

## Financial town of Tianjin Dongli Lake Hot Spring Resort Area

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Address 1 - street : 300300 ,

Gross density : 57.41 /ha

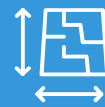
Population : 40 000

Number of jobs : 36 000

Starting year of the project : 2015

Delivery year of the project : 2022

Key words : Tourism vacation, energy saving, health livable, eco - city, renewable energy use



443



1 500 000 ¥



## ID CARD

Tianjin is one of the municipalities and the economic center across the Bohai Sea Region. It is located in the north temperate zone, belonging to semi-arid sub-humid continental monsoon climate. Financial town of Tianjin Dongli Lake Hot Spring Tourism Resort is identified as “one town with two districts and three platforms”. It is the first “financial technology” town in China, the private equity investment funds cluster district, the Beijing-Tianjin-Hebei financial innovation demonstration core area. It is constructed as a fintech innovation platform for serving technology innovation, a high-end financial ecological platform for gathering financial institutions and financial talents, a financial services demonstration platform for exploring the development of the financial services industry.

In the aspect of construction management, a construction leading group is established, cooperation among all departments is strengthened to form a situation of joint management. In the aspect of community management, management regulations are made by the Administrative Committee, targeted to carry out family planning, helping the elderly, youth education, labor security and community services.

In the financial town, the commercial facilities, cultural education and traffic supporting facilities are continuously improving to create a convenient, elegant, noble, Safe and comfortable ecological livable community.

In "twelfth five-year" period, the gross regional domestic product of Dongli lake area was 4 billion in total, the average annual growth rate was 35%. The financial town plays an important role in gathering and radiation, driving the coordinated development of Beijing, Tianjin and Hebei Province.

The industry comprehensive supporting services include equity investment, financial technology, business conferences, cultural innovation and social services, etc. Sufficient jobs can be provided and resident population increasing year by year owing to the industry gathering places including the airport economic zone and Binhai New Area, etc.

The Dongli lake belongs to alkaline land. By draining off water and salt, deep tillage and maturation, ect, to restoring polluted soil, improving soil quality. A recycled water treatment plant is planned in the west of the financial town. The recycled water is used for green area irrigation and street watering, etc. The construction waste classified treatment rate within the area is 100%.

The Dongli lake belongs to water-land composite open ecosystem. There are over 60 species of plants and dozens of breeding birds. Greening projects are carried out to improve urban ecological environment, meet the demand of residents daily recreation and protect biodiversity.

Good geothermal reservoirs are distributed in the Dongli lake area. There are abundant wetlands and geothermal energy within the area. Geothermal energy is the primary energy for heating and natural gas is taken as peak adjustment method. Gradient utilization is applied in geothermal energy development and utilization so as to enhance the utilization ratio of geothermal energy, set a good example of economical utilization of geothermal energy for Tianjin.

## Programme

- Housing
- Offices
- Businesses and services
- Public facilities and infrastructure
- Public spaces
- Green spaces

## CO2 Impact

CO2 Impact : 37 544 CO2

## Method used to calculate CO2 impact

According to GB/T50801-2013, Chapter 4.3.8, Carbon dioxide emissions  $V_{CO_2}=2.47\text{kg/kgce}$ , It is estimated that the total utilization of renewable energy is about 15,200 tce in Dongli Lake Financial Town to reduce the carbon emissions 37544 tons.

## Project progress

- Management phase
- Delivery phase
- Operational phase

## Procedure type

- Urban développement permit
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## Key points

- Governance
- Quality of life
- Economic development
- Smart city
- Resources
- Biodiversity
- Energy /Climate

## Approaches used

- Ecodistrict national label

## More info

<https://www.construction21.org/data/sources/users/23736/docs/sustainable-district-financial-town-of-tianjin-dongli-lake-hot-spring-tourism-resort.pdf>

## Data reliability

3rd part certified

# TERRITORY

## Type of territory

Dongli lake is located in the the core area of the most superior strategic location of Tianjin. The necessary link of Beijing-Tianjin-Hebei tourism integration development.

Financial town of Tianjin Dongli lake hot spring tourism resort is identified as "one town with two districts and three platforms". It is the first "financial technology" town in China, the private equity investment funds cluster district, the Beijing-Tianjin-Hebei financial innovation demonstration core area. It is constructed as a fintech innovation platform for serving technology innovation, a high-end financial ecological platform for gathering financial institutions and financial talents, a financial services demonstration platform for exploring the development of the financial services industry.

## Climate zone

[Dfb] Humid Continental Mild Summer, Wet All Year

## KEY FIGURES

### Green areas, roofs included

Green areas, roofs included : 1 959 596 m<sup>2</sup>

### Public spaces area

Public spaces area : 2 870 348 m<sup>2</sup>

### Office floor area

Office floor area : 619 180 m<sup>2</sup>

### Commercial floor area

Commercial floor area : 2 094 205 m<sup>2</sup>

### Public facilities floor area

Public facilities floor area : 80 874 m<sup>2</sup>

### Housing floor area

Housing floor area : 1 134 989 m<sup>2</sup>

### Number of residential units

Number of residential units : 14 285

### Green spaces /inhabitant

48.99

### Public spaces/inhabitant

71.76

### Total investment costs (before tax)

Total investment costs (before tax) : 3 386 ¥/m<sup>2</sup>

## Total of subsidies

Total of subsidies : 1 ¥/m<sup>2</sup>

## Detail of subsidies

According to the 2015 Tianjin Fiscal Policy of Energy Conservation and Emissions Reduction Comprehensive Demonstration Project Dongli lake with a total area of 42.32 million square meters is rewarded with 50 million CNY namely, 1.18CNY/square meters.

## GOVERNANCE

### Project holder

**Name :** Tianjin Dongli Lake Tourism Development Head Office

**Type :** Para-public owner)

**General description :**

The company is in charge of development and construction of the financial town, land consolidation, infrastructure construction, investment and construction of relevant projects, urban planning, design, consulting services and budget and final accounts. As the operation, development and construction unit, the company sticks to market-oriented operation, builds professional engineering development team and investment promotion team, and is in charge in the implementation of operation, development and construction.

### Project management

**Description :**

In the aspect of regional overall management, construction leading group of Dongli Lake Hot Spring Tourism Resort is established. The leader of the group is the Government Office, and the vice group leaders are the Dongli Construction and Management Committee and the Dongli Administrative Committee.

Departments that in charge of affairs of the area are the Dongli Planning Bureau, the Land and Resources Bureau, the Finance Bureau, the City Appearance and Garden Management Committee, the Water Affairs Bureau, the Environmental Protection Bureau and the Transport Authority, etc.

Through marketization operation and rational allocation of resources in city and towns, resources are transformed into funds. The urban infrastructures investment company is operated according to principles of “whoever invests owns, whoever runs benefits”.

The whole process management of construction project: By establishing close supervision and service mechanism during the stages of project-establishment, land leasing, planning and design, construction and operations management, and by mobilizing construction project owners' enthusiasm of developing green buildings to guarantee the successful implementation of construction of a green eco-city.

The construction of social organizations is strengthened. Community culture and education are vigorously developed. Variety of community cultural activities are carried out. "Dongli lake forum" is established to hold conferences regularly, taking science and technology innovation and development as the theme. The "Summer Davos Forum of Tianjin" Dongli lake sub-forum and World Conference on Women, etc. are introduced into the area to enhance regional influences and increase residents' sense of belonging. Featured activities such as community class, painting and calligraphy exhibition, photographic exhibition, etc. are held regularly.

## Project stakeholders

Tianjin Lihu Investment Development Co., Ltd

**Function** : Developer

All works of the financial town are carried out at the top-level strategic view, the implementation of key projects are propelled. The company cooperates closely with the Dongli Lake Administrative Committee in the area of improving planning schemes, introduction of high-level talents and ecological environmental guarantee and promotes the combination of finance and technology.

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[Construction21 company page](#) :

**More info** : [data/sources/users/10/sustainable-district-----financial-town-of-tianjin-dongli-lake-hot-spring-tourism-resort.pdf](#)

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China Academy of Building Research Tianjin Institute

**Function** : Technical consultancy agency

The institute compiles low carbon index system, special planning and corresponding implementation plans of green ecological city and sponge city in accordance with the requirements of green ecological construction and project features, and provides whole process technical support for the implementation of the planning and indicators.

[Construction21 company page](#) :

## SOLUTIONS

**Description** :

- Urban project governance
- Citizen participation

## QUALITY OF LIFE

### Quality of life / density

In the aspect of life convenience, community commerce and services are optimized and the "ten minutes" living area is built. In the aspect of work convenience, efficient information communication channels are built. Convenient financing environment is provided and effective integration of talents, capital and technologies is realized. In the aspect of convenient transportation, a "walking plus bus" seamless transportation system is created by planning rail transportation, optimizing public traffic route network and setting bike rental points to effectively solve the problem of "the last mile of public transportation".

In the financial town, facilities such as small waste transfer station, public toilets and garbage bins are gradually improved. By 2020, mechanization of refuse disposal, scientific management and modernization of sanitation technology will be realized. The rate of urban road sweeping, public toilets and garbage bins cleaning, garbage collection and refuse harmless treatment will all be 100%.

Finance training, financial consultation and big data information service companies are introduced into the financial town to enhance strengthen vocational skill training of employees.

### Net density

-0

### Culture and heritage

Before the construction of the project of Dongli lake financial town, the construction program is reported to the Municipal Cultural Relics Bureau. Then the Municipal Cultural Relics Bureau organizes archaeological excavation units to explore the place where may exist cultural relics. If the cultural relics are discovered, the protect measures will be set by the Municipal Cultural Relics Bureau and the construction unit, and the relics will be submitted to State Council cultural relics administrative departments timely.

The region where the Dongli lake financial town located is one of the eight tourist attractions in Tianjin and one of the seven nature reserves, is the national eco-tourism demonstration area, the National Water Scenic Area, China's hot spring town. By taking fully advantages of unique ecological environment, rich cultural heritage, rich tourism culture resources and integrating the fintech, ecology construction and tourism development during the construction and



development of the region, to build a new ecological, livable, business appropriate and tourism appropriate town characterized by water culture and young culture, and promote the development of ecological culture, tourism culture, financial culture in the region.

## Social diversity

Community commercial service facilities are optimized. Great efforts are made to develop community business and family service centers, and then to build a "ten minutes" living area. More than 80 service vehicles are placed in the communities. Meanwhile, services like offering breakfast, fresh fruits and vegetables, newspapers and periodicals, and bike repair are provided.

Community health and family planning services are strengthened. Community health and family planning publicity are carried out. Community health and family planning service network are established and improved. Health education, prevention, health care, rehabilitation, family planning technical services, common and frequently-occurring diseases diagnosis and treatment services are carried out as well. Community elderly service systems are built. Community endowment services and facilities are improved. Home-based care services, especially developing goods delivery for the elderly and their families, health care, day care, company and other services are developed.

## Social inclusion and safety

Great efforts are made to promote the development of education and public education institution construction, besides, to support the development of standard private education and therefore to form a pattern of mutual promotion and complement between public and private education institutions. Senior school of the affiliated high school of Peking University, an official kindergarten, private class I kindergarten, seven regulate private preschool education service points are planned in the area.

Tianjin is the national key fortification. The comprehensive disaster prevention plan of the financial town is in accordance with the principle of "combining peacetime with wartime, disaster prevention, quick response, strategies effective". The emergency system of disaster prevention and mitigation is improved and the disaster prevention and mitigation system is constructed to comprehensively improve the capability of regional comprehensive disaster prevention and mitigation and rescue and ensure the safety of Dongli lake area and Tianjin.

## Ambient air quality and health

Ecologicalization of region environment is achieved by the ecological protection, environmental greening, pollution control. To the end of the 13th Five-Year period, the cumulative green area of Dongli lake will be 9.5 million square meters and the number of trees will be one million, to achieve the goal of "sky blue, green, water clear, cool, street net, smooth road, light".

Within the scope of Dongli lake financial town, 100% green construction is implemented to reduce urban dust pollution. Taking "geotherm & gas peak-shaving" as the regional heating heat source to reduce the use of traditional energy and carbon emissions. Meanwhile, by further improving the planning and construction of public transport facilities, encouraging green travel to reduce pollution emissions from vehicles. The air quality of urban areas is actively managed and maintained to guarantee the good days of air quality.

## SOLUTIONS

### Description :

- Promotion of cultural/ historical identity
- Proximity services
- Security
- Air quality

## ECONOMIC DEVELOPMENT

### Local development

It is strives to develop four leading industries within Dongli lake, which are science and technology services, electronic commerce, outsourcing services and cultural tourism. It is predicted that the average annual growth of science and technology services, electronic commerce and outsourcing services will reach 18%, 30% and 35% by 2020, respectively. Meanwhile, economic benefits of tourism will reach over 3.5 billion.

Dongli lake financial town is constructed around finance, innovation and ecology. Private equity investment and financial technology are vigorously developed. Great efforts are made to attract private equity investments, financial technology enterprises, traditional financial institutions and intermediary service agencies to set up in the financial town. It is predicted that by 2020 the number of private-equity firm, traditional financial institution and intermediary service agency in the town will be over 500, the capital scale will be 150 billion CNY, consequently, a good investment environment will be created. Besides, by 2020 the number of financial technology enterprises and high tech enterprises will be over 100, the number of financial and technology talents will be over 1,000, accordingly, the brand of "China's first financial technology town" will be built.

### Functional diversity

Technology services, e - commerce, service outsourcing, cultural tourism, healthy living

## % of public spaces

65

## % of office area

14

## % of commercial area

47

## Circular economy

The Dongli lake tourism resort explores a sustainable development mode of "combination of ecological protection and tourism development". On the one hand, auxiliary facilities in the area should be energy efficient, environment friendly and ecological. On the other hand, the "eating, living, traveling, tourism, shopping and entertainment" are all included in the resort, providing good supply for the ecological tourism. Thereby, a win-win situation of ecological protection with social benefit and tourism development will be achieved. The development pattern of the Dongli lake tourism resort plays an important role in the demonstration of eco-tourist model zone.

Dongli lake financial town focuses on creating financial technology industry chain in a way of "high-end technologies plus traditional financial services". The town can provide entrepreneurship support platform. By setting up innovation incubators, entrepreneur service agencies and investment and financing information docking platform, to create "innovation-entrepreneurship-venture" industry chain and construct a sound environment for innovation entrepreneurship, and then to promote the rapid development of innovation and entrepreneurship.

## SOLUTIONS

- Business development
- Business parks
- Circular economy

## TRANSPORT

## Mobility strategy

The Dongli lake area possesses a multilevel transportation system- sea, road, air and rail transportation. In the level of regional transportation, six stations of Tianjin metro line 2 extension are set in the area. Convenient highway system mainly consist of Jingjin expressway, Jingjintang expressway and Jinhan road. Regional bus stops are optimized according to demands. Bike rental stations invested by government are set in advance, then by introducing shared bikes invested by third party to create a "walking plus bus" seamless transportation system, and realize a 70% of public transport travelling rate. By setting protective greenlands consist of trees, brushes and grasses around the area, to effectively control noise effects of city roads on land parcels within the area. In the level of wide area transportation, with the development of Beijing-Tianjin-Hebei transportation integration, the "one hour economic circle" of Dongli lake financial town can cover most are of Beijing, Tianjin and Hebei.

## SOLUTIONS

- Soft transportation
- Collaborative transportation
- Electric vehicles

## SMART CITY

### Smart City strategy

Huawei cloud computing data center is introduced into the financial town to construct the cloud platform of cloud computing, big data, life and health, financial service, and help to build "Tianjin smart port" which taking smart-tech industry as the core. In the financial town, network communications, smart appliances, house security systems, property services and community services are integrated in an efficient system, so that community smart service and management can be realized. In the residential area, underground garages are constructed combining with civil air defence construction to fulfill residents' parking demand. Meanwhile, mall parking spaces being open to the public is encouraged.

To achieve the goal of energy saving and emission reduction, water affair information system and energy consumption monitoring system of large public buildings are built, energy saving potential is analyzed. Energy efficient lamps and wind-PV hybrid streetlights are adopted for municipal lighting, and intelligent control system is used for lighting system regulation.

Natural environment and resources digital monitoring information system which including natural human landscape query system, sightseeing tour planning system and tourist area navigation system, etc. is built to provide information for government, executive staffs, scientific research and teaching units and tourists.

The "northern base of State Grid customer service center" located in the financial town uses distributed photovoltaic power generation system, making the town cooling and heat network as the clean energy output. The construction of green composite energy grid in the town promotes studies and construction of energy internet of Dongli lake

## SOLUTIONS

- Infrastructure
- Digital services
- Other

## RESOURCES

### Water management

Domestic water *provided by Municipal water plant* can meet the requirements of "Standards for drinking water quality". High quality pipe is selected for water supply network, and maintenance and management of the water supply facilities and equipment are strengthened. Meanwhile, leaked pipe network is timely updated and repaired to reduce pipe leakage.

The reclaimed water treatment plant is planned to the west of the financial town, which can provide renewable water 25,000 tons per day. The installation of renewable water pipeline has completed in the town. The recycled water is mainly used for green irrigation, road pouring and urban miscellaneous water, etc. and use ratio of non-traditional water can reach 20%. The water management approach by source control, terminal management and pollution control is used to manage urban sewage and to improve and repair the urban water quality. The treatment rate of urban sewage is 100%.

### Soil management

The Dongli lake belongs to saline and alkaline land. Soil improvement is combined with the water cycle, plant requirements. Site soil survey and analysis is carried out and soil improvement technology is investigated during the construction. Soil remediation is carried out by draining off water and salt, deep ripening, burnt gas column, fertilizing soil and so on, and regular sampling and testing is carried out to prevent soil degradation. As a result, the soil quality is improved steadily.

The water and wetlands are included in the protection red line of ecological land, which prohibits the construction of new, expansion, alteration projects having no concern with the protection of water sources. The dedicated functional departments carry out maintenance and management of water systems and wetlands regularly.

The garbage collection facilities including garbage transfer stations, grassroots sanitation institution, garbage collection and transfer stations are set and garbage classified collection, transportation, treatment and the construction of solid waste disposal center are promoted to achieve a 100% rate of harmless domestic waste treatment.

## Waste management

Street sweeping and waste collection and transportation are gradually popularized. Household garbage is treated at Guanzhuang waste incinerator, so that the utilization of waste resource can be realized.

Construction waste disposal within the area is supervised. Green construction management regulations are compiled. The construction of Duishan park that aims to eliminate construction waste on the spot is actively promoted. Prefabricated construction is popularized. The prefabricated construction ratio is over 30%, so that the construction waste can be reduced. In the future, the construction waste classified collection rate will be 100%.

## SOLUTIONS

- Water management
- Soil management
- Waste management
- Citizen-awareness

## BIODIVERSITY

### Biodiversity and natural areas

Urban air quality is actively managed and maintained based on comprehensively considering the impact of district heating, industry and other factors. Water self-purification ability is strengthened and the quality of surface water is ensured through rain sewage diversion and area source pollution control.

Dongli lake is a typical wetland ecosystem and is abundant in plants, animals and bird species. The recovery of native wetland forms a stable and harmonious natural wetland ecological system with abundant biodiversity. In the construction process of landscaping, drought-resistant, alkali-resistant and Barren-resistant plants are adopted following natural rules. Stability of the landscape ecological system is ensured through landscape plant biodiversity.

## SOLUTIONS

- o Environmental charter

## ENERGY/CLIMATE

### Climate adaptation, resources conservation, GHG emissions

The financial town encourages the construction of high-quality green buildings and zero energy buildings. The use of green building materials in the process of building construction, including new composite wall materials, new energy-saving windows and doors, etc is popularized. The building materials, functions and landscapes are all based on the concept of urban ecological residence. By applying appropriate passive technologies to enhance indoor comfort.

In the area, green buildings are taken as the carrier to realize the utilization of green power and green sponge, etc., and then to reduce greenhouse gas emissions. Gradient utilization strategy is applied in geothermal energy development and utilization. Geothermal tail water is used at a rate of 100% for injection. In accordance with the requirements of the sponge city, the area is planned and designed based on the concept of low impact development, making the Dongli lake as the green lung of the area, so that the air quality is improved and the climate is regulated.

### Energy sobriety

Dongli Lake Hot Spring Resort area to promote the development of green building, the full implementation of residential building energy saving 75%, 65% of public building energy efficiency building energy efficiency design standards, the formation of a sound building energy efficiency supervision system. Dongli Lake municipal infrastructure hypothesis from the water resources protection and utilization, comprehensive utilization of energy, information infrastructure services and support in three areas to ensure that Dongli Lake area fast and orderly development and development needs.

Geothermal wells put into use in the region are cascade use technology, geothermal resources for cascade use, is conducive to improving energy efficiency, energy conservation. Energy consumption monitoring of building energy systems such as lighting, air conditioning, elevators, etc., to tap the potential of energy conservation, and to experience in the area of energy consumption, Promotion.

### Energy mix

The energy demand of Dongli Lake financial town, mainly from construction, industry, transportation and municipal area, is about 124.9 thousand tce. The efficiency of building

energy utilization is enhanced from the energy system design, operation and management and energy consumption supervision, etc.

Planning heating is based on geotherm and gas peak-shaving in Dongli Lake, and the proportion of heating area exceeds 20% after the geothermal comprehensive mining, and the geothermal plant central heating is used in part of public buildings and residential building. Solar thermal technology is used to provide hot water for part residential building. The wind-solar street lights are used in the roads around the lakes for application demonstration of renewable energy. The distributed photovoltaic and battery energy storage station are built in the state grid project, and the cooling and heating network are made for the output of energy cleaning by the operation control platform of green energy network. It is estimated that the total utilization of renewable energy is about 15,200 tce in Dongli Lake financial town, and the ratio of renewable energy to the total energy demand is over 12%.

## Total electricity needs of the project area /year

Total electricity needs of the project area /year : 396 670 000,00 kWh

## SOLUTIONS

- Climate adaptation
- Renewable energies
- Urban Lighting
- Low-carbon materials/ infrastructure

## BUILDINGS

### Buildings

1. The percentage of Green buildings which achieve Green Building Two Star Label among whole new buildings (%): 30
2. Prefabricated building floor area accounts for whole new building area (%): 30

## Contest

**Building candidate in the category**





## Ranking candidate in the category



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