



# BEYOND 超越

建筑 ARCHITECTURE / 艺术 ART / 人文 CULTURE 016

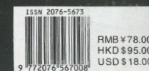
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## 专题: 永续城市 SUSTAINABLE CITY



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UNIFEI



/ 文化建筑 /



## A Green Paradise for Learning

UNIFEI - Campus Itabira

### 绿色学习乐园

巴西UNIFEI大学伊塔比拉校园

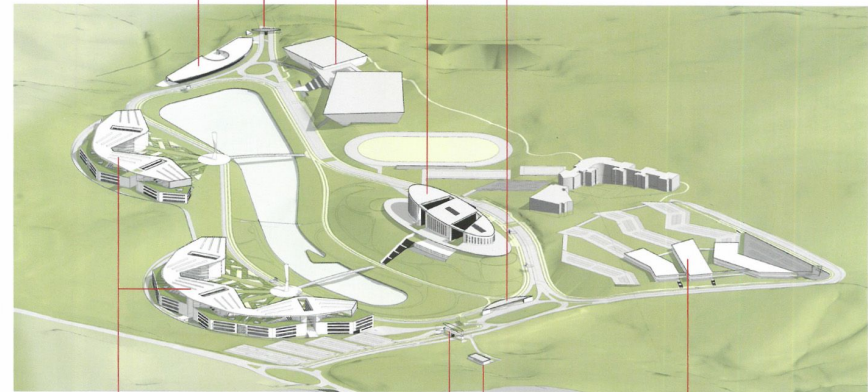
项目地点：巴西米纳斯吉拉斯伊塔比拉  
项目面积：155 000平方米  
建筑设计：Gustavo Penna建筑事务所  
开发商：Gustavo Penna  
图片：Casa Digital  
采编：张雅林

Location: Itabira, Minas Gerais, Brazil  
Area: 155,000 m<sup>2</sup>  
Architectural Design: Gustavo Penna Architect & Associates (GPAA), BH, MG, Brazil  
Developer: Gustavo Penna  
Images: Casa Digital, GPAA  
Contributing Coordinator: Yalin Zhang

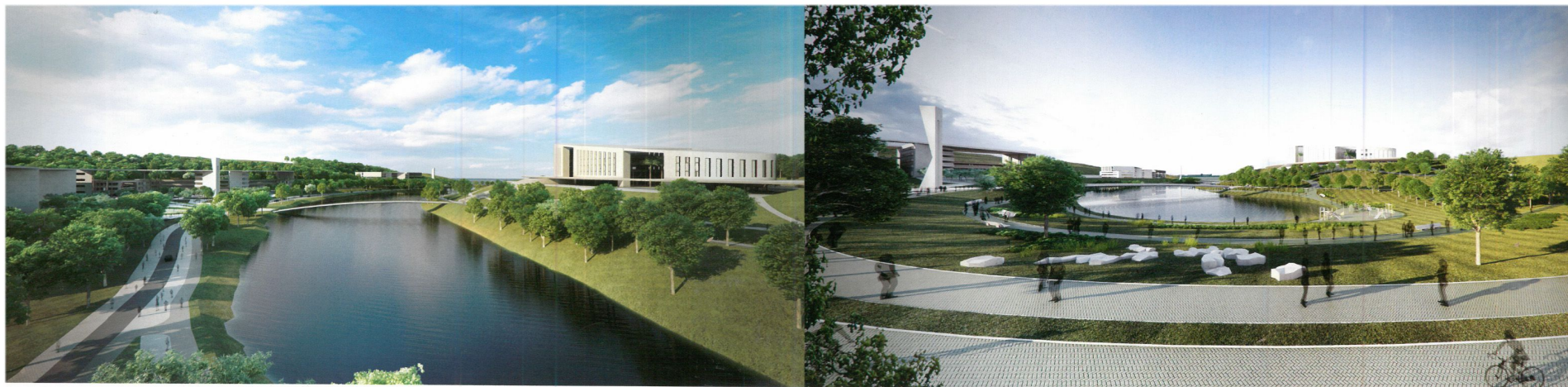
UNIFEI大学新校园位于米纳斯吉拉斯著名的铁矿城市伊塔比拉，它将为UNIFEI大学的9个学院配备顶尖的设备，并为该市提供急需的优质公共设施。新校园坐落在市郊的部分棕色地块，该地块拥有浅水湖和郁郁葱葱的本地植物。校园被设计成一个开放式公园，园内4座主建筑勾勒出位于浅水湖四周的自由元素。

The new campus of UNIFEI University in the mining city of Itabira in the state of Minas Gerais is designed to equip the university's nine schools with top-edge facilities as well as provide the city with much-needed high quality public amenities. It is located in the outskirts of the city in a partly brown site, characterized by a shallow lake and lush local greenery. The campus is designed as an open park in which the university's four main buildings outline free-form elements situated generously around the lake.

Logistic center (Prefecture) Gate Sport center Meeting platform Terminal



Learning buildings Main gate Waste-sorting center Technology park



问题导向教学法与跨学科知识交流原则是UNIFEI大学的核心教育理念，因此，它们同样也体现于“教学楼”的规划中。教学楼将9个不同的学院聚于同一屋檐下，6座附属楼内的教室、阶梯教室、实验室及非正式的教师区都与这9个学院共用。因为非正式的教学与交流对于大学是非常重要的，因此设计重点强调教室之间的公共空间及户外空间。

花园建于教学楼顶部。走廊宽敞明亮。每座附属楼都通过户外的广场休息区与花园逐步向主广场与主公园开放。内部的遮阳庭院、连接各结构的开放式露台及与“会议楼”的联系清楚表明了该建筑群的不同集成规模。此外，教学楼建筑体量能让风经过，并提供大量的遮阳区。这些建筑的调整需要更好的控制成本，简单地创建新的街区。学习不仅限于课堂，诸如游乐场等的景观元素、公园里的雕塑，甚至是车站都可以作为学习的工具，供学生及参观的公众使用、受益。

与“教学楼”一桥之隔的是“会议楼”。如果前者是校园的教学中心，那么后者便是其文化中心。会议楼被视为校内的标志性建筑，位于中央的山上，在任何地方都能看到。它包括行政单位、图书馆、餐厅、小酒店及

一个可容纳900人的剧院。会议楼由犹如花园一般的开放式庭院进行功能分区，有利于改善建筑内的自然采光和通风。

校园内的专区建筑有利于大学日常功能的发挥。这栋建筑毗邻主入口之一，作为材料设备配送中心和物流中心，从而减少了校园内重型车辆的通行。此外，它还是一个维护中心。

新校园计划分两期建成。在二期阶段将兴建一个稍小的教学楼和一个大型的体育中心，前者用于应对未来学生增长的需求，后者有利于学校和城市的发展。此外，在现有的科学楼旁边还将修建一座技术楼，其内的创业服务中心将学生和研发人员与市场紧密相连。与建筑相邻的停车场使得入口建造的非常简单。停车场分为3个区，可以进行分期、可行的建设。

校园内两个已规划的主入口需要更好的入口控制，而不需要横穿整个校园，从而减轻基础设施的应用。校园内不允许任何私家车穿行，但配备有供人们使用的沿单向环路通行的环保车。道路设计优先考虑行人与自行车专用道，内部道路连接主要设施，不需要穿过其他交叉路线。沿路都配备有遮阳区、休息区、供水区、自行车租赁区及停车设施，提供了许多低速方式，适合沉思。

新校园的修建与UNIFEI大学的办学理念相同，即成为学术与技术卓越的典范学校。其设计体现了大学提倡的可持续发展理念，限制对自然物、周边特色的破坏，如地形、树木、现有景观、泉水、湖泊等。一系列的主张与干预措施都邀请参观者采取行动，参与各方面的保护工作，使空间还原为学习的场所。

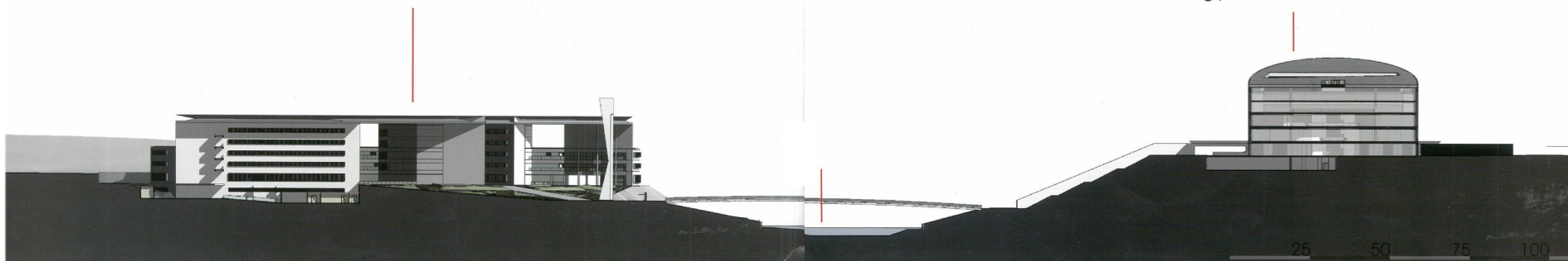
无论是在施工阶段还是使用期间，校园都非常侧重可持续的设计。除了已经提到的车辆的环保使用、无汽车穿行之外，校园还收集雨水用于厕所，利用太阳能进行水加热，在停车场和所有路径上使用渗透表面，配备现场废物分拣中心，利用喷泉氧化湖水等。校园内建筑的设置旨在最大化获取阳光，选取通风的最佳位置及最佳轮廓线，以确保在原有地形上最小化的动工。其规划旨在最大化保留原有地形，让自然盆地和季节性航道保持正常运行，而不承受额外的负载或污染，限制单独使用本地植物，弥补被破坏的森林栖息地。然而也许校园最可持续的方面体现在社会方面，因为它重点强调为伊塔比拉市民提供更好的教育、文化、知识、动力设施及开放的公共空间。

The principles of the PBL (Problem-based Learning) method and interdisciplinary knowledge exchange are central in the university's educational philosophy, thus they also guide the planning of the main 'Learning Building'. The building brings the nine different schools together under one roof. Each of the 6 sub-buildings hosts flexible classes and lecture halls common to the 9 schools, as well as laboratories and informal teachers' areas where a more personal teacher-student learning can take place. As informal learning and exchange of ideas are vital to the university, an emphasis was put on public spaces between the classes and on the outdoors.

Gardens are created on top of the building. The corridors are wide, spacious and bright. Each sub-building gradually opens to the main square and the main park through an outdoor amphitheater sitting area (which can be used also for formal gatherings and outdoor classes) and a garden. The sheltered internal patio, the open patio connecting the structures and the connection with the Meeting Platform building clearly express the different integration scales

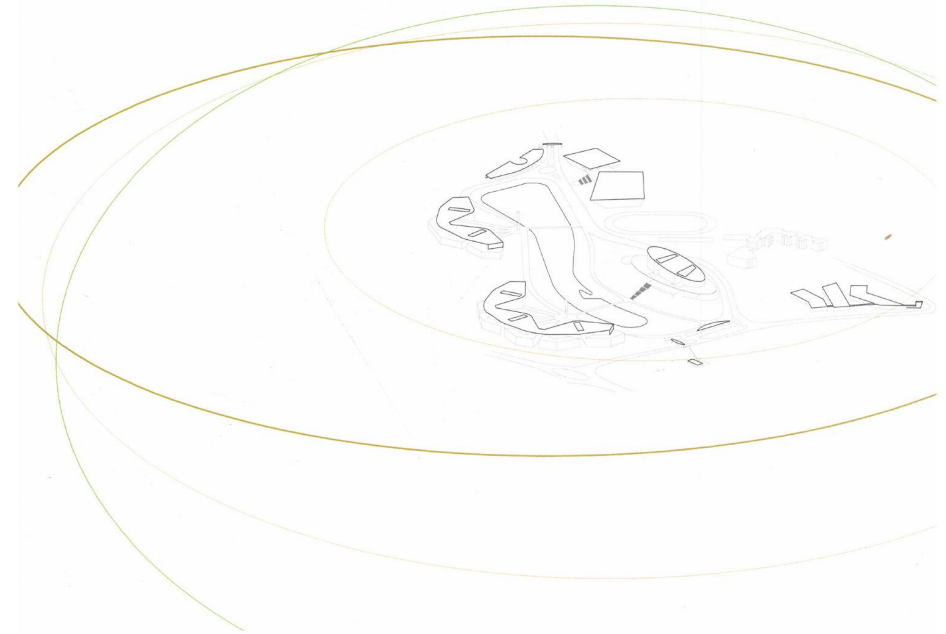
Learning building

Meeting platform





/ Cultural Architecture /



of the complex. Besides, the building's volume lets the winds go through and provides extensive shaded areas. The modulation of the buildings allows for better control of costs and makes it easy to build new blocks. As a concept - the learning is not limited to the classroom and so landscape elements like playgrounds, sculptures in the parks and even van-stops are designed as tools of knowledge, for the use and benefit of the students and the visiting public alike.

Across the bridge from the 'Learning Building' is the 'Meeting Platform'. If the former is the scholarship heart of the campus, the later is the cultural. The building was thought as a campus landmark, located on a very central hill and visible from anywhere in the complex. It hosts the university's administration units, library, a restaurant, a small hotel, stores and an 800-seat theater.

The different functions of the building are set apart by gardened open patios that promote natural lighting and ventilation.

The campus prefecture building helps in the daily functions of the University. Located next to one of the main entrances, it works as a materials and equipment distribution center and as a logistics center, thus reducing the traffic of heavy vehicles within the complex. It is also a maintenance center.

The campus is planned to be built in two phases. In the second phase of the project another, smaller 'Learning Building' will be constructed in order to answer the anticipated growth of the university together with an extensive sport

center for the benefit of the university and the city alike. Also in the second phase, located next to the existing science building, a technology park will lodge business incubation centers to connect the students and researchers with the market. The access is made easy by the parking lot adjacent to the building. The park is divided into three blocks, which allows for a staged, more viable building process.

Two planned main entrances allow for better access control and the possibility of using the complex without the need of crossing the whole campus, thus lightening the infrastructure. No private car is allowed in the campus. The university operates environmental vans along the one-way circular road for transporting the users within the campus. The design gives priority to pedestrian and bicycle routes, with a network of paths connecting the main facilities with no need to cross any road. These paths are equipped with shade, rest, water and bicycle renting and parking facilities along them, to provide plenty of low-speed ways, suitable for contemplation and fruition.

The Itabira UNIFEI campus is founded in the same philosophy that characterizes the University: to be a model institution in academic excellence and technology. Its design reflects the idea of sustainability promoted and defended by the institution: the valorization of natural products and goods and of the surrounding features, like the topography, the trees, the existing landscape, the springs and lakes. The propositions and interventions invite the visitor to

take action and to participate in all the aspects of conservation, as it turns the spaces into places for learning.

In this spirit, a focus was put on sustainable design- both in the construction process and in the operating life of the campus. In addition to the already-mentioned environmental use of vehicles in the campus and the emphasis on non-motored traffic, the campus also captures rain water to be used in toilets, uses solar energy for water heating, uses infiltrative surfaces in the parking lots and on the paths, has an on-site waste sorting center and a fountain to oxygenate the water in the lake. The setting of the buildings aims at the maximum sun exposure and the best position relating to the wind and the contour lines, assuring minimum earthworks on the original terrain. The plan seeks to preserve the original topography for the maximum, allow the natural basins and seasonal waterways to keep running in their course without extra loads or pollutions and restrain the use of flora to the local species alone, while compensating for disturbed habitats. But maybe the most important sustainable aspect of the campus is the social one, as it is focused on offering back the citizens of Itabira infrastructure for better education, culture, knowledge and motivation and an attractive open public space, in which one can be exposed to technology, science and knowledge. Making these appealing and accessible to the young generation is a humane, national and university interest.



