建筑立场系列丛书 No.07

木材——诗意与实用

Wood
Poetic and Practical Possibilities

福斯特建筑事务所等 | 编

大连理工大学出版社

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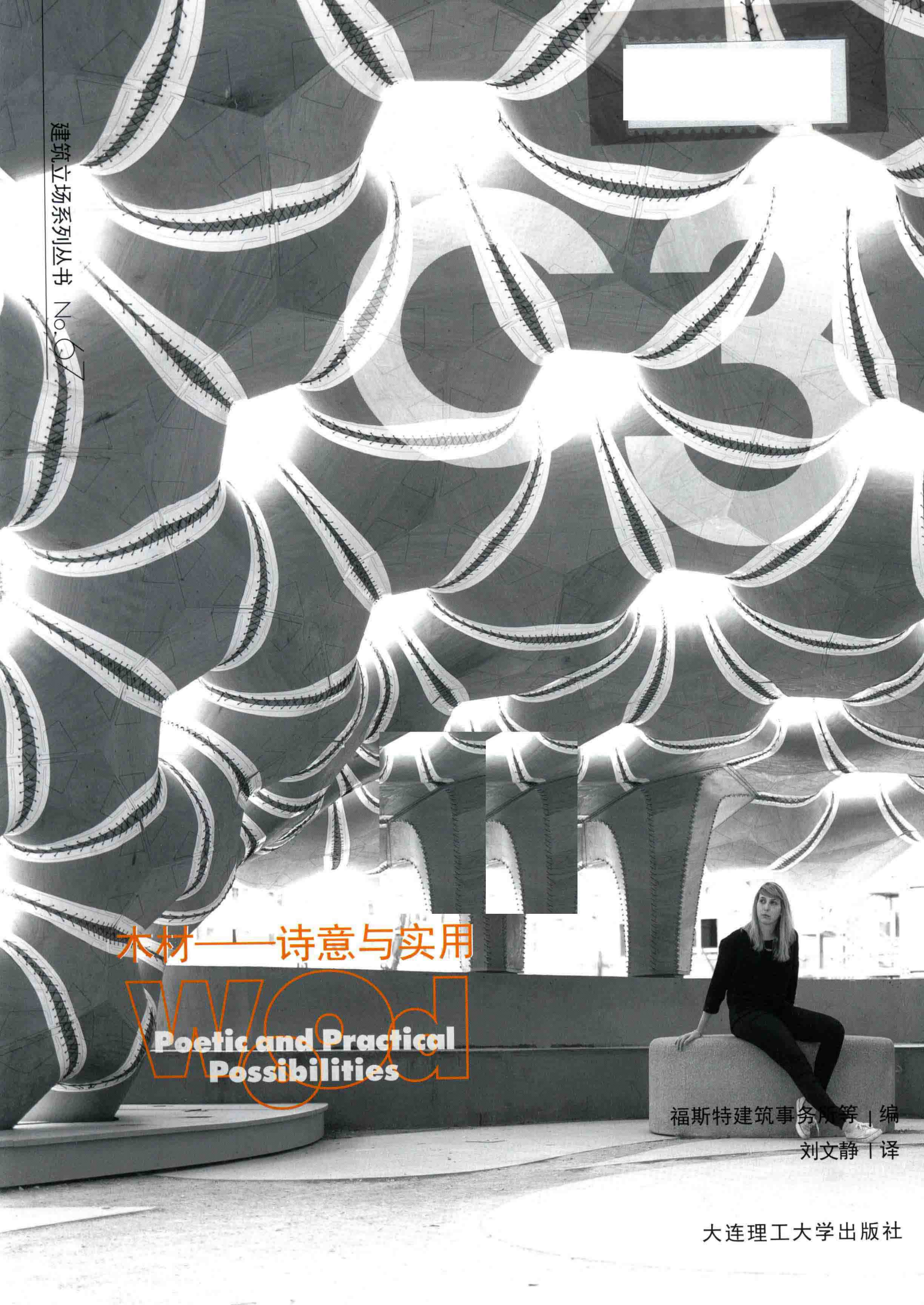

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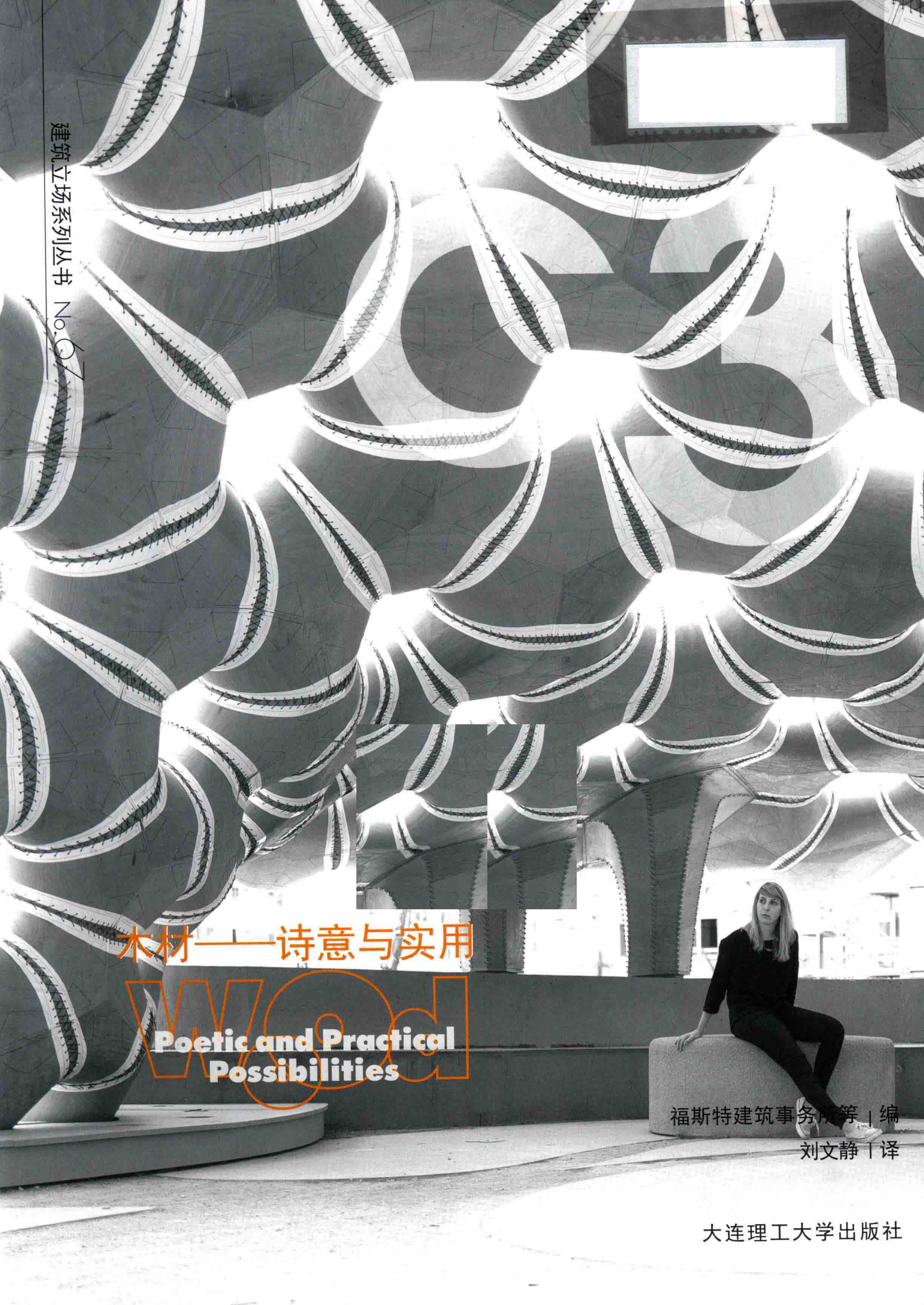

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木材——诗意与实用

Poetic and Practical Possibilities

作为建筑材料的一种，木材在全球掀起了一股复兴的潮流。这股潮流的形成很大部分取决于在环保意识盛行的时代，碳化木所具有的独一无二的地位。近期的建筑项目从各个方面很好地佐证了木材所具备的价值，不仅富有诗意而且极具可行性，因此木材被很多人比作是21世纪的“混凝土”。

十座以居民和社区为设计重点的建筑物将处在人们的检验之中。这些建筑采用的都是具有地方性特点的标志性木材。颇具特色的木材构成了项目的核心，呈现在富有特色的私人住宅和公共建筑中。同时这些木材的存在，也对于每个设计项目与其周围景观的结合程度以及对其周围景观的参照程度都起到了影响。

这一引人注目的建筑系列包含了朝圣、休闲空间以及市民公共区域，每座建筑因为其单一的材料和设计方式在一定程度上或多或少地焕发起人们自信、优雅以及镇定的感觉。

现在让我们将注意力集中在光线、重复性和利用性的相互结合、玻璃的巧妙利用、体量的有效控制、创新型的屋面设计以及迷宫理念的采用方面。这些都是用来促进建筑物与自然环境的结合，并探索其中奥秘的方法。

Wood is undergoing a global revival as a construction material, partly due to its status as an unrivaled carbon sequesterer in an age of environmental awareness. Recent architectural projects exemplify its diverse poetic and practical attributes, prompting some to describe timber as the concrete of the 21st century.

Ten civic and community-focused structures, which use regional, native timbers as their signature material will be examined, with particular focus on the characteristics wood bestows on these projects, collectively and individually, and with what degree each design references or integrates with the surrounding landscape.

While this striking architectural collection includes places of worship, recreational, civil edifices, each to a greater or lesser extent evokes a sense of stillness, elegance and calm, for their stripped-back material pallets and design approach.

Attention to light, interplay between repetition and diversity, a deft use of glass, manipulation of volumes, innovative roofing solutions, and employment of the maze concept are some of the methods that have been utilized to facilitate a connection between and discovery of built and natural environments.

过去十年来，木材在建筑行业又一次兴起，主要原因是工程木产品进行了改良，工程木其实早在20世纪初就出现过。因此，在相对较短的时间内，一系列新型木材产品实现了从小众产品到标准材料的过渡，为众多建筑者和设计者所熟知。这一系列的工程木产品中，"交叉层压木材，也就是人们所知悉的胶合木[1]，被认为是街区建筑材料中的新面孔"。[2]

新的电脑技术的应用意味着木材产品可以经过加工制成越来越多的复杂形式、更长的长度和更宽的宽度，且加工时间会越来越快，同时价格也会越来越低廉。[3] 木材的改良以及木材本身所具备的轻巧性、强度和重量的比率，使它同样适用于预制加工和屋面设计，也更加自信地、创新地应用在大规模的结构之中。[4] 本期封面所展示的斯图加特大学ICD/ITKE研究馆，揭示了众多尖端技术所蕴含的巨大前景，包括自动化织物缝合技术，同时，该展馆还在模仿海胆外形的设计方面表现出色。

建筑的施工优势以及管理同样会随着气候的变化以及环保意识的变化而变化。这也在一定程度上体现了木材的优势，正如之前所提到的那样，它具有极强的防腐性。[5] 出乎意料的是，木建筑导致火灾的可能性要低于20世纪传统的钢材和混凝土建筑。[6] 在进行推断时，2002年的一个案例分析建议在长远的环境背景下，人们要更倾向于使用木材。"与制作胶合板梁相比，我们要花费两倍到三倍多的精力，六到十二倍多的化石燃料去制作钢梁。"

近代，木材产品加工方面的技术进步带来了富有诗意和美感的前景，人们的态度随之改变，大量的木材产品都在以下的八个项目中得以体现。

Wood's renaissance in the construction industry over the past decade is strongly connected to refinements in the production of engineered timber, which has, in fact, existed since the early 20th century. Thus, in a relatively short space of time a suite of new timber products has transitioned from niche product to standard material, familiar to most builders and designers. Of this suite of engineered products, "cross-laminated timber (CLT), also known as glulam[1], is considered the new kid on the block."[2]

New computer technology has meant that engineered timber products can now be machined and manipulated into more and more complex forms, greater lengths and breadths, and more quickly and cheaply.[3] These developments coupled with wood's lightness and strength to weight ratio mean it is also well suited to prefabrication and roofing, and is increasingly being utilized in large-scale structures with confidence and innovation.[4] The project featured on the cover of this issue, the University of Stuttgart's ICD/ITKE Research Pavilion, demonstrates the extraordinary possibilities of the most cutting edge technologies, including robotic, textile-sewing techniques, while doing a remarkable job of emulating sea urchins.

Construction priorities and regulations have also shifted with growing climate change and environmental awareness, which partly account for timber's ascendency; for timber is, as mentioned, a superior sequesterer[5] and, counter intuitively,

照片提供：©ICD+ITKE+University of Stuttgart

ICD/ITKE研究馆，2015–16，斯图加特
ICD/ITKE Research Pavilion 2015-16, Stuttgart

位于芬兰的塞拉基乌斯博物馆的Gösta馆由MX_SI事务所设计，其设计理念主要是为了保留Joennimei庄园宝贵的遗产价值以及围绕在它周围的、美丽的、迷人的森林美景，并使二者相得益彰。

后建的这座令人瞩目的新木构建筑在内部空间与外部空间之间建立了一种流动的对话。内部是精心设计的、微微流动的体量。在这些大型玻璃和木框的背后是无处不在的风景。这些构件打破了现有建筑体量的整体性。

用设计师的话说："从外面看来，建筑物是由一系列垂直的木框架构成的，这些框架遵循且强调了内部构造的韵律。在这些框架之间，一个垂直立面通风系统由单独捆在一起的云杉木条制成，以打破材料的结构限制。

木材的使用促进了建筑和景观的一体化进程。MX_SI事务所的设计方案荣获了2013年的西班牙国际建筑奖（国际类）。

这座建筑的基础、室外覆层以及室内饰面都是采用木材制成的，是芬兰较为著名的、几乎全部采用木材来建造的大型公共建筑物之一。

位于法国Rillieux-la-Pape，由Tectniques建筑师事务所设计的Hacine Cherifi体育馆内设体育馆，多功能运动馆以及行政区，共占地2500m²。

建筑师是这样形容结构体系的："从内到外，结构体系是由覆盖在板条上的三层云杉板，定向刨花板（构成箱式基座），36cm高的箱式框架（采用稻草来填充），40mm厚的木纤维保温板，防雨棚以及与当地的花旗松木瓦相接的三层花旗松木板覆盖层构成的。"

在大量混合使用木材和混凝土的结构中，金色的木覆层成为这一

wood constructions can actually present a lesser fire risk than typical steel and concrete structures of the 20th century.[6] A 2002 case study recommended wood on further environmental grounds when concluding that "… *it takes two to three times more energy and six to twelve times more fossil fuels to manufacture steel beams than it does to manufacture glulam beams.*"[7] Attitude changes along with the discovery of new poetic and aesthetic possibilities have accompanied the most recent technical advancements in timber production, a number of which are showcased in these eight projects.

MX_SI's Serlachius Museum's Gösta Pavilion in Finland was designed to compliment and respect the high heritage value, Joennimei Manor, and the beautiful, petrified forest that surrounds it.

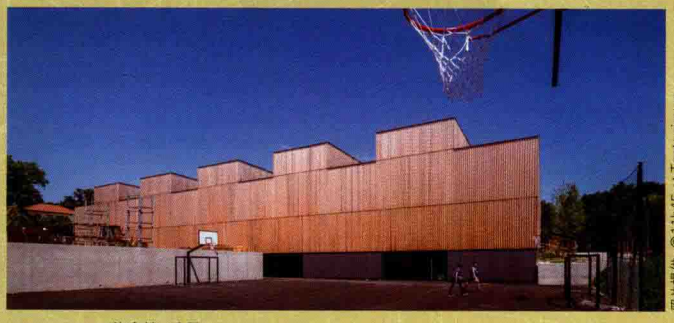
The subsequent, striking new timber structure establishes a fluid dialogue between interior and exterior spaces and contains carefully considered, subtly shifting volumes. The landscape is omnipresent behind generous glazing and timber mullions, which both serve to break up the architectural volume.

In the architects' words: "*On the outside, the building presents a series of vertical mullions that follow and emphasize the rhythm of the interior structure. Between the mullions a ventilated facade system was designed of spruce wood strips twisted independently to the tectonic limit of the material.*"

The use of wood facilitates the integration of architecture with landscape. MX_SI's design was recognised with the Spanish International Architecture Award 2013 (International category).

The building, with its timber foundations, external cladding and internal finishes, is also noteworthy as one of the first large-scale public edifices made almost completely from wood in Finland.

The Tectoniques Architects-designed Hacine Cherifi gym-



照片提供：©11h45 et Tectoniques

Hacine Cherifi体育馆，法国
Hacine Cherifi Gymnasium, France

庞大木建筑的主体。且该结构置于浅色的、填充稻草的、用麦秆做成的木材框架之上。

建筑所体现的质朴以及由内到外的通透性，主要是通过自始至终都坚持使用一种材料——木材，以及暴露在外的结构美感来实现的。特别是材料，旨在平衡建筑物所展现的壮观规模。

风格独特的箱式结构因它极富表现力的天花板结构而变得与众不同。天花板设有凸起的天窗。透过天窗，充足的自然光能够照射进来，并且无眩光。这些天窗体现了这座乐高式建筑的简易质朴。

尽管在某些方面，与其他七个项目相比，Hacine Cherifi体育馆有些华而不实，但它的坚固性、充足的阳光、特定的功能性以及些许娱乐性（通过定制的红色场馆设备得以体现），都让人念念不忘。

相反，位于巴黎的、极具纪念意义的Créteil教堂的二次开发主要集中在复原建筑物以及建造一座和原教堂同等体量的建筑方面。

两座大型壳体建筑，或者说是木质船体结构，结合在一起，构成了主教堂，位于圣坛上方，像是祈祷中的双手。一座独立的、细长的木尖塔矗立在旁边。三个三角形洞口内设置了三个古钟。

在木材专家Sylva Conseil的指导下，"船形外壳"采用层压木材覆盖，插入云杉曲面板和花旗松木板条，花旗松木板预先遮挡起来，以确保老化的速度均匀统一。

据建筑师所说："云杉木建成的拱形结构的重复性，赋予了建筑内部以韵律，彰显了这座船形建筑的装饰风格，使这一神圣地方具有一定的密集性。"至于他们所采用的主材料："木材是一种非常天然、充满生命力的材料，简洁，庄重，这也使它十分适合建筑的曲线设计。它自身的温度使其形成具有友好氛围的社区风格……"

nasium, in Rillieux-la-Pape, France, encompasses gymnastics and multi-purpose sports halls and an administration space totaling a vast 2,500m² area.

The architects explain the structural system as follows, "*From the inside out, the system is composed of three-ply spruce panels laid over the battens, the OSB panels, which make up the base of the boxes, the 36cm deep box framework filled with straw, a 40-mm insulating woodfibre panel, the rain barrier and the cladding made up of three-ply Douglas Fir boards onto which timber tiles, also made of locally-sourced Douglas Fir, are fixed.*"

This golden timber unequivocally dominates in this vast mixed wood and concrete structure that is set upon a light, straw-filled timber baton frame.

The building's simplicity and inside-out transparency come from the consistent use of one material, timber, and exposed structural aesthetic. The former in particular came from the intention to subdue the building's imposing scale.

The resulting stylized box is distinguished by an expressed ceiling structure whose raised skylights provide ample natural light without glare and, together, suggest the simplicity of a young child's Lego construction.

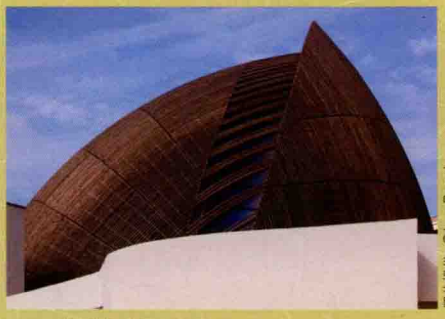
While the Hacine Cherifi Gymnasion is slicker, in some respects, than the other seven projects, solidity, ample light, and stripped-back functionality, with a dash of playfulness – via customised red gym equipment – are the take-home impressions of this complex.

In contrast, the monumental Notre-Dame de Créteil Cathedral redevelopment in Paris, was focused on reinvigorating architecture and doubling the Cathedral's congregation.

Two giant shells, or wooden hulls, form the main Cathedral as they draw together, above the altar, like hands almost sealed in prayer. A detached slender, timber spire stands nearby, with three triangular apertures exposing the same number of ancient bells.

照片提供：©Hundven-Clements Photography

Knarvik社区教堂，挪威
Community Church Knarvik, Norway



照片提供：©Luc Boegly

Créteil教堂的扩建项目，法国
Créteil Cathedral Expansion, France

在该项目以及本系列的其他项目中，光线是非常重要的，它经过了精心的策划，产生独特的氛围。彩绘玻璃安装在建筑船形结构南部的最前面，突出了建筑的神圣感，同时也使建筑全天都能够接收到日光。

Reiulf Ramstad事务所设计的Knarvik社区教堂，是一个非常有吸引力且经过全方位精心设计的建筑。它的设计理念非常注重气候、环境、建筑的地位（作为一处朝圣的场所），并考虑了其他社区庆祝以及表演活动。

这一引人注意且在一定程度上考虑了未来设计的建筑，被人们使用优美的词语描绘为“折叠的星星”[8]。该建筑的灵感来自于当地的山峰和峡湾。屋顶是尖尖的，不容易积雪。结构的长立面交替使用了垂直的木板和玻璃，使周围的景观能够融入建筑的肌理中，并且始终凸显建筑的广阔性。

尽管这一现代设计并没有显著的宗教标识，但是由于其被社区居民广泛地使用，这座建筑物仍然具有标志性，主要是因为其设有瘦削陡峭的尖塔。从远处看，教堂立面木材和玻璃的交替使用给人一种传统石廊的感觉。

Knarvik教堂和巴黎圣母院是不同的。Knarvik教堂的平静感和神圣感主要来自于其广阔性、多变性以及与周围建筑物的巧妙结合。反之，巴黎圣母院之所以具有强烈的氛围感，主要是因为其建筑的封闭性、统一性以及密集性。而Knarvik教堂之所以能实现这两种效果，主要是因为使用木材作为外围护结构以及木材之间采用了合适的间距的缘故。

苏黎世动物园新建的大象馆与Créteil大教堂有两点共同之处：创

Under the guidance of wood specialist, Sylva Conseil, the "hulls" were clad in laminated wood, stuck bows of Spruce and Douglas Fir strips, the latter pre-shaded to ensure uniform ageing.

According to the architects, the *"..repetition of spruce arches gives rhythm to the interior, a decorative style of the hulls. The intention here is … to characterise the density of a sacramental space"*.

And of their principle material: *"Wood is a natural, living material, at once humble and noble. It lends itself perfectly to the design of the building's curves. Its warmth also serves as a pattern of a fraternal community,..."*

Light is an important, well-orchestrated and atmospheric feature in this project, and most others in this collection: Here stained glass is positioned at the head of the southern hull, enhancing the sense of this being a sacred space and allowing for all-day sunlight.

The Community Church Knarvik by Reiulf Ramstad Arkitekter is a dramatic and refined building-in-the-round, which has been strongly informed by climate, context and the building's role as a place for worship, and other community celebrations and performances.

This dramatic, in some ways futuristic, structure – which has been beautifully described as a folded star[8] – was inspired by the mountains and fjords in the region: Snow would slide easily from these sharp roof plains; the structure's long elevations have vertical bands of glass alternating with timber that admits the surrounding landscape into the fabric of the building, all the while enhancing the architecture's expansive quality.

While this contemporary design has avoided overt religious iconography, due to broad community use, the building's function is still signaled through its splinter-steep spire, and the alternation of glass and timber along the church's elevation could also evoke traditional colonnades from afar.

图片提供：©Nigel Young

曼彻斯特的新麦姬癌症中心，英国
New Maggie's Cancer Center in Manchester, UK

新的木结构和与墙体穿插结合的曲形木屋顶。

大象馆与众不同的特色是其龟壳状的网格结构木屋顶，为预制的工程木壳体结构。木壳体的洞口在场地经过切割和移动能够营造出一种迷宫的感觉。

前面提到的工程木的前景以及与之有关的绘制和预制加工技术在这里都得到了充分的体现。在这些措施出现以前，这种如此壮观的定制曲形横截面以及长度是很难付诸实践的，而且经济花费也较为巨大。

在设计位于英国英格兰曼彻斯特的木构麦姬癌症中心时，福斯特及其合伙人建筑事务所并没有将传统的医疗机构设计作为参考。相反，他们采用了给人以温暖氛围的天然木材、具有触感的肌理和表面，并且在中心位置设置了厨房，设计了透明的玻璃温室以及网格式屋顶结构，这些设计使花园填补了所有的透明缝隙，营造一种充满欢迎氛围的、如家的充满阳光的空间，如同避难所，让人们感到舒适自在。

最后这两个建筑项目所体现的特点和舒适性以及主材料和周围树木的结合，似乎彰显了木材是极具生命力的事物，而这一点主要是由木材与自然和四季之间的种种联系来体现的。[9]

光线、平静以及与建筑物的结合

一个项目建筑师说了这样一段话，他的话从不同角度都适用于该系列的大部分建筑："在一定程度上，人们是推崇将外部空间穿插进建筑物之中的。"其他穿梭于建筑中的元素是照明与多变性，无论是从体量还是氛围上来说，都取决于材料的选择和处理。

麦姬癌症中心采用轻质木材建成的网格结构木屋顶，以及大象馆

The Knarvik Church is distinguished from the Parisian Cathedral, in that its sense of serenity and sacredness comes from an expansiveness, levity and connection to the landscape, whereas the Cathedral gathers its potent atmosphere from a sense of enclosure, uniformity and density, although both effects of the church have been achieved with the enveloping and spacing of timber.

The Zürich Zoo's new Elephant House shares two things in common with the Créteil Cathedral: An innovative wooden construction, and curved timber roof, which morphs into walls.

The Elephant House is distinctive for its tortoise shell-like lattice timber roof, made from a prefabricated engineered wood shell, which had its openings cut and removed on site to create a maze-like effect.

The aforementioned new possibilities of engineered wood, and its associated mapping and prefabrication technologies, are evident here. For prior to their existence, such ambitiously customized, large curved cross-sections and lengths would not have been practically or economically viable.

Foster and Partners determinedly eschewed any design reference to traditional health institutions when designing the timber-framed Maggie's Cancer Center in Manchester, England. Instead, the warmth of natural timber, tactile fabrics and surfaces, the placement of a kitchen at the design center, and use of transparent glasshouse and lattice roof structures, allowed the garden to occupy all transparent gaps, and create a welcoming, homey, light-filled space, that provides refuge and comfort.

The character and comfort found in these final two projects and their connection between primary material and surrounding foliage seem to affirm and project the notion of wood as something alive, due to its association with nature and the seasons.[9]

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Sognefjellshytta高山酒店的新入口，挪威
Sognefjellshytta High Mountain Hotel's New Entrance, Norway

墙体和屋面边缘切割的天窗网格，用一种质朴和不拘小节的方式将这些建筑与自然界连接在一起，并且有意识地利用自然光来渗透建筑，以打破建筑的厚重感。

进一步说，自然光、绿色植物以及麦姬癌症中心的花园景色通过以下几种方式得到了增强：移动门使中心可以直面大花园。每间治疗室前面都有一处狭小的绿色空间。建筑物的南面对着温室休闲区开放[10]。癌症中心结构和材料的轻盈性、照明以及氛围都充分地呈现，且梁还是人们识别空间变化的标志。据建筑师所言，"他们的设计从视觉上将建筑融入周围的花园中"，营造出一种与众不同的、引人注目的环境。

同样地，Gösta馆的切口、反射玻璃以及平行小路，形成了与周围景观紧密结合的门或者林间小道。

教堂和新社区建筑无墙的设计、切口、木框以及柱廊使建筑富于变化。同时，也使这些建筑能够与周围景观相融合，或追随景观的踪迹，把体量分割成若干个小部分"[11]。

天然材料——木材将单个体量包围起来，也因此优化了建筑由内到外的整体效果。建筑从外部到内部使用木材来进行无缝拼接，并且对灯光进行了巧妙的处理，其内的空间呈现出一种静谧的感觉，使整座建筑都被贴近自然的大地色材料所包裹。Sewn木材研究馆采取的也是相似的设计准则，力求达到相似的效果，只是采取了一种更为激进的方式。

旧与新

传统的柱廊或者竖框（或由木材制成，而非石头或者混凝土，或由玻璃焊接），是新与旧之间、或者是永恒的元素和建筑语言之间的相互

Light, calm ness and connection to landscape

The words of one project architect could easily apply, in various ways, to most of the buildings in this collection: *"external spaces, in a sense, are encouraged to penetrate inside the building"*. The other strong thread running through these projects is lightness or levity – of volume and atmosphere – emanating from material choice and its treatment.

The lightweight timber roof lattice structure of Maggie's Cancer Center and cutting edge skylight webbing of the Elephant House roof-walls, connect these structures in a more rustic or informal way to the natural world, while intentionally saturating them with natural light and breaking up the architectural density.

Further, natural light, greenery and garden views in Maggie's Cancer Center have been enhanced in the following ways: "sliding doors open the center to a large garden, each treatment room faces a small green space and the building's south side opens to a greenhouse retreat space"[10]. The Cancer Center's lightness of structure and material, illumination and atmosphere have also been achieved with beams signaling room changes, *"visually dissolving the architecture into the surrounding gardens"*, according to the architect, to create a distinct and inviting environment.

Similarly, architectural "incisions", reflective glass and parallel paths in the Gösta Pavilion, all create "doors or forest walkways" into the surrounding landscape.

Levity has variously been achieved through wall-less volumes, incisions, timber mullions and colonnades in the Church and the Social House. This has allowed these buildings to merge into or trace the landscape, while encouraging volumes to "decompose into smaller fragments"[11].

The use of the natural material, timber, has made it viable to wrap singular volumes, thereby, optimising the inside-out effect. The seamless use of timber from exterior to interior,

1. http://www.timber.net.au/index.php/timber-wood-products-glulam.html;
"a type of structural engineered wood product comprising a number of layers of dimensioned timber bonded together with durable, structural adhesives that are moisture-resistant."
2. http://blogs.aecom.com/connectedcities/the-renaissance-of-timber-structures/
"The use of this type of timber (CLT) has increased in volume by over 600 percent in Europe in the last decade, going from being a niche building material to a standard form of construction, familiar to most builders and designers."
3. http://blogs.aecom.com/connectedcities/the-renaissance-of-timber-structures/
4. http://www.theengineer.co.uk/issues/sept-2012-online/timber-renaissance/
http://blogs.aecom.com/connectedcities/the-renaissance-of-timber-structures/
5. http://www.seattle.gov/dpd/Blog/Wood%20Concrete%20of%2021st%20Century.pf
"Research suggests that wood, a local resource, vastly outperforms other common building materials like concrete and steel in terms of both carbon emissions and sequestration and engineered timber is equivalent..."
6. http://blogs.aecom.com/connectedcities/the-renaissance-of-timber-structures/
"There are also concerns around fire safety on large scale timber buildings, with a perception that they're at more risk of burning down. In reality, however, the use of thick timber sections actually has far more inherent fire resistance than an equivalent steel structure."
7. Sandin Peters Svanström, *Life cycle assessment of construction materials: the influence of assumptions in end-of-life modelling*, *International Journal of Life Cycle Assessment 19*, p.723-731, 2014
8. https://www.yatzer.com/knarvik-church-reiulf-ramstad-arkitekter
9. Silvio Carta + Stefano Tesotti, "The Future is Wood", C3 #297
10. Foster + Partners project text 11. MX_SI Project project text
12. Silvio Carta + Stefano Tesotti, "The Future is Wood", C3 #297

作用的典范：小教堂和大教堂采取的是富有戏剧性的现代化的演绎，但仍保留着传统的尖塔。从远处看，这些尖塔向人们宣告了自身作为一处朝圣之所的庄严感，在传统的哥特式宗教建筑传统中，这种设计仿佛能够连接天堂。通过使用木材竖框，博物馆和社区建筑将传统的市政建筑的柱廊与木材结合在一起。麦姬癌症中心和大象馆也融入了不同的永恒感——自然界永恒存在的、普遍的元素。

这些项目背后的建筑师通过使用木材来反映当地环境的一些方面。每个项目也都展示了材料的一个卓越特性，主要体现在其与光线的结合、低调的时尚展示，以及未采用与其他材料相对比的方式。

尽管这篇文章开始的主题是来自世界的、令人瞩目的大型建筑物的木表皮的集合，但这些建筑的精髓却是贯彻在其内部的巧妙设计以及丰富的表面材料。实际上，由于木材极高的灵敏性和创新性，木材所带来的暖意和"诗意"（在其他文章中也有所讨论）[12] 得到了进一步探讨。

along with the deft consideration of light, has also enabled the creation of calm spaces that are enveloped in an earthy material reference to nature. The Sewn Wood Research Pavilion embodies, in a more radical way perhaps, similar principles to similar effect.

Old and new

Traditional colonnades or mullions – made from wood rather than stone or concrete or conjured through vertical insertions of glass – are examples of the interplay between new and traditional or timeless elements and architectural languages: Dramatic, modern interpretations of church and cathedral, nonetheless, retain steeples, which announce them from afar as places of worship, as they stretch to the heavens in the tradition of the gothic and religious architecture; the timber mullions of Museum and Social House conjure colonnades of traditional civic buildings with wood; Maggie's Cancer Center and the Elephant House blend with a different sense of the timeless – the constant and universal elements of nature. The architects behind each of these projects have reflected something of the local environment by using wood sourced from it; each also demonstrates a great respect for the material, by allowing it to shine, in its understated-fashion, without rivalry from other materials.

While this article's starting theme was the timber skins of a collection of striking large-scale buildings from around the globe, the sophistication of design and richness of surface material have been carried through, in the majority of these projects, to their interiors. Indeed, the warmth and "poetic possibilities" of wood, discussed elsewhere,[12] have been explored with great sensitivity and innovation. Susanne Kennedy

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