Urban playground:
A concept for the urban school
Jacqueline Twardowski
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The Urban Condition is a construction of Rhythm, Nostalgia, and Mysticism.
Rhythm is derived from Motion and Progression.

(color)
Nostalgia encompasses Memory and Nature.

(culture; layer; texture)
Mysticism engulfs the Sensory in the City.

(threshold; light)
| 1. Urban    |
| 2. Neighborhood |
| 3. Individual |
I firmly believe that there is need for schools which are scaled both in concept and in size to young people who will be using them and who, I hope, will grow as individualists.

-from letter written by Bertrand Goldberg, July 1962
Mental Map of a 12 Year Old Girl

- Shops and Cafe's
- I walk where the dots are
- Cars race through!
- I don't like the Gatwick
- IGA
- School
- Tennis place down there
- Cars zoom through
- Zebra crossing
- Albert Park lake
- Living here?
Mode Gakuen Cocoon Tower

Project Name: Mode Gakuen Cocoon Tower
Location: Tokyo, Japan
Use: Vocational School

Building Scale: 50 Stories
Structure: Steel

Design Year: 2005
Completion Year: 2008

Architect: Tange
Structural Engineer: Arup
Client: Mode Gakuen

Description:
Mode Gakuen Cocoon Tower is an innovative educational facility located in Tokyo’s distinctive Nishi-Shinjuku high-rise district. Completed in October 2008, the 204-meter (669 ft) 50-story tower is the second-tallest educational building in the world. The building’s elliptic shape, wrapped in a criss-cross web of diagonal lines, embodies the “cocoon” concept developed by Tange Associates. Student occupants are inspired to create, grow and transform while embraced within this cocoon-like, incubating form. In essence, the creative design successfully nurtures students to communicate and think creatively.

Source
Mode Gakuen Cocoon Tower, Tokyo. CTBUH Journal 2009 Issue 1 pp.16-19
**Druk White Lotus School**

**Project Name:** Druk White Lotus School  
**Location:** Nagahama, Shiga, Japan  
**Use:** Nursery School - 8th Grade

**Building Scale:** 1 story  
**Structure:** Wood

**Design Year:** 1997  
**Completion Year:** 2009

**Architect:** Arup  
**Client:** Drukpa Trust

**Description:** The Drukpa Trust’s intent to develop a model sustainable school was ambitious, not only in terms of ‘hardware’—energy, site infrastructure, buildings, material resource use—but also in ‘soft’ skills like building up the local project management team, establishing a cost database, and in optimizing the use of local resources. The whole project is intended to demonstrate a new approach to teaching in such an unique rural community. It was also clear that the school could have a wide influence, contributing to the development of appropriate building technologies elsewhere in the world.

**Source**  
<table>
<thead>
<tr>
<th><strong>Project Name:</strong></th>
<th>Hundertwasser House</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Location:</strong></td>
<td>Vienna, Austria</td>
</tr>
<tr>
<td><strong>Use:</strong></td>
<td>Residential</td>
</tr>
<tr>
<td><strong>Building Scale:</strong></td>
<td>5 Stories</td>
</tr>
<tr>
<td><strong>Design Year:</strong></td>
<td>1983</td>
</tr>
<tr>
<td><strong>Completion Year:</strong></td>
<td>1986</td>
</tr>
<tr>
<td><strong>Architect:</strong></td>
<td>Friedensreich Hundertwasser</td>
</tr>
</tbody>
</table>

**Description:**

The house was built between 1983 and 1986 by architects Univ.-Prof. Joseph Krawina and Peter Pelikan. It features undulating floors ("an uneven floor is a melody to the feet"), a roof covered with earth and grass, and large trees growing from inside the rooms, with limbs extending from windows.

At a 1980 press conference with the mayor of Vienna, Hundertwasser stated: "Man has three skins: his own, his clothing, and his dwelling. All three skins must continually change, be renewed, steadily grow and incessantly change or the organism will die. When the resident moves in, his creative building activity must begin; it must not be finished when he moves in."

**Case Statement**

A house in harmony with nature

**Source**

**MV Lomonosov State University**

**Project Name:** MV Lomonosov State University  
**Location:** Moscow, Russia  
**Use:** Education

**Building Scale:** 39 Stories  
**Structure:** Steel  
**Design Year:** 1949  
**Completion Year:** 1953

**Architect:** Lev Vladimirovich Rudnev  
**Structural Engineer:** Nikolai Vasilyevich Nikitin

**Description:** The main building was designed by architect Lev Vladimirovich Rudnev. In the post-war era, Joseph Stalin ordered seven huge tiered neoclassic towers to be built around the city. The MSU Main building is by far the largest of these. It was the tallest building in the world outside of New York City at the time of its construction, and remained the tallest building in Europe until 1990. The central tower is 240 m tall, 36 stories high, and flanked by four huge wings of student and faculty accommodations. It is said to contain a total of 33 kilometers of corridors and 5,000 rooms.

Facilities available inside the building include a concert hall, a theater, a museum, various administrative services, a library, a swimming pool, a police station, a post office, a laundry, a hairdresser’s salon, several canteens, bank offices and ATMs, shops, cafeterias, a bomb shelter, etc.

**Source**  
Project Name: Leimond-Nagahama Nursery School
Location: Nagahama, Shiga, Japan
Use: Nursery School

Site Area: 5625.4 m² (60551.3 ft²)
Building Area: 691.0 m² (7437.8 ft²)
Gross Floor Area: 600.7 m² (6466.2 ft²)

Building Scale: 1 story
Structure: Steel
Maximum Height: 9.1 m (29.7 ft)

Design Year: 2010
Completion Year: 2011

Architect: Hirotani Yoshihiro and Ishida Yusaku / Archivision Hirotani Studio
Client: Social Welfare Corporation Lemonkai
Structural Engineers: Umezawa Structural Engineers
Mechanical Engineers: Azu Planning
General Contractors: K.K.Okuda Koumuten

The school has been planned as a single-storey structure with a feeling of transparency between each of the spaces as well as the exterior landscape, and the "House of Light" has been placed in the main nursery area. What is meant by the "House of Light" are conical, square light-wells of different shapes, different colors, and facing different directions in the high ceiling bringing in various "lights" into the interior space, changing with the time and the seasons. The children may be able to feel the changes of these "lights," even chase them and play with them, and to enjoy this gift of "light" in their daily activities. Furthermore, the shape of the "House of Light" may be seen from the outside as its unique silhouettes are outlined against the almost unchanging rural scenery, providing it with a little more character.
PSYCHOLOGY
COLOR
LIGHT
DAYLIGHT

SCALE
ROOM RELATIONSHIP
THRESHOLD
LAYER OF SPACE

ERGONOMICS
PROPORTION
HEIGHTS
FURNITURE
MATERIALS
**Texture**

**Verb:**
Give (a surface, esp. of a fabric or wall covering) a rough or raised texture

**Noun:**
The feel, appearance, or consistency of a surface or a substance

**Synonyms:**
fabric - structure - tissue

Texture within the project is enhanced not only through the physical use of materials but also through the volumes of interior spaces as visible from the exterior. The site develops a unique identity in the neighborhood through the variation in roofscape.

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**Ages 3-6**

Children develop observation skills. Activities include use of the five senses, kinesthetic movements, spatial relationships, small and large motor skill coordination, and concrete knowledge that leads to later abstractions.
Light plays an integral part in the relationship of space in the school. Apertures in the roof and walls are designed to optimize light depending on the function of the space: learning, reading, and playing. Children about the passage of time as light filters in and plays within the building throughout the day.
COLOR

Noun:
The property possessed by an object of producing different sensations on the eye as a result of the way it reflects or emits light.

Synonyms:
- hue
- paint
- tint
- colouring

Color is subtly applied through the use of materials. Perception of space is altered through color filters and perspective in progression through the building. Bold colors are visible from the interior and exterior of the school to simultaneously illuminate and enliven the community and students.

MATERIAL STUDY

Children begin to develop their own projects based on personal interests. They continue to work in a collaborative environment developing social and independent skills.

AGES 9-12

For ages 9-12, the curriculum is designed to enhance critical thinking and problem-solving skills.
FLIP
BUILDING CATALOG

1 AQUA TOWER
2 THE TIDES
3 THE SHOREHAM
4 THE LANCASTER
5 THE PARKSHORE
6 HARBOR POINT
7 175 N HARBOR DRIVE
8 400 E RANDOLPH
9 BUCKINGHAM PLAZA
10 VILLAGE MARKET CENTER
11 ON THE PARK
12 BLUE CROSS BLUE SHEID
The master plan won the 2002 American Institute of Architects National Honor Award for Regional and Urban Design. The park was honored as the Best New Park in Chicago by Chicago Magazine and the city’s Best New Open Space by the Friends of Downtown. The master plan, the park and several individual buildings have won numerous other awards.

<table>
<thead>
<tr>
<th>DEMOGRAPHICS</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>POPULATION</td>
<td>8450 PEOPL e</td>
</tr>
<tr>
<td>POPULATION DENSITY</td>
<td>16838 PEOPLE/ SQ MILE</td>
</tr>
<tr>
<td>TOTAL HOUSEHOLDS</td>
<td>5152 HOUSEHOLDS</td>
</tr>
<tr>
<td>TOTAL FAMILY HOUSEHOLDS</td>
<td>1627 HOUSEHOLDS</td>
</tr>
<tr>
<td>AVERAGE HOUSEHOLD SIZE</td>
<td>1.64 PEOPLE/HOUSEHOLD</td>
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<tr>
<td>AVERAGE FAMILY SIZE</td>
<td>2.41 PEOPLE/HOUSEHOLD</td>
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<tr>
<td>AVERAGE RESIDENT AGE</td>
<td>46 YEARS</td>
</tr>
<tr>
<td>AVERAGE HOUSEHOLD INCOME</td>
<td>$93,973</td>
</tr>
<tr>
<td>COST OF LIVING INDEX</td>
<td>125.9</td>
</tr>
<tr>
<td>AVERAGE PROPERTY VALUE</td>
<td>$532,169</td>
</tr>
</tbody>
</table>
TRANSPORTATION

EL TRACK
- RED LINE (SERVICE BETWEEN HOWARD AND 95TH/DAN RYAN)
- BLUE LINE (SERVICE BETWEEN CHICAGO-OHARE AND FOREST PARK)
- BROWN LINE (SERVICE BETWEEN KIMBALL AND DOWNTOWN)
- GREEN LINE (SERVICE BETWEEN HARLEM AND 63RD)
- ORANGE LINE (SERVICE BETWEEN MIDWAY AND DOWNTOWN)
- PURPLE LINE (SERVICE BETWEEN LINDEN AND HOWARD VIA EVANSTON)

BUS LINES AND SERVICE POINTS
- RT 4 UPPER WACKER & UPPER N COLUMBUS DR (FROM SOUTH SIDE TO LOOP)
- RT 6 UPPER WACKER & UPPER N COLUMBUS DR (FROM SOUTH SIDE TO LOOP)
- RT 120-123 UPPER WACKER & UPPER N COLUMBUS DR (EXPRESS TO OGLIVIE STATIONS)
- RT 20 UPPER RANDOLPH & UPPER N COLUMBUS DR (TO OGLIVIE STATION)
- RT 134-136 MICHIGAN AVE & WACKER (EXPRESS TO LOOP FROM NORTH SIDE)
- RT 144-147 MICHIGAN AVE & WACKER (EXPRESS TO LOOP FROM NORTH SIDE VIA LSQ)

OGILVIE TRANSPORTATION CENTER
- UNION PACIFIC NORTH
- UNION PACIFIC WEST
- UNION PACIFIC NORTHWEST

UNION STATION LINES
- NORTH CENTRAL SERVICE
- MILWAUKEE DISTRICT NORTH
- MILWAUKEE DISTRICT WEST
- BNSF RAILWAY
- HERITAGE CORRIDOR
- SOUTHWEST SERVICE
CLIMATE

1 ANNUAL WIND
2 TEMPERATURE
ISSUES
1 CIRCULATION
2 NATURE
3 DAYLIGHT
4 SAFETY
5 TRAFFIC
6 ORIENTATION
7 SITE PROPORTION

PROVIDING A STIMULATING ENVIRONMENT SENSITIVE TO THE HUMAN NEED FOR NATURE.

ESTABLISHING CIRCULATION AND CONNECTION BETWEEN LEVELS OF EDUCATION.
3. MAINTAINING PLENTIFUL DAYLIGHT TO ALL INTERIOR SPACES.

4. PROVIDING A SAFE ENVIRONMENT WITH SECURE ACCESS POINTS.
EXPLORATION
The school will foster learning, exploration, and development through an enriching, interactive environment. All parts of the design will be viewed as an opportunity for learning and will support growth.

SENSORY INTEGRATION
The design will engage students through the examination and utilization of sensory design methods, including material application, lighting, spatial configuration, and integration of exterior space.

COMMUNITY
The school will add vitality and identity of the Lakeshore East community providing a central point of interest and neighborhood connection. It will be a catalyst for the development of neighborhood support buildings, as well as culture.

CONNECTION
The school will provide opportunities for connection through a range of scales including: student-to-student, student to teacher, school occupant to the community, and the community to greater Chicago.
Large central rooms will encourage interaction between students and teachers. These central rooms should act as a connective tissue horizontally but also vertically, housing all level-to-level circulation.

Classrooms should provide an abundance of light color and texture. The rooms should be flexible and allow for a variety of spatial configurations to occur.
q1

**ESSEN, GERMANY**
JSWD Architects [2011]
**CENTRAL CONNECTION**

**CITE DE L’OCEAN ET DU SURF**
Biarritz, France
Steven Holl Architects [2011]
**LIGHT; LAYERING**

**SKY COURTS**
Chengdu, China
Höweler + Yoon [2011]
**MATERIALS; TEXTURE**

**SOFITEL**
Vienna, Austria
Jean Nouvel [2010]
**PATTERNED VIDEO PANELS**
Joseph Brenneman Elementary School
Chicago, USA
Bertrand Goldberg [1963]
Organic composition; zoned spaces; daylight

University of Aberdeen Library
Aberdeenshire, Scotland
Schmidt Hammer Lassen [2011]
Interior vertical connection

Singapore School of the Arts
Singapore
WOHA [2011]
Natural ventilation; sky garden

Sinatra School of the Arts
New York City, New York
Annead Architects [2009]
Transparency

Paris Parc
Paris, France
BIG [in progress]
Programmed green roof
PROCESS
Captured Moments
A Concept for a K-12 Urban School
screen captures from jacques tati's mon oncle.

Uncle Hulot lives in a small old corner of Paris. His world is full of color, light, and frivolity.

The series to the right captures a moment in which Hulot reflects light to bird cage, the light hits the bird and the bird begins to sing.
The lower portion of the school acts as community center that includes a swimming pool, gymnasium, and auditorium.

A continuous circulation path connects the two main entry points. This circulation complements the main school circulation and can be isolated for after house community center use.
The lower portion of the school acts as a community center that includes a swimming pool, gymnasium, and auditorium. A continuous circulation path connects the two main entry points. This circulation complements the main school circulation and can be isolated for after house community center use.
The central stair ascends and begins the sequence of vertical circulation. Light permeates the ground plane at the playground above and illuminates the stair. The lower portion of the stair frames views of the gymnasium beyond and creates a space for gathering.
level two +20'
pool
fitness room
locker rooms (wet)
The pool volume energetically extends to the park. Plentiful light filters into the pool from both the East facade and central skylight. The pool is elevated above the cafeteria, transparent and translucent cut outs in the underside of the pool reflect the water qualities and create a constantly dynamic light quality.
level three +40 ft
classrooms k-3
playground
cafe/lunch space
auditorium
theater prep
level four +53 ft
security check point 1
lobby
exhibit space
library
administration offices
plan organization. Grades are organized into clusters of three classrooms.
Grouping. Classrooms are organized in clusters of three, two classrooms having the potential to connect and form a larger collaborative space for students to interact.

Break out. Each classrooms cluster has a corresponding break out space which acts as a more informal learning space. Each break out space encourages interaction among students.

Exploration. Circulation is driven by the concepts of refuge and prospect. Main circulation is slightly contracted while the expansion of the break out space along with light draws the student through the space.
level six +83 ft
classrooms 8
specialty rooms (art, music, science laboratory)
teacher’s lounge
level seven +96 ft
classrooms 9-10
Material variation in transparency, translucency, and screening vary the light quality along the stair and create unique spaces for interaction both on and around it.
Light playfully animates upper level breakout spaces as it enters and reflects off the colored surface below. The skylights look out to the city, students watch the elevators of the neighboring Blue Cross and Blue Shield or the shadows along Aqua Tower.
Captured Moments
A Concept for a K-12 Urban School

The inspiration to develop a vertical urban school originates from rising urban density and the lack of interconnection and identity in some urban environments.

The urban condition is a construct of rhythms, memory, and the sensory. This condition is illuminated through the interactivity and interaction of city life. Similarly, schools mirror these lively environments. This scheme embraces the layers of activity and vibrancy inherent in the operation of schools and cities.

The recently developed Lakeshore East Community lacks the infrastructure to foster a healthy and sustainable neighborhood. Although it is in close proximity to the Chicago Loop, this residential community maintains an atmosphere of isolation. This school will link the physical community to the surrounding vitality of the city, establish the school as an integral community element, and catalyze the development of further neighborhood infrastructure.

The space between

Grade change
Light
Circulation
Program

The sequential nature of the urban condition is illuminated through the interactivity and interaction of city life. Similarly, schools mirror these layers of activity and vibrancy inherent in the operation of schools and cities.

1. Illumination: a sequential process of light
2. Open: contacts with transparent school
3. Access: access to the various levels
4. Vision: structural elements for visibility
5. Capture: structural elements for visibility

The sequential nature of the urban condition is illuminated through the interactivity and interaction of city life. Similarly, schools mirror these layers of activity and vibrancy inherent in the operation of schools and cities.
The book features various projects and calls out case studies of playrooms, weekend retreats, home offices, dining rooms, etc. This source will be used to understand a level of creativity through the study of these “dreamlike constructions”.

The book explores ideas of the child’s presence in society on various levels. The source measures levels of a child’s interaction with the urban context mentally, physically, and psychologically.

The book analyzes a child’s place in the urban context and addresses issues that arise from a child’s freedom to roam. The study explores travel patterns in relationship to personal autonomy of children 7-15. The source will be used to understand how children use spaces naturally and how to address problems associated with travel risks.

The book studies the implementation of techniques used in sensory design, through the exploration of its theory and significance. The source will be used to call into question the approach to the interior and exterior condition of a user in a school.

The book explores material properties of surfaces from a visual and haptic perspective. The source will be used to begin to understand techniques that can be used to implement sensory design ideas.


