcare employees and over 1 million patient visits per year. A large proportion of clinical research in Israel is conducted at Sheba. It is the main clinical trial venue for human health scientific studies conducted by the Weizmann Institute of Science. This has led to a strong track record of successful inventions, patented and commercialized, which impacted global healthcare. Sheba is in the process of developing a City of Health for 30,000 habitants on their main campus and is a global leader in the development of telemedicine and the Hospital at Home concept.

Based on a new master plan, Tju students made proposals to improve the urban quality, community integration, and new public transportation access to and throughout the Sheba Medical Campus. Individual design projects include new transportation hubs for a light
The new master plan attempts to build more efficient, healthier, and livable environments which facilitate healing, research, education, outreach, and integrative housing across diverse demographic and age groups. This plan spans various disciplines and scales and investigates the intersection of the built environment (urban planning, infrastructure, buildings, recreational spaces), population health (public health, environmental issues), and technology. New wayfinding solutions for patients and visitors from home to the specific location on campus were explored. This new development will affect the entire city as a system and spans buildings, transportation, environment, and infrastructure, to utilities impacting how we live, work, and play in cities.

The studio goal was to foster Interdisciplinary student research collaboration between industrial design, architecture, occupational therapy, and other disciplines. The project offered an opportunity to conduct rigorous research on a multitude of topics, ranging from the urban scale and building scale to the device scale, supported by input from the medical disciplines, psychology, and social sciences. Student projects focused on the following domains: architecture and design, population health, transportation, energy, smart systems and devices, wearable technology, and urban and social ecology.

The outcomes of the interdisciplinary design studio provide Sheba Medical Center with different planning scenarios for the future planning of the City of Health. This publication is intended as a starting point for future collaboration between Thomas Jefferson, Sheba Medical Center, and other academic institutions in Israel.

Research Methodology and Framework

Industrial design and architecture students were provided reading material, lectures, and planned site visits to help them develop an understanding of key issues and to focus on areas of interest. Discussions and brainstorming were used to identify a set of projects for which interdisciplinary teams were formed. While members of each team worked at different scales, they focused on a common issue so that integration remained a guiding principle.

Methodology

Interdisciplinary student teams from industrial design and architecture worked on particular design problems related to the overall studio topic. The project offered an opportunity to conduct rigorous research in a range of topics, from the urban scale and building scale to the device scale, driven by an underpinning of input from medicine, psychology, and social science. Students developed their project and thesis, and worked within several domains: Architecture and Design, Population Health, Transportation, Energy, Smart Systems and Devices, wearable technology, and Urban and Social Ecology.
Aging in Smart Cities

Rapidly urbanizing cities are centers for innovation and prosperity, but cities also have a significant impact on the environment and their inhabitants. The urban environment is a complex interwoven system of different factors, affecting human health and well-being. A better understanding of these linkages and effects provides the necessary insight to plan future actions and solutions for health-centric urban planning. A smart city enhances the quality of life and performance of municipal services such as architecture, health, energy, transportation, and utilities.

The periodic table ‘Aging in Smart Cities’ presents a conceptual framework for better-integrating population health and aging-in-place with environmental considerations, urban development, physical activity, transport planning, and other strategies.

The periodic table organizes and categorizes the topic in three levels:

1. **Type of Problem:**
   - Systems, agents, predispositions, and social systems.

2. **Relationship between City and People:**
   - Health, the built environment, mobility, technology, and public infrastructure.

3. **Forms of Success:**
   - Efficiency, longevity, sustainability, versatility, ease of use, economics, and practicality.

This periodic table is broadly investigates the types of problems smart cities need to address. The design studio utilized it to unlock the relationships between city and people. Individual student developed design projects related to the theme ‘aging in smart cities’ which proposed solutions for the Sheba Medical Campus.

The individual student projects investigated multiple problems at once and used the Form of Success matrix to evaluate the design solution.

For example, the transportation projects tackled ideas related to movement efficiency, wayfinding, and walkable streets, whereas the welcome centers adjacent to these proposals investigated autonomy, wayfinding, and biometric monitoring.

By merging all student projects into one master plan, the studio developed a framework to identify various existing problems and provide potential design solutions for the Sheba Medical Campus.
Sheba City of Health Masterplan

Mission Statement: Provide mobility for the entire Sheba Medical Center. Rebalance traffic circulation to improve pedestrian right-of-way.

Vision Statement: Move further with fewer vehicles.

The City of Health Masterplan connects people to their environment through an interdependent transit system that is fundamentally driven by a cohesive network of green spaces and paths. The future of mobility uses digital infrastructure to facilitate physical and energy infrastructure. Wayfinding relies upon the cooperation of these infrastructures to adequately prepare for future population expansion.

Green urban systems can optimize experience, health, contributions towards clean energy, and the social ecology of Sheba. To align with the principles of a green campus, it is imperative to reduce, and eventually eradicate, the use of private vehicles within the boundaries of the campus. Consequently, all surface parking will be converted to a variety of gardens and parks.

Traffic permitted on Sheba’s campus will be limited to pedestrians, bicycles, autonomous self-driving vehicles, Sheba-shuttles, and emergency vehicles. Existing streets within the campus boundaries will be accessible by these vehicles. Pedestrian paths will be accessible to people, bicycles, and self-driving vehicles. The increased use of mass transit systems, through the development of the Light Rail and the Metro Station, will further promote transportation other than personal vehicles, contributing to the success of the proposed green system.

Figure 1.1

Student Masterplan of Sheba’s City of Health campus. Identified are proposed student projects in conjunction with greenspace masterplanning.
Figure 1.2
Existing proposal map of Sheba Hospital in Tel Aviv, Israel. White buildings indicate proposed new construction while the blue line indicates the current boundary of the campus.

Figure 1.3
Existing map of the parking on Sheba’s campus. Parking demand currently outweighs the available surface parking, resulting in an excess of traffic from personal vehicles.

Figure 1.4
Student Masterplan of Sheba’s City of Health campus. Identified are proposed parking garages meant to reduce surface parking.
Figure 1.5
This site plan shows an analysis of the campus identifying paths, nodes, and landmarks. By developing a hierarchical language for the campus, visitors will more easily be able to navigate the campus.

Figure 1.6
This site plan compliments the hierarchical analysis by adding context. Many of the identified nodes and landmarks are transformed into green spaces.
The two student proposals on the west side of Sheba's campus are designed to accommodate the expanded influx of visitors and patients arriving from the new road, Raphael Eitan Road and the “Purple Line” Light Rail Transit. With the expansion of new infrastructure, these two projects work together to move people into Sheba’s main campus and direct them to where they need to be.

From the “Purple Line” and Raphael Eitan Road sits the Light Rail Transit Connector, which acts as a station for the light rail in addition to a pedestrian bridge which lifts individuals up over the thoroughway to the campus. At the end of this bridge sits the West Portal Welcome Center, a hub for all visitors entering the site. This building is designed to enable visitors to check in ahead of time, find information about where they need to go on the campus, and help them orient themselves.

Both student proposals extend from a main access corridor within Sheba’s medical buildings. By tying into the existing corridor, the extension helps reinforce its hierarchy on the site and reduce confusion. While keeping the needs of different users in mind, the bridge exists along the axis and the welcome center just off of it. This enables all those who utilize the light rail as commuter transit to bypass the welcome center into the circulation corridor without having a programmatic break in the axis.
Light Rail Transit Connector

Mission Statement: Create an elevated connection between the proposed Purple LRT line and Sheba’s campus that provides safe, accessible, and easily understood access.

Located off the far west side of the campus, this proposal acts as a connector for individuals seeking to use the proposed new light rail train station. As the station is 7.3 meters below the first entrance to the hospital and over 200 meters away, this solution acknowledges both horizontal distance and elevation. The bridge is situated so that it is directly in line with the existing main circulation corridor of the hospital. It spans a distance of roughly 80 meters between the campus road and the new proposed road west of the existing campus.

The bridge is part of a three pieced system of itself, a stair path, and a bike path. The stair path falls in line with the crosswalk and is a straight shot up to the hospital campus. The bike path is north of the bridge and has a consistent slope of 1:20. All three paths converge to a single point at the campus road. Utilizing flooring material, the floor naturally guides visitors into the new visitor center designed by another student. However, the straight extension of the circulation corridor still exists for those who do not necessarily require the assistance of the welcome center.

The bridge has an elevator, stairs, and escalators to provide easy vertical circulation. Within the structure are moving walkways to further assist those with physical ailments with traveling the long distances.
1. Bridge Connector
2. Platform and Shading System
3. Proposed Road
4. Campus Road
5. Stair Connector
6. Bike Path Connector
7. Plaza
8. Student-proposed Welcome Center

Additional Notes:

The total elevation difference between the proposed train station and the campus road is approximately 6.4 meters.

The plaza and pathways that bridge the plaza are at the same level as the roadway. The road is intentionally reduced down to one lane in both directions with speed bumps to indicate a slowdown. On both sides of the roadway are bollards and planters to protect individuals from accidents.

Along the bike path is a small section of no incline with shading and seating. The path widens in this area to maintain the flow of traffic.
Shading Louvres for South Facade

Structural Reinforcement

Sandblasted Steel Panel System

Structural Support

Pneumatic Elevator Core

Overhead Power Wires

LRT “Purple” Line

Moving Walkways

Lighting and Sound Mitigation Installations

Exterior perspective showing the moving walkways and lighting/sound attenuation systems.

Exterior perspective beneath the platform’s trellis shading system.

Exterior perspective showing the bridge connector’s south facade and its additional sun-shading louvre system.

Interior perspective showing the moving walkways and lighting/sound attenuation systems.

Exterior perspective beneath the platform’s trellis shading system.

Exterior perspective showing the bridge connector’s south facade and its additional sun-shading louvre system.
Sheba Welcome Center

Mission Statement: Create a multifunctional welcome experience to the campus.

Vision Statement: Discovering innovative ways to change the way you enter a medical campus.

With the development of the new light rail transit line to the west of Sheba’s medical campus, a new welcome entrance was necessary for assisting and directing visitors to their various destinations on the campus. The building also serves the aesthetic purpose of being the first thing visitors see, leaving an impression of organization, order, and friendliness. For the physically impaired and other individuals who do not wish to walk the long distances, autonomous vehicles as well as Sheba shuttles arrive in front of the welcome center, assisting them in arriving to their destination in an organized, efficient manner.

Also integrated in this building are doctors’ office registration kiosks. These allow people to sign in for doctors’ appointments and sign into the hospital when they first enter. By the time they arrive at their respective buildings, they are brought right in to see their doctor. This method maximizes efficiency and reduces patient wait times.

The second floor is accessed by the grand stairs with a lightwell that protrudes through the buildings all the way from the parking-garage below. On the second floor are the multipurpose spaces, which can be used for events such as guest speakers, a Sheba historical museum, a lounge area, and an eatery.
Figure 3.1
Diagram of the structural trellis system. The steel beams act not only as structure to hold up the second floor, but also as shading for exterior spaces.

Figure 3.2
Diagram of the roof of the second floor. The roof is suspended beneath the trellis system.

Figure 3.3
Diagram of the sight lines and entrances of the welcome center. The welcome center is primarily accessed through the bridge entrance, however, the park to the north will also have a view of the center.
The east entry portal and research buildings, also referred to as the research campus, is composed of five different projects. The metro and garage entry are the main points of entry to this area. The metro sits below ground in the center of three other projects, with exits rising up, directing individuals to their destination. Underneath the plaza, the convention center, and the research hub exists a large parking garage which replaces the surface parking consumed by the newly proposed buildings in this area. The goal of these two transportation related proposals is to reduce traffic within the main campus while still providing direction to individuals coming to the site.

The three projects that surround the metro and plaza are the convention center, two research hubs, and a digital command center. One of the research hubs along with the convention center is located in the southeast of this campus, neighbored by the metro to the west and plaza to the north. It organizes its program through a private public gradient, with more public programmatic spaces organized towards the plaza and research oriented private labs to the south. The research hub located across the plaza to the north expands upon the functions of a research facility. It attempts to create experiential space around the labs to foster a creative, problem solving environment. The new digital command center acts as an information hub for the entire campus. On the ground level, it acts as a welcome center for patients and visitors. Above sits the proposed server room and support offices. The purpose of this building is to collect information from the entire campus and all departments to more efficiently circulate individuals and resources.

North of the plaza is the student center, at the heart of the academic campus. It serves as a new central node for this area of the campus, deriving its form and location from the nearby existing buildings.
Metro Station

Mission Statement: Develop a metro station for the heart of the campus

Vision Statement: Becoming a threshold between the integrated mobilities of Sheba Medical Center and the local metro

The architecture of the metro is in isolation to the above context even though they are part of a continuous experience for the traveler. To bridge this isolation, this metro design creates a dialogue with the ground level which becomes a threshold between the outside and in. Architectural elements that exist on the ground level (light shafts, water ponds) communicate with the beneath structure and become its daylight and artificial light sources. On the surface the ponds and green landscape elements act as nodes and places where people cluster and socialize. This action resembles the act of healing that cells participate in after a puncture wound. The metro station additionally takes on a bigger role regarding the overall site, as it reaches out and connects to the neighboring buildings.

A wound is a type of injury which happens relatively quickly in which skin is torn, cut, or opened. The metro design is inspired by this notion and to improve the accessibility to the site we must create a tear in the land and introduce the metro station that connects to the city. A metro system is an excellent demonstration of how the built environment can influence the quality of our daily lives.

Figure 4.1 (RIGHT): Human skin cells healing concept diagram.
Figure 4.2 (BOTTOM): Micrograph of drosophila larvae healing puncture wound concept diagram.

Diagram perspective showing the water elements/light wells. People become the cells and congregate along the border of the punctures made on the surface level, bringing light to the metro below.
Cross sections showing the metro’s various levels, entrance, and light pools.

Interior perspective of the main lobby and entrance of the metro. A large water feature speaks the same language used by the pool/lightwells used on the surface.
Mission Statement: Create a state-of-the-art research building whose innovative architecture creates an optimum framework for world-class health research.

Vision Statement: Develop a venue which encourages many opportunities for interdisciplinary contact and social interaction while connecting to the general public.

The convention center and research hub are a collection of five building forms all located under one massive roof, adjoined by a surface plaza to the north. One goal of the building is to allow for more green space and an urban campus park through the building’s openness and open air circulation. In addition to making the streets and paths more pedestrian friendly, underneath the facility is a large parking garage which moves surface parking and traffic underground.

Due to the building’s adjacencies to future residential development, the open air layout and distribution of public spaces are meant to support interaction with the community. The more public elements of the building, such as the convention center, are located to the north of the plan towards the plaza. The plaza is completely open and accessible to the residential communities as well. Instead of closing off borders, this buildings proposes new ways to link how a hospital can interact with its surrounding community.
Exterior perspective showcasing the roof overhang and its shadow on the plaza.

Aerial perspective of the new research buildings, convention center, and plaza.

Aerial perspective showcasing the plaza and main circulation corridor of the research facilities.
Figure 5.1 (LEFT)
Campus organization and pedestrian flow

Figure 5.2 (RIGHT)
Underground program

Figure 5.3 (RIGHT)
Extrusion of program

Figure 5.4 (LEFT)
Public and private organization of the site

Figure 5.5 (RIGHT)
Facade treatment

Figure 5.6 (RIGHT)
Excess heat gain without appropriate shading

Figure 5.7 (LEFT)
Airflow through corridor pushes out stale, warm air for cool air

Figure 5.8 (RIGHT)
Roof footprint to shade corridor

Figure 5.9 (RIGHT)
Solar panel array

Rentable Lab Space
Lecture Hall
Ramp to Underground Parking Garage
Convention Center
Research and Development Labs
Exterior perspective looking at the building’s west facade and the plaza above the metro station.

Exterior perspective looking into the corridor from the east side of the building.

Interior perspective showing more angles and light properties of the circulation corridor.

Exterior perspective looking into the corridor from the east side of the building.
Mission Statement: Provide a medical research building that serves as a gateway into the campus, while fostering social interaction between researchers and other medical professionals to redefine the process of thought.

Vision Statement: Redefining the Medical Thinkplace.

Sheba Medical Center is one of the world’s leading hospitals, offering advanced technology and medicine. Unlike local hospitals, Sheba supports all of Israel and is in need of new infrastructure that supports its growing needs. Currently the site is full of brutalist architecture and lacks green and open space. This proposed medical research building changes the environment by proving more open green space and serving as a social hub between the community, campus, and researchers.

The design integrates its surrounding context and a new hardscape into the design and works to break the barriers between interior/exterior or medicine and research/community. By breaking these barriers, this research building oversees the development of new medicines through labs and clinical trials. It becomes the heart of medical campus fostering a relationship between medicine and the community which ultimately changes the future of medicine for the better.
Figure 6.5 (TOP): Circulation
Figure 6.6 (MIDDLE): Load Paths
Figure 6.7 (BOTTOM): Circulation cores

Plan Key:
1. Entry
2. Exhibition
3. Plaza
4. Auditorium
5. Service
6. Cafe
7. Cafeteria
8. Research Lab
9. Clean Room
10. Researcher Personal Space
11. Office
12. Conference Room
13. Clinical Trial Room
14. Storage
15. Lab Support Space
16. Winter Garden
Sheba Command Center

Anthony Grimaldi

Mission Statement: Create a new entrance into the hospital that serves as a central catalyst for the campus, collecting and transferring data from the other buildings to create a more connected campus.

Vision Statement: Utilize collected and managed data to more efficiently circulate resources, patients, and individuals around the campus.

The Sheba Command Center sits at the heart of the city and uses big data to control the digital realm within Sheba. Being able to track real-time information throughout the campus, data analysts are able to quickly detect any problems and develop the correct course of action. Using big data, the goal is to increase efficiency and sharpen the understanding of the best practices associated with any disease, injury, or illness. Collecting, analyzing, and transferring all of this data not only consumes a lot of energy, but produces it as well. With that in mind the building incorporates different methods to not only lessen the amount of energy required but also harnesses and reuses more energy than it consumes to power itself and the rest of the campus.
University Student Center

Mission Statement: Create a student center that supports the future of medicine through education.

Vision Statement: Create space for medical knowledge to be shared and life to be lived. Organize administrative activities for medical professionals.

Architecture can set places in the world apart from one another. As a rising medical college in Israel, Sheba Medical College should look to make its campus stand out to both potential patients and students/faculty who utilize these spaces. State of the art hospitals and learning spaces must be supported by a space where students can go and complete their daily tasks as well as immerse themselves inside of the campus community. A new student center demonstrates to patients and employees Sheba Medical’s commitment to medicine beyond professional practice and a commitment to teaching the next generation of healthcare providers.

This exploration focuses on origami, kirigami, and ribbons to form an architectural solution. The land was divided into a rectilinear grid which varies in width based on space requirements of the building’s program. The ribbon forms are then cut and folded to create form. The forms are specific to each housed program, such as the sloping required for the theater style seating.
Figure 8.1 (LEFT) Gridlines adapted from the existing campus

Figure 8.2 (RIGHT) Unrolled exterior ribbon forms

Figure 8.3 Ribbon formwork wrapped and shaped to create interior spaces and program.
In the northeast corner of the site sits the newly proposed proactive living community, a collection of four buildings which aim to unite Sheba’s medical campus with the future of living. As such, ideas such as smart city technology and aging-in-place were investigated to create three separate proposals.

The independent assisted living is divided between two buildings, both of which seek to provide comfortable, affordable housing for the elderly and physically impaired while being in the direct context and support of a medical facility. To the southwest sits its counterpart, a multi-generational housing facility. The two buildings work as a pair of housing locations for the elderly as they provide access, healthcare, and social life for their inhabitants. They reinvestigate the hospital and its surrounding context, proposing that if hospitals were located at the center of community and living areas, instead of commercial areas, they would be more easily accessed and utilized by their patients.

To the north sits the wellness center, a center for both medical and environmental health. While it is completely accessible and designed for the elderly and their medical needs, it also utilizes nature as a force for healing. This idea permeates from this center throughout the entire site, promoting health and well-being through environmental healing and care rather than strictly medical.
Sheba Multi-Generational Housing

Mission Statement: Provide living conditions for the elderly which seek to satisfy not only medical and assisted living, but also mental and physical well-being.

Vision Statement: To become the new model for assisted-living facilities while providing for all age groups and individuals seeking to age in place.

Located within the proactive living community, this facility is an adaptable residential structure. What began as an assisted elderly-living community was reinterpreted as multi-generational due to studies and research proving individuals in multi-generational neighborhoods and facilities were healthier, more active, and happier. When surrounded by individuals of all ages, elderly individuals felt more engaged with their community as they were not isolated within their own age demographic.

The adaptable nature of the design is that the structure is a modular system. The apartments are designed as a component in a system, therefore, the facility can be developed based on the needs of those seeking housing. Major programmatic elements, such as the services and atriums, are the elements that the residential blocks wrap around and provide a base for the design.
Independent Assisted Living

Mission Statement: Provide differently abled users supportive dwelling situations that promotes mental and physical health. The design goal is to identify issues faced by the inhabitants and find design solutions to solve them while promoting a sense of independence and community.

Vision Statement: A world where differently abled individuals aren’t forced to change their expectations for their quality of life.

Humans desire independence. Whether it be due to injury, illness, or the natural effects of aging, people’s ability to care for themselves tends to diminish. Too often, those who are unable to care for themselves are taken to an unfamiliar environment in order to receive around-the-clock care. These environments, while well meaning, do not necessarily foster a feeling of independence. This proposed independent assisted living facility is designed with the goal of empowering tenants by creating a living situation that fosters a sense of community and belonging.

Using strategically placed green spaces, patients are pulled out of their rooms to interact and exist with natural elements. Physician housing is located next to the facility, ensuring both independent living and reliable access to assistance when it is required. The living spaces are designed with accessibility in mind, as most of the tenants will be impaired in some capacity.

Barry Whitfield

Exterior perspective of the common space between the wings of the southern building.

Exterior perspective showing the terrace on the southern facade of the north building.

Exterior perspective showing the terrace on the southern facade of the northern building.

Exterior perspective looking at southern building from one of the balconies on the northern building.

Exterior perspective of the common space between the wings of the southern building.
Program Guide:
1: Plaza
2: Parkway
3: Residential Lobby
4: Grocery
5: Worship
6: Library
7: Gym
8: Employee Lounge
9: Mail Room

Program Guide Continued:
10: Commercial Space
11: Storage
12: Event Space
13: Employee Mail room
14: Urgent Care
15: Office Space

Program Guide:
1: Apartments (80)
2: Winter Gardens (2)
3: Two Story Atrium (7)

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Program Guide:
1: Apartments (80)
2: Winter Gardens (2)
3: Two Story Atrium (7)
Sheba Wellness Center

Mission Statement: Design a new insertion into the existing hospital campus that responds to the increase in demand for mental and physical health services as a result of the growing and aging population.

Vision Statement: To stand as a new alternative caring facility that considers the whole person’s body, mind, spirit, and emotions.

The goal of the project is to design an impactful, holistic Wellness Center for the Sheba Medical Campus. The building is a part of the proactive living community in the northeast of the campus. The building aims to promote overall health by offering a multitude of spaces and activities to provide a comfortable, interactive and positive environment. The building is designed using holistic healing methodologies. People can get educated on lifestyle changes and self-care ideals to promote wellness. The building is broken into four wings that dictate the types of spaces and correspond to the four concepts of holistic healing (mind, body, spirit, and emotion). This approach includes diet, exercise, psychotherapy, relationship and spiritual counseling, and more. There are also alternative therapies such as aroma, chiropractic care, massage therapy, and naturopathy.

Architecturally, the building features a large central atrium to allow free circulation throughout the building while offering a variety of public social spaces. The central atrium allows natural light to enter the building by creating a “stepping” motion from the second floor to the fourth floor that opens up and creates the building’s western facade. The building consists of two main sun shading elements: wooden louvers that wrap the exposed glazing and a deeper recessed concrete facade. The remainder of the facade consists of stone accent walls that run within the central corridor and white concrete.

Exterior perspective of the northern entrance. This is the entrance most individuals coming to the site will enter through.

Exterior perspective showing the greenroof/garden above the nature pods.

Interior perspective showing the nature/relaxation pods.

Exterior perspective showing the greenroof/garden above the nature pods.

Interior perspective of the main entrance and atrium space.

Interior perspective of the main entrance and atrium space.
Due to the impacts of the Covid-19 pandemic, the students and faculty of this course were unable to complete the semester on campus. Instead of a typical, in-person final critique, students prepared digital presentations of their final projects and presented them on Zoom.

Although the setting of the final review had changed, the spirit had not. Students had ten to fifteen minutes to present their projects to their professor, their peers, and guest critics. After each presentation, critics asked questions and made comments as if the critique was in person.

The following images were provided by Dean Klinkhammer.

To all the guest critics who offered their time, the professors who adapted to this new style of teaching, the design professionals who offered their time to give their assistance, and to all those who worked behind the scenes to ensure a smooth transition into online learning, we thank you. We thank your dedication to the students and the efforts made to ensure that they were still provided the best possible education experience and were prepared for their careers after graduation.
CREDITS

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