THE BUFFERING ZONE
Site overview

THE CONFLICT

The Buffering Zone
Steelmaking plant

In the last decade the following were limited:
- dust emissions - 89.3%;
- gas emissions - 63.4%;
- water usage - 70.2%;
- electricity usage - 52.3%;
- natural gas usage - 58.5%.

Electricity and natural gas usage (per 1 ton of produced steel):

<table>
<thead>
<tr>
<th>Year</th>
<th>Electricity (MWh/Mg)</th>
<th>Natural Gas (1000 m³/Mg)</th>
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To be developed site

STAKEHOLDERS' CHARACTERISTICS

The Buffering Zone
### Analysis of needs and demands

**PROBLEMS STEMMING FROM FORCED NEIGHBOURHOOD**

**HOUSING (RES)**
- industrial noise
- unpleasant view (towards IND)

**STEELWORKS (IND)**
- more people around operational plant
- fear of limiting industrial activity

**LIMITING NEGATIVE INFLUENCE / PROGRAMMATIC POTENTIAL**

**HOUSING (RES)**
- block industrial noise
- filtering the view towards IND
- functions desired by residents

**STEELWORKS (IND)**
- possibility of future expansion (spatial and/or capacity of production)
- controlled flow of people between IND - RES
- functions benefitting the employees

**STAKEHOLDERS' CHARACTERISTICS**

*The Buffering Zone*
Delimitation of the Buffering Zone

STAKEHOLDERS' CHARACTERISTICS
Why even consider placing housing next to the steelmaking plant?
Why even consider placing housing next to the steelmaking plant?
Development of the district

1930

1950

1970

NOW

CONTEXT

The Buffering Zone
Land use in neighbouring areas

- Built landscape
  - Housing
- Unbuilt landscape
  - Allotment gardens
  - Forests and parks
  - Farming fields
  - Cemeteries

CONTEXT

The Buffering Zone
Summary

LIMITING NEGATIVE INFLUENCE / PROGRAMMATIC POTENTIAL

HOUSING (RES)
- block industrial noise
- filtering the view towards IND
- functions desired by residents

STEELWORKS (IND)
- possibility of future expansion (spatial and/or capacity of production)
- controlled flow of people between IND - RES
- functions benefitting the employees

MUNICIPALITY PLANS
- job opportunities

RESIDENTS’ WISHES
- “green” character
- leisure and culture facilities

SYNERGY

CONTEXT

The Buffering Zone
The Buffering Zone concept

The Buffer Zone acts as coral reef/architectural filter between conflicted stakeholders:
- enables varied functions to be sustained and coexist
- restricts or limits flow of undesired elements between stakeholders
- enhances flow of desired elements in the system
- enables the system to sustain adequate microclimate
- differentiates environmental conditions through morphological variation
The Buffering Zone concept

FOCUS _ creating a polymorphologic urban space for a variety of users identified below;

- SHOPS
  users: residents; employees; visitors

- COMMUNITY GARDEN
  users: residents; visitors; employees

- PUBLIC PATHWAY
  users: residents; employees; visitors

- GYM
  users: during school hours - students
     after school hours - residents; employees; visitors

- LIBRARY/CULTURE CENTRE
  users: during school hours - students
     after school hours - residents; employees; visitors

- SPORTS FIELD
  users: during school hours - students
     after school hours - residents; employees; visitors

- PARKING
  users: residents; employees; visitors

- LOUNGE/CAFETERIA
  users: employees; visitors

- OFFICE INDIVIDUAL WORKSPACE
  users: employees; visitors

- SCHOOL
  users: students; employees; visitors

- PRESCCHOOL
  users: students; employees; visitors

- OFFICE TEAMWORK SPACE
  users: employees; visitors

- GREENHOUSE
  users: employees; visitors

- FOCUS _ creating a polymorphologic urban space for a variety of users identified below;

DESIGN

The Buffering Zone
Greenhouse as a noise filter - previous urban plan

DESIGN

The Buffering Zone
Greenhouse as a noise filter - revised urban plan

DESIGN

The Buffering Zone
Greenhouse as a view filter - previous urban plan
Greenhouse as a view filter - revised urban plan
Greenhouse as a host for other functions - previous version
Greenhouse as a host for other functions - revised version
The public space in between - emulating the district’s character in a new context
Focus - educational facilities for the to-be community
PRESCHOOL

separate entrance
facilities shared with SECONDARY/COMMUNITY

USERS/CHILDREN IN DIFFERENT AGE GROUPS:
CRECHE_ 1-3 years old
KINDERGARTEN_ 3-6 years old

SECONDARY

separate entrance
facilities shared with PRIMARY/COMMUNITY

USERS/STUDENTS IN DIFFERENT AGE GROUPS:
PRIMARY 1_ 7-10 years old
PRIMARY 2_ 10-13 years old
SECONDARY_ 13-16 years old

GREENHOUSE

DESIGN

The Buffering Zone
School and preschool setup - previous version
School and preschool setup - previous version
School and preschool setup - revised version
School and preschool setup - previous version

during school hours
[8:00 - 16:00]

after school hours
[16:00 - 22:00]
School and preschool setup - revised version

during school hours
(8:00 - 16:00)

after school hours
(16:00 - 22:00)
School and preschool setup – previous version
School and preschool setup - revised version

The Buffering Zone
**Preschool - layout**

- **CRECHE**
  - 1 playroom for 16 children age 0-1
  - Separated from other age groups
  - Children don’t need separate cafeteria
  - Immediate access to the outside from playroom

- **KINDERGARTEN**
  - 2 playrooms for 2 age groups - 2-3 years old and 3-5 years old
  - Children need separate cafeteria
  - Immediate access to the outside from playrooms

**DESIGN**

The Buffering Zone
Preschool - layout

CIRCULATION SPACE
-open space with growing beds
-can be used for indoor play

TEACHERS’ LOUNGE

DESIGN
Primary classes are not really structured; play-and-learn
13 assigned classrooms for 7 age groups
each class needs 1 specifically assigned classroom
Primary school - layout

DESIGN

The Buffering Zone

CAFETERIA

ACCESS TO GYM

TEACHERS' LOUNGE

CIRCULATION SPACE
- open space with growing beds
- can be used for indoor play
SECONDARY classes are structured
6 specialized labs for science classes
8 general classrooms

OPEN LEARNING SPACE
spaces for individual or teamwork
access to learning supplies and IT facilities

DESIGN

The Buffering Zone
Secondary school - layout

- CAFETERIA
- TEACHERS' LOUNGE
- TERRACE
- ACCESS TO GYM
- ACCESS TO SCHOOLS' GREENHOUSE

CIRCULATION SPACE
- open space with growing beds
- lounge area

DESIGN

The Buffering Zone
Administration and common facilities - layout

THE BUFFERING ZONE

KITCHEN

ADMINISTRATION

PRINCIPALS

COUNSELLOR

NURSE

SECRETARY

DESIGN

The Buffering Zone
Main sections

Section A-A

Section B-B

DESIGN

The Buffering Zone
Climate control - synergy between greenhouse and school
Main facade fragment

DESIGN

The Buffering Zone
Materialization - building skin details
Materialization - facade treatment

View from IND side

View from RES side

Library/gym

DESIGN The Buffering Zone
Materialization - interiors

DESIGN

The Buffering Zone
Materialization - promenade