Non-Splintered City

Exploring the gateway corridor development Beijing-Tianjin, to develop a plan for a core local transport node, as an activator to connect the local existing functions to the governmental services related plan.

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1.1 Motivation

Tianjin is one of the top 4 national cities in China, and the fastest economic growing municipality. In 1996, based on the national economic strategy, Tianjin strengthen its steps to develop the second core of the city that called Binhai New Area which owns the biggest harbour in northern China. From that time, a huge amount of investment came both for the high technical industry and the urbanization development process. The new town and the old city centre have been connected by national infrastructure as several highways and a metro line. But there is an obvious spatial and functional segregation in all the aspects for those districts which only be used as the infrastructure corridor between these two cores.

The issue of the networked infrastructures leded development was already a major discussion in a European context. In the recent decade, more attention has been paid to this discussion in China. How to integrate the infrastructure construction and the local rural reality is an inevitable problem in the fast urbanization process in China.
‘ONE PERSON’S INFRASTRUCTURE IS ANOTHER’S DIFFICULTY’: URBAN INFRASTRUCTURE NETWORKS AS ‘CONGEALED SOCIAL INTERESTS’

STEPHEN GRAHAM AND SIMON MARVIN

splintering urbanism

networked infrastructures, technological mobilities and the urban condition
1.1 Motivation

Creating an integrative urban form by taking the infrastructure not a cause of unbalance, but an opportunity for all possible social groups: urban infrastructure network as vivid social interests.

Possible outcome: a critical regional vision, illustrate by a developing design.
Reinforce the spatial link by defining a new communication space
1.1 Motivation

Regional strategy
The regional centralities are connected by the spatial links without functionally support the sub-region.

Main challenge: Integrating instead of fragmentation

Infrastructure  Landscape  Land use
**Beijing: Capital**, world city, cultural city, livable city

**Tianjin: Economic centre**, eco-city, international harbor city

Beijing municipality & Tianjin municipality
- Surface: 16808km² & 11760km²
- Population: 19.72 million & 11.45 million
- Population density: 823 per/km² & 886 per/km²

The Netherlands
- Surface: 41500 km²
- Population: 16.00 million
- Population density: 484 per/km²
Two cores

Old City Centre
- Service centre, financial centre, education, ITC industry

Binhai New Area
- Secondary centre, transportation industry, international harbor

Tianjin metropolis
- 6.810.000 inhabitants
- 2.900 km²

Randstad south wing
- 3.423.780 inhabitants
- 2.827 km²
Beijing and Tianjin have a unique relationship. The distance between these two mega is only 150km. It means you can travel from the harbor to Chinese capital by the high speed train in 40 minutes.

Before 1950, these two mega have their own identity which can be defined as one political centre and one economic centre. After 1980, this kind of definition came back. Tianjin could be taken as the gateway of Beijing. The axis along Great Beijing Region, Tianjin and the harbor would be the most possible line for the future urbanization.

The harbor raises its importance only in the last 15 years. Now it becomes the 4th biggest port in the world and the second core of Tianjin metropolis. The harbor is a transition of the logistic both in local scale and global scale. It is obviously that the harbor and its surrounding can be defined as the gateway of Tianjin and even Beijing.
Develop plan for a station surrounded area
Diagnose identity in a local scale

City centre

In-between

Binhai New Area
80% of the flow rate jump between the two cores

Starting... In-between... Terminus

39,000 passengers per/day;
14 stations in total;
There are 6 stations in the in-between area;
4 of them are functional inefficient;
There are 2 stations in process in the in-between area.

700,000 inhabitants;
Income:
$ 1,500 per agriculture inhabitant per year
$ 4,500 per non-agriculture inhabitant per year
What is the in-between area?

Tianjin has **two existing cores** as the **old city centre** and the **Binhai new area** which is 30km away from each other. These two are **highly urbanized**, but between these **two cores** there are huge amount of **non-defined space** which is **segregated** in all the aspect (**social, economy, environment and residential**) with these two and only be used as the **infrastructure corridor**.

Why focus on the in-between area?

Large-scale infrastructure development caused spatial fragmentation which indirect intensified the social segregation. Infrastructure, did not facilitate the low-income residents, but bring their daily lives more inconvenience. If we zoom in to the metropolitan scale, whether the highway connection is effective is questionable, and it inevitably brings spatial and social fragmentation under the condition that the network design work only achieved by newly planned development without considering current local issues.
A typical Monday morning, 8:00am, starting station in the city centre
8:30am, one of the station in the in-between area

Conclusion: 1st class core has already been used as an activator;
In-between district is out of the flowing rate
Before 1860
Ancient Chinese city

1900
Colonial city
Second largest city in Asia
Industry identity
Reflection of Chinese modernization

1954
Socialism city
Concentric structure
Industry city
Transportation hub

1960
Main core with satellite town control the sub-region

1982
Economic centre of northern China
Industrial base
Modern syntactic harbour

1986
Use the river as the main corridor
Move the industry to east
Take the harbour as the 2rd core

1996
Use the river and highway as the main corridor
Fix the 2 cores structure
Governance model

GOVERNMENT BY LAW

National Spatial Focus → Regional Spatial Strategy → Mega scale Master plan → City scale Master plan

GOVERNMENT BY MARKET

Urban design for spatial intervention

DEVELOPER

INDIFFERENCE

LOCAL INHABITANT
The in-between area doesn’t well integrate in the two cores network. The strategy of the strong top-down plan is using the huge infrastructure and the big centralities as the main regional driven forces for development. But the local reality doesn’t be included in the system. There is a big gap between the plan and the reality. They don’t support each other functionally.

**How current land-use could be improved to achieve more local approach**

![Existing land use vs. Land use plan](image)
The theoretical framework work between Japan: Nogoy, UK: Edinburgh, NL: Rotterdam to counteract the current fragmentation and enhance local enhesinoing development.

The governmental plan doesn't support the existing in-between area

"big mismatch" between the governmental regional master plan and the local reality dynamic. The current master plan does not recognize the existing dynamic in the in-between area, spatially or functionally.

How to integrate the local development with a metropolitan scale spatial & functional strategy.
Establish a **spatial** and **functional** link, between the **governmental master plan** and the **local development** new programs with existing settlement and its landscape. This is ordered to critical insistent the **global city model** and the existing potentiality of **settlement** and **landscape** instead of neglecting.
To make the gateway not only the transport corridor, but also the local development corridor, we need to

**Share the flow**

By raising the attraction of the in-between area, first we need to raise the attraction of the existing transport nodes

**Activate the node**

- Existing station
- Planned station
If we overlap the key transport, functional use and landscape elements, it is easy to find all the elements are spatially fragmented. And they don’t functionally support each other.

There are no clear activators for the governmental concept; The ambitious concept with the view of re-organizing the spatial structure, has a threat of breaking the existing traditional morphology, which cause losing the rural identity; It may also create new fragmentation.
High flexible node development
+ Diversified corridor development
+ Integrated network development

Local scale
City scale
Metropolitan scale
Activating the attractors

Functional corridor

Transport corridor

Been able to expend the nodes potential as activators to achieve & define the future identity of the in-between area by providing more mix functional use & flexibility
Guidance

What: Integrate the local network to the metropolitan network development

How: Reinforce the local culture identities to diversify the network system; Using the brown field as an opportunity for the integration under a cooperate network approach

Principles

Ecological renewal
Social equity
Vibrant economy
Authentic cultural identity
Centrality & Networks

- Metro station
- High way transport point

1km scale
Station surrounded developing potential

Sources: (http://www.turenscape.com/project/project.php?id=453, 2010)
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Splintered urban form & brownfield

- Metro station
- Industry related brown field
- Agriculture related brown field
- Cluster & settlement
- Road infrastructure
Splintered urban form & brownfield strategy
Agriculture & brownfield
Agriculture & brownfield
From the nodes to the corridor

Existing & Potential nodes

Interreaction

Transport Functional Landscape
Corridor reality
Network city Model

Metropolitan scale

Regional scale

Local scale

Strategy

Network city Model

Metropolitan scale

Regional scale

Local scale

Strategy
Networked local development

Metro station

River bank

New housing typology

Factory

Conference & exhibition

Agriculture
Design location as a test
Vision

Integrating the urban elements

- Landscape attraction
- Functional attraction
- Functional corridor
- Landscape corridor
- Transport corridor

Existing settlement
Potential attractor
Potential transport node
Existing attractor

Scale: 500m
Pedestrian & cycling system

500m

- Pedestrian & cycling link
- Square
- Bike Parking
Centralities & clusters

Strategy
Landscape system

- Agriculture
- Brushwood
- Corridor
- Park
- Green space
- Square
- Attractor

Landscape corridor
Agriculture land use
Square
Green open space
Attractor
Using the Hai-he river and the main road as the tool to connect the old city center and Binhai new area.
Learn from the local morphology

道路不仅是指交通的主体，也是街区形态的限制因素。曲、直都将直接影响建筑群体空间意象。寻找自发型下聚落空间的逻辑形式规律，是研究建筑群落丰富性的关键切入点。此时，道路除了交通之功能，将成为景观城市景观的重要途径，“动”与“静”赋予道路新的内涵。

孔（Void）是构成平面肌理的重要元素，这些结构相似形状相似的元素形成了协调有序的自发型建筑形态。孔作为私人领域和孔作为公共空间，如此的空间结构与当地居民的生活习惯密切相关。或许是中国建筑形态的精髓，我们试图用孔来延续中式聚落的发展。

聚落肌理虽然难以被直接感受到，但肌理却清晰地反映了地域特色、气候、人文、生活习惯、建筑事物等。因此，对肌理的控制相当于对文脉的把握。而把握的难点在于延续传统聚落形态和发展高度与现代聚落间的平衡。
Nearby village regeneration case study
Nearby village regeneration case study

Typical Unit Scale: 12m X 12m

Connect Principal: Double & Row

Alternative & distance

Green Communication Basis on Current

Date: 22nd Dec

Crop Dumping

Public Green

Form of the Units
Coherent & flexibly urban cluster
Learn from the Governmental identity

300,000 km² river oriented CBD development

The new town program has been forecasted to have 500,000 habitants
Build an ecological structure

Action map

Iconic pedestrian bridge
Agriculture land
Public space
River surrounded development
Pedestrian corridor
Landscape corridor
Attractor
Reorient urbansim to the river

Action map

- River surrounded development
- New service development
- Pedestrian corridor
- Landscape corridor
- Attractor
Increase the vision through time

Action map

- Local transport node
- New service development
- Pedestrian corridor
- Landscape corridor
- Attractor
Overall strategy & design principle
Show case design 2025

Relocated the CBD
About 1,000,000 m²
Providing services for about
50,000 people
Following the action strategy

- Iconic pedestrian bridge
- Agriculture land
- Public space
- Landscape corridor
- Attractor
Proposed public space network
Proposed semi-public space system

- Entrance as the key semi-public space
- Possible route
Link public space & urban function

Entrance for different functional zone
Commercial on the ground floor
Semi-public space
Public space
Crossing point as the key element
Crossing point as the key element
Crossing point as the key element
Crossing point as the key element
Typology regeneration

- Entrance for different functional zone
- Transferred from old constructions
- Newly proposed typology
Landscape corridor design
Landscape corridor design
Landscape corridor design
Landscape corridor design
Landscape corridor design
Landscape corridor design
Landscape corridor design
Functional corridor design
Functional corridor design
Functional corridor design
Functional corridor design
Functional corridor design
Transport corridor design
Transport corridor design
Transport corridor design
Location for each core element
THANK YOU!
QUESTIONS?
Location for each core element