

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



MOPY ELEMENTARY SCHOOL

巴西 莫匹小学

项目设计: Mareines + Patalano Arquitectos

项目地点: 巴西, 里约热内卢

项目用途: 教育

基地面积: 1 500 m²

建筑面积: 1 500 m²

设计期: 2005-2009年

竣工时间: 2009年

设计团队: Ivo Mareines, Rafael Patalano, Flavia Lima

承建商: Kreimer Engenharia

灯光设计: Ana Moraes

景观设计: Marita Adania

室内设计: Mareines + Patalano Arquitetura

摄影: Leonardo Finotti

Architects: Mareines + Patalano Arquitectos

Location: Rio de Janeiro, Brazil

Use: Educational

Site Area: 1,500 m²

Building Area: 1,500 m²

Design Period: 2005-2009

Completion: 2009

Design Team: Ivo Mareines, Rafael Patalano, Flavia Lima

Construction: Kreimer Engenharia

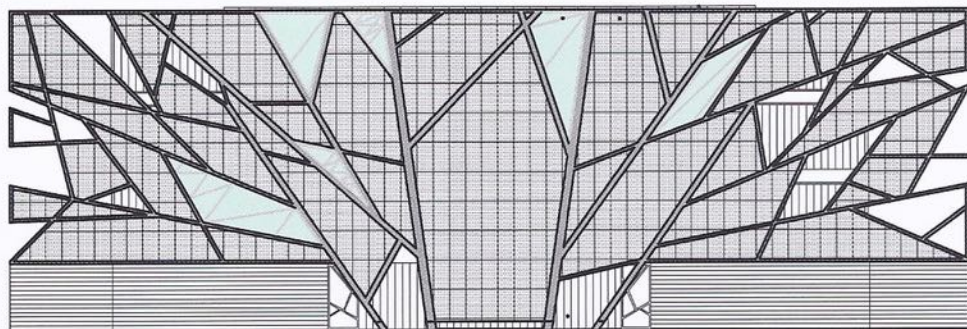
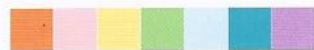
Light Design: Ana Moraes

Landscape Design: Marita Adania

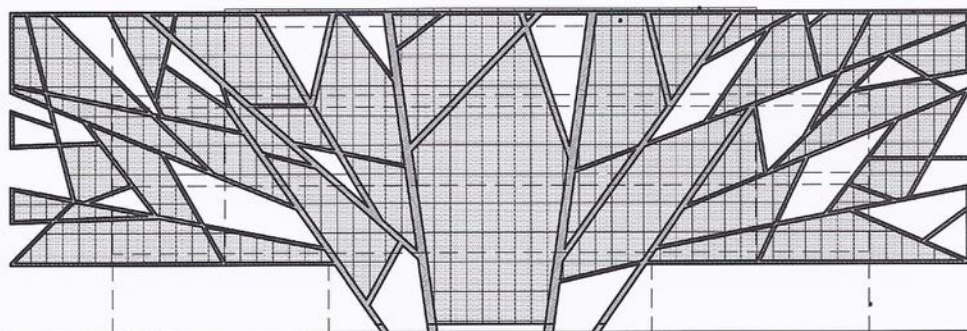
Interior Design: Mareines + Patalano Arquitetura

Photographs: Leonardo Finotti

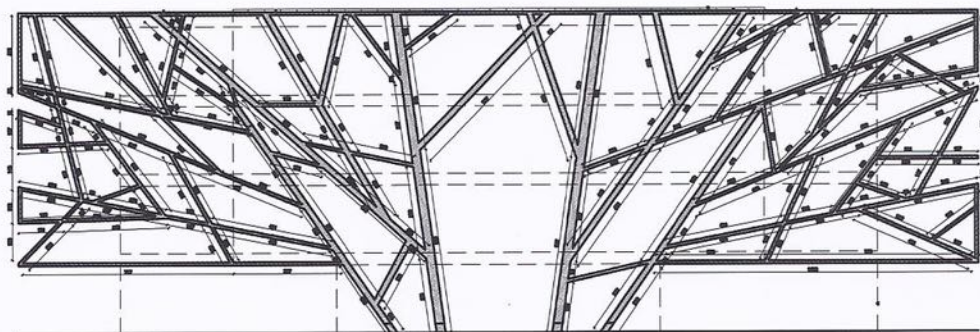




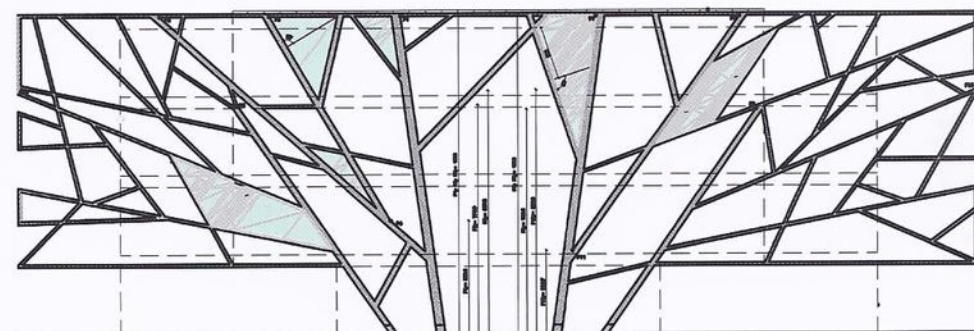
立面图 FAÇADE



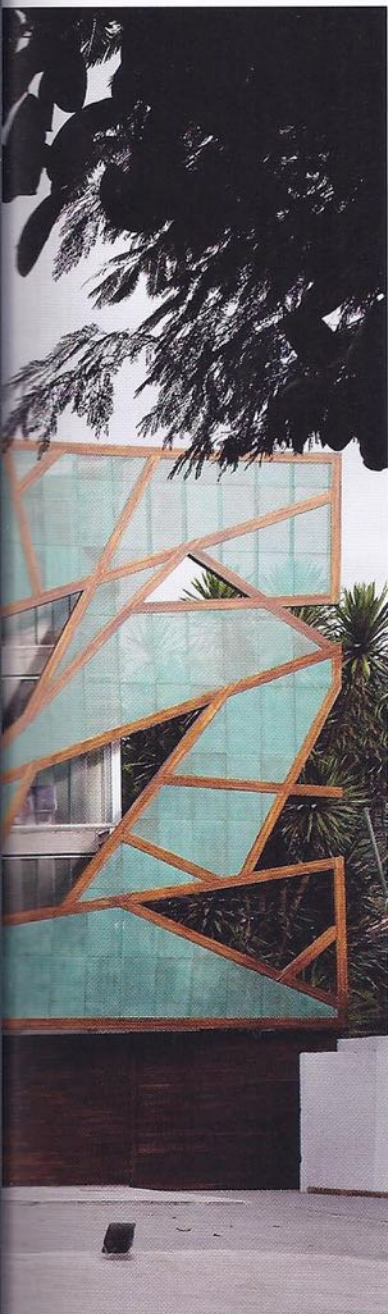
立面图 FAÇADE

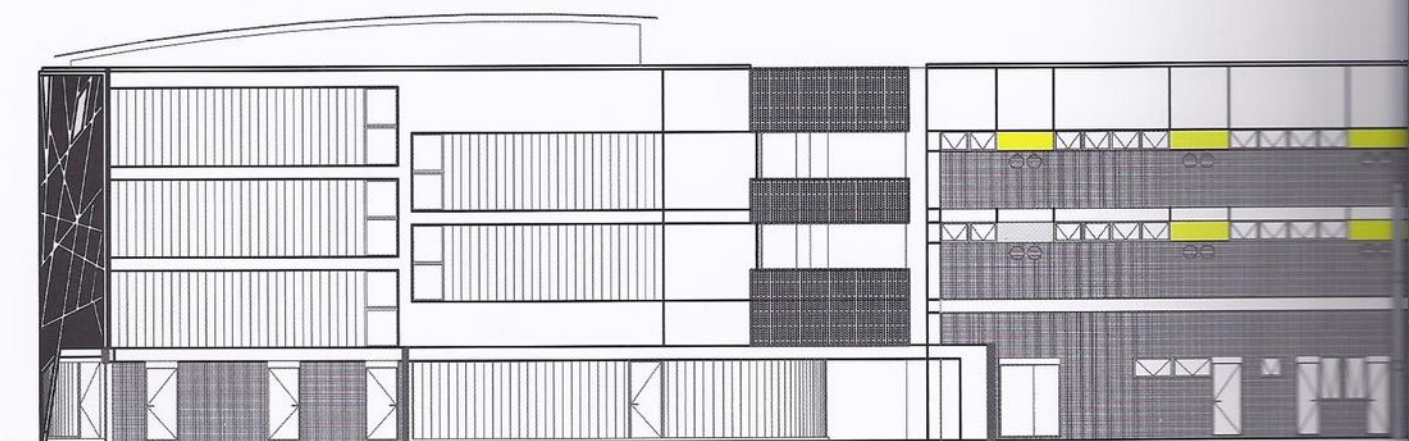


剖面图 SECTION



剖面图 SECTION



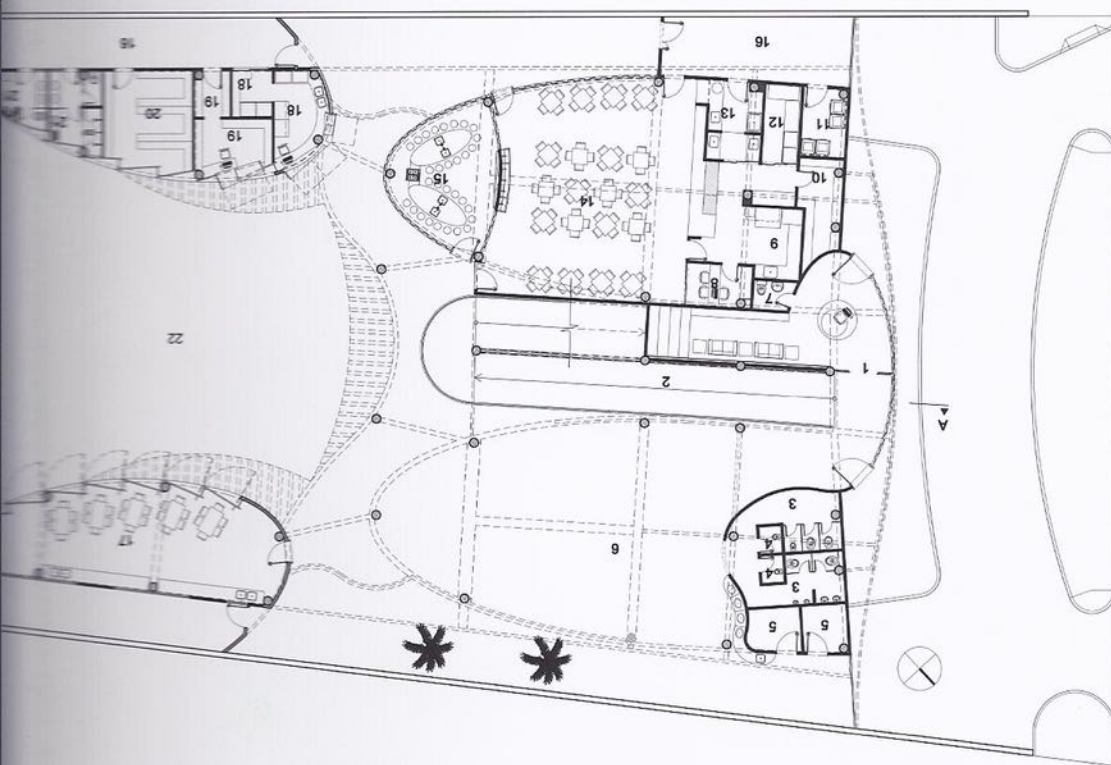


莫匹小学位于巴西里约热内卢城区一片绿地之中，主立面面朝一条连接该市西部和北部的繁忙街道，而从另一面则可俯瞰山峦叠嶂的国家森林公园，两者间是一片独户住宅和繁密的草木。建筑由4个分离的部分组成，开放式阳台将其连为一个整体U形的布局，并向森林方向开敞。主要的教室设在面朝街道的两个椭圆形建筑体内，而另外两个水滴形的建筑体则是行政区、教工办公室、艺术室、图书馆、计算机教室等辅助空间的所在地。建筑一分为四的整体设计不但促进了空气流通，利于被动式散热，还清晰地明确了每部分的功能。所有的楼层都由坡度为8%的坡道连接，为残疾学生和老师提供了便利。由于这些坡道占据了楼层间大片的空间，建筑还特别地设置了中间层。出于娱乐和教育的目的，即将竣工的顶层将会被打造成一个种植草木的屋顶花园。在这里，山峦的景色尽收眼底。大多数的教室由半透明的槽形玻璃所封闭。这样，散入室内的光线不会分散学生的注意力。建筑的正立面是一棵树的抽象图案，唤起了人们对森林的联想。建筑是一个混凝土构架，上面架有胶合层叠木梁，木梁间镶有带小孔的预氧化铜面板。横梁所用的木材是一种生长周期较短的可再生材料。这种桉树类植物是专为取材而栽种的树木。

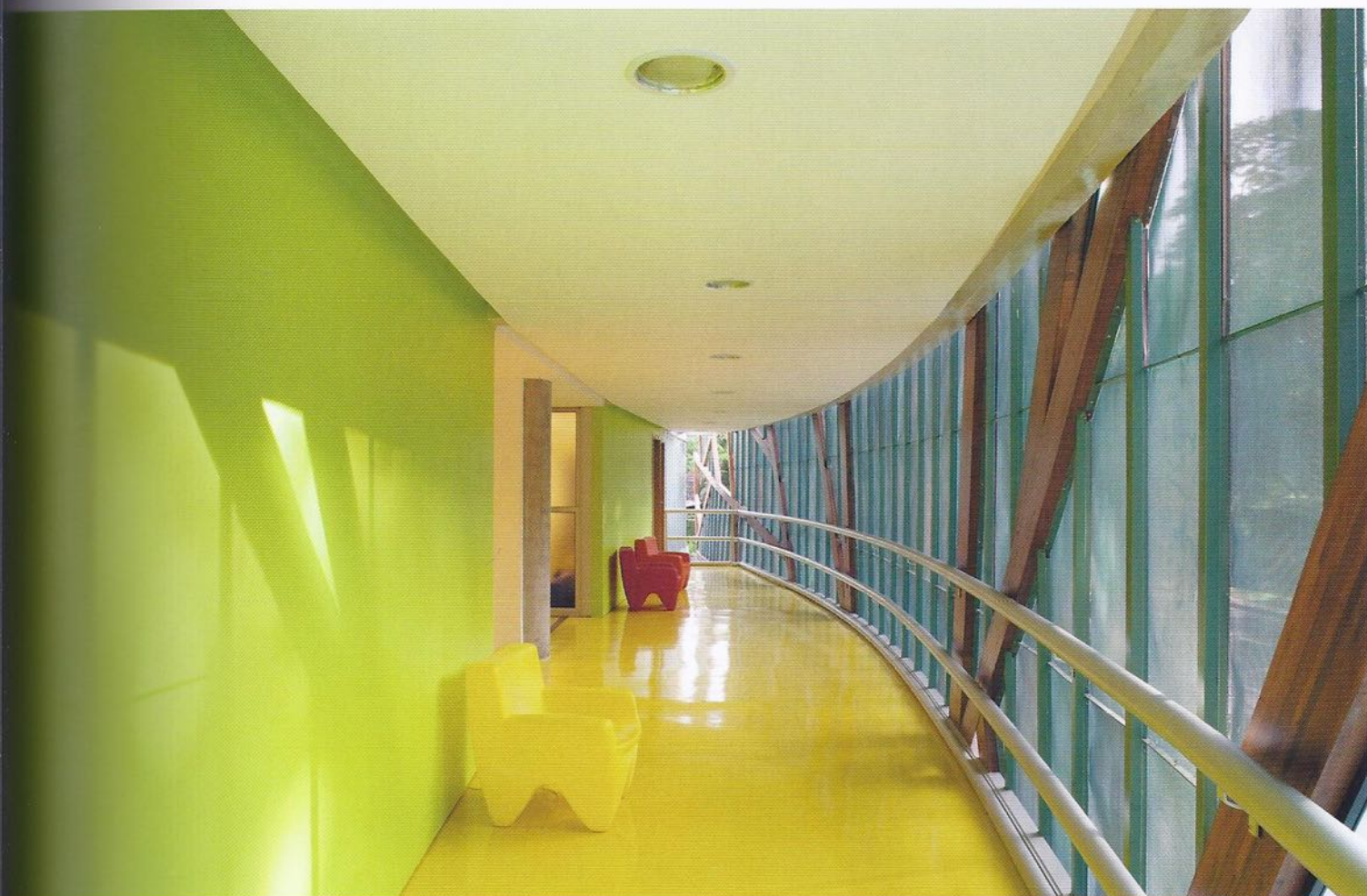
为了实现建筑的可持续性并且提高学生的生态意识，学校还采取了其他的环保策略，例如雨水的储存和再利用、太阳能热水器、厕所两极冲水设施、定时水龙头和底层采用的橡胶板等可回收材料。

微型穿孔铜材为走廊提供了良好的透气性，还能够遮挡雨水的进入。它通过透明与不透明的双重性为学校增添了蓬勃的生机。在白天，它从室外看是不透明的，而从室内向外看却是半透明的。绿色调的立面在夜晚变为半透明，流光溢彩，栩栩如生。





- 1 坡道
- 2 教室
- 3 休息间
- 4 儿童浴房
- 5 教室、礼堂
- 6 卫生间
- 7 残疾人专用卫生间
- 8 行政管理办公室
- 9 教务处
- 10 会议室
- 11 教室办公室
- 12 游廊
- 13 花园
- 14 技术轴
- 1 Ramp
- 2 Classroom
- 3 Resting room
- 4 Children's bathroom
- 5 Classroom/auditorium
- 6 Toilet
- 7 Disabled's toilet
- 8 Administration
- 9 Pedagogic
- 10 Reunion
- 11 Teachers room
- 12 Veranda circulation
- 13 Garden
- 14 Technical shaft



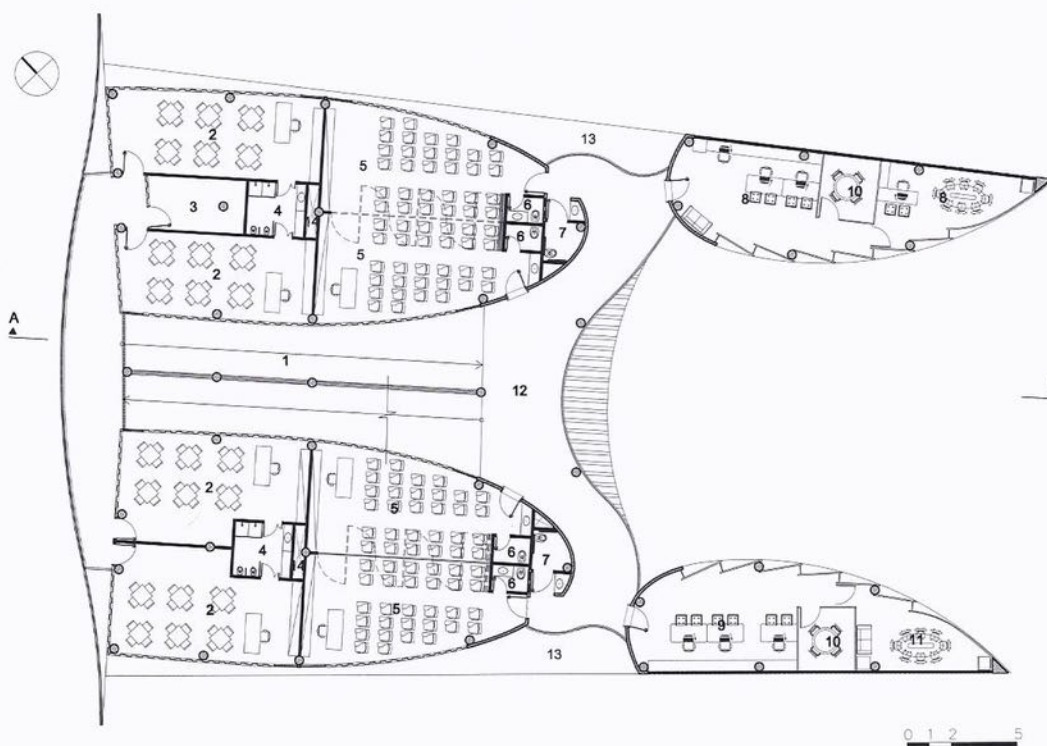


MOPI elementary school is located in an urban but very green area of Rio de Janeiro, Brazil. It's main façade faces a busy avenue that connects Rio's west and north zones. The opposite side of the building overlooks a national forest park with mountains, preceded by single family houses and lots of vegetation. The building is conceived as four separated volumes connected by open balconies and derived from a "U" shaped whole open towards the forest. The two elliptical volumes that faces the avenue contain the main classrooms, while the other two water drops shaped volumes contain secondary spaces such as administration, pedagogic room, art, library, computer classroom and so on. The whole building being split into four distinct volumes facilitates cross air circulation that provides passive cooling while marking very clearly the use purpose of each one. All levels are connected via 8% inclined ramps, to allow the inclusion of disabled students or professors. As ramps consume a lot of space in plan to go from one level to the next, mid-levels are adopted. The top floor of the school, yet to be completed, will be a roof garden with grass and small trees overlooking the mountains with recreational and pedagogical purposes. Translucent channel glass encloses most of the classrooms, flooding it with light without distracting the students. The main façade evokes the forest, it is an abstraction of a tree. It is composed of micro perforated pre-oxidized copper panels attached to laminated wood beams, which are then attached to the concrete structure of the building. The wood used in these beams are a fast growing renewable material source, and its species (eucalyptus) are planted specifically to be harvested.

Other environmental solutions adopted in Mopi want to achieve not only the sustainability of this building, but also the ecological sensibilization of the students such as: storage and reuse of rain water, solar heaters for water, two phases toilet flushes, taps with timers, and recycled materials like the rubber tiles on the ground floor.

The microperforation of the copper allows the passage of air while blocking rain water. It also gives the school a very lively aspect since it plays with transparency and opacity. During the day it looks opaque from the outside and semi transparent from inside. The green color dominates the façade. At night, it becomes semi transparent, letting movements and colors shine through, making it come alive.

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storage
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n-cleaning
mental kitchen
cal
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ing room
patio
- 1 接待处
 - 2 坡道
 - 3 卫生间
 - 4 儿童卫生间
 - 5 技术间
 - 6 有棚天井
 - 7 卫生间
 - 8 营养间
 - 9 厨房-烹饪间
 - 10 食物储藏室
 - 11 垃圾处
 - 12 冷藏室
 - 13 厨房-清洁间
 - 14 食堂
 - 15 实验厨房
 - 16 技术室
 - 17 艺术室
 - 18 儿童酒吧
 - 19 商店
 - 20 储藏室
 - 21 更衣室
 - 22 露天天井



二层平面图 SECOND FLOOR PLAN

