South vs North

**RACE**
- Blacks: 22296 (72%)
- Hispanic: 6774 (22%)
- Whites: 599 (3%)

**HOUSEHOLD SIZE**
- 2-8 people

**GENDER**
- Women: 54.4%
- Men: 45.6%

**MEDIAN AGE**
- South Chicago: 36.4
- Chicago: 32.3

**MEDIAN HOUSEHOLD INCOME**
- South Chicago: $34,001
- Chicago: $46,195

**DISTRIBUTION OF MANUFACTURING**

**INDUSTRY CORRIDOR**

Top 1 Industry by Jobs of each Community
- Accommodation/Food Service
- Educational Service
- Professional, Scientific & Tech.Servs
- Healthcare & Social Assistance
- Manufacturing
1. Introduction

Description of Current situation

South Chicago

History of Industry (South Works Mill)

Loss of economic power: Abandoned yard & infrastructure

Becoming exclusive, segregated society with high crime
There were several railroad bridges crossing the Calumet River during its industrial times and some of them survive till today although the existing ones are generally out of service. Almost all these railroad bridges are vertical lift bridges, which can move up and down in service of both the railroad and the channel.
Golden age of 1890~1970s...

the nation’s most modern and productive steel mills. At its peak, the mill employed some 20,000 people and covered a total of 600 acres (240 hectares).
In the long run, the steel strike of 1959 devastated the American steel industry. More than 85 percent of U.S. steel production had been shut down for almost four months. Hungry
Mouth of Calumet River, 1870

Deepen and widen Community development South Works in its heyday A new plan

Evolution of the neighbourhood and railroad transportation routes fostered early South Chicago's location at the intersection of river and lake at a depth of 12 feet. In July 1870, Congress appropriates $50,000 for improvements in Calumet Harbor.

A bend in the river just before it emptied into Lake Michigan. 136 vessels use the harbor.

The steel mill created a whole new community, in which thousands of people to the area since it offered so many jobs. People of different ethnic backgrounds came to live at South Works or at other plants in nearby communities. South Chicago was made by Steel. At one time, about 20,000 workers at its peak. 70% of the adult men were employed in the steel industry, becoming common. Facilities began closing. The company started its decline. In 1979, employment went down to about 10,000. After that, layoffs were with it. On Thursday Jan. 9, 1992, the announcement of the shut down was official. In April of the same year the mill closed with less then 700 workers.

Over the years, labor difficulties became common, and demand for steel went down, so suppliers went down with it. On Thursday Jan. 9, 1992, the announcement of the shut down was official. In April of the same year the mill closed with less then 700 workers.

Population growth continued for South Chicago peaking at 56,000 in 1930. In 1901, the steel mill became U.S. Steel South Works, It was the largest mill in the area and employed as many as 20,000 workers at its peak. In 1953, South Works need a new plan. In 1979, employment went down to about 10,000. After that, layoffs were with it. On Thursday Jan. 9, 1992, the announcement of the shut down was official. In April of the same year the mill closed with less then 700 workers.
- Relatively long and less frequent Public transportation compared to Car-driving
- Lakeshore drive connection
- Freight connection from overall USA
From the site (E 87Th St & S Commercial Ave) to the Chicago city center it takes **81 min** with a train.

Total Cost of the trip is **7.50 $**.
From the site (E 87Th St & S Commercial Ave) to the Chicago city center, it takes **34 min** with a train.
History..
SOCAL
crime
no free time activities
bad image
weak community/no pride
segregation
single parent families
low education

SPATIAL
vacant plots
food desert
connectivity/infrastructure
mono functional areas
gang zones
no access to lake side

ECONOMICAL
unemployment
no economical possibilities
no housing market
low income households
catalyst needs

New challenge..
Another conflict??
2. Problem Statement

“'To What Extent does new engine contribute to the positive perception of declined South Chicago?"
3. Strategy

City’s vision

More than 15 years ago, Mayor Richard M. Daley began to transform Chicago into the most environmentally friendly city in the nation. Today, Chicago is one of the world’s greenest and livable cities thanks to strong partnerships between government, residents and businesses.

“The Sustainable Chicago action plan offers concrete initiatives, metrics, and strategies aimed at advancing Chicago’s goal of becoming the most sustainable city in the country. From improving citywide energy efficiency and promoting diversified transit options, to launching citywide recycling, the roadmap is robust and comprehensive, touching upon the full spectrum of life for Chicagoans, whether at home, at work, on our streets or in our parks.”

—Richard M. Daley

Source: Chicago Climate Action Plan 2008
3. Strategy

City’s vision

- Eliminate food deserts in Chicago

Our site is not a blue cart area of the city’s blue cart program that is started to help individuals recycle

A bike path along Lake Michigan stops at the height of Lake Shore Drive South. There is no bike path from our site to the loop along Lake Michigan.

- Create a world-class bike network and increase cycling

- Improve water efficiency, water quality, and water infrastructure

- Launch city-wide recycling Bleu cart areas

Water transportation good be an interesting opportunity for our site to make a connection with the Loop and Indiana
Why Recycling

1. Launching new industry: Waste Production → Recycling industry
2. New Positive identity for South Chicago
3. New jobs in South Chicago
4. Taking advantage of strongly positioned existing infrastructure
5. Creating visible connection between South Chicago and Lake Michigan
3. Strategy

City’s vision

LID  “Low Impact Development”
Ecologically-based stormwater management approach favoring soft engineering to manage rainfall in site through a begetated treatment network. The goal of LID is to sustain a site’s pre-development hydrologic regime by using techniques that infiltrate, filter, store, and evaporate stormwater runoff close to its source. Contrary to conventional “pipe and-pond” conveyance infrastructure that channels runoff elsewhere through pipes, catchment basins, and curbes and gutters, LID remediates polluted runoff through a network of distributed treatment landscapes.

Restoration of relation between lake Michigan and Southworks
Introducing new catalyst into the site

New Economic anchor

New bounding catalyst

Green Loop

Sustainable Chicago

New public infrastructure

Re-connection with Michigan Lake
4. Urban Approach

Initiative Approach
Lakehore drive as a border for Southworks splitting the overall southchicago area in two parts
Breaking consistency in a physical and visual way

Alleviating this situation by introducing new visible connection between neighborhood and the site

Initiative Approach 1
Visible connection
Existing industrial infrastructures adjoin the lakeshore parts of the site, connecting US Freight railway and Calumet river, providing optimistic environment for new industry.

Re-activating existing industrial infrastructures by extending and re-organizing it.

Initiative Approach 2
Launching new Recycling industry
Metra Future Extension

New railway station

New port for Cargoship

Alleviating the traffic load on Lakeshore drive
Initiative Approach 3
New identity of Green connection
"Green Loop"

Water treatment system
Recreation of eco system
Street filtration evapotranspiration野生动物栖息地

recreation wildlife corridor filtration infiltration

erosion control and sediment retention

sidewalk Filter strip riparian edge stream channel riparian edge

* Reference from [Low impact development a design manual for urban areas]
2010 UACDC, Fayetteville, Arkansas http://uacdc.uark.edu
Water treatment system
Recreation of eco system
adjoin the lakeshore parts of the site, connecting
ARCHITECTURAL APPROACH
Fragment Choice

is to investigate how architectural intervention can improve
the performances of the space in a physical and social way
or how it contributes to increase positive perception of new
industrial area

The station is to be an opportunity for re-activating declined
city and realizing common ground for all kind of social
groups.

In the architectural scale, the new typology of station
building will be investigated, considering surrounding
context.

As a complex building that faces different circumstances,
industrial area, Ecological strip as well as existing
neighborhood, it will function in a diverse way to respond to
these aspects.
Goal of the project

- Common Ground where the diverse social groups can interact

- Creating a new public domain which is meant to mediate the tension between new industrial area and ecological strip, providing new sustainable identity to SouthChicago industry.

- Realizing complex building so as to respond to diverse demands from surrounding context
What is Station?

Common Ground for interacting, Profitable activity

Gate

Define public domain
Additional functions
- Hotel

+ Roof

Commercial + Platform + Transit
- Public parking
- Transportation
- Bus, tram

- Market

Take advantage of publicness of roof system of railway station
Span

18m min.

Climate

Day light / HAVC

Safety

Fire and anti vibration

Public

Take advantage of publicness of roof system of railway station
Organizing different traffic circulation...

So I investigated my station project in this aspect, extend and reorganizing the rail tracks and the transportation circulation.

After planning the and subdivided in the other is for...
Overlapping of circulation....

Public oriented
- Eco roof integrated with park
- Recycling workshop center
- Collecting area
- Second-hand market
- studios for rental

Industrial oriented
- Recycling material Collecting area
- Loading deck in and out gate

Blurring & filtering
Threshold

Transportation Station

Lakeshore drive
Rail
G.L
Positioning station at underground level

So I made the station down in the 9m level underground.
Refering American standard freight delivering system
Extension of street and bridging gap..
High speed rail station

New gate of Southchicago

Refering American standard freight delivering system
Roof as bridge

Refering American standard freight delivering system
Adding new landmark
to emphasize publicness...
Adding new landmark

responding to the Green stream

responding to the freight hub

Open field for Freight facilities
public/nature

Lakeshore drive

Passenger station

Freight station

Recycling Industry

Intermodal hub

Recycling Industry
Access from Ground level

Program spectrum

Bridge between public and industry
Level adjustment

Entrance to Zero hotel Level GL+10.2
Entrance to Zero Market Level GL+6.0
Front entrance Reacting on public access Level GL+0.0
Entrance from neighborhood area Level GL+0.0
Extended street to the inside of building continuous from public domain.

- Entrance to Zero hotel
  - Level GL+10.2

- Entrance to Zero Market
  - Level GL+6.0

- Front entrance
  - Reacting on public access
  - Level GL+0.0

- Entrance from neighborhood area
  - Level GL+0.0
Vertical connection with Station
Service core
Traffic core/ shaft

Loading deck
Function
Level GL+6.0

1st.
Function
Level GL+14.4

3rd

Access from parking only for guest or residential key owner

Up to upper floor of guestroom
Function
Level GL+18.6

4th
View towards to i two faces
Function
Level GL+23.0

5th
Ground layer
Equally distributed load bearing..
2way steel frame

Castellated beam + Composite column

Ultra High performance concrete
Platform

Station facility & maintenance

Freight railway
Repair market
load bearing component supporting ground level of square
Slab element as public square enabling light penetration through hole between grid as well as load bearing transition
Building plot
Fragment A
Hotel Unit type A for family

Hotel Unit type B for Single
Hotel Unit type A for family

Hotel Unit type B for Single
Climate facade
Facade plan

Climate consultant
June~September
Shade needed
Operable solar panel

With a predominately East or West facing façade, a fixed system will not perform well throughout the day as the altitude of the sun varies throughout the day. Effective solar shading on the South, East and West façades can be achieved only by using an operable shading louver system on the building’s façade. The angle of the louvers is adjusted throughout the day to provide optimal shading.
Operable solar panel
South

With a predominately East or West facing façade, a fixed system will not perform well throughout the day as the altitude of the sun varies throughout the day. Effective solar shading on the South, East and West façades can be achieved only by using an operable shading louver system on the building’s façade. The angle of the louvers is adjusted throughout the day to provide optimal shading.
Operable solar panel
South

PVC Panel with aluminum louver
Vertical timber Louver

North

Roof FL
EL +26.50

4F FL
EL +26.50

3F FL
EL +26.50

2F FL
EL +26.50

1F FL
EL +26.50

Parking

Parking

Hotel

Hotel

Reused wood panel
Daylight
Prefabricated Ultra high performance concrete
Holedeck slab
Shear pocket (filled with UHPC)

Dowel bars (1 in. dia)

Hole deck slab

Bridge girder
Holedeck slab

0%

55.65%
Electriv cable/ air duct

Daylight

Daylight
Water reusing

Section A

Rainwater collector

Grey (Sink, bath) water is piped to bio filters

Pump

Water storage in roof garden

Eco pond + Bio filter

Water collector

Water pond

Eco pond

Rainwater collector

Recycled rainwater for flushing, cleaning

Pump

Water collector

Water pond

Eco pond + Bio filter

Recycled rainwater for flushing, cleaning
Water reusing

Rainwater collector

Grey (Sink, bath) water is piped to bio filters

Pump

Water storage in roof garden

Eco pond + Bio filter

Section B

Water collector

Water pond

Recycled rainwater for flushing, cleaning

Pump
Water reusing system

Water collecting route

Collecting water

Heat storage