


## The Chinese Experience

### Case17:

#### Shenzhen International Low Carbon City (ILCC)

Shenzhen, Guangdong Province

In May 2012, Shenzhen International Low-carbon City (ILCC) was identified as one of the flagship projects of China-EU cooperation on sustainable urbanization. The Shenzhen International Low-Carbon City (SILC) is aiming for energy efficiency through micro grids, smart building technologies, and public transportation combined with electro mobility. In January 2014, ILCC has won “2014 Sustainable Development Planning Program Award” which was launched by China Center of International Economic Exchanges together with Paulson Foundation of USA.

	<b>Primary Tools:</b> →Tool CUD 1, →Tool CUD 2, →Tool CUD 4 →Tool CUD 4
	<b>SMART planning principle:</b>
	✓ Sequestration
	✓ Micro-climate
	✓ Architecture
	✓ Recycle
	✓ Traffic



International Low Carbon City Shenzhen<sup>i</sup>

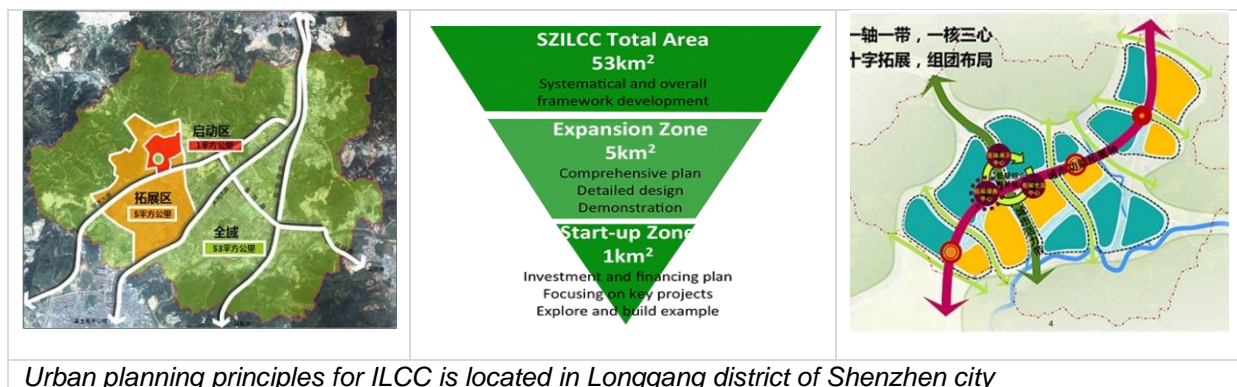


Strategic location of the ILCC<sup>ii</sup>



Shenzhen is taking the lead in demonstrating innovation in sustainable urban transformation and future-orientated city planning through its ambitious International Low Carbon City (ILCC). This initiative aims to transform the previously manufacturing-based and carbon-intensive economy and built environment of Pingdi into a model of low-carbon, post-industrial urban revitalisation. ILCC maintains a focus on preserving and refurbishing existing buildings to the latest environmental standards whilst also pursuing new construction of cutting-edge, low-carbon buildings and urban infrastructure. As such, this initiative marks a significant shift from large-scale demolition and new construction centred modes of urban development. Also, involving extensive collaborations with the Dutch government and other international partners, futuristic green buildings and economic transformation is pursued whilst taking the utmost care to preserve the natural environment and cultural identity of the area. <sup>iii</sup>

ILCC is located in Longgang district of Shenzhen city. The total planning area is 53 km<sup>2</sup>, while 5 km<sup>2</sup> area of it is the expansion zone, where the comprehensive plan and detailed design would be applied. The development started with the 1 km<sup>2</sup> core area, with a planned building area of 1.8 million m<sup>2</sup>, 50,000 expected jobs, among which 15,000 people live within the planned area. The development is planned for 8 years



#### Highlights:

- **Low-carbon municipal infrastructure**, which organically integrates water, (renewable) energy and waste (recycling) systems together.
- **TOD oriented space layout pattern**: constructs the green travelling system by integrating the rail transportation, tramcar, bus, and slow traffic system. 3 different levels of TOD system as of city, region, and community according to its radiation scope.

#### Space Planning: TOD Clusters of Pingdi, Jiaoyu Road, and Liulian.

- **'One Axis & One Belt, One Core with Three Centers, Cross Development, and Cluster Layout'**, which are:
  - City Functions Expanding Axis;
  - Dingshan River Vitality Belt;
  - Low-carbon Service Core ;

#### Industries Layout:

Aerospace Industry, Life & Health Industry, New Energy Industry,

Energy Saving & Environmental Protection Industry, Low-carbon Service Industry, High-end Equipment Manufacturing Industry

#### Key Projects:<sup>iv</sup>

Project winning the national level finance rewarding for energy-saving and carbon emission reduction. Target: 1-star green building, to explore replicable, spreading retrofitting experience for buildings with characters of southern China.

## 5. Aerospace Science & Technology South Center

**6. Revitalization of traditional Hakka Round House. Main features:** 1. Environmental ecology; 2. supporting services; 3. building envelope; 4. resource utilization; 5. comfortable indoors; 6. efficient facilities; 7. green construction

**7. LE Town**, planned floor area 19,280m.<sup>2</sup> It will be a 3-star green building, used as culture center, office, theme hotel, etc.

**8. Low-carbon offices**, planned floor area 883,250m.<sup>2</sup> Main functions are smart low-carbon information industry, low-carbon service industry, science & technology research, and science & education service industry as well as fostering the industry chain of low-carbon development.

**1. Exhibition Center** land area 120,000m<sup>2</sup>, floor area 25,000m<sup>2</sup> **with main features:** eco-landscape rehabilitation, variable vertical planting, intelligent micro-grid system, individual temperature & humidity control, individual sewage treatment, robot canteen, carbon account experience platform, and mobile body buildings.

**2. Dingshan River Reformation:** 6.7km long within Shenzhen administration area. **Main features:** Clean the “black, odorous” water, improve waterfront landscape.

**3. C-Hotel (retrofitted from an old dormitory house):** Building area 9,080m<sup>2</sup>, 8 floors. 3-star green building as the target. Main features: **Main measures:** grass swales, raingarden, permeable pavement for Rainwater harvest; green roof & vertical greening to adjust micro climate.

**4. C-Plaza (retrofitted from an old factory built in 2012):** Building area 13,523m<sup>2</sup>, 6 floors, listed as the demonstration

## Author:

Principal author: Dr. Florian Steinberg

Edited by Kosta Math  y

July 2018

## Sources and Further Reading:

---

<sup>i</sup> <http://www.silccforum.com/?l=en-us>

<sup>ii</sup> <https://slideplayer.com/12827098/78/images/8/Shenzhen%E2%80%99s+Model+of+ILCC.jpg>

<sup>iii</sup> [https://www.c40.org/case\\_studies/urban-efficiency-2-international-low-carbon-city](https://www.c40.org/case_studies/urban-efficiency-2-international-low-carbon-city). For a more complete case study of the case see: [https://issuu.com/c40cities/docs/urbanefficiencyii\\_final\\_hi\\_res\\_1](https://issuu.com/c40cities/docs/urbanefficiencyii_final_hi_res_1)

<sup>iv</sup> More information on <http://en.ilcc.com.cn>