CERC-BEE “Net Zero Energy Building” Key Technology Integrated Engineering Demonstration Project of Hot Summer Warm Winter Climate Zone

Sino-US Low Carbon Building and Community Innovation Experimental Center

深圳市建筑科学研究院股份有限公司

SHENZHEN INSTITUTE OF BUILDING RESEARCH CO. LTD.

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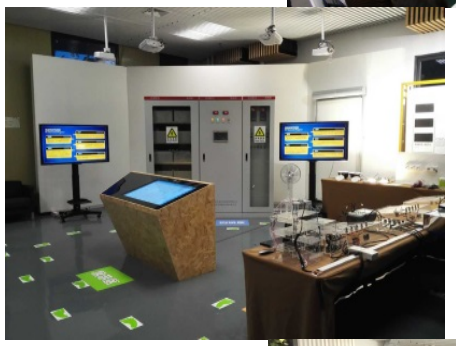


1 中美中心项目情况简介 Introduction of Sino-US Center

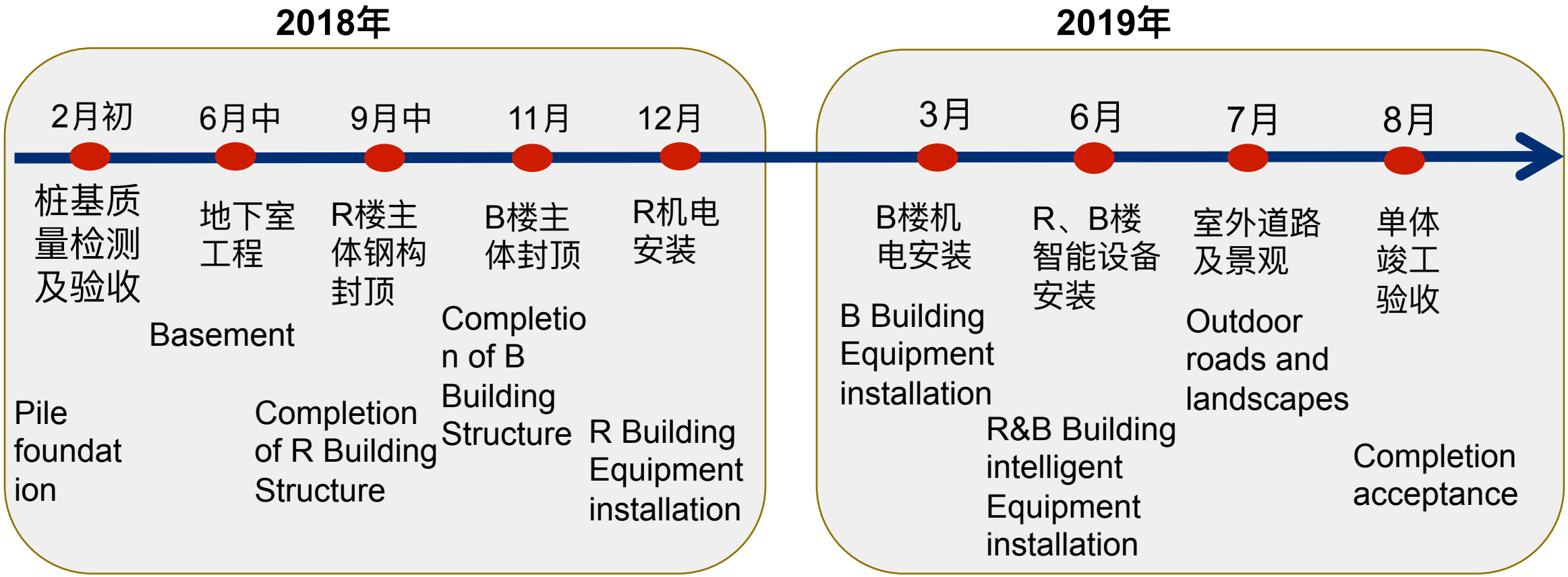
Land area: 11037.76m^2
Building area: 62523m^2
Main functions: R&D, office, experiment, pilot test, exhibition, education, inhabitancy, and cultural exchange, etc., exploring low-carbon lifestyle and work pattern of the future.

项目地点： 深圳市龙岗区坪地街道
用地面积： 11037.76m^2
建筑面积： 62523m^2
主要功能： 办公、、居住、实验、展示/文化交流等多种功能，探索未来的低碳生活工作模式。

Sino-US Low Carbon Building and Community Innovation Experimental Center

中美中心项目情况简介 Introduction of Sino-US Center

➢ 中美中心示范工程建设进展 Project Schedule

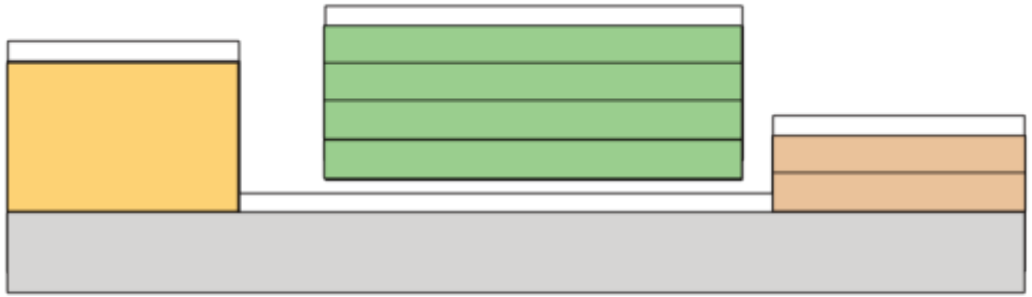


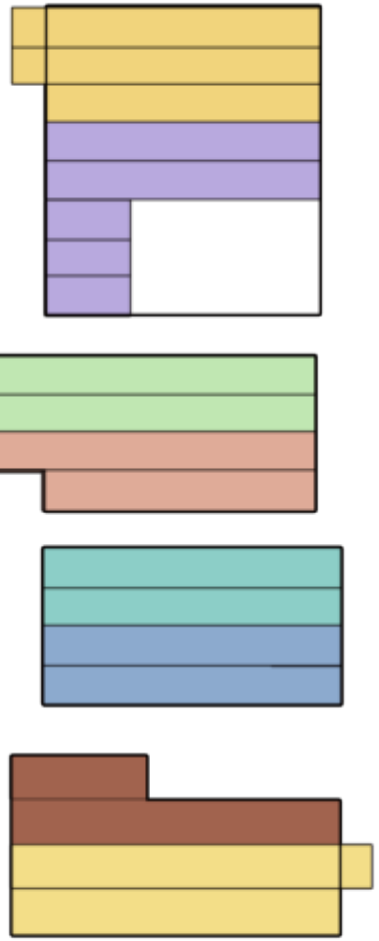
[模块 Modularization]

定制实验室
（研发）
Modulation Labs

都市农业实验室
（研发）
Ecology Labs

零碳实验室
（研发）
Energy Labs





专家工作坊
（宿舍）
Experts' Workshop

青年公寓
（宿舍）
Youngs' Flat

创客办公
（研发）
Makers'Small Office

社区和创客活动
（研发）
Community Activities

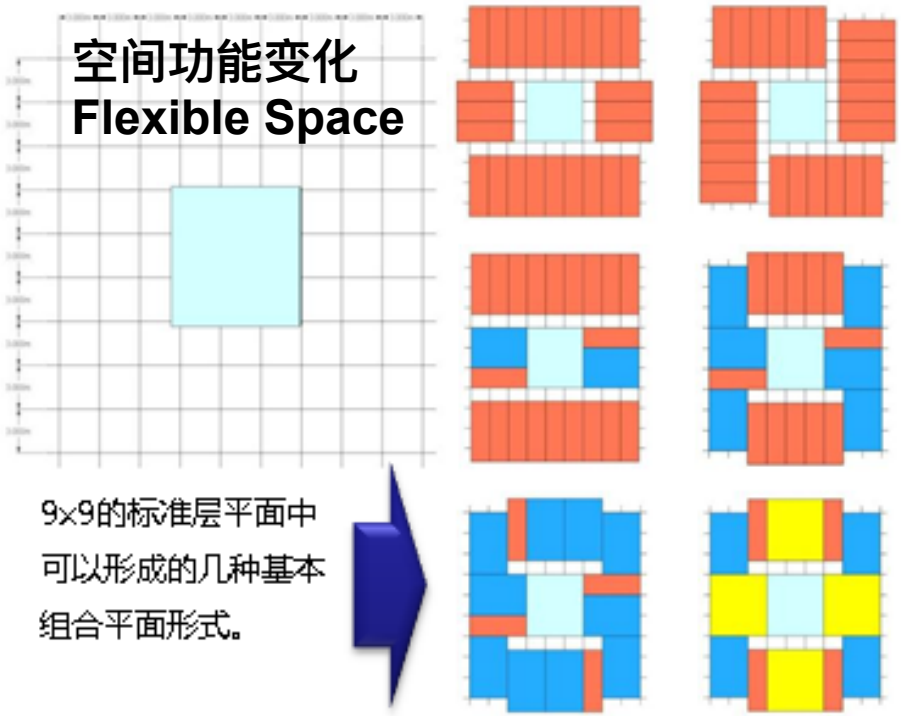
七个模块, 每个模块约5000m^2

Composed of seven modules,

5000m^2 of each module.

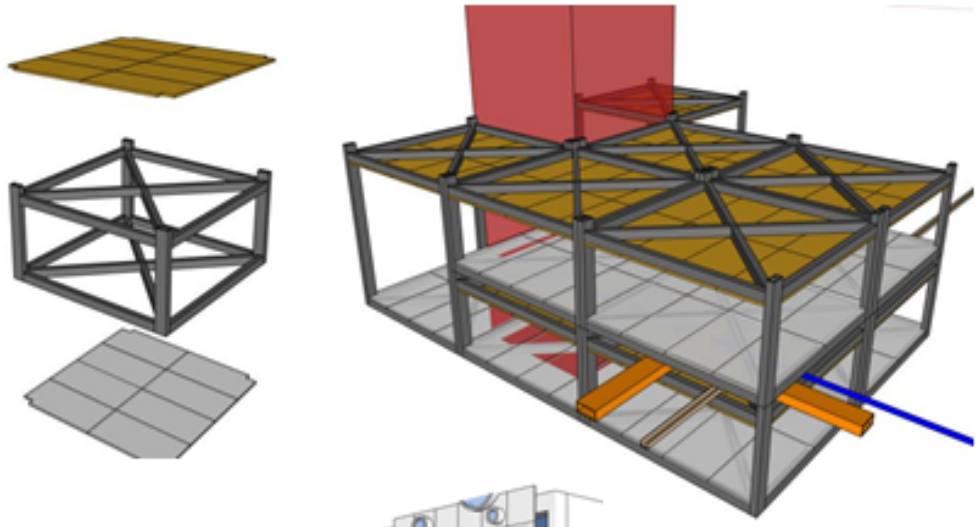
中美中心项目特点 Project Highlights

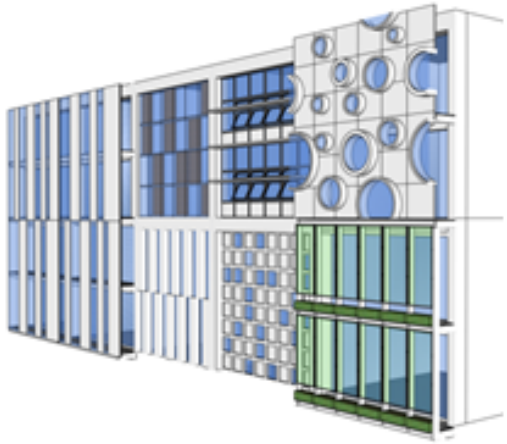
➢ 中美中心项目特点 Project Highlights



[应 变 Flexibility]

9*9*9框架结构 Main Structure





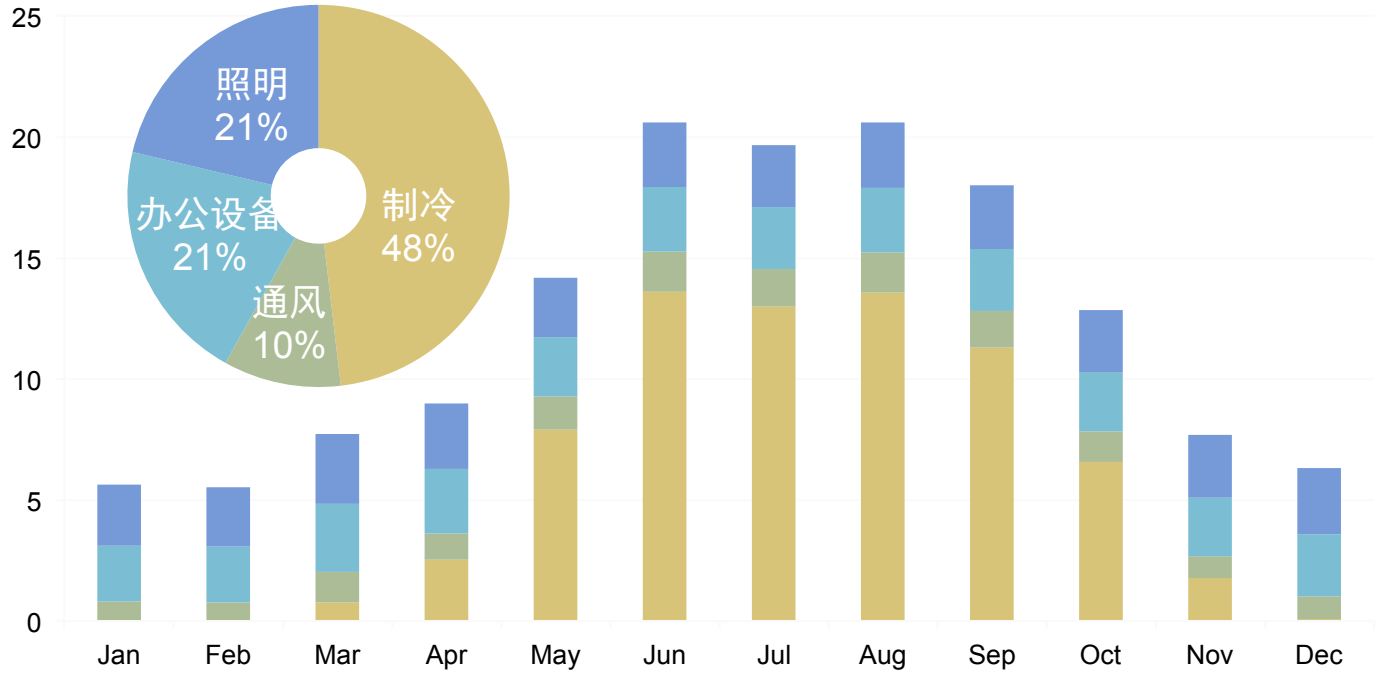
立面变化 Flexible Facade

中美中心项目特点 Project Highlights

➢ 中美中心项目特点 Project Highlights

- ✓ 项目整体能耗 **Project EUI 40kWh/m²**
- ✓ 净零能耗能耗 **ZC module 31kWh/m²**

[净零能耗 Net Zero Energy]



被动式设计
Passive Design

- 自然通风 Natural ventilation
- 自然采光 Natural lighting
- 遮阳 Shading

主动式技术
Active Design

- 可再生能源 Renewables
- 高效设备 High-efficient equipment
- 精细调控 Advanced control

中美中心开放实验平台 The Open Testing Platform

未来立方实验平台 Future Cube Test Bed

04-15

04-25

05-13

05-27

05-30

06-10

06-13

06-18

中美中心开放实验平台 The Open Testing Platform

实验验证：30kW容量、二级母线、10kWp光伏、分散蓄电、十余种用电设备

Experimental verification: 30kW capacity, two-stage bus, 10kWp photovoltaic, decentralized storage, more than ten kinds of electrical equipment.

直流家用电器
DC Household Appliances

直流空调
DC Air Conditioner

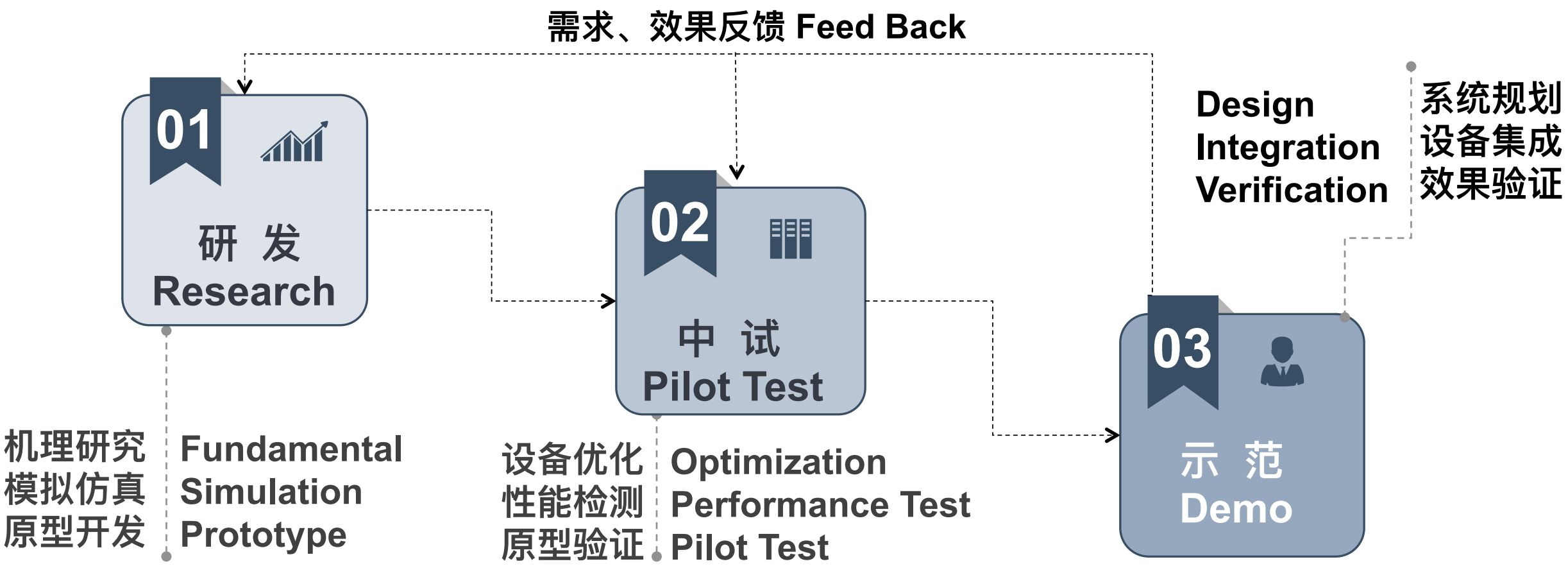
控制台
Control Panel

直流配电柜
DC Distribution Box

直流照明
DC Lighting

展示体验
Show and Experience

中美中心开放实验平台 The Open Testing Platform



Open、Integration、Sharing
开放、 集成、 共享

中美中心开放实验平台 The Open Testing Platform

感 谢！

Hope to hear from you soon!

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GOLDENCOOPERATE

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GREE

中国建筑股份有限公司 CHINA STATE CONSTRUCTION ENGRG. CORP. LTD

BERKELEY LAB Lawrence Berkeley National Laboratory

能源互联网研究院 Energy Internet Research Institute

北京四方 BEIJING SIFANG

THE HONG KONG POLYTECHNIC 香港理工大學

LUTRON

Persagy Keep Simplifying, Keep Innovating