GARE DE MONS TRANSITION HUB

PRESENTATION OUTLINE

1. A survey of the Walloon backbone
2. Theoretical background
3. Existing condition
4. Modification
5. Design tools
6. Architecture
7. Technical & climate
8. Animation
... once meant the beginning of the Industrial Revolution in Europe.

Defined by the limits of the underground coal reserves, it covers an area of 6% of Wallonia, but inhabits two thirds of its population.

An extensive rail network connects industrial hotspots with cities.

Since most of the industry has long gone, the network still shows where the industry is used to be.
break and sieve out calcium carbonate

transport granulate silo

wash sort out sieve break stone

fly ash cement granulate

transport concrete silo mix

Line 96 | since 1963

Cuesmes

Nimy

Nimy-Maisières

Ghlin

Obourg

Obourg cement

Havré

Estinnes-Hyon-Ciply

Frameries

Genly

Harmignies Vellereille

Jemappes Quaregnon

Saint-Ghislain

Quaregnon-Central Hornu-Route Boussu-Route

Monsville Pâturages Wasmes Petit-Wasmes Warquignies Flénu-Produits | until 1984

Line 96 | 1857 - 1963

Gembl

Line 96 | since 1963

transportation system

high speed rail link Paris - Cologne

Gare de Mons Transition Hub

Thalys

French High Speed Rail

transportation system

transport high speed rail

transportation system

sieve and homogenize grind and dry

grind and dry cement silo

pre heating heat up to 1500 °C

clinker silo

cool down to 100 °C

silicium dioxide iron oxide aluminium trioxide

transportation system

transportation system

transportation system

transportation system

transportation system

transportation system

transportation system

transportation system

transportation system
GARE DE MONS TRANSITION HUB

ALONG LINE 96
GARE DE MONS TRANSITION HUB

UNDERGROUND QUARRY

C.S. LA MALOGNE

PLAN OF LA MALONE UNDERGROUND QUARRY

SECTION OF EXTRACTION TUNNEL, PARTLY DAMAGED BY PRESSURE AND WATER

SECTION OF EXTRACTION TUNNEL, DIVIDED INTO WALKWAY AND TRANSPORTATION ROUTE

SECTION OF TRANSPORTATION TUNNEL

SECTION OF TRAIN TUNNEL
"ZONING WAS EMPLOYED TO SEPARATE INDUSTRY FROM THE HOME, AND RAILWAYS WERE USED TO LINK THE TWO WITH TRADE CENTERS. THE IDEAL SITE DID CONVENIENTLY FORESEE TERRACES IN THE LANDSCAPE WHICH HELPED TO ARTICULATE THE DIFFERENT ZONES, BUT THE HIERARCHY OF PARTS WAS ALSO ORDERED AND HEIGHTENED BY THE USE OF AXES."

Tony Garnier, Une Cité Industrielle
Instead of taking out the obstruction the railway track forms, they materialize the obstruction and transform it into an accessible "urban artifact" that links both sides of the city. "As a contemporary linear city, the total mass forms a city within the city."

Michiel Riedijk, Niklaas Deboutte and Kersten Geers, Leiden railway zone
“Modification reveals an awareness of being part of a pre-existing whole, of changing one part of a system to transform the whole.”

Vittorio Gregotti in ‘Territory and Architecture’
GARE DE MONS TRANSITION HUB

FACADE

TRANSITION

CITY CENTER

PARK

COMMERCIAL CENTER

TRAINSTATION

TYPOLOGY
GARE DE MONS TRANSITION HUB

CONNECTION
GARE DE MONS TRANSITION HUB

SECTION SEQUENCE
GARE DE MONS TRANSITION HUB

SECTION PRINCIPLES
GARE DE MONS TRANSITION HUB

DIVE & SPORTS CENTER
GARE DE MONS TRANSITION HUB

GALLERY
GARE DE MONS TRANSITION HUB

CIRCULATION VOID
GARE DE MONS TRANSITION HUB

PARK FACADE

+ 18100MM - ROOFEVEL
+ 10900MM - HOTELEVEL
+ 10600MM
+ 6300MM - GROUNDELEVEL
0MM - PLATFORMLEVEL
SOLAR PANEL = ELECTRICITY + SHADING
GARE DE MONS TRANSITION HUB

VENTILATION

IN-WALL FAN: VENTILATION

IN CASE OF FIRE: STRONG VENTILATION

WHEN TRAIN ARRIVES: BLOW!
GARE DE MONS TRANSITION HUB

CLIMATE
GARE DE MONS TRANSITION HUB

OFFICE FLOOR
- 20 mm concrete top layer
- Concrete joint layer
- Ventilation intake
- 260 mm pre-stressed hollow core floor slab
- 270 x 200 mm steel I beam
- 120 mm thermal insulation
- Acoustic insulation

CARPAK FLOOR
- 20 mm textured concrete top layer
- Concrete joint layer
- Ventilation intake
- 260 mm pre-stressed hollow core floor slab
- 270 x 200 mm steel I beam
- Prefab concrete barrier block

CARPAK FACADE
- Single-glazed strips 60%
- 30% open for ventilation

TRUSS - FLOOR CONNECTION
- 270 x 500 mm steel beam
- Concrete filling for fire protection
- 30 mm steel endplate
- 260 mm pre-stressed hollow core floor slab
- 120 mm thermal insulation
- Acoustic insulation

HIGHLY ACOUSTIC INSULATED INNER WALL
- 10 mm concrete panel
- 480 mm steel framing
- 200 mm Isofloc insulation

D V 2
D H 1
D V 3
D V 5
GARE DE MONS TRANSITION HUB

DETAINING

**GARZIP ROOF**
- 333 x 65mm Kalzip roofing
- 80mm thermal insolation
- 100mm vapour seal
- 100mm steel trapezoidal roof panel
- Perforated for acoustics
- 1200 x 500mm reinforced concrete truss
- 400 x 200mm steel I beam

**GLASS ROOF**
- 400 x 200mm steel I beam
- 50 x 70mm Schueco aluminium profile
- 30 degrees safety glazing
- Solar panels mounted on glass sheets for electricity and shading
- 60 degrees clear safety glazing
- Gutter for rain water and condensation drainage

**VOID**
- 333 x 65mm Kalzip roofing 15 degrees
- 100mm steel trapezoidal roof panel
- Perforated for acoustics
- 1200 x 500mm reinforced concrete truss
- 80mm thermal insolation
- 100mm vapour seal
- Gutter for rain water drainage
- 10mm concrete panel
- 480mm steel framing
- 200mm Isofloc insulation
- 400 x 200mm steel I beam
- 50 x 70mm fixed and adjustable Schueco aluminium profiles
- Safety glazing
GARE DE MONS TRANSITION HUB

MATERIALIZATION

- Brushed Aluminium
- Smooth Concrete
- Textured Concrete
- Perforated Corten Steel
- Glass
- Wooden Strips
GARE DE MONS TRANSITION HUB

ANIMATION
GARE DE MONS TRANSITION HUB

THANK YOU

AND SPECIAL THANKS TO
KARIN, ESIN, JOHN & DAAN
MOM & DAD