

BEYOND

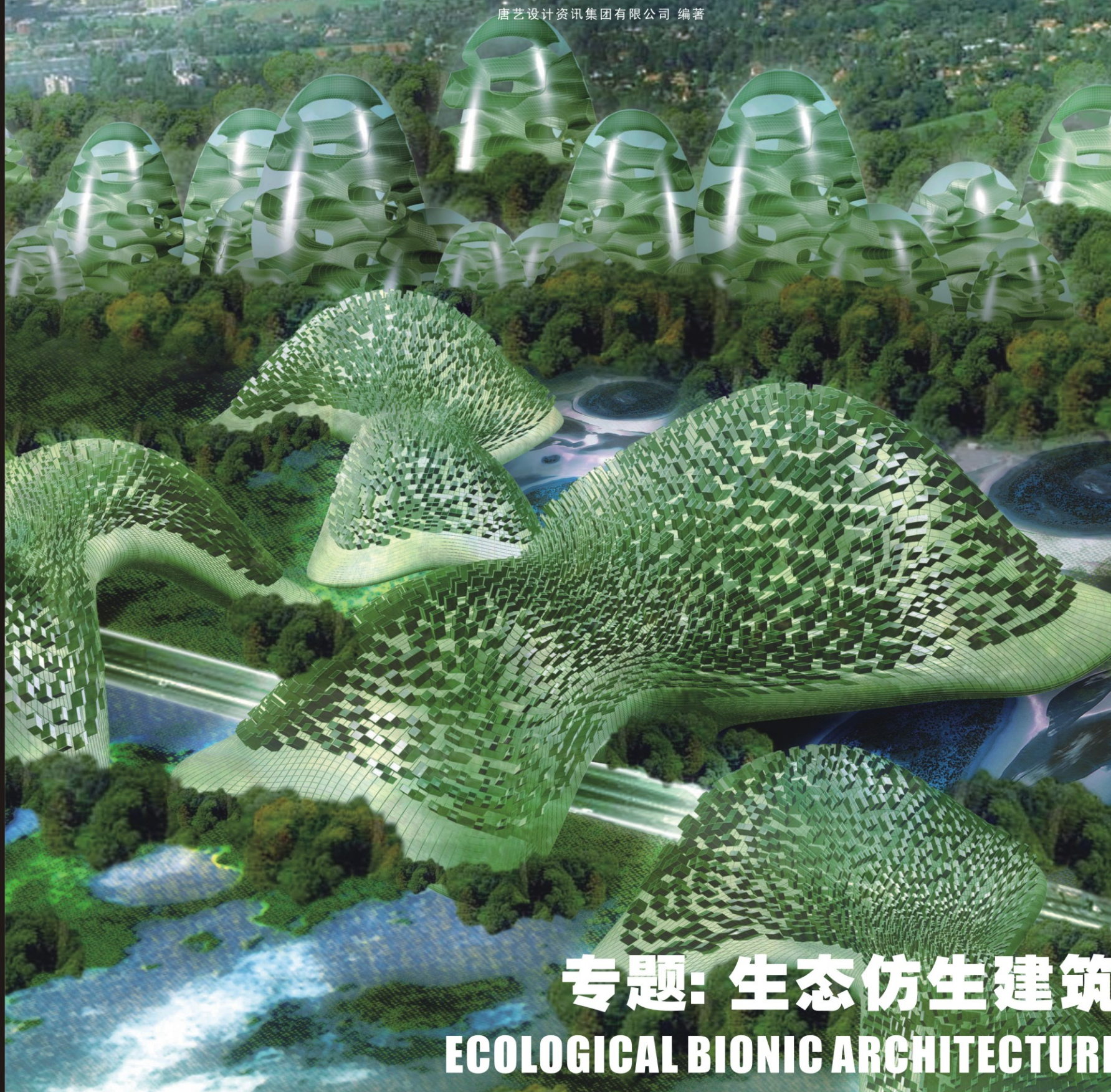
超越

建筑 ARCHITECTURE / 艺术 ART / 人文 CULTURE 013

唐艺设计资讯集团有限公司 编著

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专题: 生态仿生建筑 ECOLOGICAL BIONIC ARCHITECTURE



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纽约Axis Mundi建筑事务所创始人

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Founder of Axis Mundi Design LLC

科技亦或是建筑？

Is it Technology or is it Architecture?

“仿生”这一术语总会让人想起人类与科技的完美结合，就像20世纪70年代风靡美国的电视剧《无敌金刚》一样，里面的主角无敌超人就拥有九条命。我们是否应该对增强型建筑抱有期望，就像进入奥运会半

试想你可以给它取名，也可以决定其设计，仿生或其它方式，只要你喜欢，都可以。

作为建筑师和设计师，我们专注于解决问题，有时甚至提出创造性的解决方案。然而，什么才是最好、最简单、最聪明、最完美、花费最少的

1950年4月17日，伊利诺理工大学设计学院成立，时任建筑系系主任的密斯曾在庆典上发表了这样一段讲话：“科技是一次真正的历史运动，一次塑造并代表着这个时代的伟大运动。科技远远超越方法，它本身就是一个世界。就方法来说，它几乎在各方面都很优越，但只是体现在机械施工过程中，或巨大的工程结构中；然而科技却揭示了其真正本质。显而易见，科技不仅是一种有用的手段，还是一种具有意义的有力形式；因此，这次运动无法简单地命名。是科技亦或是建筑呢？这也许是人们深信建筑必将过时，必将被科技取代的原因。这一信念并未经过思路清晰的推理，相反的情况反而发生。当科技真正实现时，它会超越建筑的范畴。我希望你们能明白建筑与形式的创造之间并没有任何关系。它不是供孩子、年轻人或老人休闲的场所。建筑是精神的真正战场。建筑是内部结构的结晶，是形式的缓慢展开。这就是科技与建筑关系如此密切的原因。我们真正希望它们能齐头并进，直到某天其中一个另一个的表现。直到那时，才会出现一种无愧于自己名字的建筑，一种代表我们这个时代的建筑。”

然而矛盾的是，密斯一边痴迷科技，一边选择居住在一间满是古典石膏模型的资产阶级公寓内。从内心来看，密斯似乎是一位古典主义爱好者，但在必要的场合他又是科技的辩论者。

那么我们究竟在当代条件下处于何种位置？密斯会认为仿生建筑如何呢？是我们这个时代的真正象征？还是创新前沿的伪装，自我放纵的幻象？

对于一些人来说，似乎觉得我们的世界发展得太过复杂，但这种复杂是作为设计师的我们应追求的最终目标。Twitter的联合创始人Jack Dorsey曾说过，“好技术在使用时便会消失”。他还告诉Charlie Rose，“要想把东西变得简单其实是很复杂的，iPad就是一个真正伟大的设计例子”。

我倾向于首先从大自然的体验中获取灵感，然后运用科技手段，而不是其它方式来实现某些目的。例如，在“云住宅”项目中，我想要房子消逝，就像沿地平线前行的反射光，日落时模糊的运动。又如H₂O办公楼，我当时的设计灵感来源于水波纹的反射光以及池塘泛起涟漪的景象。因此，我们通过计算机研究模拟出了流动的表面。

正如密斯所坚信的，虽然科技可能是我们这个时代的真正象征，但它仍然替代不了美好的东西。从他自己的方式来看，我完全相信他已经理解了这一点，但我们呢？如果科技是一种实现目的的手段，那么这一目的应该会变得简单、毫不费力，只需减少或删掉不必要的东西。就像画家何时会停笔一样，那必定是无东西可加、无东西可改的时候。

经常换衬衫一样”。人不能两次踏入同一条河流。也许从长远来看，不给东西命名是最好的，这样它能继续进步，就像他们说的，“先开枪后查证”。理论往往会失败，误入历史的黑洞，也许没有任何理论参考才是最好的。

The term “Bionic” conjures up the perfect melding of the human being with technology, like the “Six Million Dollar Man,” a popular American television show in the 1970s – featuring an invincible cyborg with nine lives. Should we be aspiring toward architecture on steroids, like some doped Olympic semi-finalist? Arnold

Schwarzenegger would say it's “pumped up.” You can call it what you like, as it will be up to you to decide the next move forward, bionic or otherwise. As architects and designers, we focus on solving problems with inventive and sometimes even novel solutions. But what is the best solution - the simplest, the least expensive, the cleverest, the most beautiful? Sometimes the best solution as Mies van der Rohe famously once said was by reducing architecture to “almost nothing”.

In a speech given on April 17, 1950 in celebration of the addition of the Institute of Design to Illinois Institute of Technology, where Mies was the Director of the Department of Architecture, (and I quote at length) he said: “Technology...is a real historical movement - one of the great movements which shape and represent their epoch. Technology is far more than a method; it is a world in itself. As a method, it is superior in almost every respect. But only where it is left to itself as in the construction of machinery, or as in the gigantic structures of engineering, there technology reveals its true nature. There it is evident that it is not only a useful means, that it is something, something in itself, something that has a meaning and a powerful form - so powerful in fact, that it is not easy to name it. Is that still technology or is it architecture? And that may be the reason why some people are convinced that architecture will be outmoded and replaced by technology. Such a conviction is not based on clear thinking. The opposite happens. Wherever technology reaches its real fulfillment, it transcends into architecture ... I hope you will understand that architecture has nothing to do with the inventions of forms. It is not a playground for children, young or old. Architecture is the real battleground of the spirit. Architecture...is the crystallization of its inner structure, the slow unfolding of its form. That is the reason why technology and architecture are so closely related. Our real hope is that they grow together, that someday the one be the expression of the other. Only then will we have an architecture worthy of its name: Architecture as a true symbol of our time.”

Ironically, at the same time that Mies was obsessed with technology, he himself chose to live in a bourgeois apartment with classical plaster moldings. It would seem that Mies was a classicist at heart, yet could be a technological polemicist when the occasion warranted it.

So where does this put us in contemporary terms and what would Mies think of bionic architecture – is it a true symbol of our time, or is it merely a doped up ghost masquerading at the cutting edge of innovation, a bloated phantom of all that is needlessly complex and self indulgent?

To some, it would seem that our world has grown far too complex, and complexity for its own sake is the last thing we should be pursuing as designers. Jack Dorsey, the co-founder of Twitter, said that good technology disappears while you're using it. “It's really complex to make something simple,” he told Charlie Rose, and explained that the iPad is an example of truly great design.

I tend to be inspired by experiences in nature first, and then use technology to achieve certain ends, rather than the other way around. For example, in our Cloud House project, I wanted the house to go away, like a reflection passing along the horizon, a motion blur at sunset. For another project called H₂O, I recalled the mesmerizing experience of gazing at light reflecting off water and the ever changing tapestry of patterns and shimmering reflections it makes. Then we did a variety of computer studies to mimic a flowing surface.

While technology may be the true symbol of our time, as Mies believed, it is no substitute for beauty. In his own way, I think Mies understood this – but do we? If technology is a means to an end, that end should be toward simplicity that borders on the effortless. Reduce, cut out the fat. When is a painter finished? When there is nothing to add, nothing to remove.

Francis Picabia suggested, that a painter should “change his style as often as he changes his shirts.” You can't step in the same river twice. Perhaps in the long run, it's best to not give something a name. It's better to keep moving, shoot first - ask questions later, as they say. Theories tend to fail and tumble into the black hole of history. Maybe it's best not to have any.



Axis Mundi建筑事务所为某瓶装水公司办公总部设计了新的名为H₂O的立面。H₂O表皮像水一样自然扭曲，其目的就是通过建筑来强化业主的瓶装水品牌。

Axis Mundi has been retained to propose a façade retrofit for H₂O, which is a new bottled water company that has ambitious plans to distinguish their innovative brand.

现有的H₂O六层大楼位于巴塞罗那繁忙的十字路口，靠近安东成的干涉图形的启发。在物理学中，干涉图形是一种由两个或两个以上波纹叠加形成的新波纹。

设计师通过对河流、小溪和池塘等各种条件下水波纹的光反射进行记录、分类和研究，最终选取了池塘泛起涟漪的一幅图片，经过三维还原后形成建筑表皮，由酚醛复合材料制成，并通过钢桁架附着于原有建筑。设计师分割剖面，将各种波形线围绕建筑结构四周分布。这些剖面互相波动，形成一种能加以控制和调节的波纹表皮。这种新的表皮经过复制和轻微转移，在相互穿插处形成重叠，并在相交处形成流动状的入口。至此，表皮也成为H₂O办公楼标志性的营销符号。

此外，大楼还从高迪的设计中获取启发，内部穿插两个椭圆形的孔洞，为办公空间提供充足的自然采光。

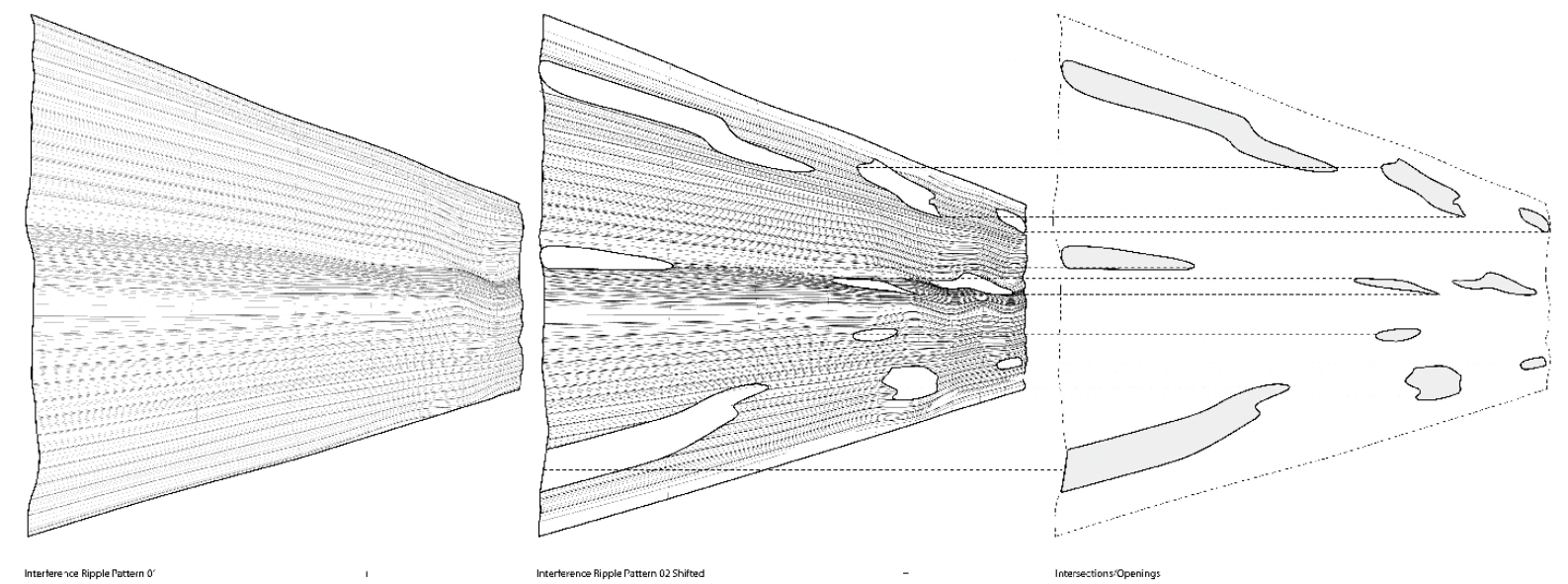
Rippled Skin

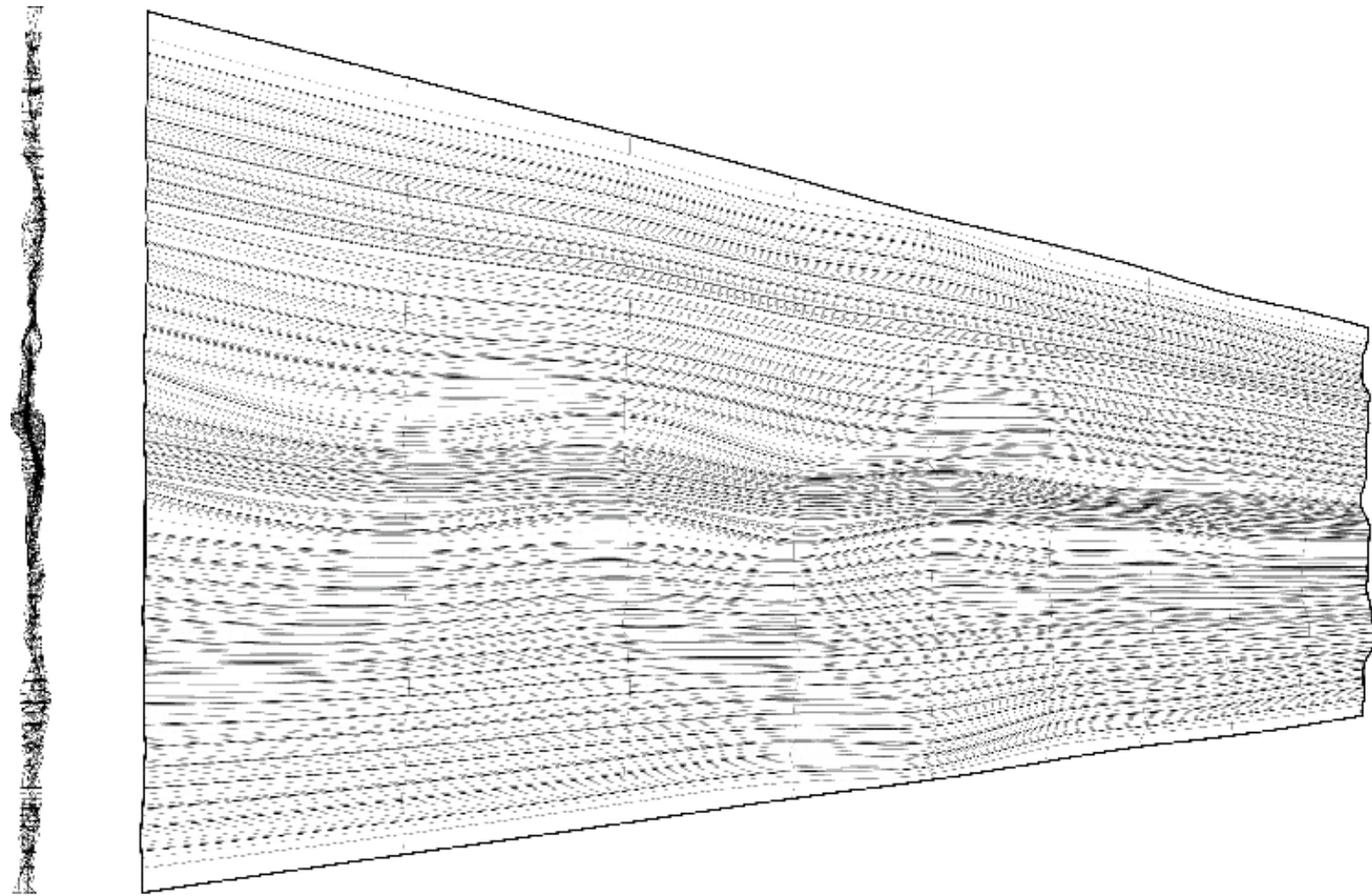
H₂O

流动的表皮

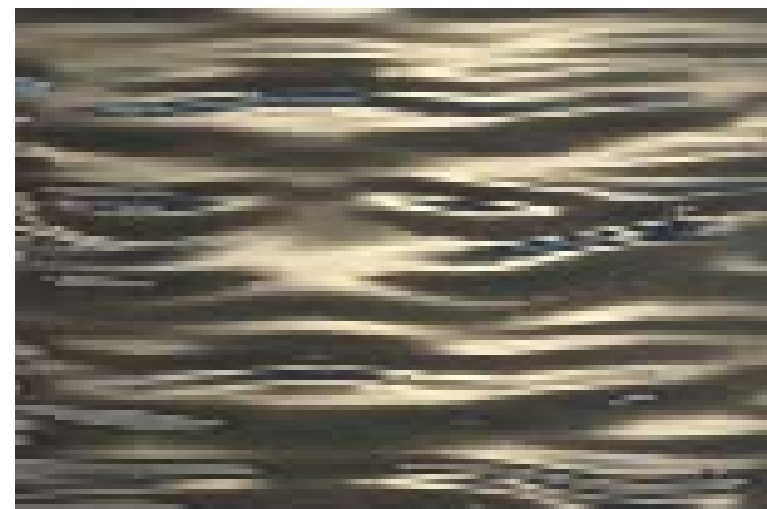
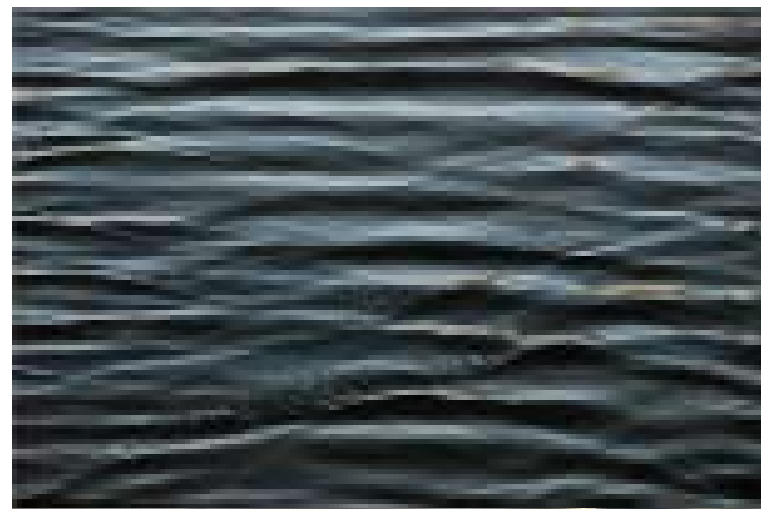
H₂O办公楼

项目地点：西班牙巴塞罗那
 项目面积：约11 148.4平方米
 建筑设计：Axis Mundi建筑事务所
 主设计师：John Beckmann
 设计团队：John Beckmann, Ronald Dapsis, Masaru Ogasawara
 效果图/草图：Ronald Dapsis
 采编：张雅林
 Location: Barcelona, Spain
 Area: Approx. 11,148.4 m²
 Architectural Design: Axis Mundi
 Designer: John Beckmann
 Design Team: John Beckmann, Ronald Dapsis, Masaru Ogasawara
 Rendering & Diagrams: Ronald Dapsis
 Contributing Coordinator: Yalin Zhang





Section/Elevation



Reference Image

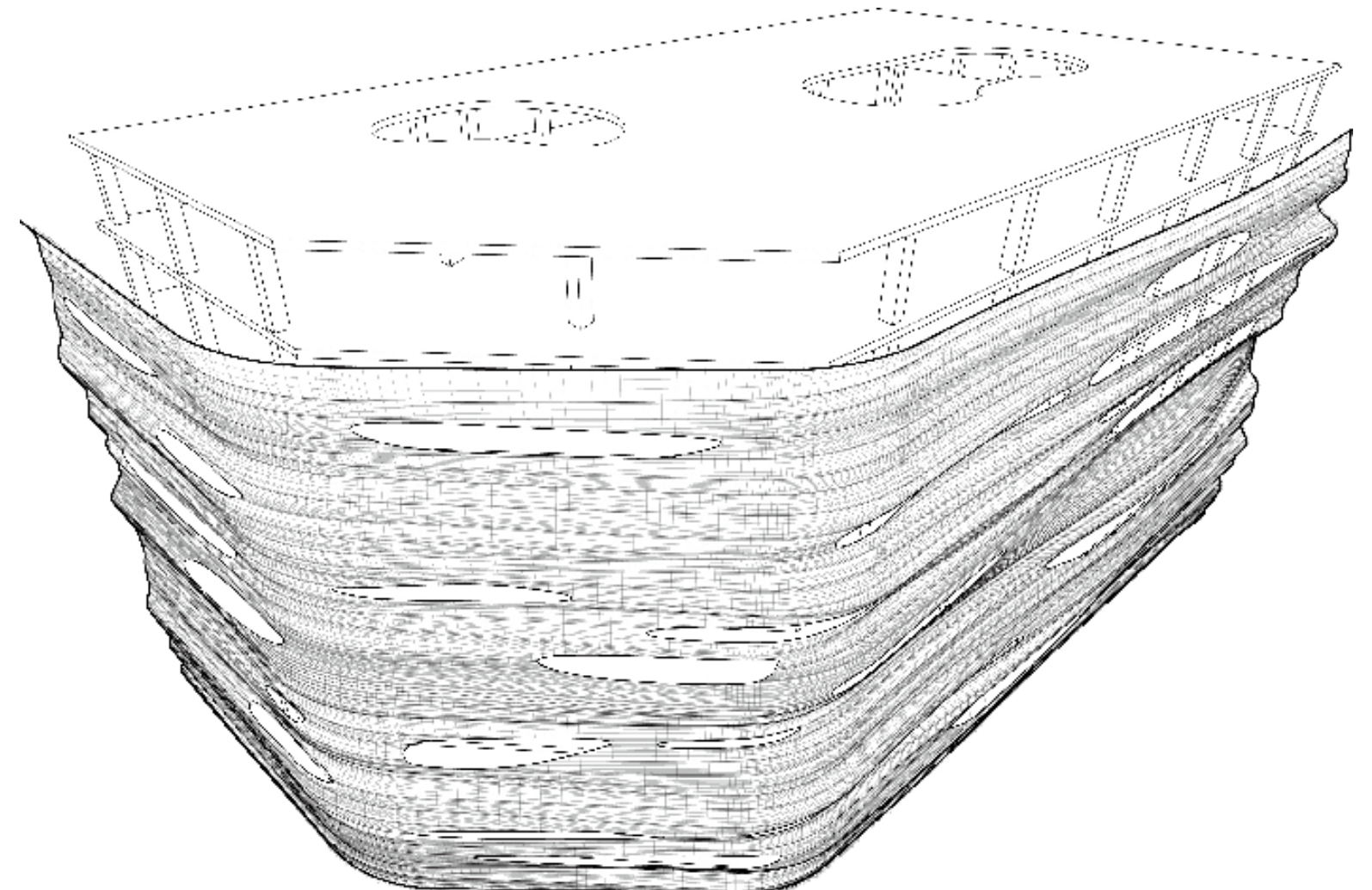
The existing six-storey building is situated on a busy intersection in Barcelona, close to Antonio Gaudi's residential masterpiece – the Casa Mila.

The concept for the new façade is based on the interference patterns that are created by the flow of water surfaces. In physics, interference is the addition (superposition) of two or more waves that result in a new wave pattern.

The architects documented, categorized and studied light reflecting off the surface of flowing water in various conditions: in rivers, streams and ponds, for example. They ultimately selected an image that visually appealed to us the most – subtle ripples in a pond. That photographic image was then imported and modeled into a very precise 3D form; they cut sections and derived numerous

wave shaped lines which they then placed around the perimeter of the building envelope. These sections were lofted between each other, forming a rippled skin that they could control and adjust. The new skin was then duplicated and shifted slightly, and where they interpenetrated each other they formed overlaps, these intersections were then removed to create flowing shaped openings in a dramatic brise-soleil made from a phenolic composite material. This secondary skin acts as a highly identifiable marketing symbol for H₂O.

Taking a cue from Gaudi, the interior of the building is pierced with two elliptically shaped voids that allow natural daylight to filter down into the offices.



Final Interference Surface Molded into Building Facade



Clouds in a Grove of Aspen Trees

Cloud House

白杨树林中的“积云”

云住宅

项目地点：美国科罗拉多
 项目面积：约204平方米
 建筑设计：Axis Mundi建筑事务所
 设计师：John Beckmann, Jacob George
 效果图：Jacob George
 草图/模型：Jacob George, Jessica Marvin
 采编：张雅林
 Location: Colorado, USA
 Area: Approx. 204 m²
 Architectural Design: Axis Mundi
 Designer: John Beckmann, Jacob George
 Renderings: Jacob George
 Diagrams & Model: Jacob George, Jessica Marvin
 Contributing Coordinator: Yalin Zhang

“云”往往会让人产生各种想法；它们碰撞却又相互联系，可以说形成了一个稳定的组合。
 ——亨利·庞加莱

这是由纽约建筑事务所Axis Mundi设计的云住宅项目，云朵状的住宅隐藏于白杨树林中，四个椭圆形的结构围聚在一起，朝向不同的角度，拥有绝佳视野。透明弯曲的室外结构从首层延伸至住宅白色的屋顶上，在一年中的某些时段几乎变成了隐形的住宅。

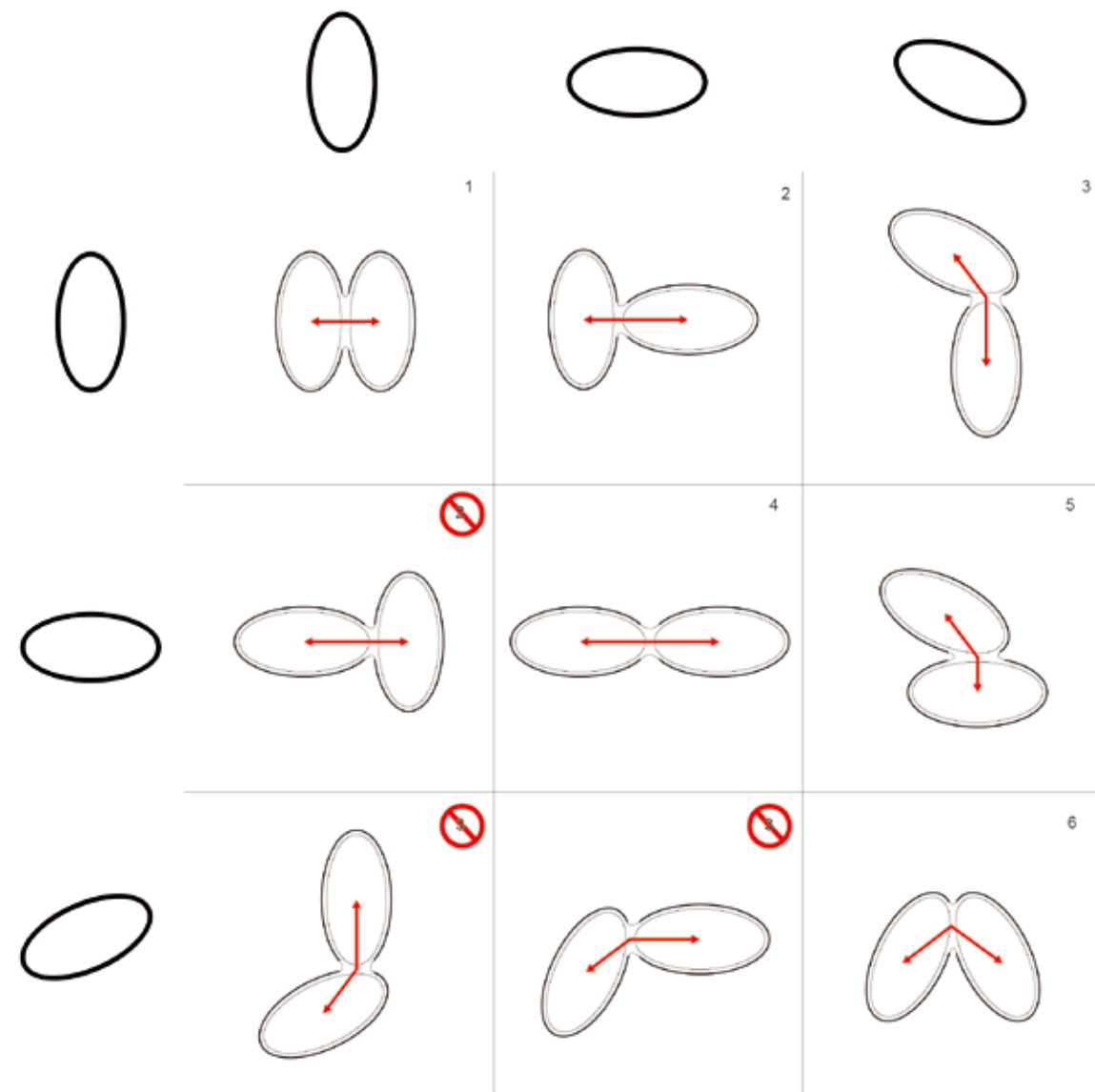


Ideas rose in clouds; I felt them collide until pairs interlocked, so to speak, making a stable combination. - Henri Poincare

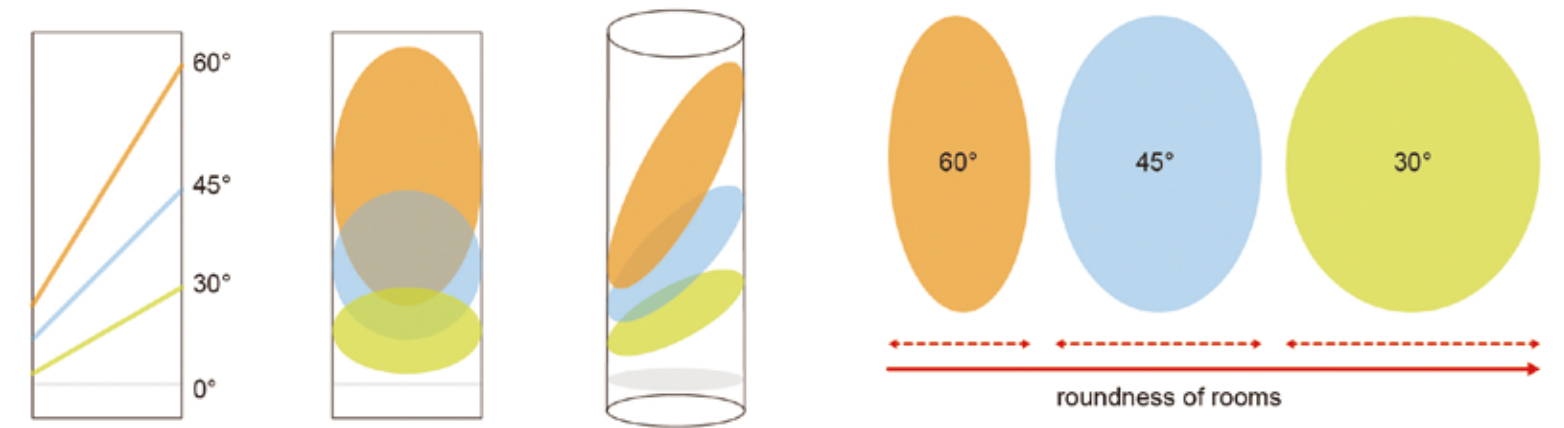
The Cloud House designed by Axis Mundi is a design for a weekend getaway home located in the mountainous plateau of Lizard Head

Pass, Colorado. Nestled within a grove of aspen trees, four oval pods are clustered side by side and oriented at different angles to overlook strategic vantage points. The transparent and curved exterior spans from the ground to the flat white roof, becoming nearly invisible during various times throughout the year.

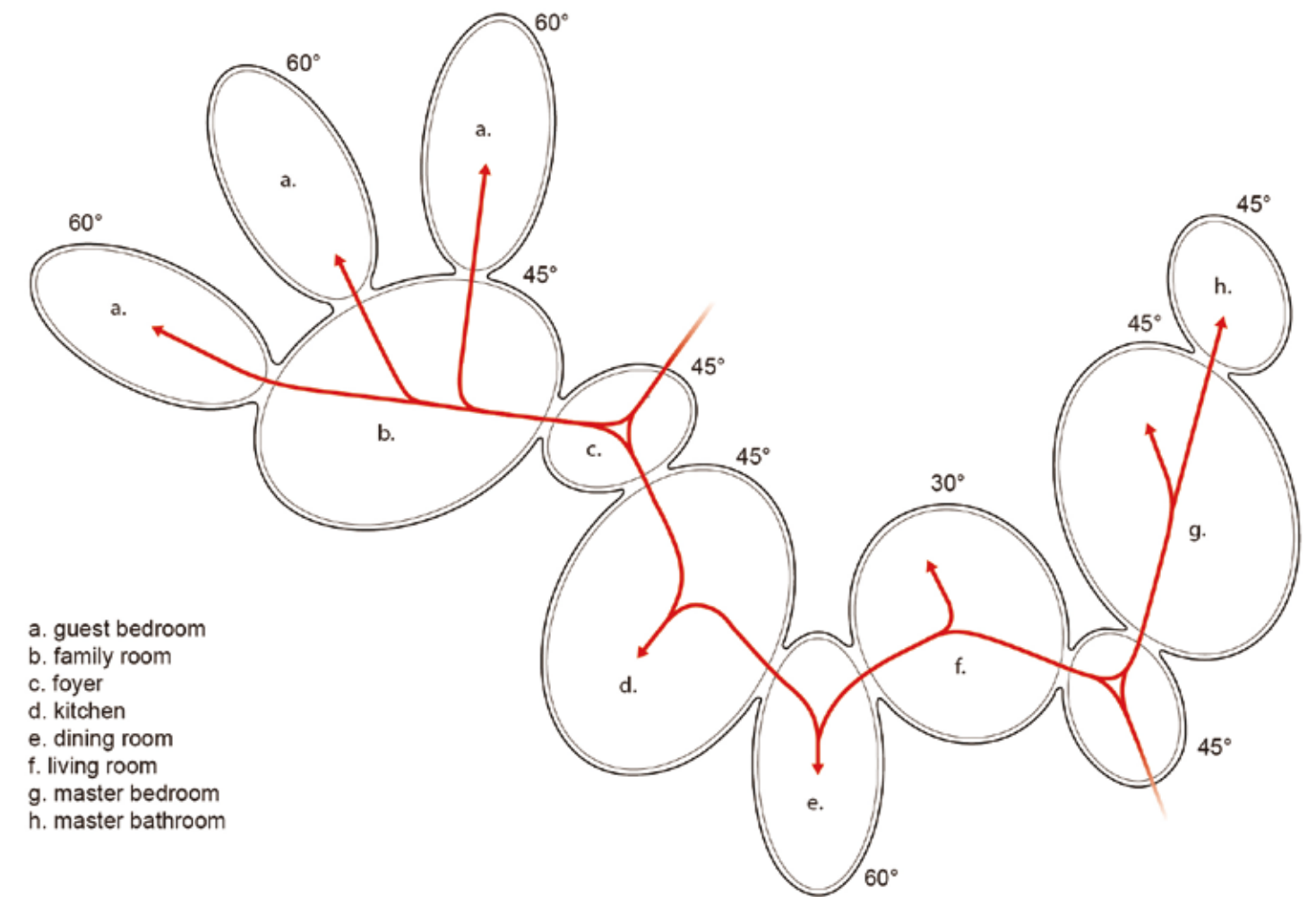




Tangential Connections



Pod Generation



Modular Floorplan

绝佳的地理位置

“云住宅”坐落在科罗拉多高原沿山脊的一片白杨树林中，优越的地理位置使得该度假屋可以欣赏优美的景观。

新颖的设计理念

项目设计方案是对开放性、透明性、亮度和反射的一个新的研究。“云住宅”在一年的某段时间内会变得隐形。积云形状的抽象诠释演变

为五个循环的椭圆形玻璃体。这些合并空间灵活轻巧，铰接在一起。每个玻璃体都是一个独立房间，拥有独特的规划功能。房间入口都设置在玻璃体相连的空隙处。室内门设置尽量减少。整体设计形成一种闲适自由的组合，为天与地提供了一个无可比拟的“约会”场地。

从规划来看，项目拥有一个入口、厨房、餐厅、卧室、储藏室、浴室、客厅和书房等。空间多孔畅通的流通系统还给生活和娱乐带来了额外的机会。



Advantageous Site

The Cloud House is a planned weekend retreat, which is situated on a promontory high along a ridge of the Colorado Plateau. The site offers panoramic views from numerous vantage points. The house is nestled in a grove of dramatic Aspen trees.

Novel Concept

The design is a study in openness, transparency, lightness, and reflections. The house approaches near invisibility at certain times of the year. The floor plan is an abstract interpretation of a cumulus cloud shape transformed into a series of five rotated and elliptically shaped glass pods. The combined spaces have a softly nuanced suppleness based on the way the forms are hinged together. Each pod is an individual room, having a distinct programmatic function. Room openings were created at the interstitial space where the pods meet. Interior doors have been reduced to a minimum. The overall design is a loose free-form assemblage which is informed by its unique relationship to the site, and offers an incomparable meeting place of earth and sky.

Programmatically, the house contains an entry pod, kitchen/dining areas, bedroom/storage/bathroom, living area, and a study/bar/powder room. The spaces have a porous and smooth flow between one another which affords exceptional opportunities for living and entertaining.

