UIA ARCHITECTURE & CHILDREN WORK PROGRAM

PLANNING ARCHITECTURE FOR CHILDREN: WORLD CHILDREN’S DAY

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During the past four years, the focus of research outcomes on “Architecture and Children” at Cairo University, can be grouped into four main themes:

1. Including Children with Special Needs in Mainstream Schools (special reference to Autistic Children in Egypt).
2. Child Friendly Cities: In this aspect, children are asked to contribute and participate in public space design to allow for child interaction and play, especially during school lockdowns as a result of Covid-19 pandemic.
4. Rehabilitation facilities targeting Street Children/Refugees
5. **Including Architecture Education in Schools**

All the above topics have been attempted based on theory and applied field work, with the participation of children from different areas in Cairo precisely. More details can be provided on the research outcomes and the level of interaction of children in the built environment.
ARCHITECTURE & AUTISM
TOWARDS INCLUDING AUTISTIC PEOPLE IN MAINSTREAM SCHOOLS

Arch
Nouran Hamdy
Research Contribution:
• Creating inclusive autism-friendly environments that are able to host and accommodate autistic people along with their normal peers.
• Creating redesign alternatives varying from optimal changes to minimal changes while considering the normal developing students, the built environment, and the budget.
• Applying the design alternatives on two existing experimental mainstream schools with different building typologies.

Design criteria

Spatial sequencing:
- Transitional area before entering and leaving spaces.
- Space organization to follow the daily routine.
- Creating a gradual transition between indoors and outdoors.
- Layout must be clear, simple, and logical.

Visual clues:
- Visual sign.
- Color coding.
- Timetables and daily schedules.
- Using pictures, maps, patterns, colors, arrows.
- Floor to ceiling windows in corridors.
- Classroom furniture arrangement.

Withdrawal area:
- Sensory neutral space with minimal stimulating elements.
- Using soft furniture.
- Flexibility to add and remove objects to get the required stimulus level.
- Can be partially or completely separated.

Lighting:
- Avoid reflections, glare and strong contrast between light and shadow.
- Use dimmable LED lighting instead of fluorescent lighting.
- Use clerestory windows to enable natural lighting.

Acoustics:
- Reduce echo and background noise.
- Use acoustic ceiling tiles.
- Use acoustic panels such as felt and cork.
- Use carpets or vinyl with sound absorbing backing.
- Trees and greens reduce the external noise.

Safety:
- Avoid sharp edges and rough surfaces.
- Clear sightlines inside spaces are needed.
- Avoid tiny details and screws.
- Buffer zone around outdoor games like swings.
- Controlled spaces.

Colors:
- Use warm neutral colors.
- Avoid strong primary colors such as yellow.
- Avoid strong patterns.
- Contrast between floor and wall color might be useful.
- Bold colors can be used in navigational signs.
Architecture and autism: towards including autistic people in mainstream schools

Study case: Tarek EL-Mergawy School

Redesign proposal 1

Original plan

Optimal Redesign proposal

Minimal Redesign proposal

Optimal Redesign proposal

Classroom/ Transitional space

Corridor
EVALUATING CHILD DEVELOPING PLAY OPPORTUNITIES FOR CHILDREN IN CAIRO

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Evaluating Child Developing Play Opportunities For Children In Cairo

Problem:
- Lack of Public play Opportunities
- Poor Designs for available ones
- Unclear criteria for rating play spaces

Research Questions
1. What are the categories/types of available play provisions in Cairo?
2. What are the characteristics of a well-designed child developing play provision?
3. How could play spaces be rated and evaluated?
Safety and Security in Public Space

INTERNET SURVEY

General survey parents participants

General survey children participants

Urban dimension

Traffic safety dimension

General Crime safety Dimension
INTERNET SURVEY

Traffic safety dimension

Indicators:
- Sidewalks
- Speed limits
- Crosswalks
- Traffic congestion
- Accidents rates

Satisfaction Meter

General Social safety Dimension

Indicators:
- Access to play
- Move unattended
- Gender indifference
- Child labor
- Go to school alone
- Children skip school

Satisfaction Meter

Children visual Survey

Indicators:
- Crowded traffic
- Empty streets
- Streets at night
- Stray animals
- Police presence
- Heavy trees
- Building scale
- Passive walls
- Transportation
- Land use

Satisfaction Meter
CRITERIA OF SELECTION:
1. Different income neighborhoods in the same city.
2. Children demographics in neighborhoods.
3. Availability of enough data for analysis.
4. Have clear barriers.

AGE SAMPLE:
1. Different income neighborhoods in the same city.
2. Children demographics in neighborhoods.
3. Availability of enough data for analysis.
4. Have clear barriers.
FIRST SETTLEMENT LANDUSE
S.W.O.T ANALYSIS

STRENGTHS:
- Greenery spaces
- Educational facilities
- Health facilities
- Squash center
- Narrow streets with low speed limits
- Windows on space

WEAKNESSES:
- Spread of Trash
- Low maintenance
- Spread of stray dogs
- No pedestrian crosswalk and bad sidewalk condition.
- Passive walls on space at night
S.W.O.T ANALYSIS

OPPORTUNITIES

Playgrounds open for communities activities.
- Educational facilities
- Health facilities
- Squash center
- Possible pedestrian streets

THREATS

Playgrounds for communities
- Crime occurrence
RE-VISITING AGA-KHAN AWARD WINING CHILD PARK

Post-Occupancy Evaluation of the Nucleus
Menna El-husseiny
Re-Visiting Aga-khan award winning child park

Author: Menna El-husseiny

Activities Inside The Park
1. People entering the park.
2. Security at the entrance.
3. Gardening in the park.
4. Lack of participation in Palm garden.
5. High walls at the administration.
6. Loss of visual connection due to high walls.
7. Crafts men working under wooden shed.
8. Temporary shops in front of theatre.
9. People working in crafts shop.
10. Kids playing and preparing for the dance show.

Overview of Activities Inside the Park,
BTU-Cottbus Double Msc Degree Students, 2017
Opportunities and Suggestions
Ruba Azzam
AAH Helwan drop-in center design and usage patterns

Author: Ruba Azzam

- Uninterrupted multi-functional hall consisting of dining & reception areas + hosts various activities for children, visitors, & staff meetings where activities take place in parallel
- Lacks furniture or treatments creating several temporary well-defined activity settings
- Used during lunch time as a dining table
- Cannot host all children at center max. capacity
- Too small to host any activity
- Steel grills installed for children’s safety

Hosts quiet loud physical & messy activities

Only accessible to staff, includes filing cabinets for children’s cases

Interviewed children’s most used & favorite space because it is:
- largest node of congregation of traffic in the center
- most flexible & readily furnished space to host various activities
- least noisy space
- most thermally comfortable space since it has AC unit + connected to a terrace

100% of interviewed children reported that using shower is prohibited

33% of children recorded being subjected to hostile behavior from older boys partly due to room being at far end of center & difficult for supervisors to monitor

Plan of AAH Helwan drop-in center


Usage patterns of center spaces (Main hall, Left: Class/game room and pool room, Right)

Panoramic image of the main hall

Eating 100%  Drawing 100%  Crafts 100%  Story telling 83%  Reading 50%  Playing with toys 30%  Studying 24%

Main hall (Dining area) Main hall (Reception area) Activities carried out across spaces of center Classroom & game room
AAH Helwan drop-in center design and usage patterns

Author: Ruba Azzam

- Kitchen for meal preparation
- Children not allowed in for safety reasons
- Hosts quiet & loud activities at different times
  - Has capacity of 10 children & furnished with desks & a white board to be used as a classroom for tutoring sessions, studying, and reading. Occasionally used by children for playing board games & with toys.
  - Accessory making & knitting workshop, enjoyed by 70% of interviewed children. Seating arrangement limits the number of hosted children at once.

- Supervision in office able to indirectly supervise children in main hall through glass-panel doors
- Similar doors installed across center spaces (except bathrooms) allow children to view activity held in a space before engaging

- Terrace is only outdoor space in center but children not allowed to use for safety purposes

Plan of AAH Nasr City drop-in center

Usage pattern of center main hall

- Eating
- Drawing
- Reading
- Craft making with toys & board games
- Playing
- Group study
- Napping
- Individual counseling

Children are the only available seating

Children engage in physical activities in main hall for being largest uninterrupted space & lack of outdoor activity areas

Activities carried out across center spaces
C. Physical Characteristics and Usage Patterns:

- Football Turf Court
- Volleyball Sand Court
- Play Area for Primary Students
- Football Turf Court
- Seating Area

Materials & Finishes
- Both football yards are covered with a type of green artificial turf which is durable, does not need high maintenance, and does not flume up in hot weather.
- The ground is covered with sand which is safe for children of any age.
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- Colorful play equipment painted with the participation of children to promote a sense of ownership and belonging to the school.

Usage Patterns & their Relationship with Shaded Areas in the Outdoor Area

Environmental Quality
- All benches surrounding the play areas are designed to have sheds to provide shade.
- Each bench in the seating area is designed to be attached to a tree to provide shade.
- Trees were planted in different areas in the schoolyard to increase vegetation.

Spatial Characteristics
- The upgraded schoolyard added variety achieved by providing different types of spaces for different activities, different play elements and different finishing materials.
- The schoolyard is an open space where all activities and play elements are visible to students, encouraging them to easily see and choose where they want to play.
- Both football yards, the sand play area and the primary play area have defined boundaries by using bricks that surround their perimeter.

Furniture & Equipment
- Seating benches surround each play zone to allow students to sit, watch and socialize. The benches were built on site using local materials and with the participation of students to promote a sense of ownership. Each bench is designed to have a shed to provide shade.
- Each bench in the seating area is placed on a slab and attaches to a tree to provide shade.
- Multi-use play equipment, mainly used by primary students, that encourages gross motor development.

Most favorable spaces according to interviewed students

- All interviewed boys stated that their favorite space is the upgraded schoolyard, particularly the football courts.
- All interviewed girls stated that their favorite space in school is the upgraded schoolyard. 60% of them prefer spending time in the sand court playing volleyball, 20% prefer playing in the football court and 20% just prefer the seating areas.

Figure 4-17: Analysis of the physical characteristics of the new playground at “Omar Ibn Alkhattab” school, Source (Author, 2019)
EIS School Initiatives Introducing Architecture to Children
THANK YOU