

Design 2/2017-18 SS, Tutor: Cuisong Qu, Topic: Zero-Carbon Factory in Age of Industry 4.0, architectural and urban planning concept for Letaron Electronic Co.,Ltd in Dongguan
Joint design studio with Prof. Siegemund, THK, Germany

Introduction:

Zero-Carbon factory

Nearly a third of the world's energy consumption and 36% of carbon dioxide (CO₂) emissions are attributable to manufacturing industries and industrial energy use has been growing strongly in recent decades. Efficiency has improved substantially in manufacturing industries over the last twenty-five years in every region. New manufacturing plants are more efficient than old ones. The political target that until 2050 all new built buildings shall be CO₂ emission neutral impact all kinds of buildings including new manufacturing buildings.

Letaron is a world leader in LED lighting, providing state-of-the-art lighting systems to more than twenty countries in Europe and North America. This has been achieved after almost a decade of major investment in design, research and development, and production facilities.

The company and their manufactory plants until now are separated in two production facilities in Hengli Town of the city Dongguan. December 2017 a piece of abandoned formal industrial land in the area has bought from the local government by the company and the leadership has great desire to develop a zero-carbon factory for their products with high energy performance.

The land area is about 1.2 Ha, FAR 4.0, therefore 48800 sqm floor area to be planned. The wish is to develop a sustainable mixed used clean factory campus, with functions besides manufactory such as office, research, communication, show rooms, library, canteen and cafes. Also a kind of residential function should be included. All the function parts should be well arranged so that it matches the future manufactory working conditions of industry 4.0.

• **What to do in this studio?**

The task of this studio is to develop innovative architectural and urban planning concept for the site. To be discussed and done are following items:

- A function program according to the working conditions of industry 4.0
- master plan with consideration of the district development
- floor plans, sections and elevations
- integration of regenerative energy in the architecture
- chosen material list

- life span analysis diagram
- perspectives

Number of participants: 16

Design Studio period:

March. 08 2018 to June. 21 2018,
Thursdays from 13:30-17:00

First Meeting:

March. 08 2018, Thursday at 13:30, Room C402

Schedule March. 08 to June. 21 2018,

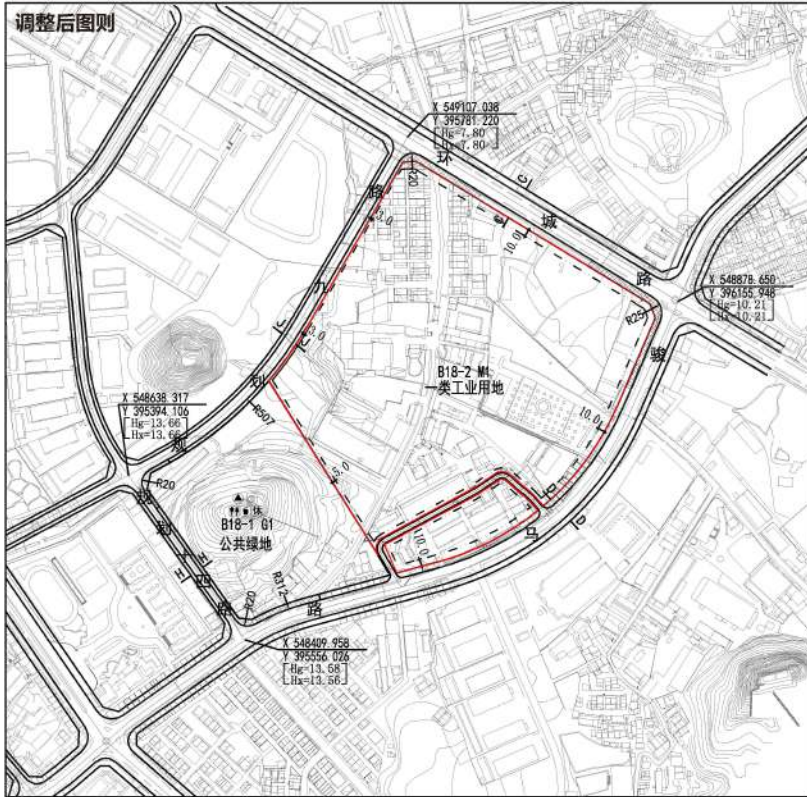
No.	time	Content	Form	place
1.	March. 08. 13:30	intro	group	C402
2.	March. 15. 13:30	1. Concept intro	group	E201
3.	March. 22. 13:30	Correction	Individual	E201
4.	March. 29. 13:30	2. Concept intro	group	E201
5.	April. 05.	holiday		
6.	April. 12. 13:30	Correction	Individual	E201
7.	April. 19. 13:30	Correction	Individual	E201
8.	April. 26. 13:30	mid. presentation	group	E201
9.	Mai. 03. 13:30	Architectural design	group	E201
10.	Mai. 10. 13:30	Correction	Individual	E201
11.	Mai. 17. 13:30	Correction	Individual	E201
12	Mai. 24. 13:30	Architectural design	group	E201
13	Mai. 31. 13:30	Correction	Individual	E201
14	June. 07. 13:30	Correction	Individual	E201
15	June. 14. 13:30	Prepare for final delivery		E201
16	June. 21. 13:30	Final presentation	group	E201

* Individual timing for corrections, to be confirmed latest one day before.

**Each student one page A0 panel printed, result model site/single building each group for final presentation.

附图

调整后图则



图例

- 地块编号
- 地块界线
- 建筑后退线
- 禁止机动车开口地段
- 道路转弯
- 道路交叉点坐标
- 道路转弯半径
- 道路宽度

地块位置示意图

用地编号	用地名称	用地面积 (m²)	容积率	建筑密度 (%)	绿地率 (%)	建筑高度 (m)	备注
B18-1	公共绿地	1000	0.15	15	15	1.5	公共绿地
B18-2	类工业用地	4000	1.5	40	10	24	工业用地

说明

1. 本图则适用于本图则范围内的所有地块。
2. 本图则范围内的所有地块均应按本图则的要求进行规划。
3. 本图则范围内的所有地块均应按本图则的要求进行建设。
4. 本图则范围内的所有地块均应按本图则的要求进行管理。

广东新长安建筑设计有限公司		项目名称	横原镇北片区控制性详细规划	
编制	校对	审核	审批	编号
设计	制图	日期	1:4000	日期
专业	制图	日期	2017-12	