

ARCHITECTURE

DESIGN FOR ELEMENTARY AND
SECONDARY SCHOOLS

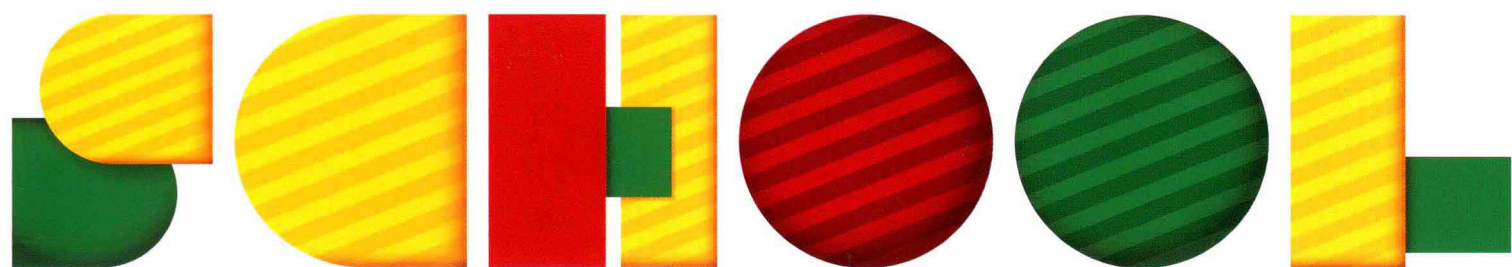
成长空间

世界当代 **中·小·学** 建筑设计

凤凰空间·北京 编



江苏人民出版社



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INTRODUCTION 序



“成长系列”是一套专门介绍学校建筑的丛书，选取了当今世界各地教育建筑中最优秀的案例，按幼儿园、中小学、大学、职业学校4册分别介绍。《成长空间 世界当代中小学建筑设计》正是这套丛书继《七彩童年 世界当代幼儿园设计》之后的第2本。《成长空间 世界当代中小学建筑设计》秉承这一系列丛书的优秀品质，用中、英文双语，图文并茂地介绍、展示了世界不同区域近50个优秀的中小学建筑项目。

这些项目涵盖了多种中小学类型，可谓“极大丰富”。中小学的分类虽多样，但中外的称谓都有相应的对照，学制也颇为雷同。由此可见，世界各地虽地域文化不同，习俗不同，但青少年的教育格局却渐渐趋同。而这，更增强了世界各地校园以至建筑、室内空间、设施及装饰等设计相互借鉴的意义。

《成长空间 世界当代中小学建筑设计》不仅将这些丰富的项目汇聚其中，阐述校园建筑特点的同时简要介绍这些国家的青少年教育的特点及人文传统，分析建筑与文化、历史、地域的关系。书后还附有我国中小学面积定额和设计规范，更为建筑从业者提供了有效、准确的参考。

书中收录的项目基本代表了当代学校设计最先进的水平。就每个项目而言，除了展示传统学校必备教室、办公室、操场等常见的建筑空间，更有各种青少年活动室、储物柜、餐厅、休息室、图书馆、家长接待室、设备间，以及各种五彩缤纷的创意空间呈现。而

这些正是我国中小校园急待添置和参考的内容。优美、细致的图片呈现加上平实、严谨的语言阐释，《成长空间 世界当代中小学建筑设计》为建筑设计及相关知识爱好者打开了一扇遥望远方、了解世界的窗子。

The “Growth Series” is a set of books specifically devoted to introduce the design of school buildings, selecting the most outstanding school architectures in the world. They are divided into four parts, kindergartens, elementary and secondary schools, universities and vocational schools. *School Architecture: Design of Elementary and Secondary Schools in the World* is the second book after *Colorful Childhood: World Contemporary Kindergarten Design*. It keeps the high quality of this set of books, introducing about 50 projects of elementary and secondary schools in different parts of the world in Chinese-English bilingual, with both excellent images and texts.

This book is rich in content, with projects covering many types of elementary and secondary schools in the world. Though there are various classifications of schools in different parts of the world, their names or designations in Chinese are corresponding to that in other languages, and their school systems are quite similar. It shows

that the education systems of teenagers in different countries are converging, though having different cultural backgrounds and customs. In this case, it is of great significance for mutual reference to school buildings and even architectures, interior design, facilities, decoration, etc. in the world.

This book integrates all these projects together, focusing on the architectural features of the school buildings in different countries. Meanwhile, it introduces the educational characteristics and humanistic tradition of these countries, analyzing the relations between architecture and culture, history and geography. At the end of the book, there is *Code for Design of School GB50099—2011* in China. These serious information and data provide effective and accurate reference for architectural practitioners.

All projects in this book show a high level of contemporary architectural design of schools in the world. In these projects, besides common architectural spaces such as traditional classrooms, offices, playgrounds, the schools includes activity rooms, lockers, cafeterias, common rooms, libraries, reception rooms, equipment rooms and other creative spaces. These need to be added promptly in Chinese elementary and secondary schools, and provide a reference for China. With delicate and detail images and plain and rigorous texts, this book provides a window for architectural practitioners and enthusiasts to see the world and learn from world-leading architects.

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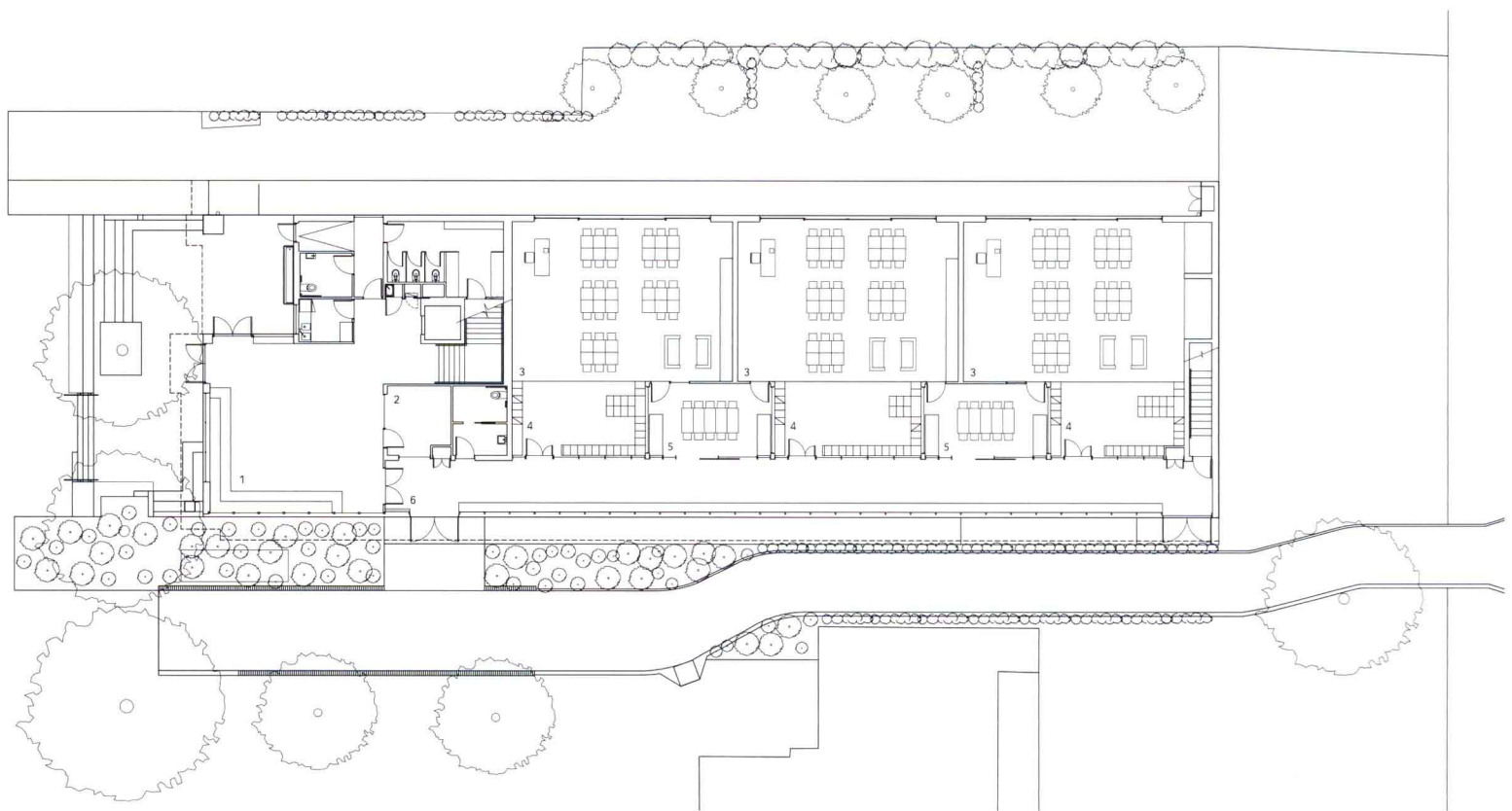


PEGS JUNIOR BOYS SCHOOL

澳大利亚 PEGS少年男校

项目设计: McBride Charles Ryan
项目地点: 澳大利亚, 墨尔本
项目团队: 首席建筑师 Rob McBride, Debbie-Lyn Ryan
项目经理 Benedikt Josef
建筑师 Amelia Borg, Natasha Maben
工程师: Hive Engineering
承建商: Contract Control
建筑测量师: Davis Langdon
建筑设备工程师: Medland Metropolis
项目面积: 1 650 m²
摄影: McBride Charles Ryan, John Gollings

Architects: McBride Charles Ryan
Location: Melbourne, Australia
Project Team: Principal Architects: Rob McBride, Debbie-Lyn Ryan
Project Manager: Benedikt Josef
Graduate Architects: Amelia Borg, Natasha Maben
Engineer: Hive Engineering
Builder: Contract Control
Building Surveyor: Davis Langdon
Services Engineer: Medland Metropolis
Project Area: 1,650 m²
Photographs: Courtesy of McBride Charles Ryan / John Gollings



- | | |
|-------------|---------|
| 1 Meeting | 1 会议室 |
| 2 Staff | 2 教工室 |
| 3 Classroom | 3 教室 |
| 4 Locker | 4 储物柜 |
| 5 Breakout | 5 小组讨论室 |
| 6 Colonnade | 6 柱廊 |



一层平面图 GROUND FLOOR PLAN

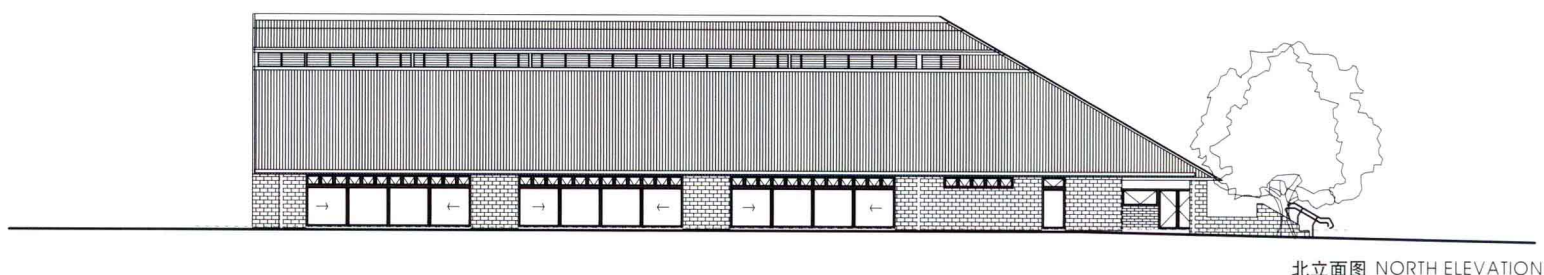
PEGS少年男校始于Windy Hill一座意大利风格的建筑, 对面是埃森登足球俱乐部。这座建筑在这片联邦住房密集的住宅区中独领风骚。在被Nicholson、Raleigh、Napier和Fletcher4条街道围拢的街区内, 学校逐渐积聚了许多房产, 许多房屋现在都属于学校所有。这个新项目是座两层建筑, 分别为5、6两个年级的学生各提供了3间教室。这无疑是对学校和Nicholson街区面貌的重要补充。

建筑师期望建筑能够尊重和利用周边非同寻常的都市环境, 为男孩们的学校生活创造良好的开端。除了提供理想的住宿条件, 还希望它是一座深具想象力的建筑。

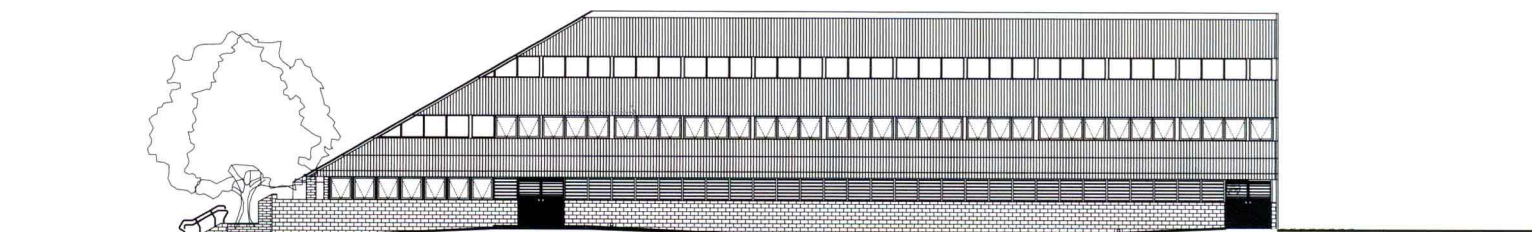
建筑采用了联邦民居的基本轮廓, 整体向上收拢, 角棱突兀, 削割感强。建筑的正面堪称一座鬼屋; 中部(突出的部分)仿若一座神社; 细看之下, 其后部(与学校椭圆形建筑相呼应)呈现了蓬顶的造型。

从建筑的布局来看, 一楼的教室与北边庭院相连; 楼上的走廊被转换至另一侧, 减少了对楼下的俯视; 5年级教室位于一楼, 色彩丰富而浓重, 营造出了朴质的氛围; 而二楼的设计轻盈缥缈。为了表示对Utzon's Bagsvaerd教堂的尊重, 建筑师对建筑繁复的轮廓进行了平缓的处理, 呈现了云朵般的造型。高耸的烟囱不仅是采光的通道, 也为教室提供了理想的自然通风条件。

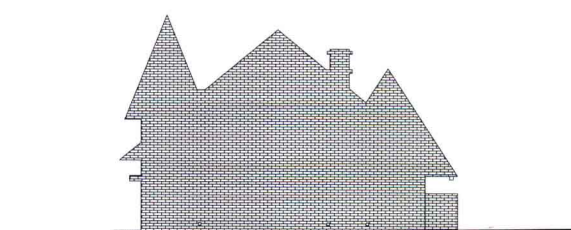




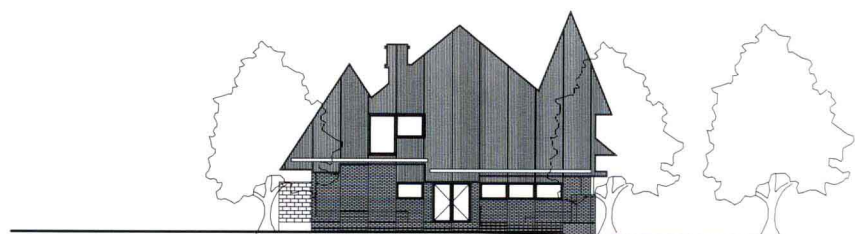
北立面图 NORTH ELEVATION



南立面图 SOUTH ELEVATION

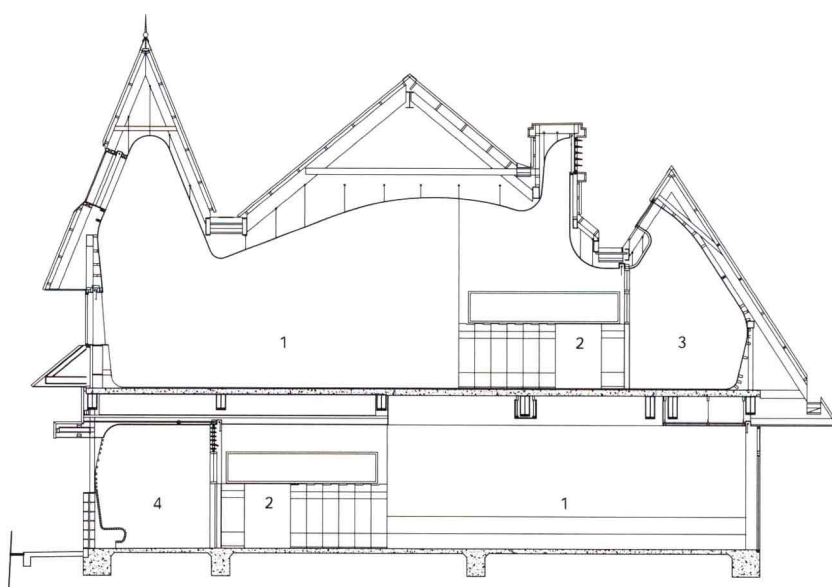


东立面图 EAST ELEVATION



西立面图 WEST ELEVATION

1 5 10 m



- | | |
|-------------|-------|
| 1 Classroom | 1 教室 |
| 2 Locker | 2 储物柜 |
| 3 Corridor | 3 走廊 |
| 4 Colonnade | 4 柱廊 |

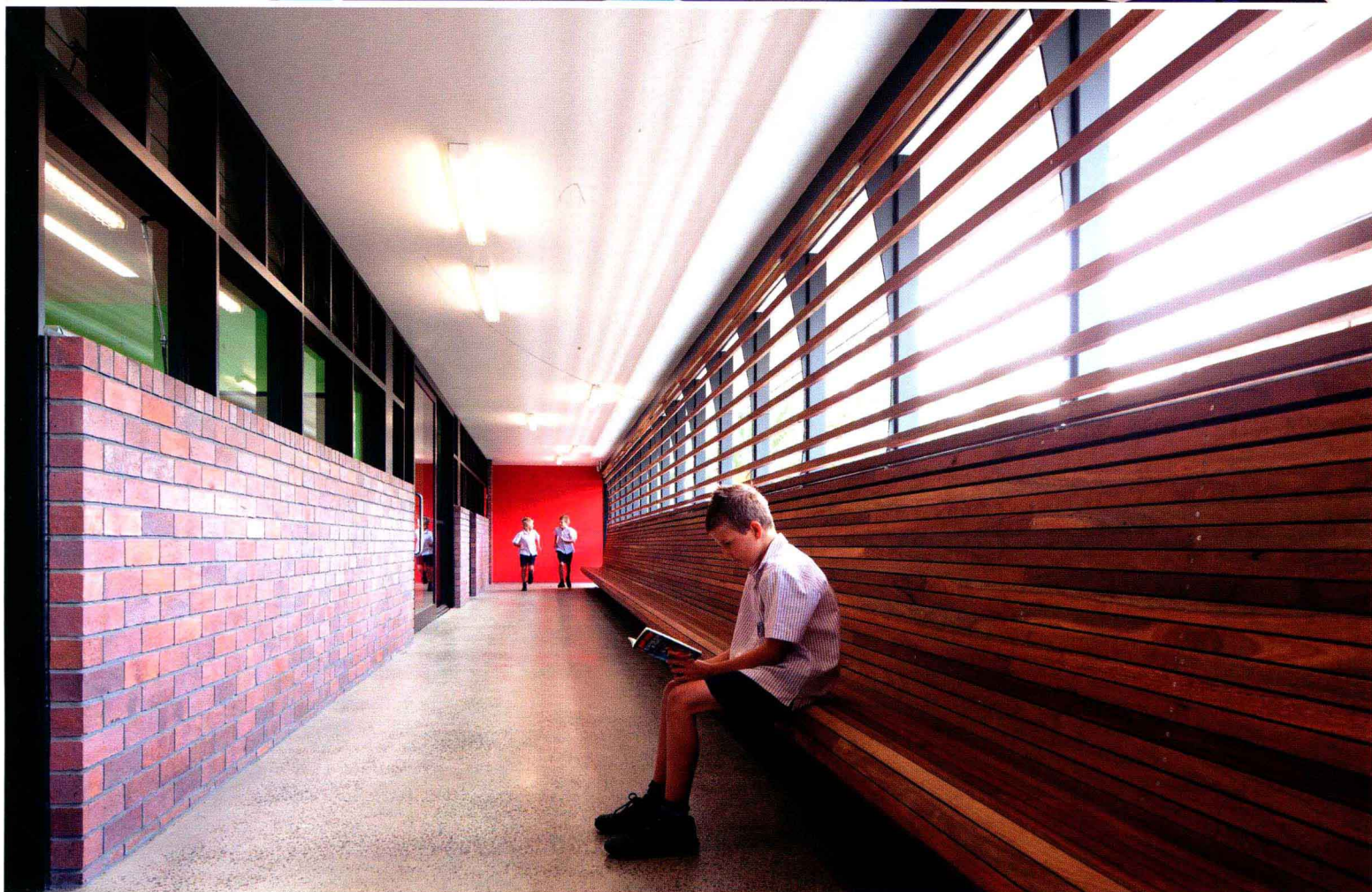
1 2 3 4 5

剖面图 SECTION

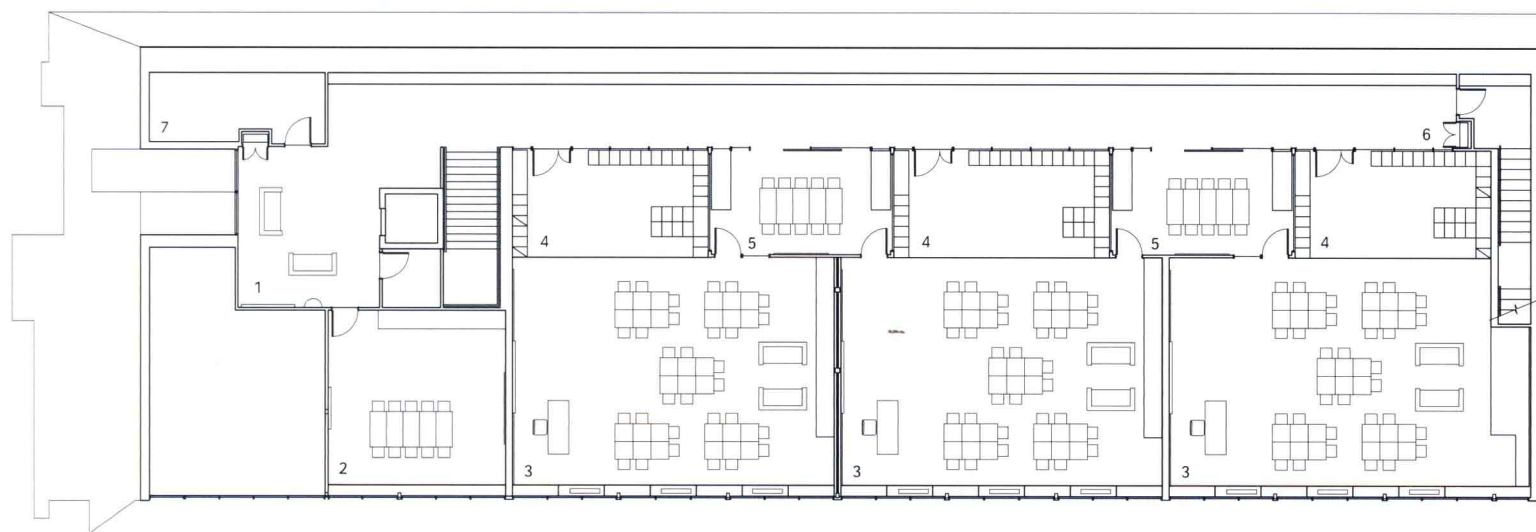
Penleigh and Essendon Junior Boys School began in an Italianate mansion on windy hill, opposite the Essendon Footy Club. This building is exceptional in a residential area where Federation housing dominates. Slowly the school has accumulated much of the property in the block bounded by Nicholson, Raleigh, Napier & Fletcher Streets. Many of the 'houses' are now occupied by the school. This new project, a two storey year 5 & 6 block with 3 classrooms above and below, is an important addition to the school and public interface to Nicholson Street.

The architects wanted this building to acknowledge and exploit its unusual urban condition. All wanted this building to be a unique acknowledgment of an important threshold stage in the boy's school life. All wanted more than just good accommodation, but a building of the imagination.

This proposal takes just the silhouette of a Federation Home, it is up-scaled, extruded and sliced. The front of the building might be described perhaps as a haunted house, the centre (the extrusion) is vaguely a Shinto Shrine, the rear (which interfaces with the schools ovals), if you squint-The Big Top.







二层平面图 FIRST FLOOR PLAN

- | | |
|---------------------|---------|
| 1 Foyer | 1 大堂 |
| 2 Meeting | 2 会议室 |
| 3 Classroom | 3 教室 |
| 4 Locker | 4 储物柜 |
| 5 Breakout | 5 小组讨论室 |
| 6 Corridor | 6 走廊 |
| 7 Plant & Equipment | 7 厂房及设备 |

1 2 3 4 5



The planning is arranged so as to provide northern courtyards to the ground floor classrooms, upstairs the corridor is switched to reduce overlooking to the adjacent neighbor. The ground floor Grade 5 classrooms have rich deep colors and an earthy ambience. The first floor is ethereal. With more than a nod to Utzons Bagsvaerd Church the complex silhouette is smoothed to a cloud like shape. The extruded chimney is a source of light and a means of naturally ventilating the classroom space.





FITZROY HIGH SCHOOL

澳大利亚 菲茨罗伊中学

项目设计: McBride Charles Ryan

项目地点: 澳大利亚, 墨尔本

首席建筑师: Rob McBride, Debbie-Lyn Ryan

建筑师: Andrew Hayne, Drew Williamson,
Michelle James, Angela Woda, David Fraser

摄影: John Gollings

Architects: McBride Charles Ryan

Location: Melbourne, Australia

Principal Architects: Rob McBride, Debbie-Lyn Ryan

Architects: Andrew Hayne, Drew Williamson, Michelle James,
Angela Woda, David Fraser

Photographs: John Gollings

菲茨罗伊中学位于墨尔本城区内, 是一所提供7~10年级教育的政府公办学校。该学校曾于1992年被关闭, 到2004年才重新开办。学校设有精品设计课程, 是澳大利亚实施先进课堂教育模式的引领者。

2008年, 该学校进行了扩容改建, 为享受义务教育的学生设立了11和12年级, 在校人数也由375人增至600人。为了促进这次扩建, McBride Charles Ryan在同一时间设计和筹划了一种“新学校模式”, 以符合和表达21世纪学校的要求和愿景。

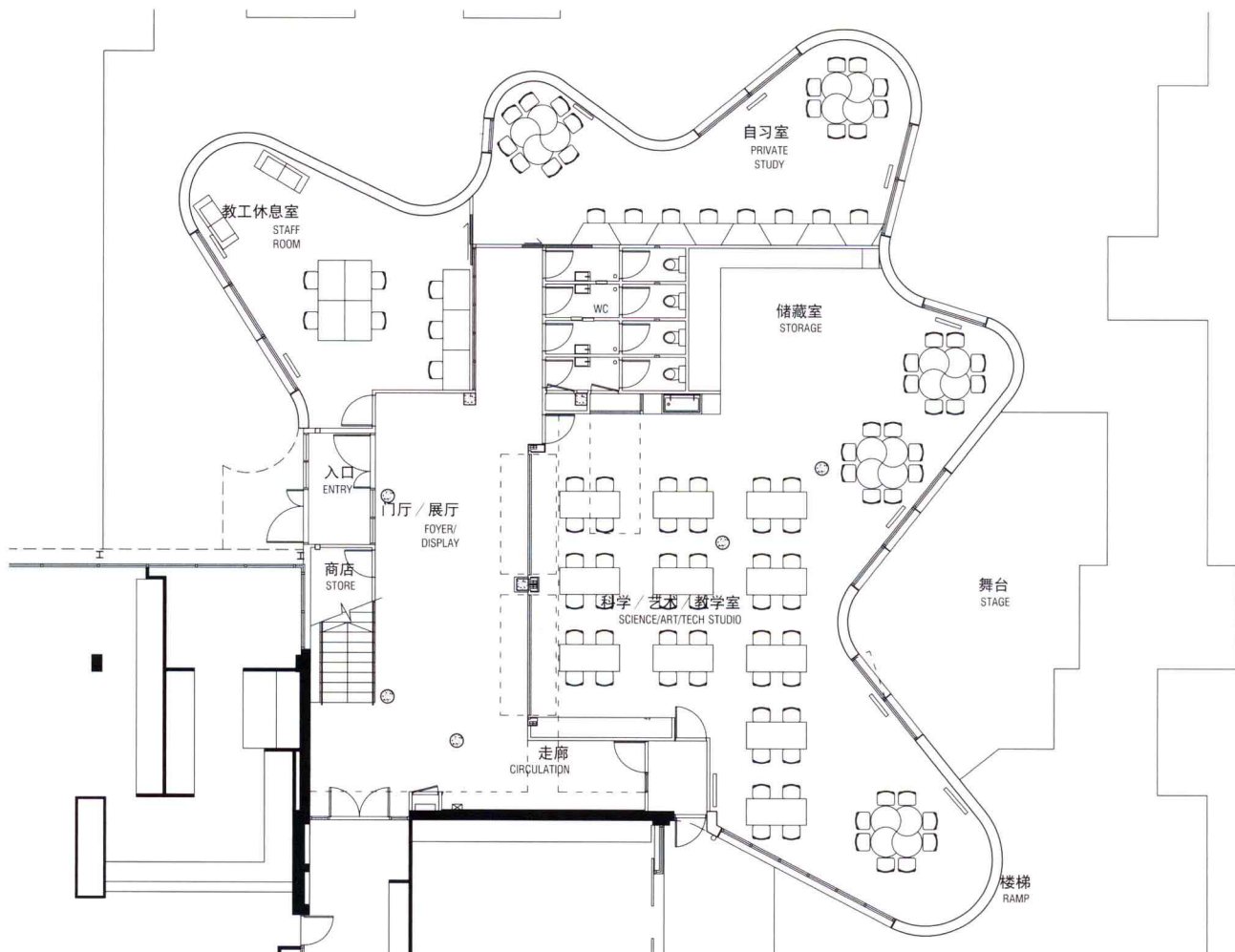
McBride Charles Ryan的设计为新增的225名学生和12名教工提供了3层的空间, 并与20世纪60年代的原教学楼形成交互。此外, 还创设了私人学习区域, 资源中心和一间艺术及技术工作室。这间工作室向宽阔的展示门厅开敞, 为社区集会提供了空间, 这是当前这一城郊地区极为缺乏的。

建筑的模块单元是一个可供40~60人使用的空间。遵循这小组教学法的运用,

这些空间的设置用途灵活。从大型的注入式演讲形式的展示, 到中等规模的研讨分组, 再到学生的个人学习, 这些空间均可胜任, 这得益于其外沿起伏的建筑平面。在众多更为独立的空间内, 监管工作达到了最优化。

内凹极深的波浪状轮廓由双层砖构筑, 这使得建筑的外观结构更加坚固, 从而减少了对附加框架和支撑的依赖。暴露在外层的砖砌内层壳板(和平板的底面)最大程度地保证了建筑的潜在热稳定性, 极大地减少了对额外气候控制措施的需求。为满足各个楼层的功能需求, 建筑师为现有建筑设置了4 m的层高, 从而确保充足的自然光线射入室内。

建筑朝向街道的立面卓尔不群, 并与学校的原有特点建立了动感的联系。面对教育部设施计划的可变性, 菲茨罗伊中学诠释了建筑设计如何富有生命力, 并为同行树立了良好的榜样。



一层平面图 FIRST FLOOR PLAN





Fitzroy High School is a government 7-10 school in inner urban Melbourne. The school had been closed in 1992 but was subsequently reopened in 2004. Fitzroy High School has a strong design curriculum and is a state leader in implementing progressive education models in the class room.

In 2008 the scope of the school was increased to include post-compulsory level students, with the addition of years 11 and 12 raising the projected enrolment from 375 to 600. To facilitate this expansion, McBride Charles Ryan have been engaged to design and document a "new school model" simultaneously accommodating and expressing the requirements and aspirations of a 21st century school.

MCR's design provides for the additional 225 students and 12 staff across three levels, interfacing with the existing 1960s school building. Private study areas, resource centres and an art / technology studio are also provided. The art / technology studio has been designed to open up to a generous display foyer, providing a space for community gatherings that is currently lacking in this suburb.

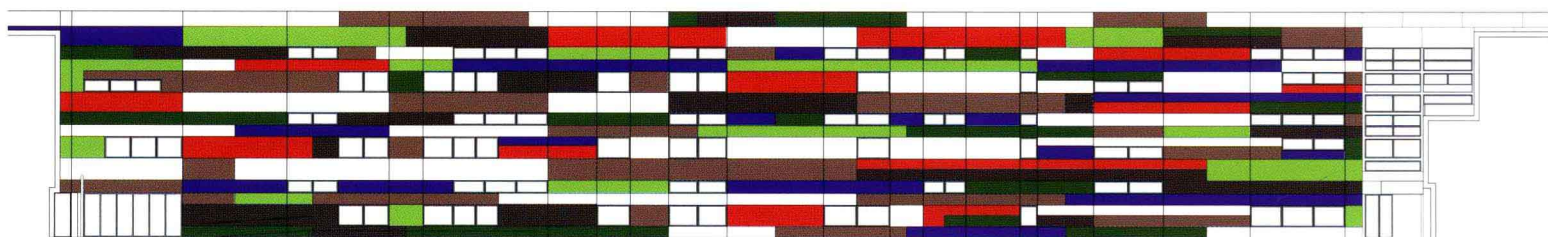
The model unit of the design is a space for between 40 and 60 students. Following a "team teaching" approach, the spaces are configured to allow for a flexible distribution of use, accommodating activities ranging from large "chalk and talk" lecture-style presentations to medium scale seminar groupings to individual private study. This is achieved by a floor plan with an undulating perimeter, allowing for an optimum of supervision to occur within a variety of more discrete spaces.

The undulating perimeter is constructed from double brick with a deep cavity, allowing the building's skin to perform structurally, thereby reducing the need for additional framing or bracing. The exposure of the inner skin of brickwork (and the underside of the slabs) maximizes the buildings latent thermal stability, considerably reducing the need for additional climate control. The 4 m floor-to-floor height required to meet the existing building at each level also increases the quality of daylight deep into the proposed plan.

With its prominent aspect to the street, its dynamic relationship with existing features such as the mature fig tree and its confident, exuberant expression of the aspirations of the school and its community, Fitzroy High School provides a positive example of how, faced with the contingencies of the Department of Education's facilities schedules, architecture can still be designed with a modicum of "zing".



剖面图 SECTION



立面图 FAÇADE