事务所档案
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度·态建筑 dotA

度态建筑dotA是一家尝试把“物”与“法”创造性的联系在一起，并在这个过程中重新定义自身实践的设计事务所。

“物”是建筑设计面对的对象。 通过设计来协调社会的各方面资源和意志，整合并加以物化，赋予设计产品以最终的物质形态。所谓“度态”之“态”。

“法”是建筑实践依靠的方法。格物致知，立足于建筑实践面对的物质世界，梳理设计之章法。所谓“度态”之“度”。

“物”与“法”之间，构成了有趣的张力和对比。

“物”关心的是如何把抽象资源实体化。在一个社会生产关系日益复杂、经济制度非常抽象的现代社会，建筑设计始终要追求最后的实体成果，同时这个实体成果一般情况下是惟一的。建筑设计这个产业，因其工作流程和成果的不可复制特点，成为一个古董行业。

“法”关心的是如何把实物的组织过程抽象系统化。在一个抽象之法高于实体制造的宏观环境下， 已经有先辈同行发出了“建筑业将死”的预言。 在与时俱进的时代压力下，依靠电脑处理能力的新的设计工具和方法论被引入设计实践，欲借新法巧夺天工，重新定义建筑设计在当代社会产业链的位置。

因此对于“物”与“法”的双向关心，反映了建筑师的当下现实处境：在一个被云计算深刻变革的社会中，如何固守立足于秦砖汉瓦的建筑行业？

度态建筑尝试诚实的面对这个问题：天工开物，道法自然，最终的落脚点还要在放在当下适当的生产力基础之上。这之间的造物之法，才是我们的兴趣点所在。不求巧夺天工，只求匠心独运。

dotA′s agenda is to develop architecture that emerges from the combination of explicit and implicit design operations. This approach enables the negotiation of two often conflicting design methodologies: the deterministic global representation and the autonomous local organization. We challenge the dichotomy between the two and seek to develop a synthesis of a coherent architectural synergy that could be engineered into irreducible constructions.

Beyond computational techniques, we inquire about developing appropriate design products, in which design operations are dedicated to the realization of innovative and sustainable projects, rather than the manipulation of forms which often leads to an excess of spectacles. This approach positions our practice within architectural discipline, and furthermore embraces the rich synthesis of social, cultural, material and ecological substrates. uf

龙腾塔
Dot-a Tower I

项目性质：观光塔、办公、餐饮娱乐
地点：台中市新区
设计时间：2010年1月
高度：320 m
运行速度：20m/分钟
观光时长：60分钟
设计团队：常强、高岩、朵宁、刘立早、何励琦、李智慧、纪晓恩

“龙腾”方案是综合各方面需求，充分结合区域地标、精神表达、观光游乐、生态示范、清洁能源、广电通讯等功能于一体提出的独创性设计。

“龙腾”的精神与地标形象

“龙腾”，宛如一条腾龙，屹立在台中市新区，螺旋升腾的形象，是根据设计要求，创造性地提出一个双螺旋的观光塔的结果，其理性的建筑形态综合映射了华表、蟠龙、竹节、DNA分子、木棉花树等元素，并结合结构设计与观览需求而形成的独特形象。

集多种实用功能完美统一的设计则渗透了对台湾社会多元化与博爱和谐的深层理解；龙是中国人的传统图腾，腾龙体现了一种动态的力量美；竹是台中县当地盛产的主要生态建材之一，收拉的缆绳，自然的形成竹节的视觉效果；木棉花是台中县的县花，艳红色的观光舱，悬挂在双螺旋的结构上盘旋舞动，远远望去又仿佛是一颗盛开的木棉树。设计力求从多角度提取精神内心的艺术形象，融合到一个知性与感性共生的设计之中。

“龙腾”与城市的关系

从形态上，硬朗（螺旋上升的轨道）而柔美（直线连接的缆绳），形成了统领城市与区域之势，其曲线的轮廓线形态与公园的自然形态相映成趣；

从氛围上，形若木棉红花的88个舱体旋转上升、运转不停，与熙攘多彩的市民生活呼应互动；从生态上，大面积的种植、水面、湿地与中央公园植被交织穿插，形成独特的都市生态环境样板；从能源上，通过在塔内植入系列新型垂直风力发电机和被动式换气，建筑不只是能源消耗体，还成为洁净能源的提供者。

Flying Dragon is a unique design which comprehensively responds the requirements of the brief, e.g. a new regional icon, reflction of the Taichung spirits, tour attraction and entertainment, clean energy, telecommunication, etc.

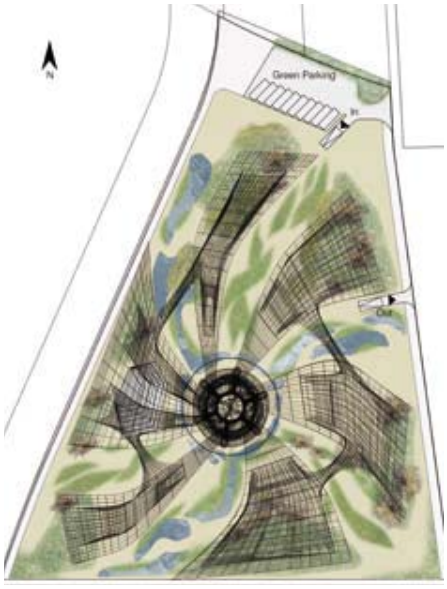
The spirites of Flying Dragon

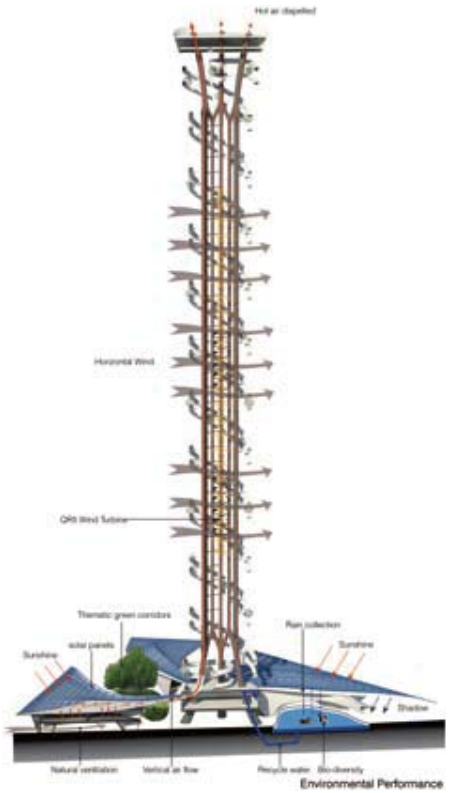
Alike a rising dragon, this tower is initiated by the intention of creating an unprecedent dynamic viewing experience from a double helix, which in-turn trigers a series of symbolic meanings from traditional Chinese elements, such as Hua Biao, spiral dragon, bamboo, DNA, Kapok (Representational flower of Taichung County).

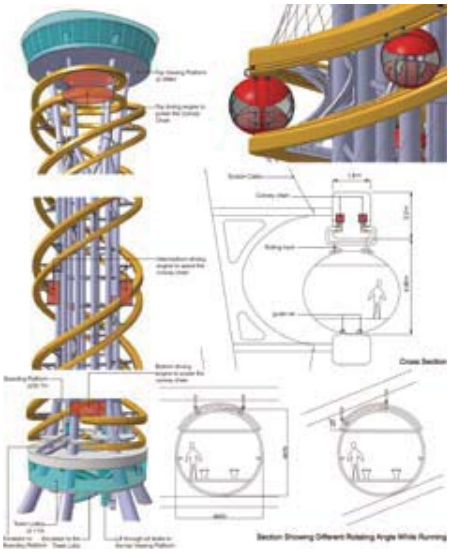
This proposal reflects the in-depth understanding of the genuine nature of Taiwan, i.e. multiplicity, philanthropy and harmony through the innovative and practical design outcomes. As the most prestigious totem to Chinese people, dragon represents the beauty of movement.Bamboo is one of the local resources in Taichung, which is also echoed through the segmental profile.

Interaction between Flying Dragon and the city

Flying Dragon is the combination of strength (spiral frame) and softness (tension cable) as if a inherent member of the natural features whithin Taichung Central Park. The constant spiraling 88 capsules reflect the vibrant city life and animated activities. This tower integrates itself into the existing green network through the system of wetland parks and local vegitations. The principles of sustainable design, e.g. passive cooling and clean energy generation, are implimented as the engine to enpower the process of creation. uf

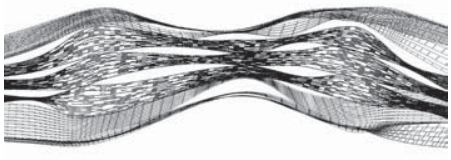






千丝万缕
A Thousand Inscriptions

项目性质：交通枢纽
业主：莲塘/香园围口岸联检大楼概念设计国际竞赛
地点：香港/深圳，莲塘/香园围口岸
设计时间：2010年3月
主体建筑面积：19 000m²
场地面积：40hm²
合作单位：Ocean CN | HKPDA
设计团队：高岩、常强、刘立早



“建筑书法”之“千丝万缕”

我们的核心策略是如何在体现两地千丝万缕的联系下，实现空间上平滑而清晰的连接，同时保持两个城市的微妙区别。

“千丝万缕”方案的空间和效果的灵感源自中国书法，在我们看来它是物我合一的极佳体现。

运笔的疏密、轻重、缓急的无穷变化，都会影响书法的形态和内容。情动形言，意在笔先，留在纸上的不仅表情达意，而且通过毛笔扫过纸面的笔触，表现了书者写作时的力度与速度，凝固了时间。正如宗白华所说的，通过运笔节奏和力度的变化，表达了个体心中自然和社会的图像，以及内心的感受。它把主观感觉，通过“虚”（飞白）与“实”（着墨）在时间和空间上的移动变化体现出来。“虚”与“实”的互动与妥协，在我们看来是中国书法的核心审美价值。毛笔在空间和时间上的运动，被凝固到二维的纸面上。我们把整个场地和建筑物看成是一个由一系列根据不同流动（车行、人行）激发的物化表现，宛如不同的笔触划过空间的集成效果。

“时间”和“空间”

人们在空间中移动时的体验，即速度，体现了时间和空间的融合，它把人的主观感知和客观环境联系起来。运动速度的变化节奏，被编码翻译成一种形式生成的逻辑，用来控制整个建筑形态设定的平面序列。速度因此被固化到形式的形成过程中。

“连接”与“区分

深圳和香港正在致力于建设一个泛“港深联合大都会”。我们认为边检大楼应该成为两地千丝万缕的联系枢纽，城市活动中的一个重要音符。原本密封包裹的建筑被策略性地剥离开，重新建立人与周边环境的感知联系，颠覆了边检楼的通常做法。

“自然人造”与“人造自然”

香港一侧以自然山地地景为主，深圳一侧以城市高楼为主。我们认为，人造城市不应该是自然的对立，而应该成为一个和谐统一的生态体系，二者水乳交融，象征着变化、动态和互动。

Architectural Calligraphy

The principle strategy of this proposal is to inscribe an explicit, fluid connection between two disjoined territories while maintaining the discrete identities of both.

Traditional Chinese Calligraphy immerses subjective affects into the objective presence of ink and void on paper through the movement of brush strokes in time and space. Graphic qualities arise from the negotiation of positive shapes inscribed by dark ink, and negative whitespace in the empty void. Such movement is frozen when articulated onto a two dimensional canvas. Analogous to the spatial and temporal phenomenon associated to a set of multiple brush strokes, this proposal inscribes three classifications of programmatic movements:

Time & Space

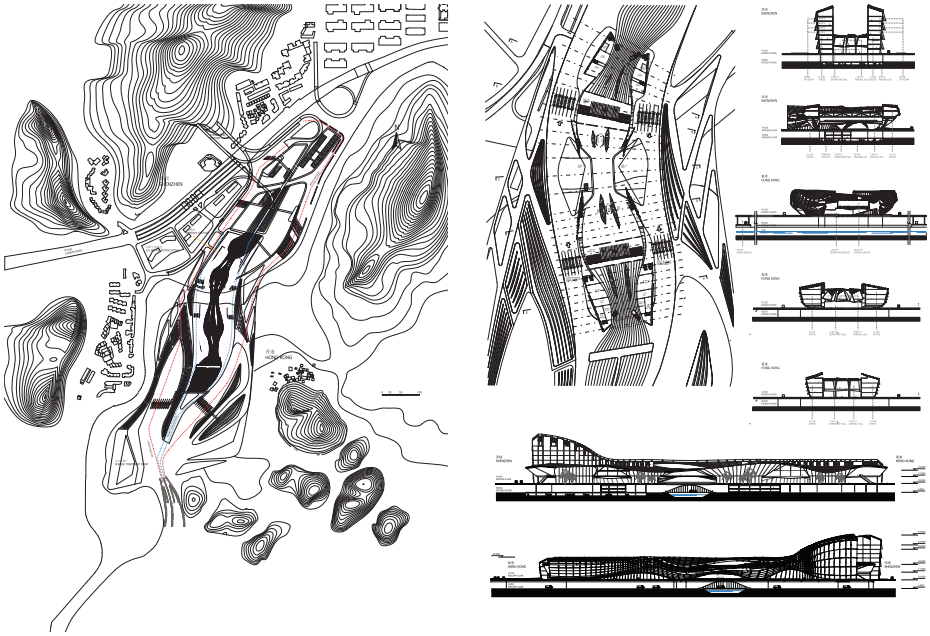
Temporal patterns of the subject's movement articulate the material substance of this proposal and, augment the perception of spatial transitions. The changing speeds of movement during the sequence of the border-crossing experience are translated into a series of associated tectonic component assemblies. Gradient fields of computationally coded graphics become more dense and pronounced in slow zones and more porous and ephemeral in the fast zones. Space in this proposal is no longer deployed as fixed and static, becoming as fluid as time.

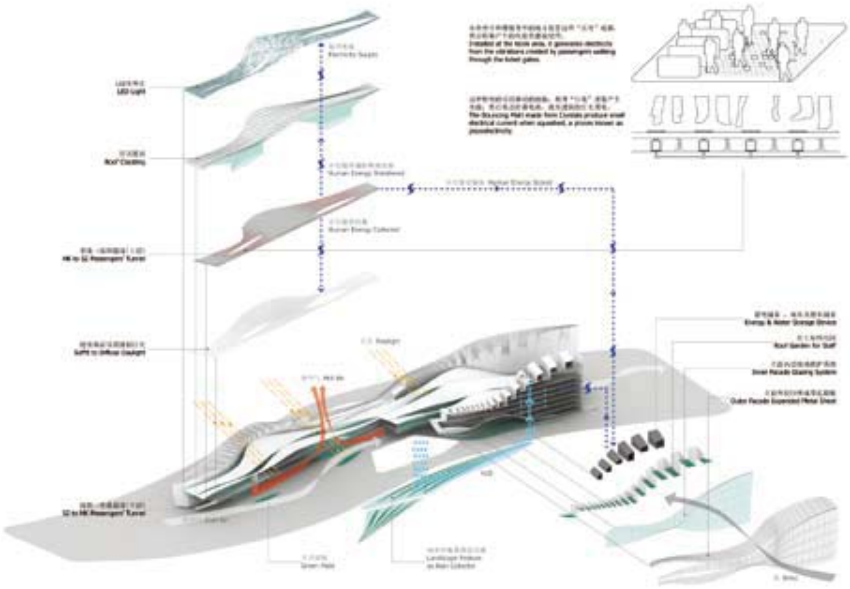
Correlations & Distinctions

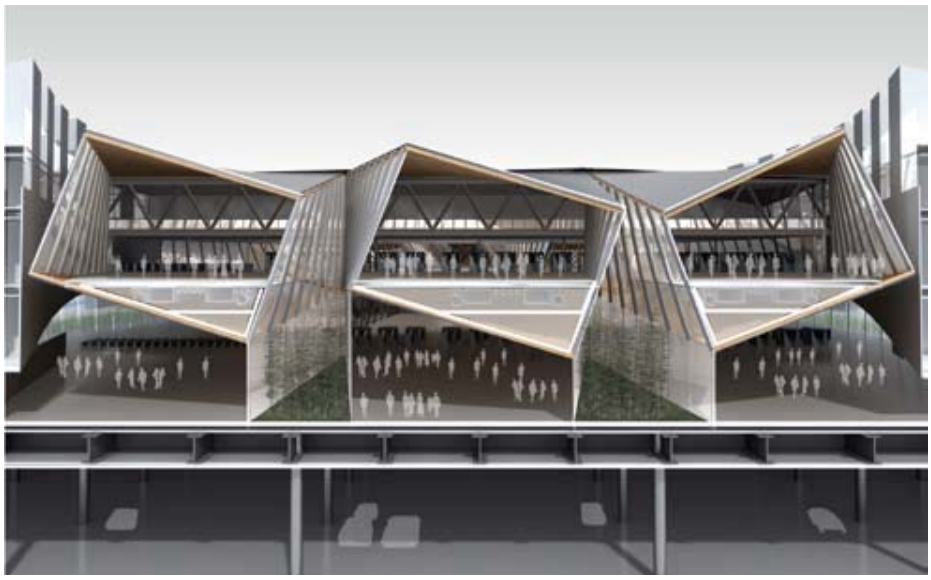
Hong Kong and Shenzhen have become increasingly correlated, and the crossing of this boundary has evolved to a commonplace one. This proposal expresses the connection of these two cities, two geographies, two systems, as a fluid transitional space, in which the identifiable characteristics of each side are concurrently associated yet distinguished. The deep space of the BCP building is illuminated through the peeling away of a series of tectonic roof bands, flanked by two strokes of office volumes which hover above and on either side of the Passenger Crossing.

Natural Artifact& Artificial Nature

Given two parallel yet divergent ecological, planning and political histories, the Hong Kong side is characterized primarily with wild protected landscapes and topographies, while the Shenzhen side is overwhelmingly artificial and urban. This proposal aims to synthesise the categories of the artificial and the natural, through an emerging ecological paradigm, in which man-made, 'mineral' urbanism is no longer conceived as in opposition with the natural, 'biological' environment, but rather, fused as a symbiotic association of mobile, dynamic forces and interactions. uf

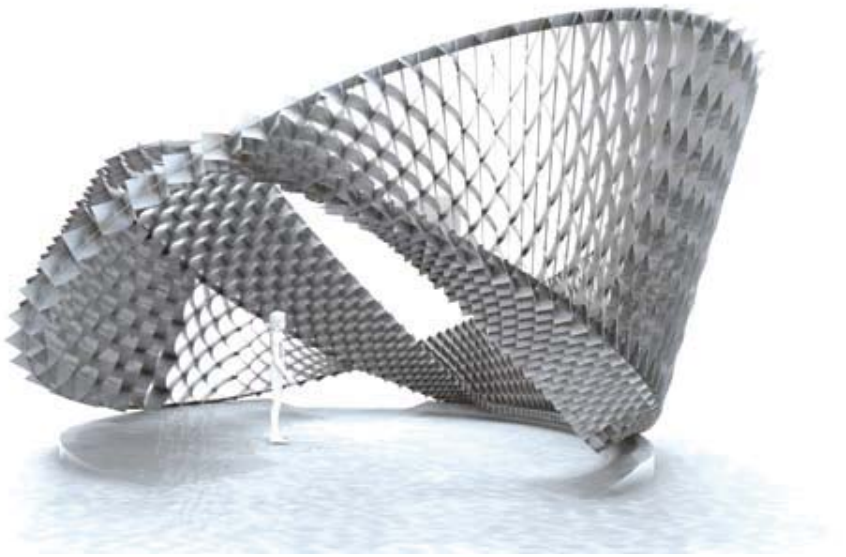




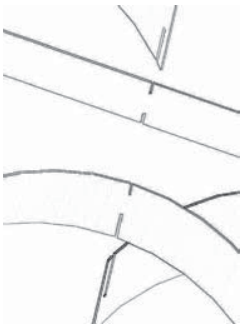


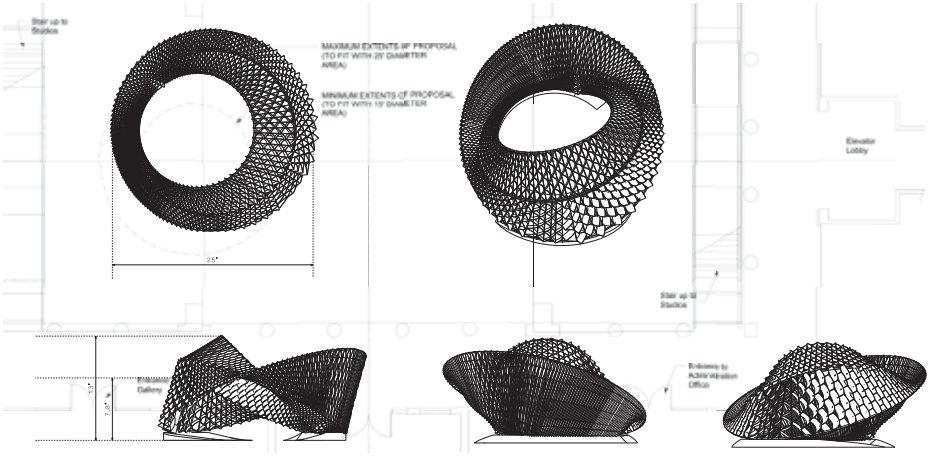
弓棚
Bow

项目性质：临时展棚
业主：tex—fab, Digital Fabrication Alliance
地点：美国休斯敦
设计时间：2010年10月
设计团队：高岩、常强、朵宁



“弓棚”是通过对一系列简单元素之间连接基因的迭代操作，而非不同形状的构件重复而生成的构筑物。单元构件为铝片，组合在一起后成为一个预张拉结构细胞来增强整体的强度和刚度。通过把场地的设计限制范围拉伸成三个圆桶，和另外三个由交通等功能制约的平面相交，得到三条椭圆曲线，这三条曲线彼此相交后得到总体控制线，来生成全局形态的骨架，综合考虑了朝向、人流动线和视觉通透等因素。这三条曲线作为格构式扭转梁，还进一步控制了自下而上单元组合的逻辑，确保整体结构的稳定。自上而下扭转梁的高度减低了整体弯曲应力，而自下而上铝片单元的弯曲应力有助于保持结构的整体稳定。铝片单元的宽度随着表面曲率的变化而变化， 最终得到一个三维连续扭转曲面。弓棚通过自上而下模糊的设计决策和自下而上清晰的算法设计，综合材料特性，获得了一个由简单二维单元组成的复杂三维复合。





BOW is a pavilion computed by repeating a simple kind of components, of which each unit comprises a straight acrylic extrusion and a bended aluminum extrusion (PIC_01), working together as a pre-stressed structural unit to improve the stiffness and overall strength of laminal material. By changing the width of the bended aluminum sheets to fit with the surface curvature, a continuous folded 3d twisting surface can be achieved (DIA_02).

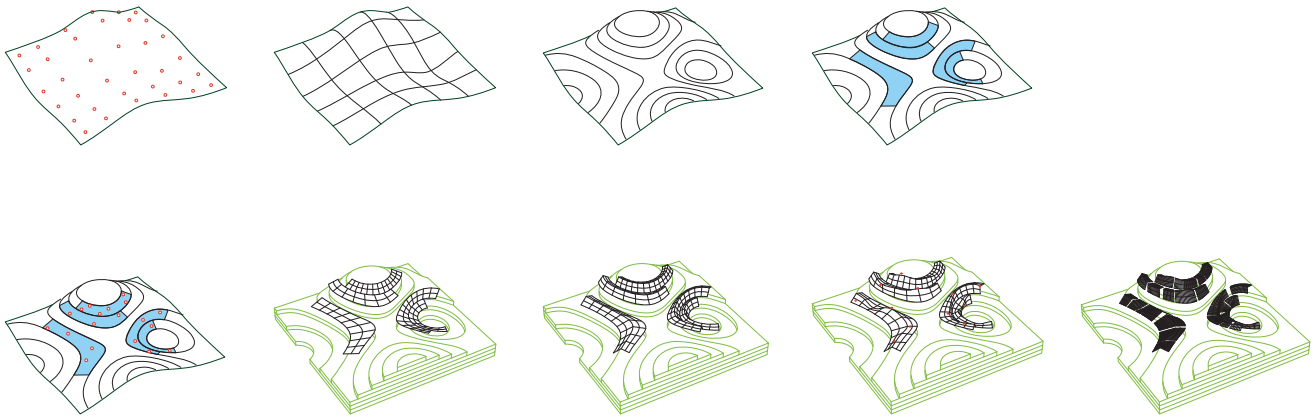
A very simple notch joint (DIA_01) is used for connection, which is totally re-demountable and fairly cheap. The joint can be fabricated while cutting the plane strip, with only laser-cut or 2/3D CNC machine. The shape of each component is determined by positions of the notch joints and the shape of the plane-cut aluminum sheet. At each joint, the acrylic strips and the aluminum extrusions are stiffened by each other to form a connection with high stability of mechanics of

thin-wall structure. The notch joint can also be constructed easily without involving complicated manufacture and construction facilities.

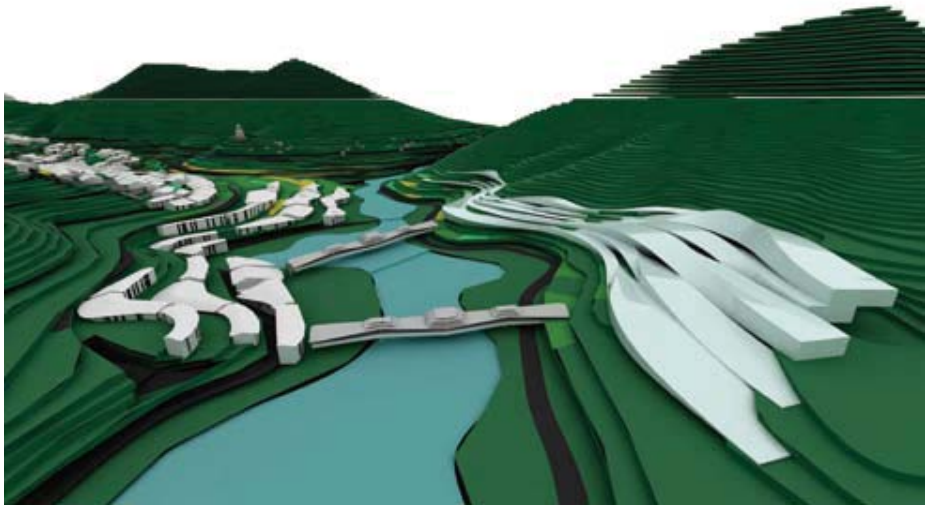
The aluminum sheet material can be as thin as 1~2mm as it is bended. This thinness allows the changing of the notch anger (PIC_02). The straight acrylic sheets are stress-stiffened by the pre-stress.

BOW is a complex 3D assembly made out of simple 2D-based components by the design intelligence rather than the machine intelligence. uf

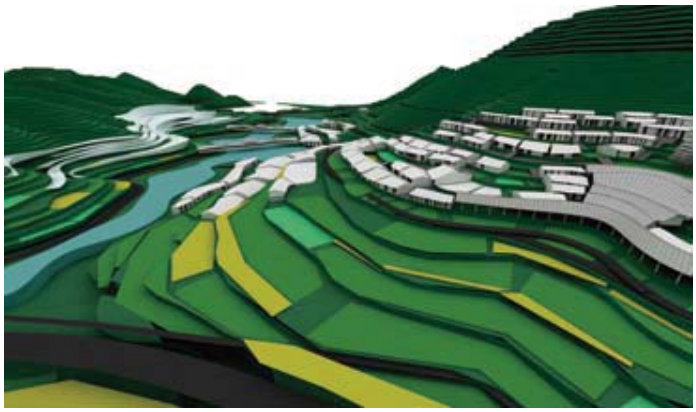
贵州凯里民族园
Kaili Ethnic Culture Park

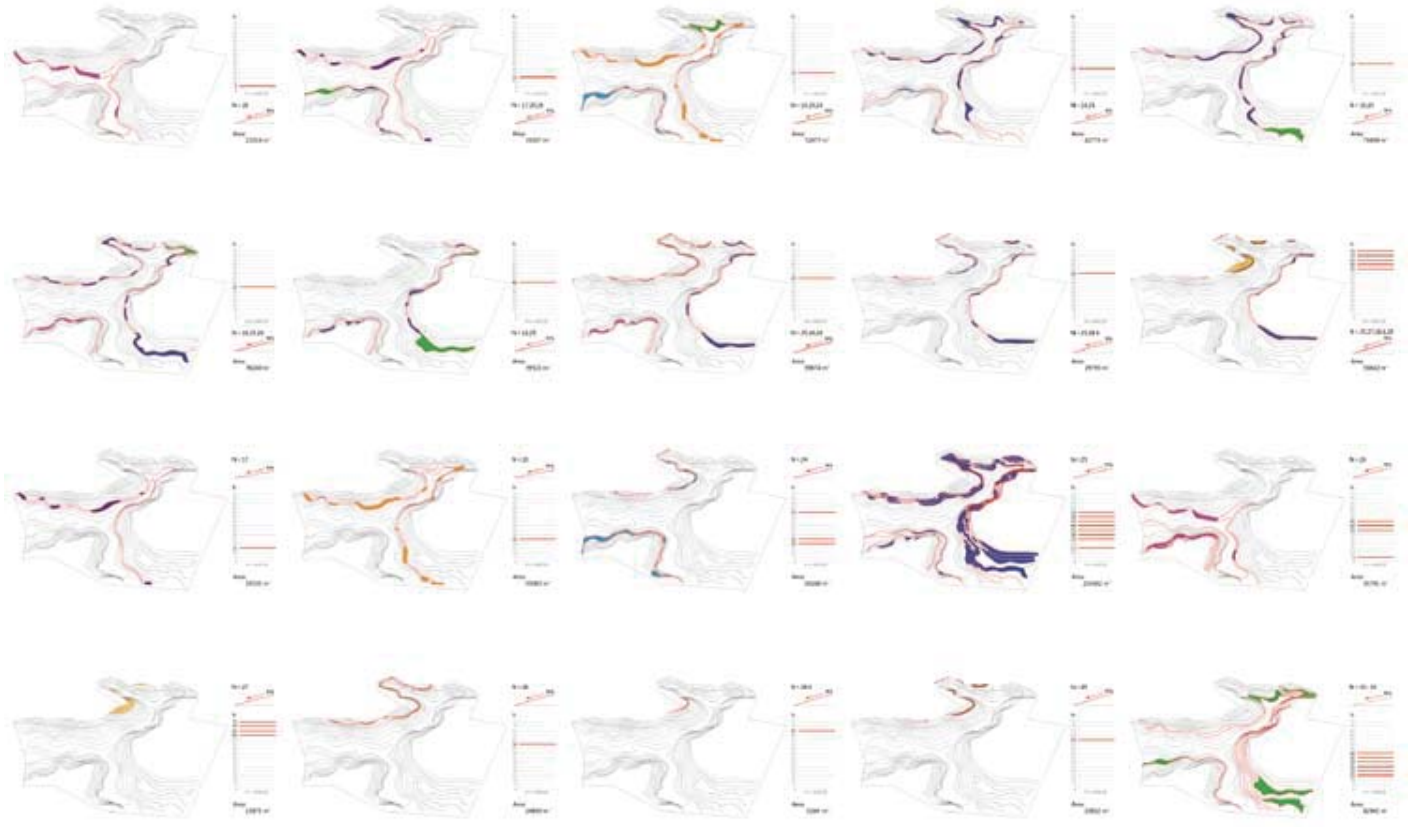


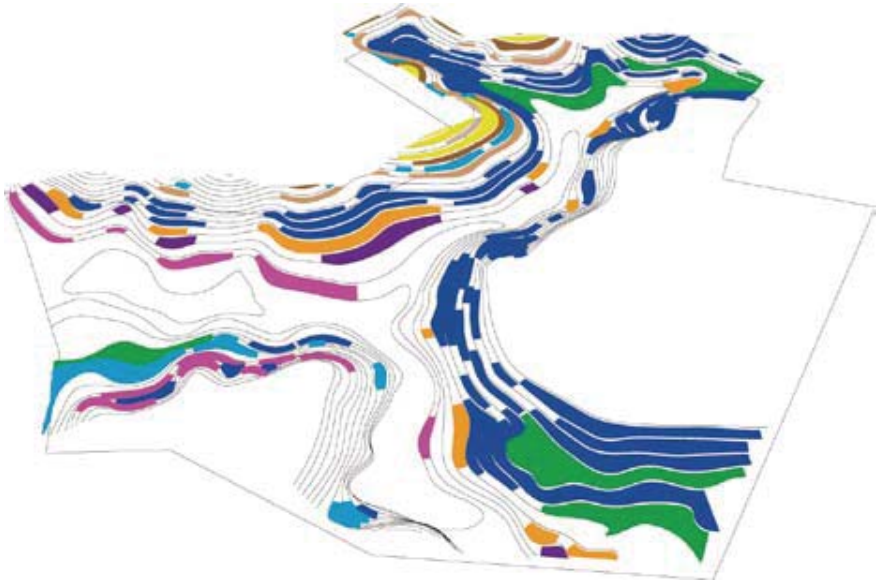
项目性质：城市设计
地点：贵州凯里
面积：1.75 km²
设计团队：本项目由同济城市规划设计研究院与度态建筑合作设计完成，度态建筑方面成员如下：高岩、朵宁、覃立超、孙一夫



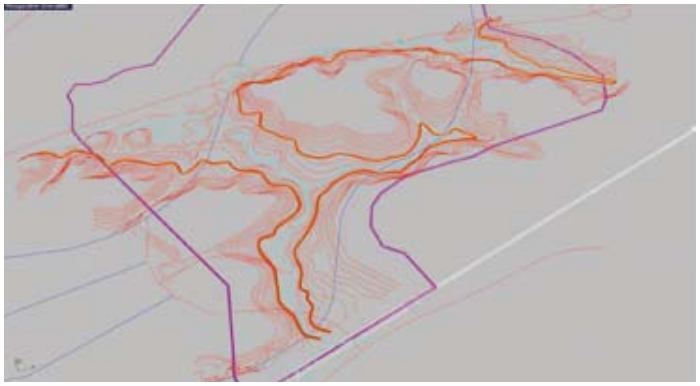
本项目是贵州黔东南自治州某区的一个集高档度假酒店、商业街、博物馆、娱乐休闲和住宅等功能在内的综合开发项目。项目用地为山地，地形非常复杂。设计团队利用地形测绘数据，探索三维的规划之法：根据地势坡度，遍寻适宜进行建设的建筑基座范围，并相应进行建筑体量生成。通过脚本语言的应用，设计者可以在等高线数据上探测生成出所有符合设计要求的建筑基座平台形式。然后，通过控制符合建筑坡度要求的平台进深范围，结合功能和空间组合的要求，最终形成执行到建筑单体的生成编码。通过抽象模仿山地居民建设的自发策略的基因，并应用于大规模场地，我们得到了质朴天然的规划设计成果，把聚落村镇演变的时间因素，通过电脑算法设计浓缩到空间设计当中，实现了延续当地人居文化和土地开发的二元互惠。

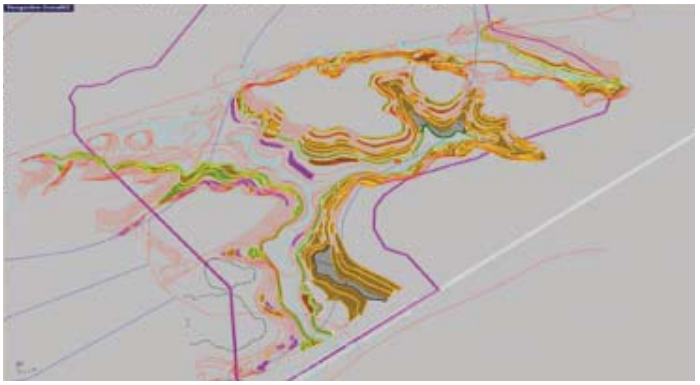






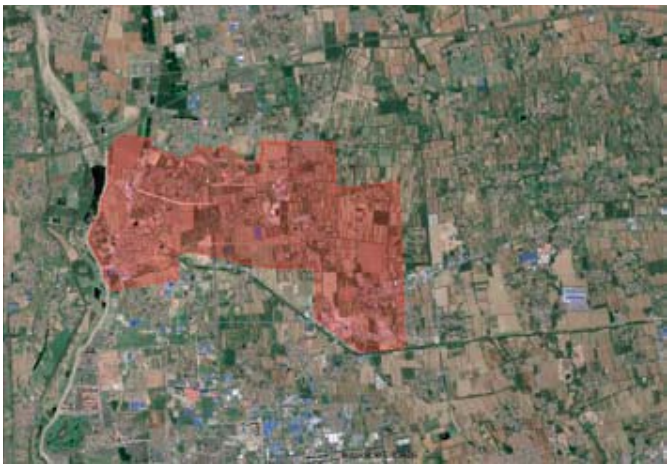
Instead of the conventional way of 2D master plan, we started Kaili Project with a new way of 3D planning, i.e. computing the gradients of the site topography locally for the most appropriate building plots based on which houses can be generated individually in respect to the vernacular style. The techniques for intelligent massing were explored in real time. As a result, no single house was identical and all adapted to the topography well. According to the design brief, a series of evolutionary design strategies were made for further teething out both the buildings in different shapes and public spaces in various scales on the basis of the massing outcomes. A massive, automated and logistic dwelling customization offer collective buildings with the similar qualities of the local architectural style, both genuine and diversified. This project embraces sustainable design in the dimensions of culture and economic rather than purely ecology. uf



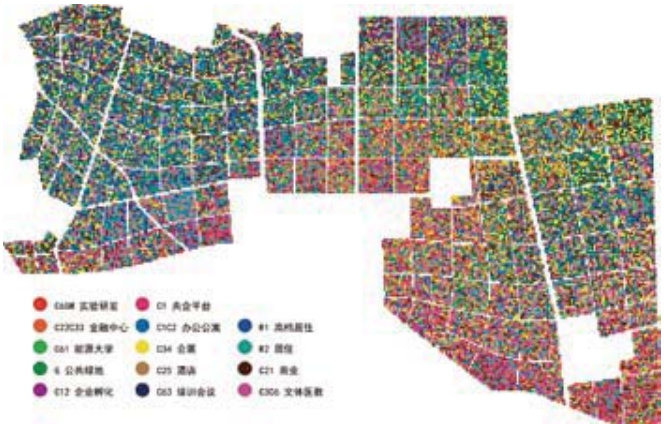


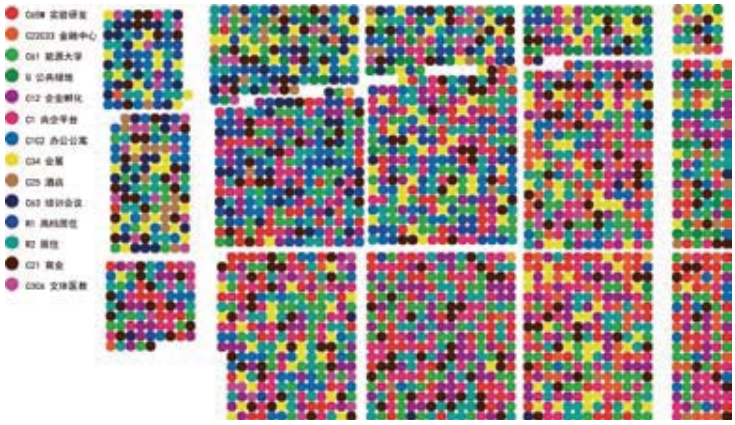
华润新源城
“Melt” (Cr Land New Energy City Planning)

项目性质：城市规划
面积：25.31 km²
设计团队：常强、高岩、朵宁、王欣
合作单位：Ocean CN



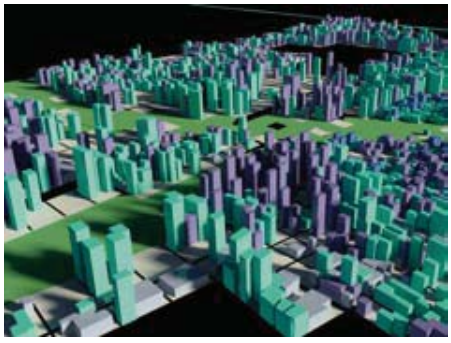
华润新源城这一项目的切入点在于质疑传统的城市规划过程中“功能分区”的概念，并尝试提出一个基于城市产业结构策略和信息决定的设计模型。我们通过跟甲方的交流，建立起一个详尽的数据库，其中囊括了驱动城市发展的不同功能产业；下一步的工作是通过建立产业和功能之间的联系，趋利避害，在编码层面

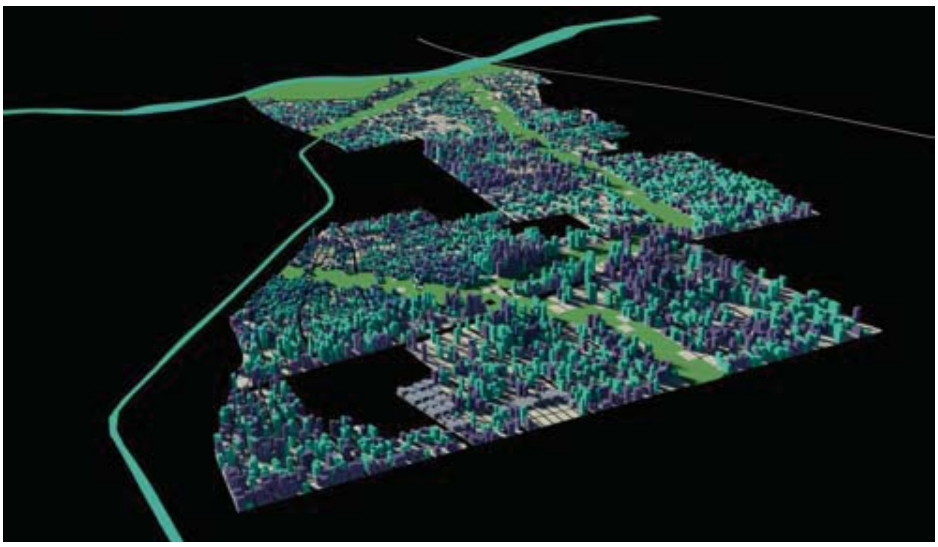




设定相关产业之间吸引或者排斥的倾向和程度；最后通过电脑运算得出不同功能在城市各个地块的适宜分布密度，以此作为总体框架来决定功能的布局和建筑的体量形态。这种博弈式模型的结果，是一个混合不同功能的城市有机策略，避免了以往总体式规划设计通过图面效果决定一切的弊病。同时，博弈式模型可以通过改变数据和数据的权重来调整规划成果，这样随着不同输入数据的调整，规划变得更加可持续和动态。

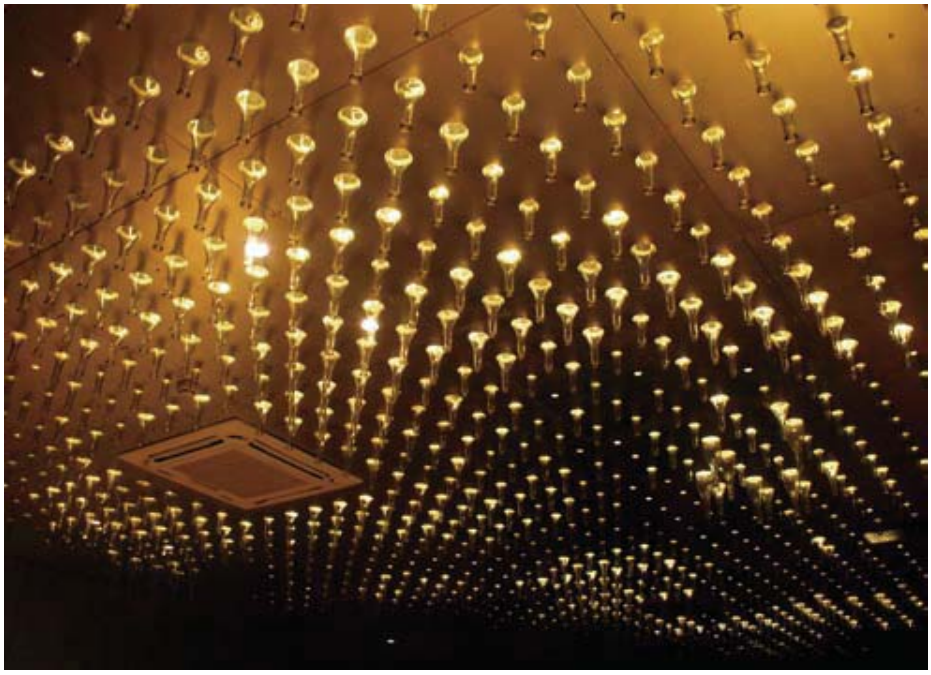
“Melt”questions zoning, the foundation of urban planning, with an information-based decision process. We quantified sophisticated computational relationships between different urban programs, which were interpreted as forces and codified into a series of negotiation of occupancy according to locations and surrounding programs, under the guideline of the urban plots, where were made through global design decisions. A blended mixture of multiple programs beyond a top-down planning process emerges. Another significant benefit is that it can be adapted to unexpected changes caused by the uncertain brief for almost every rapid development. uf



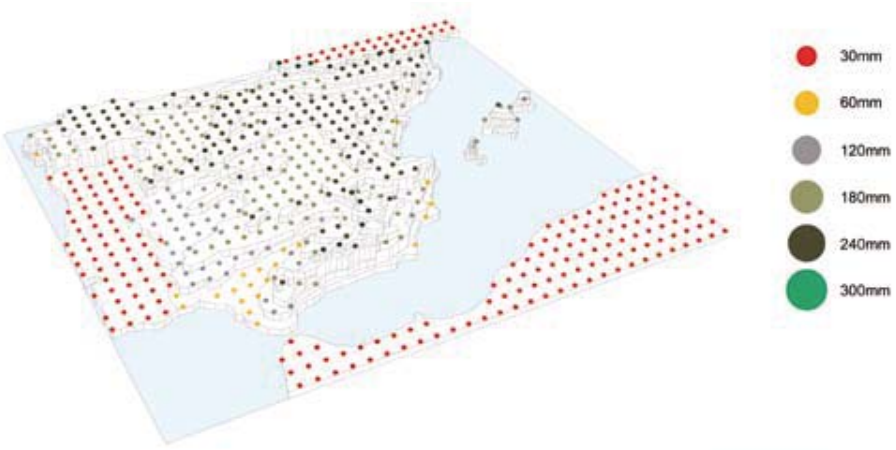


班吧
Real Vino Bar

项目数据：
项目性质：酒吧室内设计
地点：北京工体西门
面积：200 m^2
设计团队：高岩、朵宁、覃立超、黄狄、孙青峰

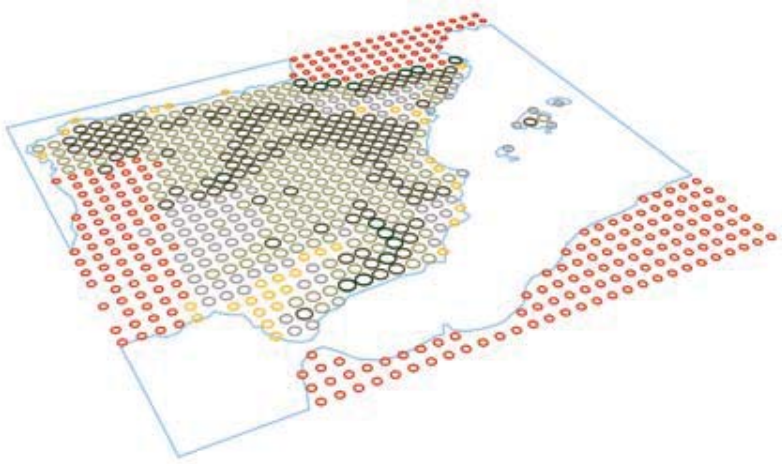


班吧是一个位于北京中心区域的西班牙红酒吧。设计概念源于红酒的储藏方式：瓶体倒置，以此来防止红酒被空气氧化。在物体构造层面，倒置的瓶体演化为酒吧空间的吊顶系统和墙面系统；在总体法则层面，引入西班牙地图作为吊顶和墙面的控制。为了在“物”（倒置酒瓶）和“法”（酒瓶分布规则）之间建立连接，设计师在吊顶板和墙面板上穿孔，孔的尺寸分为若干级别。而倒置的酒瓶置于打孔板之上，因为酒瓶从瓶口到瓶身之间的缓和曲线，自然会根据孔径的大小而下沉至板下不同的高度。基于这个构造逻辑，把西班牙国土的地形高差转化为平面打孔的不同孔径，进一步转化为酒瓶下沉的不同高度，形成一个高低变化的酒瓶阵列，最终这个阵列变成酒吧室内连贯的吊顶和墙面系统。



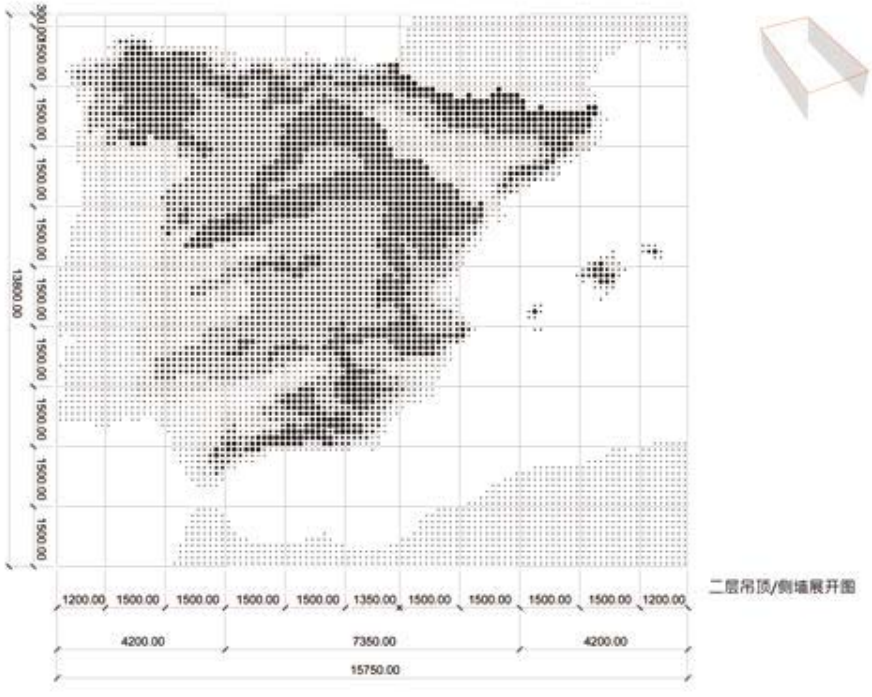
吊顶板穿孔位置示意

酒瓶露出长度与对应地形高度成正比；
吊顶穿孔直径与酒瓶露出长度成正比。



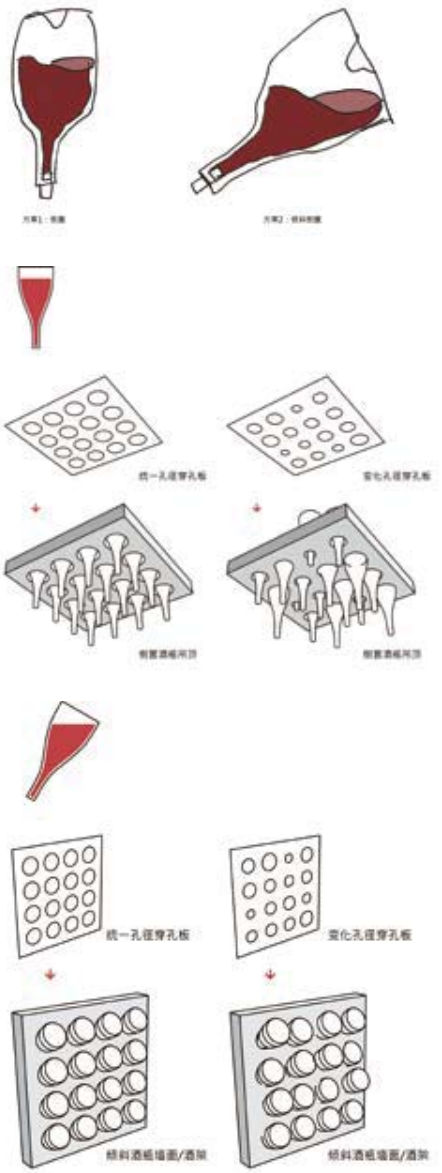
吊顶板穿孔平面成图

三维的西班牙地形数据，通过酒瓶露出长度（由酒瓶瓶身/瓶颈尺寸变化导致），转化为二维吊顶打孔平面。



二层吊顶/侧墙展开图

如何储藏红酒？



Real Vino Bar was inspired by the concept of a system which integrate wine bottles storage with other elements inside the bar to enrich the capacity of internal surfaces. A perforated panel system was set up for establishing an corresponding relationship between the sizes of apertures and the profile of bottles. As a result, this system created a ceilingscape defined by the displacement of bottles, which can further denote a genuine constellation effect when light refracts through and reflects on the curvy glasses of the bottles. The pattern of the folded perforated panel is informed by a Spanish Map. This system also incorporated acoustic functions as well. uf