NORDBAHNTRASSE
HYBRID OPEN SPACE IN WUPPERTAL
SITE SELECTION

Location in the Nordrhein-Westfalen
* Adress nature and water themes

Culverted creeks and location in the Wupper valley.
Nordbahntrasse - part of disused railway system that is transformed into bike paths.

https://www.panorama-radwege.de/nordbahntrasse.jpg
What kind of public space typology will it create?

Which landscape qualities should be sustained in such area? How to treat a new programme of a post-infrastructure?

How to organize a process to secure goals? What could be a role of landscape architect in the process?
**hybrid open space**. The reference to specific types [a square, a park, a promenade...] is gradually disappearing from contemporary urban development and with it, to some extent, the legibility and recognizability of open spaces.

Günther Vogt Landscape as a cabinet of curiosities, 2014

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**Hybrid of typologies**

- **Bike path**
- **Linear city park**
- **Neighbourhood park**
**immanent landscape** is not merely an intellectual construct, it is also about inherent respect for and a capacity to fully live out the momentum of a place, in all its moral, physical, and spiritual substance.

Christophe Girot, Immanent landscape Harvard Design Magazine 36, 2013
Nordbahntrasse is becoming a destination and should be designed as such within the city context.
DISTRICTS

- residential
- commercial
- industrial
- district boundaries
47% (160,400 people) of all Wuppertal inhabitants live in neighbourhoods along Nordbahnstrasse.
Spaces of Nordbahnstrasse
LOW MOUNTAINS, HIGHLAND AND LOWLAND

Location in the landscape
CROSSES CREEK VALLEYS

- Nordbahntrasse
- Wupper river
- Creeks
CUTS THROUGH MOUNTAINS

tunnels

cuts in the mountains
SERIES OF SPACES
TYPOLOGY OF NORDBAHNTRASSE

- CUTTINGS
- CUTTING AND SAME LEVEL
- MIXED (CUTTING AND EMBANKMENT)
- EMBANKMENT

 TYPOLOGY OF SPACES OF NORDBAHNTRASSE

- Cutting slope
- Mixed (cuttings + embankments)
- Embankment slope
- Embankments
**CUTTINGS**
focus on the underlying landscape

- Introvert character
- Framed views
- Most direct contact with underlying landscape / soil
- Difficult to orientate in surroundings
- Does not obstruct view in the neighbourhood
- Physical barrier

**EMBANKMENTS**
focus on the context

- Extrovert character
- Open views
- Artificial construction
- Easy to orientate in surroundings
- Obstructs view in the neighbourhood
- Visual and physical barrier
COMMUNITY WORK
OPPORTUNITIES
ROLE OF LANDSCAPE ARCHITECT

- LANDSCAPE ARCHITECT
- COMMUNITY
- WUPPERTAL CITY
- URBANISTS
- ENGINEERS
- TOOLS
- SITE DESIGN
- REALIZATION
5 THEMES

MOBMENT

ACCESSIBILITY

DESTINATIONS

NATURE

WATER

TOOLBOX

TOOLBOX

TOOLBOX

TOOLBOX

TOOLBOX
Schwebebahn experience
Pina Bausch dance theatre
MOVEMENT PATTERNS

LOOP

DAILY COMMUTING

LONG DISTANCE

ACROSS
MOVEMENT

USERS

Children

Teens

Adults

Families

Seniors
CONTINUOUS ROUTES
Keep routes continuous and within site borders.

NO CROSSINGS WITH CAR TRAFFIC
Preserve the exclusive separation from streets/car traffic but adjust the routes according to needs of bike/pedestrian instead the ones of train

TAILORED ROUTES
Accommodate different users and movement types / patterns

NEW EXPERIENCE
Use the site to create new visual and sensorial experiences
USE HEIGHT DIFFERENCES

CUTTINGS - new paths reveal and/or express geomorphology

- Cut-in path
- Cut-in path / elevation
- Attached path
- Attached path / elevation
- Dug-in path on slope
- Cut-in path on slope
- Dug-in path
- Cut-in path with existing retaining wall

EMBANKMENTS - new paths reveal context in different perspectives

- Elevated path
- Path on poles
- Path on poles / elevated path on the line

TAILORED PATHS

FOR ALL AREAS

- Bike path (asphalt + pit stop stations)
- Pedestrian path (crushed limestone or asphalt + furniture)
- Skateboard path (smooth concrete or asphalt + ramps)
- Jogging and Nordic walking path (crushed limestone or wood bark + height differences)
- Cycling path for children (asphalt)

FOR WIDER AREAS

extra tracks, both in flat areas and slopes

- For all areas
- Next to each other
- Parallel
- Alternative

FOR VERY WIDE AREAS

- Path on poles / elevated path on the line
- Path on poles
- Path on poles / elevated path on the line

MULTIPLE ROUTES

FOR ALL AREAS

- Bike path (asphalt + pit stop stations)
- Pedestrian path (crushed limestone or asphalt + furniture)
- Skateboard path (smooth concrete or asphalt + ramps)
- Jogging and Nordic walking path (crushed limestone or wood bark + height differences)
- Cycling path for children (asphalt)

FOR WIDE AREAS

- Next to each other
- Parallel
- Alternative

FOR VERY WIDE AREAS AND SLOPES

- Focus on experiencing the place - path close to the rocks
- Focus on experiencing the place - path through various planting types
- Special tracks

SHAPED ROUTES

- Bike path (asphalt + pit stop stations)
- Pedestrian path (crushed limestone or asphalt + furniture)
- Skateboard path (smooth concrete or asphalt + ramps)
- Jogging and Nordic walking path (crushed limestone or wood bark + height differences)
- Cycling path for children (asphalt)
MAP OF MOVEMENT INTERVENTIONS

ROUTES
- multiple routes
- parallel routes
- special tracks

PATHS ON SLOPES
- paths in cutting slopes
- paths on embankment slopes
Access points
ACCESS POINTS AND DISTANCES FROM NORDBAHNTRASSE PERSPECTIVE

Access points North of the line
Access points South of the line

Distances between access points: the shortest = 50 m
the longest = 1040 m
on average = 480 m

SHORTEST ROUTES BETWEEN ACCESS POINTS FROM CONTEXT PERSPECTIVE

Distances between access points: the shortest = 150 m
the longest = 2625 m
on average = 1033 m (for cyclists)
900 m (for pedestrians)

bike and pedestrian access
pedestrian access (stairs only)
shortest routes
routes only for pedestrians
alternative routes
bike and pedestrian access
pedestrian access (stairs only)
EDGES AND ACCESSIBILITY

TYPOLOGIES OF EDGES

BOUNDARY WITH PRIVATE PROPERTIES

BOUNDARY WITH SEMI-PUBLIC SPACES

BOUNDARY WITH PUBLIC SPACES

ACCESSIBILITY
**PRINCIPLES**

**DIFFERENTIATE EDGES**

Differentiate edges according to spatial and functional situation of Nordbahntrasse and context.

**NEW ACCESS POINTS**

Create new accesses and lateral connections in relation to the existing networks and programme.

**COMMON DESIGN LANGUAGE**

Edges and accesses should have a common design language to emphasize the unity of the park.
TOOLS

EDGE OF PRIVATE PROPERTY
Hedge + entrance gate + path

EDGE OF SEMI-PUBLIC SPACE
Hedge + path

EDGE OF PUBLIC SPACE
Path

EDGE OF A STREET
Path + planted border

COMMON DESIGN ELEMENTS
Entrance gate to private property
Secondary paths (private / semi-public)
Entrance / info place - where to prepare for sport and get information on the place
Stairs / ramps
Planted borders
Security railing / fence on top of deep cuttings and steep slopes

FLAT AREAS

EMBANKMENTS
Hedge + entrance gate + ramp/path
Hedge + ramp + path
Path on slope
Path on slope + border

CUTTINGS
Hedge + entrance gate + stairs/path
Hedge + stairs + path
Ramp and path
Cut-in or dug-in ramp and path + border

DEEP CUTTINGS
Transparent fence + entrance gate
Railing + ramp/path (where possible)
Cut-in ramp and path
Cut-in ramp and path + border
MAP OF NEW ACCESS POINTS AND EDGES

EDGES
- edge of private property
- edge of semi-public space
- edge of public space
- edge of a street

ACCESS POINTS
- new access point
- new access point from a bridge or street
- existing access points
- connection to bike route
By means of design and new functions, transform certain areas between the bike path and city to strengthen Nordbahntrasse as a destination.

Design elements should be introduced along with new functions to help creating a new destination.

New functions should be chosen and positioned in relation to the existing programme of the line and of the context.
DESTINATIONS

ALL AREAS

- Seating / benches / chairs
- Picnic tables

ALL WIDE AREAS

- Outdoor exercise places
- Playgrounds
- Pavilions for group exercise
- Cafes and beer gardens
- Sunbathing furniture
- Grill furniture

EXTRA WIDE AREAS

- Sport pitches
- Events
- Ice skating rink
- Special gardens
- Water features
- Lawn

SLOPES

- Climbing wall in deep cuttings
- Sledge slopes on wider slopes
- Slope gardens

BRIDGES

- Look-out post
MAP OF NEW PROGRAMME

PROGRAMME
- parks
- sport pitches
- playgrounds
- culture
- education
- catering
- train station

DESTINATIONS
PLANTS OF NORDBAHNTRASSE

MATERIALS OF NORDBAHNTRASSE
GEOMORPHOLOGY

Karst limestone (with joint sets)
Karst sinkholes - nature reserve
Typical elements of karst landscape

LOCAL LANDSCAPE CHARACTERISTICS

LANDSCAPE TYPES

Luzula luzuloides
Gymnocarpium dryopteris
Carex pilulifera
Great wood-rush / Beech forest

Gymnocarpium dryopteris
Melica uniflora
Athyrium filix-femina
Wood melick / Beech forest

In more wet areas with high groundwater level that are not suitable for beech forests

Luzula luzuloides
Melica uniflora
Athyrium filix-femina
Oak / Hornbeam forest

CREEKS

NATURAL GEOMORPHOLOGY

Typical elements of karst landscape
Introduce the place/location by means of local planting, materials and processes to create atmosphere and sensorial experience that is characteristic to the place.

Focus on sensorial experience in cuttings.

Focus on visual experience on embankments

Choose plants according to water conditions from dry embankment to creek floodplains.
CUTTINGS
- Woods
- Exposed rocks with plants
- Meadows
- Trembling trees
- Fragrant plants

EMBANKMENTS
- Openings
- Enclosures
- Layers of planting
- Transparent and thick trees

HUMIDITY CONDITIONS
- Water planting
- Floodplain planting
- Bank planting
- Slope planting - plants with strong root system
- Embankment top planting

MATERIALS
- Limestone
- Crushed limestone
- Limestone gravel
- Limestone rocks
- Dry stone wall
MAP OF NATURE INTERVENTIONS

PLANTING

- focus on sensorial aspects of planting
- mixed plants (sensorial and visual)
- focus on visual aspects of planting
- openings in planting for views
- planting along creeks
Creeks
Flood in lower areas

Stormwater run-off
TOPOGRAPHY + CROSSINGS OF CREEKS AND NORDBAHNTRASSE

culverted creek
open creek with changed appearance
unchanged creek
flood area
Daylight creeks, where possible, to enrich identity of the neighbourhoods.

Manage stormwater in the upper creek areas locally, in order to reduce the flood downstream.

Collect, purify and store rainwater from the neighbourhoods and the site itself on the Nordbahntrasse.

Use water to create new visual and sensorial experiences.
TOOLS

WATER PLANES
- rainwater channel cut in a slope
- retention ponds
- wetlands and bioswales for cleaning storm water
- alternative paths that can flood during heavy rainfall events
- reflection ponds storing clean rainwater / ice-skating rinks in winter
- fountains
- stream or multiple streams

DAYLIGHTED CREEKS
- creek under embankment (cut or a tunnel in the embankment)
- creek in the cutting (outlet from a culvert to emphasize the height difference between the line and the creek)
- creek in the same level
- creeks with meanders and natural bottom
- floodplains
- retention ponds
- rocks in the stream to deflect the current

BIOSWALES AND SLOPE WATER GARDENS
- bioswale on an embankment (between embankment and street to retain and clean rainwater from the line and streets)
- bioswale in a cutting (between cutting and street to retain and clean rainwater from streets)
- embankment slope water garden (between embankment and built area to retain excess rainwater from the line)
- cutting slope water garden (between cutting and built area to retain and clean rainwater from the surroundings)
MAP OF WATER INTERVENTIONS

WATER PLANES
- wide water planes

DAYLIGHTING CREEKS
- creek under embankment
- creek in the cutting
- creek in the same level

BIOSWALES AND SLOPE GARDENS
- bioswale (between embankment and street)
- bioswale (between cutting and street)
- slope water garden (between embankment and built area)
- slope water garden (between cutting and built area)

EXISTING CREEKS
- culverted creek
- open creek
MOVEMENT

Old road

Guerilla path

Road

Bike and pedestrian path

Old road

Bridge

Paths in allotment gardens

MOVEMENT
Elevated path
Attached path
Dug-in path on slope
Cut-in path on slope
Bike path
Pedestrian path
Skateboard path
Jogging and Nordic walking path
Pedestrian loop
Bike & pedestrian paths
Jogging routes
Longboard track
Special tracks
Pedestrian loop
Bike & pedestrian paths
Jogging routes
Pedestrian loop
Bike & pedestrian paths
Jogging routes
MOVEMENT
ACCESSIBILITY

TOOLBOX A+B
- Path + planted border
- Transparent fence + entrance gate
- Hedge + entrance gate + path
- Cut-in or dug-in ramp and path + border
- Cut-in ramp and path + border
- Hedge + entrance gate + stairs/path
- Entrance to bus
- Edge with a street
- Private edge
- New access
- New access
- Extra access
- Extra accesses
- Private edge
- Access to bus
- Bridge
- Edge with a street
- New access
- Access to bus
- Extra access
- Extra access
- Private edge
- Edge with a street
- New access

TOOLBOX B (additional to toolbox A)
- Entrance gate to private property
- Secondary paths
- Cut-in ramp and path
- Entrance / info place
- Stairs / ramps

ACCESSIBILITY
Parking Square with garbage bins

Haus Becker catering

Playground

Multi game court Streetball

Square with garbage bins

Playground

Playground

Playground

Multi game court Streetball

DESTINATIONS
Overgrown cutting slope, pioneer species

Overgrown top of embankment, pioneer species

Limestone rock wall with trees

Cluster of birches

Woods, uneven relief, deep depressions, pioneer species

Plane trees in a grid

Allotment gardens

Meadow, pioneer species

Cluster of trees

Limestone rock wall with trees

NATURE
TOOLBOX

- Woods
- Exposed rocks with plants
- Slope planting - plants with strong root system
- Fragrant plants
- Openings
- Transparent and thick trees
- Water planting
- Crushed limestone
- Dry stone wall
WATER

Surface run-off

Culverted creek under the street
WATER

RETENTION PONDS
WETLANDS AND BIOSWALES
FOR CLEANING STORM WATER

TOOLBOX A

EMBANKMENT SLOPE WATER GARDEN
BIOSWALE ON AN EMBANKMENT
CUTTING SLOPE WATER GARDEN
BIOSWALE IN A CUTTING

TOOLBOX B

RETENTION PONDS
EMBANKMENT SLOPE WATER GARDEN
BIOSWALE ON AN EMBANKMENT
BIOSWALE IN A CUTTING
WETLANDS AND BIOSWALE
FOR CLEANING STORM WATER
CUTTING SLOPE WATER GARDEN
REFLECTION PONDS
(STORE CLEAN RAINWATER)
OPTION A
Event space and lawn with picnic areas and multiple water features. Pedestrian path loop and wood with jogging and nordic walking routes.

OPTION B
Sports pitches with tribune on a slope and bioswales and water gardens on slopes. Pedestrian path loop and woods with longboard track.
Stage 2 - Setting up the base
Current situation - overgrown borders, no access to the site
Stage 2 - cleared borders and new access to the site
Stage 3 - Extras
Lateral crosssection through the site

- improved street profile
- slope water gardens, pedestrian and jogging tracks
- reflection pool with cleaned rainwater
- event space / lawn / picnic place
- bike path
- woods with jogging routes
thank you!