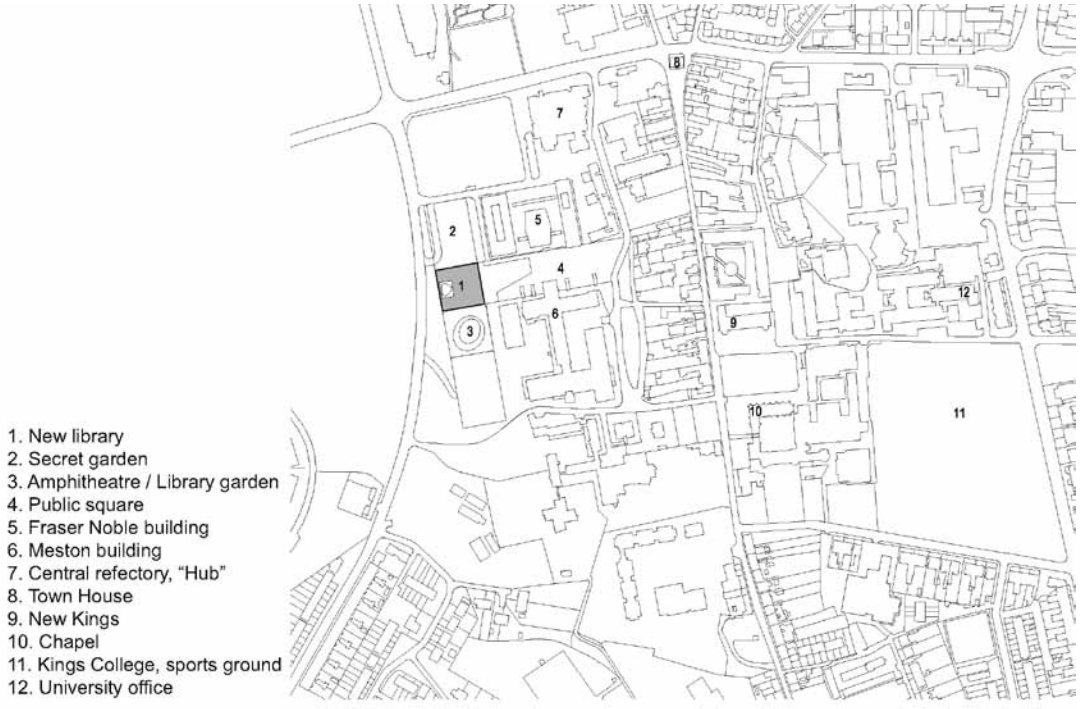
University of Aberdeen New Library, Aberdeen

阿伯丁大学新图书馆，阿伯丁

客户 阿伯丁大学
建筑/景观设计 schmidt hammer lassen architects
面积 15 500m^2
造价 € 40 million excl.VAT
获奖 2005年命题式国际设计竞赛第一名
建设时间 2009~2011
工程监管 Arup & Partners Ltd.
造价 Davis Langdon LLP
摄影 Adam Mørk/www.adammork.dk



总平面

阿伯丁大学是世界上第五大历史悠久的英文大学，建于1495年，图书馆馆藏超过250万册图书和手稿。新图书馆面积达15 500m^2，将为14 000名学生提供学习与交流空间，设置了1 200个自修位置，还提供档案查阅、历史展品参观和珍藏图书阅读等多项服务。

设计的核心部分是一个新的公共广场，它连接着大学与城市，构成了横贯大学校园的东西向轴线的西端部分。学术广场把大学和周边的社区连接在一起。

图书馆坐落在苏格兰石的基础之上，外观亲切宜人。建筑一层设有休息室和咖啡厅，用来举办常规展览、学术会议或诗歌朗诵会。巨大的螺旋形中庭空间将8层楼上下贯通，辅以连绵蜿蜒的轮廓和鲜活生动的建筑样式，与简洁干净的外立面形成了鲜明的对比。

建筑设计的宗旨之一是实现长期运行费用及能量损耗的最小化。建筑外立面配置了不规则样式的保温板和高性能玻璃幕墙，白天闪光，夜里微亮，成为阿伯丁地区一道明亮的地标。阿伯丁大学新图书馆将兼做大学和阿伯丁地区的会议和文化活动场所。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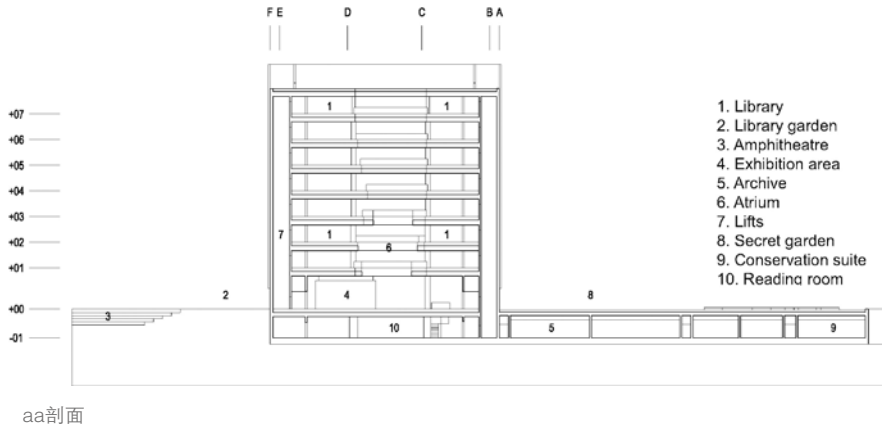
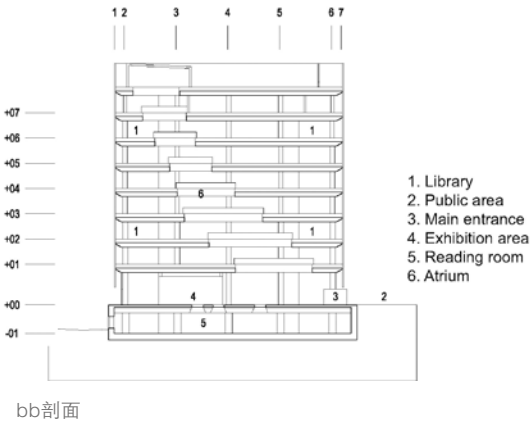


aa剖面



bb剖面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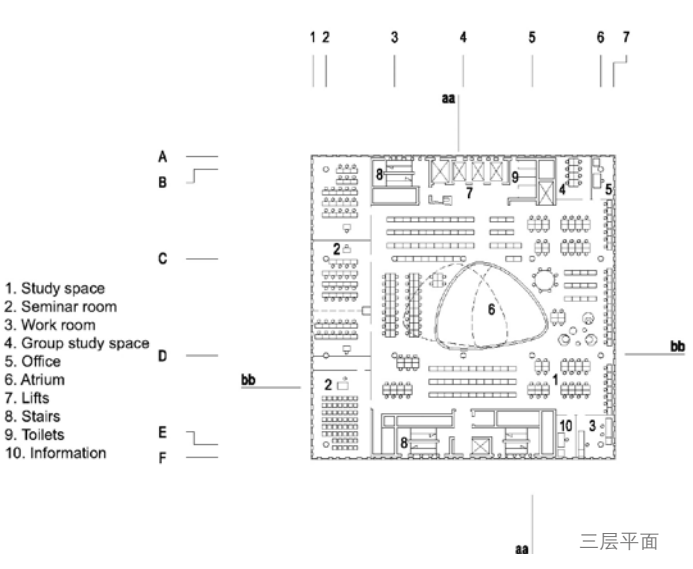
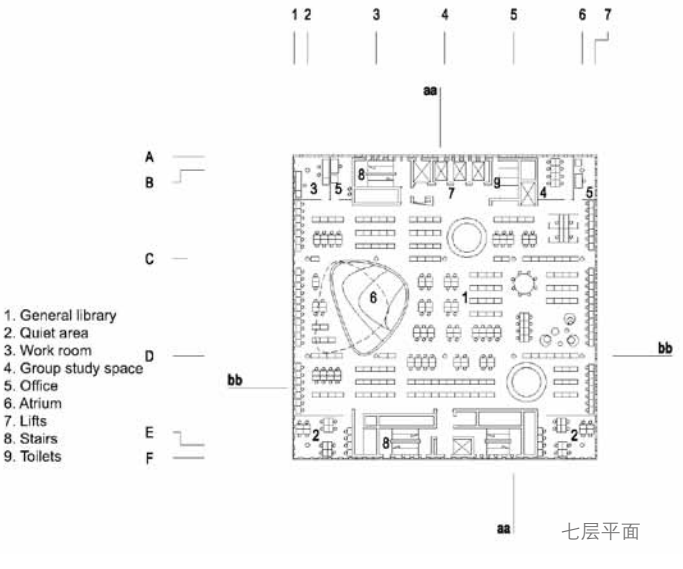

1 2 3 4 5 6 7
aa
bb
A
B
C
D
E
F
1. Study space
2. Seminar room
3. Work room
4. Group study space
5. Office
6. Atrium
7. Lifts
8. Stairs
9. Toilets
10. Information

三层平面


1 2 3 4 5 6 7
aa
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A
B
C
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E
F
1. General library
2. Quiet area
3. Work room
4. Group study space
5. Office
6. Atrium
7. Lifts
8. Stairs
9. Toilets

七层平面

可持续性

能源：屋顶安置光伏电板以满足建筑的电力需求。

水：水循环系统会收集和储藏从屋顶流下的雨水，雨水循环后会在盥洗室使用。

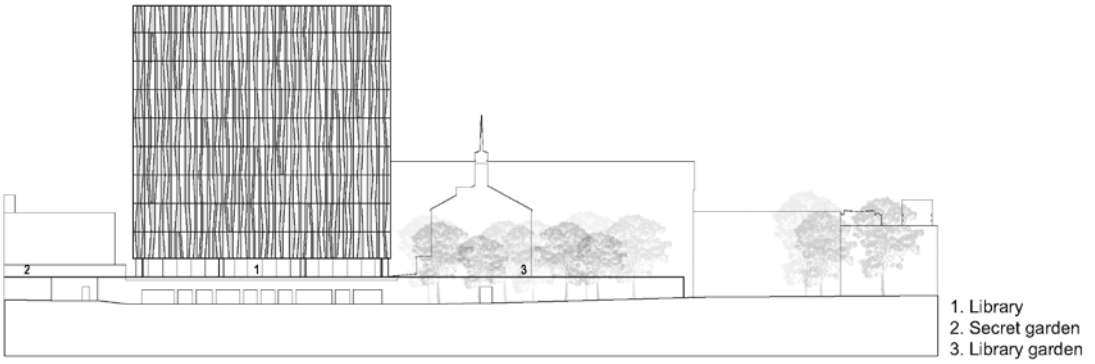
通风系统：将会设置一个节省能量的绿色置换式通风系统。例如，在每年特定的时间段内，当室外温度为17~18° C时，系统会在18~19° C时供应空气，以避免机械制冷。系统的压力下降值要比常见的风机盘管机组系统低，这有助于在系统中装入更小的风机来循环系统空气。温度分层的原理使制冷范围被限制在人群的活动空间，而天花板下的非人群活动空间就不会浪费制冷的能量。

基础设施：大学制定了一个强调可持续性的交通规划，这会在宏观上鼓励可持续性交通体系，如脚踏车和公共汽车的使用，减少汽车的使用率，并会为骑车上班的员工提供淋浴间等设施。

国际认证：项目获得了BREEAM 优秀评级认证。

照明：所有的工作环境在白天都会光线充足。通过使用高性能的玻璃幕墙，日光的过度辐射和热量损失都会被限制在最小范围内。内部电梯隔板和外立面玻璃间的光线透过率将会接近50%。

经济性：建筑设计会在最大程度上减小长期运行费用，并有效减少方案的碳足迹。（译/方朔，校/朱晓琳）



西立面

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The University of Aberdeen is the fifth oldest English-language university in the world. It was established in 1495 and it houses over a quarter of a million books and manuscripts. The new library serves a community of 14,000 students. The 15,500 square metres of floor-space accommodates 1,200 reading spaces alongside archives, historical collections and a rare books reading room.

A new public square is an integral part of the design, linking the University and the city and forming the west end of an east-west axis across the University campus. The Academic Square will generate a sense of cohesion between the University and the surrounding community.

The library will be positioned on a base of Scottish stone, and it is designed to be welcoming. The ground floor with lounge and café areas will host regular exhibitions, seminars and poetry readings. The atrium's vast spiralling volume connects all eight storeys, and with its sweeping contours and organic form, this space contrasts with the clean cut exterior profile.

The building is designed to minimise long term running costs and energy use. Consisting of an irregular pattern of insulated panels and high performance glazing, the façade will shimmer during the day and glow softly at night, creating a luminous landmark for Aberdeen. Aberdeen University New Library will be both a meeting place and a cultural centre for the University and the wider Aberdeen community.

Sustainability

Energy

Photo voltaic cells are to be located on the roof and will supplement the building's electricity requirements.

Water

A water recycling system will be utilised to collect and store rainfall from the roof. The rain water will be recycled for use in lavatories.

Ventilation

A green displacement ventilation system will be used to save energy. For example, the system supplies air at 18-19° C, thus obviating the need for mechanical cooling for a significant period of the year, that is, whenever external temperatures are less than 17-18° C.

System pressure drops are much lower than in conventional fan coil unit systems, and this permits the use of far smaller fans to circulate air through the system. Temperature stratification allows for the conditioning of the occupied zone only, and in this way energy is not wasted in conditioning the unoccupied zone directly beneath the ceiling.

Infrastructure

The university is developing a traffic plan with an emphasis on sustainability. This will generally encourage the use of sustainable transport systems rather than cars - for example cycling and buses. Facilities such as showers for staff cycling to work will be provided.

Certification

The project has achieved a BREEAM Excellent rating.

Light

All working environments will be generously day-lit. Through the use of high performance glazing, the amount of solar gain and heat loss will be kept to a minimum. The ratio of glass to solid panel on the internal elevations will be approximately 50 percent.

Economy

The building's design will minimise long term running costs and significantly reduce the scheme's carbon footprint.