MEDICAL LIBRARY IN CHICAGO LAKESIDE

From steel factory to health city

P5 Presentation
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I. ANALYSIS:
South Chicago - South Works Site

II. GROUP STRATEGY:
Health City

III. INDIVIDUAL DESIGN:
Medical Library
I. ANALYSIS:
South Chicago - South Works site
The site is located in south side of Chicago, which gives people impressions of violence, shooting, drugs...
Problem

- Poor health
- Unemployment
- Low quality education
- Gangs / Street violence
- Crime
North Chicago Rolling Mill Company opened a sister mill at the mouth of the Calumet River on Chicago’s South Side—the famous South Works.

In 1889, most of the large Chicago-area mills—including North Chicago, South Works, Union, and Joliet—combined to form a huge new entity, the Illinois Steel Company.

In 1901, New York banker J. P. Morgan engineered the creation of U.S. Steel, the world’s largest business enterprise, and Illinois Steel became part of this giant entity.

Beginning in the 1970s, the facility began downsizing due to a shifting market for steel.

On 10 April 1992, the plant permanently shut down with fewer than 700 people employed at the time of its closing.
South Works in 1950s.

South works in 2013

SOUTH CHICAGO NEEDS NEW INVESTMENT.
They need jobs. They need education, healthcare and social support.
THE METRA LINE
DIRECTION: NORTH TO SOUTH

ADVANTAGE:
THE MOST CONVENIENT WAY OF PUBLIC CONNECTION FROM SOUTH CHICAGO TO DOWNTOWN

DISADVANTAGE:
LOW FREQUENCY
ABSENCE OF CONNECTION FROM EAST TO WEST

PROPOSAL:
CREATING THE EFFICIENT CONNECTION WITH THE SOUTHWORKS SITE
THE LAKE SHORE DRIVE

DIRECTION: NORTH TO SOUTH

ADVANTAGE:
THE MOST CONVENIENT WAY OF PRIVATE CONNECTION FROM THE SOUTH CHICAGO TO DOWNTOWN

DISADVANTAGE:
SPATIAL SEPARATION BETWEEN THE NEIGHBOURHOOD AND THE SITE

PROPOSAL:
CREATING A VERTICAL PUBLIC CORRIDOR TO DISSOLVE THE SPATIAL SEPARATION
EXISTING MAIN ROADS
DIRECTION: WEST TO EAST

ADVANTAGE:
CONNECTING THE METRO AND THE LAKESHORE DRIVE
CONNECTING THE NEIGHBOURHOOD AND THE LAKE SIDE PARK

DISADVANTAGE:
THE PRESENCE OF THE CARS AND BUSES EXERTED AN ADVERSE INFLUENCE OF
THE QUALITY OF THE PUBLIC SPACE

PROPOSAL:
The separation of people and vehicles
Creating a PUBLIC CORRIDOR for pedestrians
THE EXISTING BUILDINGS AND HERITAGE
STATION, VELODROME, ORE WALLS AND THE LAKESIDE PARK

ADVANTAGE:
ATTRACTION OF PEOPLE

DISADVANTAGE:
SEPERATED AND OUT-OF-ORDER

PROPOSAL:
CREATING A PUBLIC CORRIDOR FROM THE STATION TO THE LAKESIDE PARK
THE EXISTING VELODROME (WILL BE RECONSTRUCTED IN 2014)
THE EXISTING ORE WALLS

Site Conditions

- 11.43m
- 37.84m
- 57.13m
- 764.74m
THE EXISTING ORE WALLS

Site Conditions
THE EXISTING LAKESIDE PARK

Site Conditions
II. GROUP STRATEGY:

Health City
HEALTHY CHICAGO PUBLIC HEALTH AGENDA:
Principles Of Health City

**DEFINITION OF A HEALTH CITY**

- **HEALTH SCIENCE RELATED**
  - Cutting Edge Medical Technology
  - Ample Health Related Service Industry
- **HEALTHY LIFE STYLE RELATED**
  - Healthy Food
  - Environmental Quality
  - Recreation & Sports Space
  - Efficient And Environmentally Friendly Public Transportation
  - Qualitative, Sustainable, Affordable Building
  - Economic Opportunities
  - Awareness Of The Importance Of Health

**BOTH**

- Advanced Patient Care Services
healthy food
walking & biking instead of car
health education
healthcare
sport facility
park
health company
clinic
A separate guide and map for Mayo Clinic Downtown Campus and Rochester Methodist Hospital is available in the Patient Information brochure racks or online.

One mile to Saint Marys Hospital. A separate guide and map for Saint Marys Hospital is available in the Patient Information brochure rack or online.
Existing Transport

Bus Lines

Metra Electric Train
INVENTORY OF GREEN SPACES

- LAKEFRONT PARK
- LINEAR PARKS
- COURTYARDS
1. Lakeshore Drive - 25m Wide

Proposal:
- Absence of connection from East to West

Disadvantage:
- Downtown

Advantage:
- Direction: North to South

Total Program Comparison to SOM Program Bar of Health Science Campus

Source: Healthy Chicago Annual Report Feb14 2013

193 supporting strategies.
12 priority areas, and
16 health outcome targets,
unveiled on August 16, 2011

Social Background: Government's Support Make an Healthcare Development Available

Healthy Chicago identifies

Patient Care Area
Education & Research Company
Housing Area
Other

Logistics:
The Healthy Chicago Public Health Agenda

Public Route System in Campus Centre

Site Condition Analysis

Site Conditions

Hospitalization:
-冈

Diagnosis & Treatment:
-冈

Central Service:
-冈

Health Information Centre:
-冈

Background Research

The strategies within each property area call for action in one of three areas:

1. Extending bus route - 12m wide
2. Add diagonal view road
3. Add linear park + grid design

Function of TRANSPORT

Structure of Health Science Campus

Public Health Strategy

Structure: Healthy Lifestyle Communities

■ Functional Link Between the Clusters

Transport Strategy

Definition of a Health City

First: Routing through/under buildings
Second: Health plant gardens (semi-public)
Third: Linear park (public)
SECTION AT THE PLACE OF PUBLIC HEALTH EDUCATION CENTRE
- SECTION AT THE PLACE OF CONFERENCE CENTRE

Section Analysis 3
Program Bar of Health Science Campus

- Patient Care Area: 13.4% (100325
- Education & Research: 33.6% (276101
- Health Related Business: 21.37 (213712
- Housing Area: 12.4% (121490
- Others: 14.7% (100325

Campuses:
- Rochester Campus: 34%
- Huddinge Campus: 55%
- Solna Campus: 42%

Rochester Campus: 10%
Huddinge Campus: 35%
Solna Campus: 38%
Development Of Phase 1

■ STEP 1
THE BASIC BUILDINGS FOR A CAMPUS

■ STEP 2
NEW PROGRAMS APPEARS
UNION RESEARCH, PATIENT CARE

■ STEP 3
MIXED DEVELOPMENT OF BUSINESS & RESEARCH ZONE

■ STEP 4
EXPANSION OF EDUCATION ZONE MIXED WITH HEALTH RELATED BUSINESS
AND CONTINUE TO GROW INTO NEW COMMUNITIES ALONG THE N-S AXIS
III. INDIVIDUAL DESIGN:
South Chicago - South Works site

1. Location: spatial context
2. Architectural Concept: historic context
3. Program Organization
4. Structure
5. Climate
6. Facade, Details
A. ON THE WALL

Location

- abandon
- risk to be demolished
- beautiful
- existing holes
The medical library is in the crossing of two main axis in the campus, which lead people to the library.
C. PROGRAM COOPERATION

- Liaison librarian program (1977)
- Clinical medical librarian program (1975)
- Personal librarian program (1997)

- Researcher
- Subject librarian
- Personal librarian
- Medical students
- Subject librarian
- Doctor
- Patient

- Company
- Hospital
- Research
- Medical College
- Laboratory

- Yale Medical Library
- Hospital
2. Architectural Concept: historic context

Newcomers often hear about “the good old days.”

Many former workers didn't leave. They still live here. They love the neighborhood. They are proud of the good old days.
GOAL: REFLECT INDUSTRIAL PAST.
One of the "health city" missions is to develop the neighborhood. As the heart of healthy science campus, the medical library is a proper building to express the idea.

Ship: transport Iron Ore to harbour

Gantry Crane: unload Iron Ore
Travelling bridge: distribute & store Iron Ore
A. FORM: The library uses several strips to symbolic the busy construction in history.
A. FORM

Form Generation:

1. short strip and long strips
2. extend end: better view
3. connect: less facade, more sustainable
B. STRUCTURE

Reflect history
Liberate ground floor

TRUSS
A. MEDICINAL PLANT GARDENS

Scenes in medicinal plant gardens:

- sow
- cognitive learning
- pick
- medicine experiment
B. BUILDING: MAIN ENTRANCE

Program Organization
B. BUILDING: FUNCTION DIVISION

Program Organization

Public Function

Service Function

Public Function

Public Function

Public Function
B. BUILDING: LOBBY CONNECTS VIEW POINTS

Program Organization

- Lobby
- View point
- Routing

Exhibit Histology & Embryology
Reading Room
Pathogeny Biology
Reading Room
Silence Reading Room
Open Study Space
View Platform
Bookshop
Meditation Space
Up
Down
Computer Support
Research Support
Book Transport Facility
Room
Garden
Cafe
Exhibit Librarian Office
Electronic Search Area
Lobby Exhibit Store Room
Audiovisual Area
Equipment Room
Document Delivery
Journals
Exhibit Immunology Reading Room
Discussion Space Lounge
Meeting Room
Reading Room

A
B

A
B

Up

Routing

lobby
view point
B. BUILDING: AUTOMATIC BOOK TRANSPORT SYSTEM

Program Organization
B. BUILDING: AUTOMATIC BOOK TRANSPORT SYSTEM

Program Organization

Blue line: borrow books
Red line: return books
B. BUILDING: MOST ATTRACTIVE PART

View Platform

Program Organization
B. BUILDING: MOST ATTRACTIVE PART

Program Organization

Cafe

Fragment chosen

Exhibit

Garden

Up

Up

Bookshop

Exhibit

Journals

Exhibit librarian office

View Platform

Cafe

Exhibit

Garden

Cafe

Exhibit

Program Organization
B. BUILDING: MOST ATTRACTIVE PART

- Exhibit View
- Platform
- Bookshop
- Garden
- Cafe
- Exhibit Librarian Office
- Journals

Secondary entrance

Program Organization
B. BUILDING: LECTURE ROOM

Program Organization

case study: muziekgebouw in Rotterdam
Case study:
Meditation room set for UVSC’s new library

The meditation area can also be used as a respite for students to simply sit quietly and think — maybe clear their mind before a big test or just escape from the stresses of life, Walton said.
Comparison: Outdoor reading space

Normal library

Medical library in Healthy City
Comparison: More human, user-friendly

Normal library

librarian

Medical library in Healthy City

librarian

Program Organization
Comparison: Better view, good for mood and eyes

Normal library

Medical library
in Healthy City
Truss: supported by Ore Wall
Base: existing ore wall
Each strip has its own supports
Three main strips have independent structure
Two serves parts hang between them
Structure
Buildings in healthy city are sustainable.
Heating and Cooling: Thermal properties of the water
Generate electricity: solar panel

Exhibit
Garden
Lobby
Electronic Search Area
Lecture room
Exhibit
Lobby
Lounge
Open Study Space
Discussion Space

1. Solar panels
2. Inverter
4. Electric meter
3. Light & outlet
5. Electric utility grid
Mechanical Ventilation: as a public building
Facade, Details

- Without louvers
  - Transparent Glass
  - Transparent Glass with curtains
- Louvers
- Translucent Glass with curtains

Exhibit
- Garden
- Lobby
- Electronic Search Area
- Lecture room

Exhibit Lobby
- Lounge

Open Study Space
- Discussion Space
Vertical louvers: changes according to weather, controled by computers.

- Situation 1: closed - strong sunshine
- Situation 2: twist angle - weak sunshine
- Situation 3: slide to one side - cloudy
Composite floor: steel deck + concrete slab

ComFlor 210
depth 270mm
span 4.5m-6m
(5.6m)
Composite floor: steel deck + concrete slab
1:50 hand model
Free cantilever beams or canopies, balconies or walkways, the Schöck Isokorb® type KST offers complete freedom of design when it comes to steel construction. The unit is able to withstand extremely demanding loads and is effective against bending moment and shear force. Its stainless steel components mean that the unit is corrosion-resistant.

Tests by the OISD* show: Only one of the above met the necessary legal energy protection requirements** – the steel beam incorporating the Schöck Isokorb® type KST.

*Oxford Institute for Sustainable Development (OISD)

**With the critical temperature factor $f_{RSi} \geq 0.75$.

Schöck Isokorb® type F
- For insulation between protruding balustrades. Point installation according to design requirements regarding spacing.

Schöck Isokorb® type A
- For insulation between parapets and floor slabs. Point installation according to design requirements regarding spacing.

Schöck Isokorb® type S
- For insulation at cantilever beams. Carries bending moment and shear force stress at exact point of origin. It is designed and manufactured according to the spacing requirements.

Schöck Isokorb® type W
- For insulation at floor/storey level wall height. Carries bending moment and shear forces both vertically and horizontally. It is designed and manufactured according to the spacing requirements.

Schöck Isokorb® type KST
- The thermal insulation element for where steel-to-steel cantilever connection is planned.

Schöck Isokorb® type KST-QST
- The thermal insulation element for shear forces involving steel-to-steel construction.

Schöck Isokorb® type KS/QS
- The thermally insulating steel connection for free cantilever and supported steel members on reinforced concrete components.

Schöck Isokorb® type KSH/QSH
- The thermally insulating connection for free cantilever and supported timber structures on reinforced concrete components.

Thermal break between two steel beams
Conclusion of the building:

The building reflects industry history, which adapts to the regionalism. It shows the mission of our strategy, "healthy city", which is to develop the neighborhood.
Conclusion of the building:

**It is a medical library, which is a part of health city.**

- Outdoor reading space
- More human, user-friendly
- Better view, good for mood and eyes
- More Sustainable
Conclusion of the building:

According to our strategy, the South Chicago will revitalize again by establishing its identity and brand as a health center of Chicago. As a significant part of it, my project of the medical library is a main building in this healthy science campus, which demonstrates the concept of our healthy city, showing the mission to develop the neighborhood. Conducting our strategy, Chicago will regain its fame as a harmonious multi-racial metropolis.
Thank you!