NEXT GENERATION
STROKE REHABILITATION CENTER

JURY REPORT

May 30, 2023
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1. INTRODUCTION

1.1 Description of the Competition

Definition of Health. Health, as defined by the World Health Organization (WHO), is “a state of complete physical, mental and social wellbeing and not merely the absence of disease or infirmity,” and “the enjoyment of the highest attainable standard of health is one of the fundamental rights of every human being without distinction of race, religion, political belief, economic or social condition” (WHO, n.d.).

2022: UIA Year of Design for Health. To respond to recent global health crises, including the COVID-19 pandemic and other devastating disasters, the UIA General Assembly in July 2021 declared "2022: UIA Year of Design for Health." This commitment urges all UIA Member Sections to encourage architects and their clients to use evidence-based design to promote health in buildings and cities, and promotes “Design that protects health, design that develops Better Health, and design that restores health once it is impaired." The notion of Protecting, Developing, and Restoring Health is aligned with the WHO’s definition of health and can include two directions: (1) a project that protects, develops, and restores the physical, emotional, intellectual, or spiritual health of the parties; and (2) an approach to design that protects, develops, and restores the health of the parties, regardless of the building or project type (Pentecost, 2022). Therefore, Design for Health should be a fundamental component imbedded in every project, for every practice, and at any scale.

The NOVELL Project. To fulfill the mission of the UIA Year of Design for Health, the UIA and its Public Health Group are collaborating with NOVELL (Neuroscience Optimized Virtual Environments Living Lab) Redesign Team to organize this international student competition. NOVELL is a collaborative healthcare innovation project led by the Florey Institute of Neuroscience and Mental Health in Melbourne, Australia. This project aims to establish an evidence-based platform for rethinking how stroke rehabilitation facilities are designed and integrated into new models of care and redevelop and protect patients’ health and wellbeing. The project considers current best practice guidelines and applies rigorous user co-design, research, and evaluation approach to generate new knowledge and important evidence for future health design.
1.2 Goals of the Competition

This competition aims to encourage architecture and design students interested in design for health, and to advance innovative ideas and futuristic concepts to solve current challenges identified by brain injured (stroke) patients, family members, and medical staff. We believe that buildings and surrounding environments have potent influences on these vulnerable individuals and their caregivers.

1.3 Type of Competition and Eligibility

This was an open, one-stage project student competition. The competition was open to full-time university architectural students from all over the world. Multidisciplinary teams were encouraged. However, only architectural students could serve as team leaders or authors. Full-time university students from other disciplines, including interior design, landscape architecture, urban design, urban planning, medicine, neuroscience, psychology, and others, could be co-authors or team members acting as specialists. All team members (authors, co-authors, specialists) must be enrolled as university students by the time of the project submission to the competition website. Each team may have 1 to 5 university students, with 1 or 2 advisors. Having an advisor for this competition is not mandatory. Advisors must be named as consultants. A student or team of students was only allowed to submit one proposal. Regarding team projects, the student was only allowed to join one team. An advisor was only allowed to serve one proposal/project. Students, associates, employees, and family members of jury members and people involved in the preparation of this competition were not allowed to participate in the competition.
1.4 Evaluation Criteria

The following were the Evaluation Criteria in no order of importance:

- Creative approach
- Quality of architectural design
- Innovation regarding how the built environment supports stroke survivors’ experiences
- Addressing the NOVELL Aspects of Design
- Adequacy of the proposal/program
- Feasibility and functional aspects
- Pertinence over an overall concept

The jury had the right to expound the above criteria during the evaluation process.

1.5 UIA Endorsement and Legal Framework

This one stage project Competition has been reviewed by the UIA international Competition Commission and endorsed by UIA. The competition was conducted according to the UNESCO Standard Regulations for International Competitions in Architecture and Town Planning and the UIA best practice recommendations (See: Competition Guide for Design Competitions in Architecture and Related Fields: https://www.uia-architectes.org/wpcontent/uploads/2022/02/2_UIA_competition_guide_2020.pdf)
1.6 International Jury

The following international jury evaluated the entries:

- **John Cooper**, Architect, UK, UIA Region I, Jury President
- **Fani Vavili-Tsinika**, Professor Emeritus, Aristotle University of Thessaloniki, UIA, Council member, UIA Representative, Greece, UIA Region II
- **Philip Patrick Sun**, Architect, USA, UIA Region III
- **Jane Repin Carthey**, Architect, Australia, UIA Region IV
- **Innocent Okpanum**, Architect, South Africa, UIA Region V

Alternate jurors:
- **Pei Ing Tan**, UIA Secretary General, UIA Representative, Malaysia, UIA Region IV
- **Henning Lensch**, Architect, Germany, Region I

The jury session was coordinated by Zhipeng Lu, member of the UIA-Public Health Group, and the coordinator of the Technical Committee.

1.7 Submission deadline

The date of competition submission deadline was originally April 15, 2023. It was changed to April 21, 2023.
2. JURY SESSIONS

2.1 Evaluation Process

The jury sessions took place on May 4, May 10, May 19, May 22, and May 24, 2024. The jurors met virtually through the Zoom teleconference platform.

According to the report of the technical committee:

- 177 entries were submitted before the deadline;
- 2 were duplicated submissions;
- 1 submission was with crashed files that could not be recovered (possibly with unsuccessful submission);
- 2 violated the requirement for anonymity;
- A large percentage of entries did not use the required scales for floor plans (1:100) or unit plans (1:50);
- Some entries did not fulfil all the presentation requirements (e.g., missing unit plans)

The jury noted the report of the technical committee. The jury decided to remove the 2 entries that violated the anonymity requirement but kept those that did not use the required scales or did not fulfil the presentation requirements in the evaluation. Eventually 172 entries were entered into the evaluation process.
2.2 Meetings and Evaluation Results of Each Round

- **Kick-off Meeting (May 4, 2023)**
  Attendees: John Cooper, Fani Vavili-Tsinika, Jane Repin Carthey, Innocent Okpanum, Philip Patrick Sun, Warren Kerr & Zhipeng Lu

  During this meeting, the jurors met virtually, introduced themselves, and got to know each other. The jurors discussed the detailed arrangement of the evaluation process and criteria.

- **First-Round Evaluation (May 10, 2023)**
  Attendees: John Cooper, Fani Vavili-Tsinika, Jane Repin Carthey, Innocent Okpanum, Philip Patrick Sun, Henning Lensch, Fei Qi & Zhipeng Lu

  Before the meeting, the coordinator downloaded all the entries from the UIA competition platform. He compiled all the documents into multiple PDF files, each of which contained 10-15 entries.

  During the Zoom meeting, the coordinator displayed all the entries through the shared screen. The jurors reviewed and discussed each entry according to the evaluation criteria.

  After the meeting, the coordinator uploaded the entries to a newly created Google Drive and shared them with the jurors. The jurors therefore had more time to study and evaluate the entries.

  After the first-round evaluation, 46 entries with following codes were selected to enter the next round: 3, 5, 10, 12, 19, 20, 26, 27, 30, 32, 38, 40, 41, 44, 48, 50, 54, 79, 86, 97, 99, 102, 103, 104, 115, 119, 122, 124, 125, 127, 130, 132, 134, 138, 139, 142, 145, 146, 147, 150, 164, 166, 168, 169, 172, 175.

- **Second-Round Evaluation (May 19, 2023)**
  Attendees: John Cooper, Fani Vavili-Tsinika, Innocent Okpanum, Philip Patrick Sun, Henning Lensch, Fei Qi & Zhipeng Lu

  *Note:* Jane Repin Carthey was not able to attend the meeting due to the time zone confusion. Henning Lensch cast the vote during this session as an alternative juror.

  During this meeting, the jurors thoroughly discussed the remaining entries in greater details and short-listed following entries: 12, 20, 27, 32, 50, 54, 86, 99, 102, 103, 125, 127, 134, 139, 142, 164
Third-Round Evaluation (May 22, 2023)
Attendees: John Cooper, Fani Vavili-Tsinika, Jane Repin Carthey, Innocent Okpanum, Philip Patrick Sun, Henning Lensch, Fei Qi & Zhipeng Lu

During this meeting, the jurors discussed and reviewed the short-listed entries and determined the top 4 prize winners and honorable mentions:

- Top 4 prize winners: 27, 50, 103, 125
- Honorable mentions: 12, 20, 32, 54, 99, 102, 142, 164

Fourth-round Evaluation (May 24, 2023)
Attendees: John Cooper, Fani Vavili-Tsinika, Jane Repin Carthey, Innocent Okpanum, Philip Patrick Sun, Henning Lensch, Brooke Parsons (stroke survivor, advisor to the jury), Fei Qi & Zhipeng Lu

During this meeting, the jurors decided to add one prize winner, determined the winner for each prize, and finalized the results:

- 1st Prize: 27 (South Africa site)
- 2nd Prize: 103 (China Site)
- 3rd Prize: 125 (South Korea Site)
- 4th Prize: 50 (Cameroon Site)
- 5th Prize: 12 (Japan Site)

Honorable Mentions:
20 (USA Site), 32 (UAE Site), 54 (Poland Site), 99 (Poland Site), 102 (China Site), 142 (Cameroon Site), 164 (Africa Site)

2.3 Prizes and Honorable Mentions

The total prize money available was EUR 12,500. The jury determined five prizes and seven honorable mentions.

The following amount of cash will be paid to the prize winners:

- 1st Prize: EUR 5,000 to #27
- 2nd Prize: EUR 3,000 to #103
- 3rd Prize: EUR 2,000 to #125
- 4th Prize: EUR 1,500 to #50
- 5th Prize: EUR 1,000 to #12

Certificates will be awarded to all prize and honorable mention winners. Novell Redesign will invite the prize winners to become co-researchers at Novell.

The prize money will be paid within 90 days of the result announcement through UIA Secretariat. Prize winners will be responsible for any taxes and/or charges incurred as per their countries’ laws and regulations.
2.4 Remarks and Recommendations of the Jury

The jury was of the firm belief that this competition offered unparalleled opportunities for students all around the world to understand the 'design for health' concept, apply evidence-based design methodologies, and incorporate human-centered design principles. This competition also succeeded in amplifying global awareness about the significance of health as a crucial aspect of design practice. They were impressed by the quality of the submissions. The student teams demonstrated exceptional design and graphic abilities, and displayed meticulous attention to contextual, historical, cultural, and human factors. The jury identified excellent innovations that effectively tackled a variety of globally challenging issues.

Meanwhile, the jury noted a discernible shortfall in the incorporation of sustainability across the submissions. While sustainability was not explicitly stated as a requirement in the competition brief, it should naturally be integrated into each project, given the pressing issues surrounding global climate change. The jury also encouraged students to present a “whole story” about their designs regarding “where the project was located,” “who they were designing for,” “why they adopted specific approaches,” and “what made their design unique,” rather than simply arranging the drawings on presentation boards. In addition, the jury suggested students pay attention to site planning and landscape design, as outdoor environments significantly contribute to the health and safety of patients and healthcare staff.

- **First Prize Winner**
  The jury offered high praise for this exquisite design, remarking on its provision of culturally appropriate, economically feasible solutions for Xhosa stroke survivors in the Eastern Cape Province of South Africa, a region characterized by rural poverty and an extremely arid climate. The design artfully harnessed the natural landscape, light, and ventilation to create therapeutic spaces. Public areas within the facility were transformed into cultural showcases that nurtured social interactions and provided positive distractions. The patient unit was designed thoughtfully with options for one-bed, two-bed, and three-bed rooms. Each bed was granted convenient access to the bathroom and common living area, as well as exposure to natural light and outdoor views.
• **Second Prize Winner**
This design adopted a modular and prefabrication approach, effectively providing viable and adaptable solutions that could be implemented anywhere in the world. It fostered a sense of community, vividly illustrating how stroke survivors could be cared for in a community setting. The jury appreciated the team's depiction of a user's daily use of the facility, which lucidly demonstrated their design intentions and the versatility of the unit designs. However, the jury also voiced concerns about some issues, including maintenance (cleaning and landscape upkeep) and wayfinding.

• **Third Prize Winner**
The jury appreciated the concept of a centrally located water garden that delivered a therapeutic landscape for all stroke survivors. The idea of a water garden—with a grassy bottom—doubling as a conduit for natural light to illuminate the therapy pool directly underneath it in the basement, was deemed particularly innovative. In general, the design was thoughtfully crafted, though the jury pointed out that the outdoor spaces sandwiched between the two units might be too constricted to offer pleasant experiences.

• **Fourth Prize Winner**
This design exemplified low-cost construction, leveraging vernacular architectural style and local materials. It was characterized by an elegant form and a simple, double-loaded corridor floor plan. The roof overhang offered shaded outdoor spaces and limited excessive direct sunlight to the indoors. The unit design was uniquely structured, with private bedrooms and bathrooms but a shared common living area. The jury remarked, however, the corridor on the north side might not be needed and some of the transportation spaces might be oversized.

• **Fifth Prize Winner**
This design introduced small-scale, decentralized care clusters that forged cozy, homelike atmospheres for stroke survivors. The compact size of each unit may facilitate ease of movement for stroke survivors and could foster closer personal relationships between the care staff and stroke survivors. The outdoor landscaping, interior design, and detailing of the units were commendable. Nevertheless, the jury pointed out that certain aspects and details might not be suitable for stroke survivors, such as the floor seating and the outdoor pool with steps, though there were some drawings illustrating how they could be used by stroke survivors.
749 teams from over 100 countries registered for the competition, among which 175 teams from 40 countries submitted their projects. The participating countries and the related number of submissions are listed below:

<table>
<thead>
<tr>
<th>Country</th>
<th>Submissions</th>
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<tbody>
<tr>
<td>China</td>
<td>46</td>
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<tr>
<td>Russia</td>
<td>21</td>
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<td>Poland</td>
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<td>USA</td>
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<td>Kyrgyzstan</td>
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<td>Indonesia</td>
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<td>Greece</td>
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<td>Romania</td>
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<td>Cameroon</td>
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<td>Portugal</td>
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<td>Brazil</td>
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<td>Egypt</td>
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<td>France</td>
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<td>South Korea</td>
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<td>UK</td>
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<td>Tunisia</td>
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<td>Uganda</td>
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<td>UAE</td>
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<td>Uzbekistan</td>
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<td>Viet Nam</td>
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4. ACKNOWLEDGEMENT

The jury extends heartfelt gratitude to the following individuals and organizations responsible for orchestrating and supporting this remarkable student competition. The profound impact of this competition will undoubtedly resonate in the years to come.

**Organizers**
Public Health Group of International Union of Architects (UIA-PHG)
NOVELL Redesign Team

**Sponsors**
International Union of Architects (UIA)
Australian Health Design Council

**Organizing Committee**
Competition Manager: Warren Kerr, Architect (Australia, UIA-PHG)
Coordinator: Fei Qi, Architect (China, UIA-PHG)
Maryam Banaei, Post-doctoral Researcher (Australia, NOVELL Redesign)
R. Chandrashekhar, Architect (India, UIA-PHG)
Nirit Pilosof, Architect (Israel, UIA-PHG)

**NOVELL Redesign Team & its Collaborators**
Ruby Lipson-Smith
Aaron Davis
Brooke Parsons
Anna Fox
Michelle Shannon

**UIA-PHG Administration/Technical Committee**
A. Ray Pentecost (Director)
Zhipeng Lu (Coordinator)
Cynthia Lockledge (Secretary)
Uran Sokoli (Website Manager)

**UIA Secretariat**
Pei Ing Tan, UIA Secretary General
Mwiyathi Wanjira
Claudia Da Silva
Sonia Cela

**UIA International Competition Commission**
Regina Gonthier
Jerzy Grochulski
5. DOCUMENTATION OF WINNING ENTRIES

First Prize

**Name of the Project:** Xhosa Miracle Spring  
**Location:** Coffee Bay, Eastern Cape, South Africa  
**University:** Harbin Institute of Technology  
**Country:** China  
**Team Members:**  
- Zheyuan Zhao (Leader)  
- Jiayu Sun  
- Yutong Sun  
- Haibo Sun,  
- Fei Lian (Advisor)

**ID #:** 63a288df288e8  
**Submission folder #:** 27
01 Preliminary Research

In the town of Xhosa, water scarcity is common among the locals. Apuu school and sports village are nearby. Female students often walk long distances to fetch freshwater.

Site Information

The site is in the town center, near a school and sports village. A stream and nearby areas are suitable for water collection.

Current Water Supply

Half a year of drought leads to water scarcity in the community.

Components & Functions

- Xhosa Miracle Spring
-stroke rehabilitation center

Stoke Survivor Rehabilitation Center For Xhosa Women

This center was designed to support stroke survivors, especially young women who suffer from stroke. The design includes accessible pathways and spaces for physical therapy.

Architectural Diagrams

- Site Plan
- Floor Plan
- Elevation View

Dimensions:

- Width: 841.9
- Height: 595.3
CULTURAL EVIDENCE
TRADITION & RELIGION

ENDMIC ARCHITECTURE

Collective religious activity
Collection retention activities show an important role in daily life.

HERAPALTIC COMPONENTS

PLANTING BASED EXERCISE
PLANTING RECOVERY

Aristotle's case study

Aristotle's case study

Herbal treatment heritage
Herbal treatment heritage
Herbal treatment heritage

Therapeutic qualities that pertain to cutaneous problems can be noted. The sick patient is not allowed to eat the sick

Ensemble residences with a radial family

Church core

Crematorium

Medical Space Planning

The medical space is carried out in accordance with the local cultural evidence and progressive therapeutic strategies. It includes psychotherapy and communication spaces with religious spaces as the core. Modern sports rehabilitation spaces with hydrotherapy as the core, and sports rehabilitation spaces with plants for recovery as the core. Meanwhile, income generation and profit are achieved through planting recovery activities.

OPERATION MODE
PATIENT CLASSIFICATION

INCOME GENERATION

INCOME UTILIZATION

The products are sold through planting and advertising of the institution. It is also sold through the rehabilitation center and cut into the commodity market. Income is generated through the sale of the products and profit.
03 Architectural Approach

The plan is centered on a central core. The core is the heart of the building, the living center of patients and staff, and is surrounded by various functional medical and social facilities. The central core is surrounded by the main patient rooms, with the main patient rooms being arranged around the central core. The central core is surrounded by the main patient rooms, with the main patient rooms being arranged around the central core. Each unit is designed to accommodate the specific needs of patients in each phase of treatment and to promote social interaction and support among patients in the same phase of treatment.
Second Prize

Name of the Project: Community Patches - Warm Around, Life Around
Location: Beijing, China

University: Beijing University of Civil Engineering and Architecture
Country: China
Team Members:
  Zuozheng Shi (Leader)
  Han Cui
  Biao Chen
  Xiaohui Guo
  Wen Ouyang (Advisor)
  Tingwan Huang (Advisor)

ID #: 64074ef0580aa
Submission folder #: 103
Third Prize

Name of the Project: Meet Me at S.M.L. !
Location: Seoul, South Korea

University: Kwangwoon University
Country: South Korea
Team Members:
  Byeongssoo Kim (Leader)
  Kyeonghyeon Park

ID #: 63fff765ee318
Submission folder #: 125
Meet me at S.M.L I

Seoul Medical Center (SMC) is a leading public general hospital which demonstrates a new medical concept and facility among other public hospitals. Due to the increasing number of semi-patients due to extreme weather and the absence of a stroke rehabilitation center in South Korea, this project is planned on the site for future expansion of the hospital. By planning a new stroke survivor space (S.M.L I) next to the department of rehabilitation medicine, it would bring an attraction to the hospital and the facility from the society. Thus, the stroke rehabilitation medicine would ensure the stroke survivors by providing good care, resulting in the possibility of the recurrent stroke.
The survivors can meet up with medical staff and other survivors through small rooms, which locate the community and the water garden.

Medium community space

The dining and activity area is arranged around the central water garden to provide rehabilitation facilities.

Large community space

On the semi-outdoor space near the hydrotherapy pool, the outdoor dining area, event space, and communal areas are designed for the community, visitors, and medical staff.

S.M.L. Community Spaces (CS)

The existing two cycle treatment rooms with the bad attitude to exterior have a window but the patient cannot see the beautiful view. This situation can be improved by adding a window to the treatment rooms. The patient can then see the beautiful view outside, which can help elevate their mood and improve their recovery.
Fourth Prize

Name of the Project: Sustainable Survivor’s Village
Location: Yaoundé, Cameroon

University: National Advanced School of Public Works
Country: Cameroon
Team Members:
  Sidoine Baudrel Nde Keulek (Leader)
  Steve Wilson Ntakam Tonguembo
  Lizette Marlaine Tsafack Donfack
  Emy Sandrine Masso

ID #: 63bd0c81496fa
Submission folder #: 50
Fifth Prize

Name of the Project: Forest Rehabilitation Villa
Location: Miura City, Kanagawa Prefecture, Japan

University: Harbin Institute of Technology
Country: China
Team Members:
  - Meng Chen (Leader)
  - Nan Jiang
  - Fujia Lv
  - Yutong Li
  - Hsin-Hsien Chiu (Advisor)

ID #: 63f2cbffdbd21
Submission folder #: 12
Prefabricated modular building

The building adopts a pre-manufactured lightweight wooden structure, and the use of prefabrication techniques significantly reduces the construction time and cost. The building materials are selected to be fire-resistant and environmentally friendly.

Design Description

The building is designed to maximize natural light and ventilation. The use of large windows and open spaces allows natural light to penetrate the interior, creating a bright and welcoming environment. The building is also designed to be easily expandable and adaptable to future needs.

Rehabilitation

The building is designed to accommodate rehabilitation services, providing a supportive and safe environment for patients. The design includes features such as wheelchair accessibility, physical therapy rooms, and specialized medical equipment.

Forest Restoration

The surrounding area is designed to promote forest restoration, with native plant species and Indigenous knowledge incorporated into the design. The goal is to create a sustainable ecosystem that enhances the well-being of the community.
Honorable Mention

Name of the Project: Riverside Recovery  
Location: San Antonio, Texas, USA  
University: The University of Texas at San Antonio  
Country: USA  
Team Members: Dana Martinez, Ariana Gomez, Narda Parga Moreno, Neda Norouzi (Advisor)  

ID #: 640fce1f4a832  
Submission folder #: 20
DESIGN + LAYOUT FOR STROKE RECOVERY

1. Drop-Off Zone
2. Main Entrance + Check-in
3. Individual Patient Suite
4. Patient Lounge Space
5. Nurse Station
6. Occupational Therapy
7. Speech Therapy
8. Physical Therapy + Gym
9. Interactive/VR Therapy
10. Patient Dining
11. Staff Hall + Lounge Space
12. Staff Personal Lockers
13. Inner Courtyard / Sanctuary
14. Storage

SINGLE FLOOR + CENTRAL PLAN

INDIVIDUAL PATIENT ROOMS
Support patients' family's ability to visit, encourage patient's social interaction, and increase patient's confidence in their health.

SINGLE-LOADED CORRIDOR
A space to facilitate mobility, orientation, and provide a clear path for visitors. It also allows for easy access to specific patient rooms.

GARDEN THERAPY
An area designed to promote a lush natural environment, encourage relaxation, and enhance the overall patient experience.

PATIENT LOUNGE SPACE
A spacious area designed for patient comfort, featuring comfortable seating and access to outdoor spaces.

ACCESSIBILITY WITH COMFORT
Conveniently access to all patient areas and lounges to provide a comfortable and accessible space for all patients and visitors.

GULAM BEAM + COLUMN DETAILS

Sensory Hydrotherapy Facility

CIRCULATION

Min. width of entrance
Min. width of corridor

Garden Space
Central Courtyard / Sanctuary

2.5 meters
3.5 meters

39
COMMUNITY SPACE
A space where patients, guests, and staff can engage in social activities, be provided with enrichment activities, such as certain classes or group games. It's a space that can be dynamically programmed to meet the needs of the facility, providing an opportunity for residents to interact and enjoy various activities.

PAINTING
Using painting to create spaces to engage and communication spaces. Where possible, accessible pathways are implemented to ensure accessibility and safety, promoting a sense of security and well-being.

PERFORMANCE
Creating a dedicated area for performances, such as live music or theater, to provide an interactive experience for guests and staff. This area can be used for various activities, promoting well-being and creating a dynamic environment.

SAFETY
The spaces are designed to ensure the safety of all parties, with clear pathways, safety symbols, and emergency exits. The design promotes awareness and safety measures.

ACCORDION-STYLE BREEZE PANELS
Located adjacent to the meditation and sensory gardens, these panels can be opened or closed to adjust the level of light and sound, creating a flexible space.

INNER COURTYARD + SANCTUARY
Focusing on the meditative and sensory gardens, the inner courtyard is designed to promote a sense of tranquility and well-being.

NATIVE PLANTS
The use of native plants enhances the aesthetic appeal while supporting biodiversity and promoting a sense of well-being.

WEST EAST BUILDING SECTION
1000

1. Water treatment is based on the most common nitrification systems (Ward & Williams, 2008).
2. Pathway surfaces are treated to enhance safety (Ward & Williams, 2008).
3. Ramps should be designed to accommodate wheelchair users (Saunders, 2008).
4. Vegetation areas are to be maintained to create a welcoming environment (Ward & Williams, 2008).
5. Pathway surfaces are treated to enhance safety (Ward & Williams, 2008).
6. ADA guidelines should be followed to ensure accessibility and usability (Saunders, 2008).
7. Native plant species can be used to support biodiversity (Thomas, 2010).
8. Water treatment systems should be designed to minimize environmental impact (Ward & Williams, 2008).
9. The design of the outdoor spaces should promote social interaction and well-being (Ward & Williams, 2008).
10. The use of native plants enhances the aesthetic appeal while supporting biodiversity (Ward & Williams, 2008).
PATIENT SUITES  
EMPOWERMENT THROUGH INDEPENDENCE

PATIENT WINGS
- Private nurses' base
- Exercise/yoga
- Activity鹂空间 space
- Private sitting
- Consulting rooms

SUITE PER WING
- Private lounge space
- Private bathroom
- Private sunroom
- Private van with options for independence

LIGHTING DESIGN + CHROMOTHERAPY BENEFITS
- Therapeutic and psychological benefits
- Enhances mood and well-being
- Promotes healing and relaxation

PATIENT ACCOMMODATION WINGS
- Inpatient and outpatient care
- Accommodations for families
- Comfortable and inviting

VITAL THERAPY
- Integrative and complementary therapies
- Promotes healing and wellness

DINING SPACE / NURSING AREA
- Customized meal options
- Comfortable seating

STAFF WORK + LOUNGE SPACE
- Dedicated areas for staff relaxation

MATERIALS + FINISHES
1. High Pressure Laminate (HPL) Panel 3/4
2. High Pressure Laminate (HPL)
3. Melamine Write & Wipe Panel
4. Laminate Countertop
5. Stainless Steel
6. Stainless Steel
7. Black Steel
8. Black Steel
9. Moveable Blackout Curtain

PATIENT SUITE PLAN

PATIENT SUITE SECTION 1/4

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Honorable Mention

**Name of the Project:** Kumasi Stroke Rehab Center  
**Location:** Kumasi, Ashanti Region, Ghana  
**University:** Kwame Nkrumah University of Science and Technology  
**Country:** Ghana  
**Team Members:**  
- Harriet Asamoah (Leader)  
- Nuhu Shuaib Abekah  
- Yiho Sare Yaboure Aristide Kevin Daouda  
- Philip Chinwendu Jason  
- Oliver Ackumey

ID #: 63a3676d4a13b  
Submission folder #: 164
The stroke survivor's space was made in the form of a cassette with a 20cm radius. The shape follows the form of a perfect circle, which gives the room's layout the organic form of a vortex. The form follows the properties of the room, which are organized in a line with sandstone tiles. The room is designed to provide a calm and relaxing environment to help rehabilitate stroke survivors. The connection between the room and the outside is achieved through the use of natural elements such as the trees and flowers. The roof is elevated with the use of wooden planks to create a natural feeling and comfort, while also providing an aesthetic appeal. The ceiling is designed to create a calm, serene atmosphere. The room is also equipped with adjustable lighting to provide a comforting environment for stroke survivors. The walls are decorated with paintings and open artwork to enhance the room's beauty. The furniture includes beds with white fabric to create a cozy and comfortable space for the survivors. The bedroom is designed with a window that looks out to the outside, providing a sense of freedom and openness. The bathroom is also designed with attention to detail, featuring white tiles and a mirror, creating a relaxing and uplifting ambiance. The indoor garden is designed with natural elements such as plants and flowers, providing a calming atmosphere for the survivors. The room is also designed to ensure the well-being of the survivors, with a focus on creating a calm and comfortable environment.
Honorable Mention

Name of the Project: Reinvigorate Center
Location: Abu Dhabi, United Arab Emirates

University: University of Sharjah
Country: United Arab Emirates
Team Members:
  Salma Essam Eldin Anwar (Leader)
  Ameera Abdallah Anas
  Muna Mohamed Elsadig

ID #: 631cae67d5e48
Submission folder #: 32
Our concept behind the design was based on several parameters that consider and integrate the physical and psychological aspects in design to help in the stroke survivor's healing progress. Choosing a curvilinear form was meant to ease the Stroke survivor's wayfinding inside the space, this is by deviating away from typical healthcare rectilinear designs that have several repetitive corridors.

To both reduce the confusion caused from repetition and to give the Stroke survivors their personal control over the space. A ramp was designed to take the stroke survivors from the inpatient unit from the first floor to the outpatient/rehabilitation unit in the underground level. Having one clear path will allow Stroke survivors and their families to easily circulate and move from one space to another.

A structure revolving around the mass was added to amplify the curves and to be used to direct daylight in an indirect way to different spaces within the center. The structure is treated with perforations to add to the dynamic effect of shadows caused by daylight.

The motivation behind choosing a site in Abu Dhabi relates to its vision in 2030, where it aims to position Abu Dhabi as an international destination for medical tourism. Furthermore, the unique nature of the site and the surrounding that includes the gulf sea and a golf yard helps in constantly connecting the stroke survivor to the nature; hence, affecting their psychology positively and fasten the recovery.

- Zone 2: Outpatient/rehabilitation unit 40% of the total area
- Zone 1: Inpatient unit 60% of the total area
- Perforated structure
-朝海 level-0 m: Public view
- site 2 m: No filling or cutting is needed
- Golf field-7 m: Positive view
- Noise Pollution
- Low traffic
- Medium traffic
- High traffic

Water bodies
- Greenery
- Access (Main roads)
- Access (Secondary roads)
- Transportation (Bus station)
One major step in designing the rehabilitation centre took into consideration several NOVELL redesign core concepts. And the step was subtracting voids to create central nodes within the space. Having clear and unique spaces will give the Stroke survivors their personal control over the social and interpersonal experience by treating these spaces as landmarks within the centre. Hence, improving their wayfinding will support their choice: flexibility, and social activity. Choosing to subtract masses to create semi-open courtyards not only was to engage the Stroke survivor with the community and the real world, but also to give them the opportunity to connect to nature, active, positive, and stimulating environment. Furthermore, having semi-open courtyards will help improve the sightlines of the survivors to see key spaces inside the centre.

Taking into account the survivors’ long stay inside the rehabilitation made us derive away from typical healthcare layouts and forms to positively affect the healing process of the survivors. This is by creating an environment that helps in reminding them that they are not there to only rehabilitate. Healthcare environments tend to increase stress levels of survivors because it constantly reminds them of their medical condition. This is solved by using different colours, materials, levels, using smooth and curved lines in the form, and integrating daylight.
Deciding to choose a single room layout for the Stroke Survivors was to mainly achieve high levels of privacy, but to accommodate for the drawbacks such as decreased level of physical activity, a therapeutic garden was designed to encourage the Stroke Survivors to engage in physical movement. The garden consists of different levels and elements (bridges, walkways, and recessed activity spaces) to stimulate the survivor’s physical and psychological healing.
Honorable Mention

Name of the Project: Rehabitat
Location: Gdansk, Poland

University: Silesian University of Technology
Country: Poland
Team Members:
  Artur Gała
  Jan Kubec (advisor)

ID #: 640128c267400
Submission folder #: 54
REHABITAT

Rehabilitation centre REHABITAT takes its name from a combination of the words rehabilitation and habitat. These describe the project as a place for rehabilitation characterized by optimal conditions for its users. The main design strategies shaping these optimal conditions are: a structure and context.

The context is a balance between the needs and the possible for users to control their own actions. According to this concept, it is the user who decides when he or she wants to interact with others. Domestication, i.e., a lack of access to social contexts, can be a consequence of difficulties in contexts and situations leading to isolation and isolation and a lack of intercultural relationships. Communication difficulties and the challenges of future life in society are, in contrast, become more complex and require greater attention. The meaning of the space can only be understood through interaction with others. This allows contact to be established between them. Some of the corridors, in order to avoid initiating its function to the central area, have been used as circulation spaces on the move, creating a more intimate interaction. The extended space has been complemented with vegetation, furniture, and increased height making it similar to an urban street.

The project is a prototype of a sustainable and environmental friendly building. The use of natural materials, such as bamboo, timber, and glass, has been maximized to reduce the environmental impact. The building is oriented to take advantage of natural light and ventilation, reducing the need for artificial lighting and cooling. The use of renewable energy sources, such as solar panels, further reduces the carbon footprint of the building.

In conclusion, REHABITAT is a prototype of a sustainable and environmentally friendly building. The use of natural materials, natural light, and natural ventilation, as well as the use of renewable energy sources, reduces the environmental impact of the building. The project is a prototype of a sustainable and environmentally friendly building.
ADJUSTABILITY OF DINING ROOM

Thanks to the use of distinctive structures, the interior design can be easily adapted and modified. The use of different color codes for various areas and functions allows for easy transition and scalability.

ADJUSTABILITY OF INDIVIDUAL BEDROOMS

As structural elements are not rigid, they can be adjusted and adapted to accommodate the needs and requirements of the inhabitants.

EAST ELEVATION 1:500

FIRST FLOOR PLAN 1:500

SECTION A 1:500
1. Introduction

Patients have the opportunity to engage in different types of activities depending on their stage of rehabilitation. Activities with other patients such as exercises, working with plants in the greenhouse, stimulate the senses in the sensory gardens, providing sensory stimuli which can improve their mood and overall well-being.

Green roof garden
The main floor houses the main garden, which is elevated above the main floor level, enhancing the patient's experience and improving their mood and well-being.

Green courtyard
The courtyard is a communal space for patients and staff, offering a place to relax, socialize, and enjoy outdoor activities.

Sensory gardens
A garden in which the patient engage in a multi-sensory environment, including sights, sounds, and smells, promoting relaxation and well-being.

Social interactions in patient's room
The patient's room is designed for social interactions, promoting a sense of community and well-being.

Special areas for social interaction
Special areas are designed to promote social interaction and community building, ensuring patients feel supported and engaged.

2. Communication

Patients can interact with other patients in shared areas, such as the central garden, promoting socialization and connection. These areas are designed for interaction and communication, fostering a sense of community and well-being.
Honorable Mention

Name of the Project: Wroclaw Stroke Rehab Center
Location: Wroclaw, Poland

University: Wroclaw University of Science and Technology
Country: Poland
Team Members:
  - Ewelina Zub (Leader)
  - Fryderyk Karzkowiak

ID #: 63cfbb22b9e9b
Submission folder #: 99
WROCLAW STROKE REHABILITATION CENTER

REPORT

Location:
The stroke rehabilitation Center project was located in the city of Wrocław, on a university campus that's near the city's main green recreational areas. The new center is on a part of the area that's near the main highway, allowing easy access to the city and its border, and is also near the university campus.

The idea:
Combining the concept of sustainability and social interaction, the new center is designed to provide a warm and welcoming environment for patients. The building is set on a corner lot, making it visible from both sides. A large portion of the building is glazed to allow natural light into the spaces. A characteristic element of the design is the use of natural materials, such as wood and stone, which add to the building's overall aesthetic.

An elevated view:
The building is the result of the intersection of three circles. The two larger circles represent the research and educational functions, while the smaller circle represents the common areas for patients. In each of these circles, there is a large auditorium. The building is single-story, which makes it accessible to people with mobility difficulties.

Functional programs:
The building contains several rooms, including a medical center, a variety of service and activity spaces, and a public square. The building is designed to be accessible to people with mobility difficulties. The building has a central atrium, allowing natural light to enter the spaces. The design is also focused on creating an open and welcoming environment that feels like a home.

Stair and elevator description:
There are two staircases and an elevator to provide access to different levels of the building. The staircases are located on opposite sides of the building, ensuring that people with mobility difficulties can easily access all parts of the building.
Honorable Mention

**Name of the Project:** Blending To Harmony  
**Location:** Wuhan, China

**University:** Wuhan University  
**Country:** China

**Team Member:**  
- Qiwei Liu  
- Lingjiang Huang (Advisor)  
- Xu Peng (Advisor)

**ID #:** 640070348626e  
**Submission folder #:** 102
**BLENDING TO HARMONY**

The Next Generation of Stroke Rehabilitation Centres Design

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### CONCEPT ANALYSIS

In Modern's era, clients demand a holistic approach to health, including the integration of various aspects of well-being, such as physical, mental, and social health. This approach addresses the needs of individuals at different levels, from physical health to psychological well-being. The design of rehabilitation centres should reflect this holistic approach, providing spaces that promote healing and recovery.

### DESIGN GUIDELINE

**PHYSICAL REHABILITATION**

- **Under-loaded activity**
  - **Recreational and social activity**
  - **Self-actualization and self-fulfillment**

- **Physical activity**
  - **Low-intensity exercise**
  - **High-intensity exercise**

- **Therapeutic activity**
  - **Occupational therapy**
  - **Rehabilitation therapy**

**PHYSICAL ACTIVITY**

- **Lenient activity**
  - **Medical care**
  - **Meal activity**

**PHYSICAL ACTIVITY**

- **privacy preservation**
  - **Mental health**
  - **Social life**

**PHYSICAL ACTIVITY**

- **Provision of amenities and services**
  - **Medical care**
  - **Social life**

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### THEORETICAL ANALYSIS

<table>
<thead>
<tr>
<th>BASED ON Maslow's Hierarchy OF NEEDS</th>
<th>STROKES SURVIVORS' NEEDS</th>
<th>SPACE REQUIREMENT</th>
<th>DESIGN STRATEGY</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Safety Needs</strong></td>
<td></td>
<td>Social Equality</td>
<td>Femininity</td>
</tr>
<tr>
<td><strong>Physiological Needs</strong></td>
<td></td>
<td>Self-Esteem</td>
<td>masculinity</td>
</tr>
<tr>
<td><strong>Love and Belonging</strong></td>
<td></td>
<td>Communication</td>
<td>femininity</td>
</tr>
<tr>
<td><strong>Esteem</strong></td>
<td></td>
<td>Privacy</td>
<td>femininity</td>
</tr>
<tr>
<td><strong>Self-Actualization</strong></td>
<td></td>
<td>Rehabilitation</td>
<td>masculinity</td>
</tr>
</tbody>
</table>

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### REFERENCE

1. Study of Environmental Behaviors and Spatial Interaction (Social Area) Parameters (2019)
2. Impact of Environmental Context on Patient's Experience (2020)
**INSPIRATION SOURCE**

Tu Fu Ching, the masterpiece of eastern philosophy, mentioned that, "All things have two 'elements' (Yin and Yang) to become harmonious by blending two forces."

It is intrinsically interpreted with a healthy-donated combination of spaces generated by the new circulation and the original two chimneys on the site. The bugs (Yin) to the healthy people from the society and the patients from the rehabilitation center can communicate with each other and understand each other through two secluded four-story inter-connected courtyards. While the ‘giant’ structure provides a means for patients to gather self-esteem, the east and west wings allow each patient realize the transformation from negative to positive, from loneliness to companionship, from closed to opening.
Honorable Mention

Name of the Project: Revive Through Nature
Location: Minkoameyos, Yaoundé, Cameroon

University: National Advanced School of Public Works
Country: Cameroon
Team Members:
   Kenfack Azangmo Anselme Raoul (Leader)
   Tekeu Kelly Fakira
   Tsafack Fabien Junior
   Tiayo Nopousse Diderot
   Joubouh Atiofak Bienvenu Espoir

ID #: 63f0d801eff73
Submission folder #: 142
01

1. BUILDING MATERIALS
2. CULTURE
3. RURAL LIFE
4. CLIMATE

S - Quiet, surrounded by nature and vegetation
W - Located at outskirts, as away from the noise of the city
O - Can be a landmark for the colony
T - Possibility of haphazard settlement around

Solar analysis

Climatic diagrams

EXISTING ROADS
UNBUILT AREAS
BUILT AREAS

Topography

SITE

Radiation Range

Wind Speed

Wind Direction

Temperature Range

Traveling Winds
REVIVE THROUGH NATURE

Being aware of the positive and stimulating effect of nature on healing, the design seeks to establish an environment which itself already serves as therapy for the patients using evidence-based design and experience-driven design strategies.

The project is divided into key zones: stroke survivor space, stroke survivor services, and staff area, all linked by an outdoor space at the Centre where stroke survivors can meet, interact, and conduct various activities. The semi-public covering unifies these three instances into one supported by columns. This covering is slightly detached from the façade to allow cross ventilation and creates ambient shadows through the perforations made.

Simplicity and sustainability are the basis underlying the building process. The roof sheet is made of recycled materials, supported by the wooden trellis columns. The walls are made of cobble earth bricks with plaster as finish layers, and the use of glass on all elevations allows some transparency and continuous dialogue with the exterior environment.

The design is genuinely sustainable, exploiting its climate and context to minimize energy consumption and maximize the use of passive energy. Courtyards, gardens, and fountains provide shade and allow evaporative cooling.
The stroke survivor spaces have 03 typologies, which can be used by a wide range of patients, including bariatric patients and patients on wheelchairs at different levels of recovery.

The independent living unit permits patients at an advanced stage of recovery to receive their family members in privacy and conduct activities of daily living to simulate life at home.

The use of modern technologies like light sensors and camera views help keep patients in contact with the staff and provide information, directions and orientations to patients about different activities.

The elements like patient wall, skylight which are components of the adaptive healing room allow the patients to feel some improvement over the space in which they live.

Above all, the stroke survivor space creates a learning environment to stimulate the senses. The presence of a versatile and adaptive area allows the patient to take care and engage in various activities. A simple and customizable area using retractable furniture, where different activities like self-directed therapy, painting could be carried out.

The design empowers patients and encourages them to become active participants in their path to recovery. They can control their personal space, choose the type of environment they want to recover in and the level of social interaction they prefer. They have full access to landscape and meditation spaces—an essential part of the healing process.
6. STATEMENT & CONTACT INFORMATION

6.1 Statement

This document presents an overview of the student competition, describing the judging sessions, evaluation process, and results. All information provided herein is accurate. This document was initially developed by Zhipeng Lu, the coordinator of the jury sessions, and has been reviewed and approved by the competition jurors: John Cooper, Fani Vavili-Tsinika, Jane Carthey, Innocent Okpanum, Philip Sun, and Henning Lensch.

6.2 Contact Information

If there are any questions regarding this report, please contact:

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