Leisure City – Transforming from traditional fishing village to sustainable oriented tourism city – the case of PENGHU, TAIWAN
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GEOGRAPHY

PENGHU ATLAS

Penghu County contain 1 city and 5 township
Area 128 km²
90 isles with 71 uninhabited isles
Coastline 449 km
Position[LAT/LONG] N 23°12 ~ 47 / E119°19 ~ 43
Highest Point[ALT] 79m on Damow Isle (大貓嶼)
Soil Basalt / Coral reef
Population 91,785
Tourist number 479,992 (2008)
Tourist season April to October
Climate Tropical
Average temperature 23°C
Summer: 28.3°C
Winter: 16.2°C
Average annual rainfall 1000mm
Evaporation 1600mm
Dry season October to next March
Wind Strong Northeast Monsoon in Winter
[6m/sec ~32.6m/sec ]
INTRODUCTION
INTRODUCTION
**ECONOMY TRANSFORMATION**

- Population shrinking/Ageing sociality/Service and tourism sectors develop rapidly
- Local economy transform from agriculture and fishing to tourism
- Penghu’s economy is highly dependent on tourism. More than 50% GDP on the islands are relate to tourism activities.

Tourism Development = Stable income/More job opportunities
DILEMMA OF TOURISM
- Domestic tourism market / - Seasonal tourism

INTRODUCTION
Low accessibility of Penghu archipelago

Tourist numbers by month, 2008

Tourist number in 2008

Taiwanese tourists
Chinese tourists
Other countries

Tourist numbers by month, 2008
OPEN BORDER TO CHINA

- Expect tourist numbers will reach 750,000 by 2013 and will be doubled (1 million) by 2018.

The amount of Chinese tourist traveled abroad increased 8.5% in 2009.
Source: International Monetary Fund
Is Penghu ready for the CHANGE?
LACK OF COMPREHENSIVE TOURISM DEVELOP PLAN

- Sprawl model / - Economic orientation

Government’s vision for the future development

Source: Penghu county government
LACK OF UTILITIES & FACILITIES

Water
- Low rainfall and high evaporation rates
- The output of existing seawater desalination plant can only fulfill the demand of inhabitants
- Less than 1% land are using for water storages.

Electricity
- The wind farm provide 6~7% of Penghu’s need
- The thermal power plant produce 129,000 KWh/year
LACK OF UTILITIES & FACILITIES

Sewage system
- The sewage system only constructed in city center
- The waste water from neighborhood and factories are directly disposed into the ocean

Garbage Landfill
- No incinerator in Penghu
- 1/3 of garbage landfills are already full

No garbage landfill available in Magong city
Waste water disposed into ocean directly
PROBLEM STATEMENT

POOR PUBLIC TRANSPORT AND LOW ACCESSIBILITY

Bus

Ferry

Kaohsiung

Wangan

Cimei

Makung

China

Baisha

Depends on need (People+Cargo)

1/day

1-2/day

1-2/week

197 people

123 people

1-2/day

1/day
THE MAIN STREET IS NARROW AND HAS LESS CHARACTERISTIC
- Main street has less connection with surrounding open spaces
- The city center had lost its culture and less characteristic
THE MAIN HARBOR WILL SOON INADEQUATE WHEN TOURISTS NUMBER INCREASE
As tourism and recreation rapidly replace agriculture, adaption to new economies without complete loss of identity demands innovation—Sébastien Marot
How to define the tourism developing zones in Penghu region to minimize the social, ecological and environmental impact cause by open border effect?

How to improve Magong’s harbor city image and living environment to place both tourists and inhabitants?
Zoning developing area

Sustainable tourism

Renewable energy/Recycle resources
DEVELOP ZONING  Tourist facilities
DEVELOP ZONING Attractions

- Water recreation
- Natural & cultural attractions
DEVELOP ZONING

attraction zone + Intensity of using zone
Tourism which leads to management of all resources in such a way that economic, social and aesthetic needs can be fulfilled while maintaining cultural integrity, essential ecological processes, biological diversity and life support systems” – [World Tourism Organization,1996]
SUSTAINABLE TOURISM >> Socially and culturally
- Respect the tradition and local culture. Also, conserve their built and living cultural heritage and traditional values.
SUSTAINABLE TOURISM >> Economically
- Stable income, job opportunities and social services of local communities.
SUSTAINABLE TOURISM >> Environmentally
- Reduce the waste of environmental resources and maintaining essential ecological processes to help to conserve natural heritage and biodiversity.
SUSTAINABLE TOURISM >> Public Transport

- Improving public transport
- Construct bike path to connect main attractions
SUSTAINABLE TOURISM >> Fish Port

- There are 69 fish ports in Penghu (every 4.7km) but less than 10% population are fish man
- The maintain fee of harbor is around €10 millions per year (20% of annual budget)

- Increase the usage of fish port
- Contributing cargo function from Magong harbor to Longmen fish port
SUSTAINABLE TOURISM >> Magong Airport

Magong Airport
- Runway: 3000m x 45m
- Hierarchy: Regional Airport
- Total Passenger (2008): 1,687,571
- Total Cargo (2008): 6,819.7 tons
- No. of Movements (2008): 32,427
- Public Transport: Bus
- Distance to City Center: 10km

Eindhoven Airport
- Runway: 3000m x 23m
- Hierarchy: Regional Airport
- Total Passenger (2008): 1,629,893
- No. of Movements (2008): 17,217
- Public Transport: Bus
- Distance to City Center: 7km

Beijing
- Charter Flight

Shanghai

Xiamen

Canton

Penghu
SUSTAINABLE TOURISM >> Developing Plan

PHASE 1 [Priority developing area]
SUSTAINABLE TOURISM >> Developing Plan

PHASE 2 [Tourists increase to 1 million]
SUSTAINABLE TOURISM >> Developing Plan

PHASE 3 [Tourists increase to 2 million]
RENEWABLE ENERGY & RECYCLE RESOURCES

GREEN ENERGY
- solar power
- wind power

WATER RECYCLE
- rain water
- gray water

WATER TREATMENT
- wetland

REUSE WASTE HEAT
- thermal power plant
- incinerator
RENEWABLE ENERGY & RECYCLE RESOURCES

- Thermal power plant
- Wind farm
- Water storage
- Desalination plant
- Garbage landfill
- Unavailable landfill

DESIGN GUIDELINE & STRATEGY
PROJECT—NEW CITY CENTER
UNDEVELOPED AREA
- The historical center become the edge of the city
- There is a undeveloped area in-between city and village
3 STEP ANALYSIS

- The position of city center is periphery, which is not ideal
URBAN LAND USE
Possible Develop Area
- Military base
- Third Harbor
- Cemetery
PUBLIC & GREEN SPACE
- Only 1/3 of public space is green

Public Space

Green Space
CITY ATTRACTIONS
- The attractions are located in the two main leisure areas of Magong city.
- The position of tourist information center is periphery.
NEW CITY CENTER – GREEN STRUCTURE

- Boulevard has 2 lane in both side, mainly use for vehicle and bike connection
- Waterfront parkway combined pedestrian, bike path and grassland
- Windbreak woodland prevent strong northeast wind blowing into the new city center in winter
GOVERNMENT PLAN – LIVING

- Tourist number reach to 1 million, government expect the population will increase to 32,000 [345ha new residential area]
- New residential area at north side and third harbor (25ha)
NEW CITY CENTER – LIVING
- When tourist number reach to 1 million, expect to create 3,500 job opportunity
- Population increase 10,500 [80% living in city 20% in suburban]
- 23ha new residential area/ 7ha regeneration area in city/ 20ha regeneration area in suburban

![Map of urban analysis and strategic project with various density areas and regeneration zones.](image-url)
NEW CITY CENTER – HARBOR AREA

— Less people visit harbor area because there are fewer shops and restaurants open along waterfront.
NEW CITY CENTER – HARBOR AREA

- The harbor remain mix function but mainly use as ferry dock
- Improving the quality of harbor by construct the parkway along waterfront and put up art objects to beatification the port area
Existing bus line
Extend bus line
No service in weekend
NEW GREEN STRUCTURE

- Pedestrian priority street
- New pedestrian
- Improve the existing pedestrian

1km
URBAN ANALYSIS & STRATEGIC PROJECT

STRATEGY—PHASE 1

- New green structure
- Existing green space
- Wetland
- Plaza
- Improving harbor area
- Cultural park
- Existing cultural facility
- Commercial area
- Mix used area
- Residential area
- Accommodation
- Government
- Parking
- Industrial area

Fish port
Cargo
Ferry
Water taxi
Sailing
Windsurfing
Water recreation

500m
New green structure
Existing green space
Wetland
Plaza
Improving harbor area
Cultural park
Existing cultural facility
Commercial area
Mix used area
Residential area
Accommodation
Government
Parking
Industrial area
Fish port
Cargo
Ferry
Water taxi
Sailing
Windsurfing
Water recreation
PROJECT >> Tourist information & Observation tower
PROJECT >> Boulevard

3m 2m 2.5m 25m 2m 5m

URBAN ANALYSIS & STRATEGIC PROJECT
PROJECT >> Culture Plaza

Brick
Basalt Stone
Coral tree
Cerbera manghas
PROJECT >> City Park
PROJECT >> Tourist information & Observation tower
PROJECT >> Wetland
Magong city pattern in 2008

The expected city pattern of the project
Current condition

After add the pedestrians and bike paths to connect harbor area and N-road
CONCLUSION

Top Down
Economic development
City develop

Quality life
Preserve nature and culture
Bottom up
THANK YOU FOR YOUR ATTENTION

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