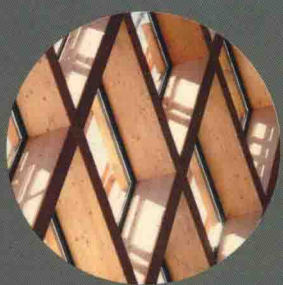


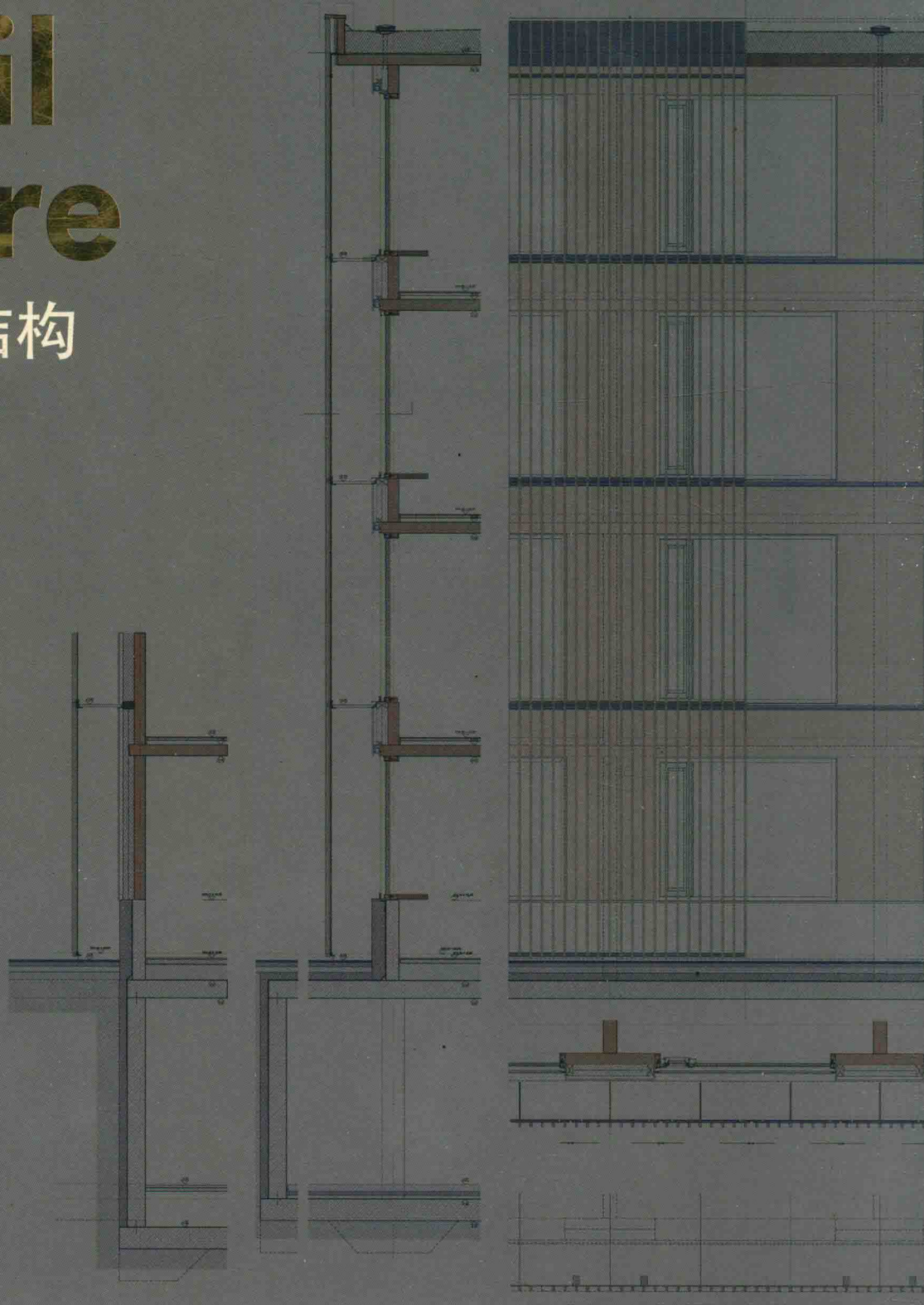
Architectural Material & Detail Structure

建筑材料与细部结构

(法) 伯纳德·布勒 编 常文心 译



Wood 木材



辽宁科学技术出版社

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Preface 前言

ARCHITECTURE IN WOOD

Wood returned to the limelight of the architectural stage

木材建筑

木材重回建筑舞台

Since time immemorial, wood has been used in primitive cultures across the world for making tools and satisfying man's most basic needs. Vitruvius saw building a shelter as a specifically human form of activity, stemming directly from early man's mastering of the art of fire and the development of sedentary communities. In this light, the most primitive forms of human habitat include huts made from branches and leaves or grottos dug into mountains. Vitruvius's interest in rudimentary shelters arose from the opportunity with which they provided him to validate a number of architectural principles, outlined in his seminal work *Ten Books on Architecture*.

The eighteenth century the oreician Laugier revisits the myth of the rough wooden hut, seeing it as the vegetable origin of thought from which the Ancient Greek concept of order stems. The metaphor of tree vessels forming a forest and the bone structure of animal skeletons are also used as examples to explain the light, natural framework of Gothic churches. Laugier's rudimentary cabin also anticipates the use of the orders in architecture; "The perpendicular wooden elements gave birth to the column; the horizontal elements positioned on top of them brought forth the entablature." "A few branches, cut down in the forest, are the only materials the builder needs. He chooses the four sturdiest and erects them perpendicular to the ground, to form a square. He then lays four more across their top, to which he fixes a further series, tilting inwards and meeting at an angle on both sides. This crudely shaped roof is then clad with a layer of tightly overlapping leaves, preventing the rain from entering and providing protection from the sun. And there the builder had it, a roof over his head." Marc-Antoine Laugier, *Essai sur l'Architecture*, Paris: Duchesne, 1755, p. 9

The rudimentary cabin as defined by Viollet-le-Duc in the second half of the nineteenth century retraces construction practices in the Gothic period. "Epergos would choose two saplings, several paces apart. He would climb onto one of them and use the weight of his body to bend it downwards. Then, with a hook-shaped branch, he would pull the summit of the second tree towards him and attach the intertwining branches of both trees together with rushes." (*Histoire de l'Habitation Humaine*).

Just like Vitruvius, Le Corbusier turned to primitive architecture as a means of legitimating new principles to which he gave precedence. Reference to primitive forms of human habitat also enabled him to endow the affinity between architecture and nature at the core of his ideas with an almost mythical status. As Jean Cuisenier argues, this is not a case of merely interpreting archaeological data or positing primitive man as a figure within a historical framework, but rather of pointing to the square, hexagon, octagon, rectangle and right angle as primary building techniques. By accrediting early man with a spontaneous command of geometry, Le Corbusier imbues the notions at the very heart of his theoretical argumentation – order, the regulatory line and modularity – with a nobility derived from their status as natural, rational building blocks.

"Take the primitive house – it shows that man is a creator of geometry whose actions are governed by geometry. Look how precise he is. Not a single piece of wood is used for its form or force, not a single tie is used without the greatest precision. And he is also economical. [...] One day, surely this hut will be a Roman Pantheon, dedicated to the gods." Le Corbusier, *Une Maison - un Palais*, 1928, Paris: Connivences, 1989, p. 38. (Image 1)

While metal came to the forefront of architectural construction in the latter half of the nineteenth century, only to be followed by concrete in the second half of the twentieth century under the effect of the Industrial Revolution and large-scale prefabrication, the pioneers of modernity continued to take a lively interest in the symbolic and structural role played by wood. When architecture lost its way in the wake of post-modernism in the 1970s and 1980s, a series of reactions were triggered in the work of theoreticians such as Kenneth Frampton who, in 1983, introduced the concept of critical regionalism in his work *Towards a Critical Regionalism: Six Points for an Architecture of Resistance*, in *The Anti-Aesthetic. Essays on Postmodern Culture*, ed. Hal Foster, Bay Press, Port Townsend. In this essay, Frampton advocates a coming together of the universal, progressive values of the modern movement with a need for a heightened attention to contextual data on the part of architects in their designs. This gave birth in the following decades to architectural works which seek



自古以来，早在原始文明时期，木材就已经作为工具制作材料被世界各地所广泛应用。建筑师维特鲁威（Vitruvius）将建筑看成庇护所，它是人类特有的活动形式，是早期人类对火的控制和定居社群的发展结果。从这个角度来讲，最原始的人类生活环境包含由树枝、树叶制成的棚屋以及在山上挖掘的洞穴。维特鲁威对原始庇护所的兴趣在于它们能让他证实一系列的建筑法则，这在他的著作《建筑十书》（*Ten Books on Architecture*）中有所体现。

18 世纪，理论家劳西耶（Laugier）再次研究了木屋的秘密，将它看成是古希腊“柱式”设计的植物原型。形成森林的树木和动物的骨架结构也是哥特式教堂轻质、自然框架的原型。劳西耶的原始小屋还显示了柱式在建筑中的运用：“垂直的木元素是立柱的前身，而它们顶部的水平元素则是立柱顶盘的设计灵感来源。”“棚屋的建造者只需要一些从森林中砍下的树枝作为建造材料。他从中选取最粗壮的四根，将其垂直固定在地面上，形成一个方形；然后在它们的顶部放置四根树枝，并由此搭建向内倾斜、呈一定角度的屋顶；最后，在造型天然的屋顶上方铺上一层密实的树叶，遮阳挡雨。这样一来，建造者就有栖身之所了。”（马克·安东尼·劳西耶，《论建筑》；Marc-Antoine Laugier, *Essai sur l'Architecture*, Paris: Duchesne, 1755, p. 9）

维欧勒·勒·杜克（Viollet-le-Duc）在 19 世纪下半叶所提出的“原始小屋”概念重现了哥特式时期的建筑实践活动。“爱泼格斯（Epergos）会选择两棵相距几步的小树，爬上其中一棵，用自身的重量将其向下压弯，然后利用钩形的树枝把另一棵树的顶端拉向自己，最后用灯芯草将两棵树的树枝缠绕起来。”（《人类居住史》；*Histoire de l'Habitation Humaine*）

与维特鲁威一样，勒·柯布西耶（Le Corbusier）也用原始建筑来验证他的新理论。通过参考人类原始的居住形式，他还在自己的理念核心中提出了建筑与自然的密切关系。正如珍·库斯尼尔（Jean Cuisenier）所提到的，这并不仅仅解释了考古数据或将原始人定位在历史框架中的问题，而且指出了方形、六边形、八边形、长方形和直角是最原始的建造技术。柯布西耶相信早期的人类能无意识地掌握几何图形，并从天然、理性的建筑模块中提取了一种高贵的特质，将其渗透到了自己辩证理论的核心——秩序、基准线和模块化之中。

“原始住宅展示了人是几何图形的创造者，他们的行动受几何图形支配，无比精准。每一片木材都经过了调整，每一个绳结都无比精准。同时，他们还十分经济节约……总有一天，这座小屋会变成罗马万神殿，向众神致敬。”（勒·柯布西耶《一栋住宅，一座宫殿》；Le Corbusier, *Une Maison - un Palais*, 1928, Paris: Connivences, 1989, p. 38.）（图 1：勒·柯布西耶在罗克布吕讷-卡普马丹生活最后几年居住的小木屋）

to create meaningful bonds with the immediate context of the site on which they stand, and a natural return to wood, in harmonious union with concrete, in a number of key achievements, such as Renzo Piano's Tjibaou Cultural Centre, built in 1998. During the 1990s, wood returned to the limelight of the architectural stage, becoming a meaningful alternative to the lacklustre repetition and uninspired replication of the defining features of International Style across the globe. Architects turned once again to wood in combination with other materials, seeking through their specific designs to return to a greater architectural authenticity, to buildings which converse with context and the natural landscape. Today, wood gives rise to buildings which are seen as eminently human, closer to the people who live and work within them, with far greater respect for environmental concerns.(Image 2)

I came to wood early in my career as an architect, using it for housing developments lodged within the framework of Bordeaux's historic wine warehouses. I chose wood not only for its structural qualities, but also for the warm and generous atmosphere it creates, providing an environment for people to live in where quality of life takes pride of place: In Northern and Eastern Europe, growing timber is deeply rooted in local tradition, but elsewhere, in France for instance, this is not as yet the case. One often hears inhabitants or political decision-makers saying wood "doesn't age well", or looks shabby with passing time. This is forgetting that like any other material, it requires maintenance, and that some forms of ageing may be anticipated from the outset and thereby prevented, decelerated or cured with a regular lick of paint. It is also forgetting that in some regions, especially those along the shores of south-west France's Atlantic coast, the fishermen's huts so prized today have gracefully accepted the gradual changes wrought to their initial colour, and the subtle silvery grey they exhibit today is now such an iconic feature of the marine landscape that no one could ever imagine them differently.

Wood is a living material. It requires either maintenance or a more insightful acceptance of its evolution, a subject of great significance illustrated in the pages of this book through the varied perspectives offered on this question across the world. They show how pine, cedar, larch or spruce may be used in multiple ways and in multiple configurations. Numerous demonstrations of how wood may be successfully employed are amply illustrated, and the book offers a discerning and informative analysis of such implementation. The example of mixed material buildings, where wood has been used in association with materials such as concrete, glass and metal, shows to what extent a judiciously selected type of timber, implemented wisely, not only contributes to the overall comfort and sense of well being a building exudes, but also provides the means of its effortless integration into the immediate environment.

Wood's thermal and acoustic qualities are still too often underestimated. This book analyses these specificities and presents the reader-architect with tools for resolving practical problems encountered in design processes on an everyday basis. The buildings explored in detail here show just how inspiring a material wood is and how rich its

potential, making this book a valuable addition to any architect's personal library, beautifully page set and illustrated, eminently useful. I would like to invite the reader to attentively examine the projects presented within its pages, in the hope that they will be a source of inspiration for the implementation of a material at the very crux of our century's concerns.

19 世纪后半叶, 金属走到了建筑的前线; 20 世纪下半叶, 在工业革命和大规模预制建造的影响下, 混凝土紧随其后。然而, 现代主义的先锋们始终对木材的象征意义和结构作用保持着兴趣。20 世纪 70、80 年代, 建筑在后现代主义中迷失了自己, 引发了理论家们的连锁反应。1983 年, 肯尼斯·弗兰普顿 (Kenneth Frampton) 在文章《论批判性地域主义: 反抗建筑的六点》(Six Points for an Architecture of Resistance, in The Anti-Aesthetic. Essays on Postmodern Culture, ed. Hal Foster, Bay Press, Port Townsend) 中提出了批判性地域主义的概念。在文章中, 弗兰普顿倡导将通用、进步的现代运动价值观集中起来, 让建筑师在设计中提高对环境数据的注意。这一理论促使了在未来几十年中, 建筑开始寻求与环境之间的融合。木材开始回归建筑, 并与混凝土和谐地结合起来, 如伦佐·皮亚诺 (Renzo Piano) 的吉巴欧文化中心 (1998 年)。20 世纪 90 年代, 木材回到了建筑舞台的灯光下, 调节了缺乏生气、毫无特色的全球化国际风格建筑。建筑师又一次将木材与其他材料结合起来, 通过独特设计使建筑回归真我, 打造能够与环境与自然对话的建筑。如今, 木材让建筑更加人性化, 更贴近生活和工作于其中的人们, 也更尊重环境。(图 2: 吉巴欧文化中心)

我在自己建筑师生涯的初期就接触了木材, 用木材在波尔多老葡萄酒库的框架上设计了一个住宅项目。我选择木材不仅是因为它的结构特质, 而且因为它能营造温暖、热情的氛围, 为人们提供高品质的生活环境。在北欧和东欧, 木材的种植是一种根深蒂固的传统; 但是在法国等国家, 则并非如此。一些居民或决策者总会说“木材太容易老化”或者“随着时间的流逝会显得破败”。这种说法显然忘记了木材像其他材料一样, 都需要维护。只要在木材表面涂上一层油漆, 就能避免一些老化过程或使其减缓。他们还忘记了, 在一些地区, 特别是法国西南部的大西洋沿岸, 渔夫的小木屋是如何珍贵。它们经历了风雨的洗礼, 呈现为精致的银灰色, 现在已经成为海岸上一道独特的风景线。

木材是一种活的材料。它需要维护, 或者是经历微妙而独特的进化。本书通过来自全球各地的设计项目对此进行了详细的讨论。它们呈现了松木、雪松木、落叶松木、云杉木等的各种应用方式和配置。本书充分展示了木材在建筑项目的应用方式并且对其进行了敏锐和详细的分析。在混合材料建筑中, 木材与混凝土、玻璃、金属等材料结合起来。它们证明了合理选择木材并进行应用组合不仅有助于提高建筑的整体舒适度, 还能使其毫不费力地融入直接环境。

木材的热性能和隔音性能常常被低估。本书分析了这些特点并向读者呈现了如何在设计过程中解决这些实践问题。经过详细分析的建筑项目展示了木材的启发性和丰富的潜力。本书将成为建筑从业人员私人藏书中的精品, 拥有精美的页面和实用的图解。我希望读者能认真分析其中收录的项目, 从中获得灵感, 从而在未来的项目中成功地运用木材, 解决我们在这个世纪所面临的环境难题。

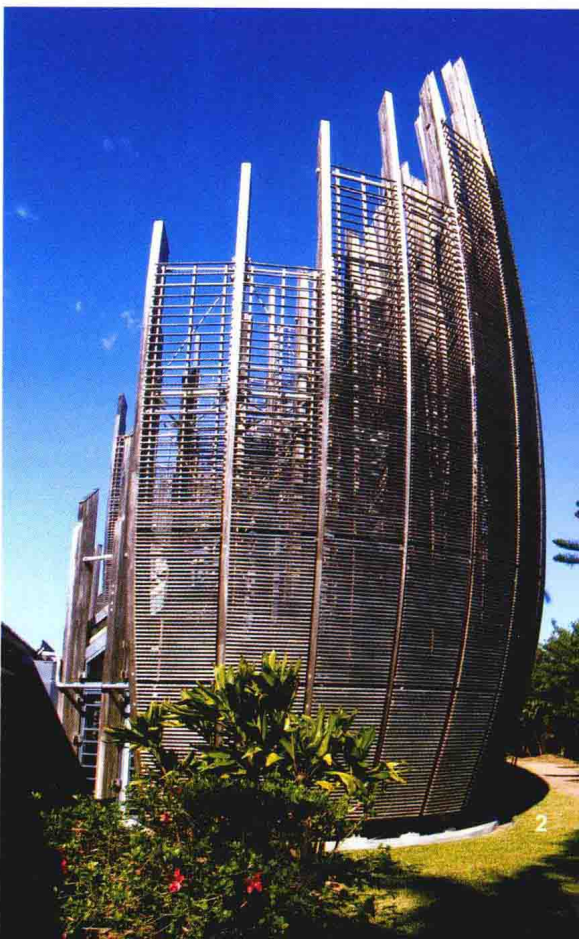
Text by Bernard Bühler (Agence Bernard Bühler)
原文: 伯纳德·布勒 (伯纳德·布勒建筑事务所)

Image 1 The cabin where Le Corbusier spent his last years in Roquebrune-Cap-Martin
Source: Wikipedia

Image 2 Jean-Marie Tjibaou Cultural Centre in Nouméa
Source: Wikipedia

图1 勒·柯布西耶在罗克布吕讷-卡普马丹生活最后几年居住的小木屋
来源: 维基百科

图2 吉巴欧文化中心
来源: 维基百科



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木材建筑 木材重回建筑舞台

Since time immemorial, wood has been used in primitive cultures across the world for making tools and satisfying man's most basic needs. Vitruvius saw building a shelter as a specifically human form of activity, stemming directly from early man's mastering of the art of fire and the development of sedentary communities. In this light, the most primitive forms of human habitat include huts made from branches and leaves or grottos dug into mountains. Vitruvius's interest in rudimentary shelters arose from the opportunity with which they provided him to validate a number of architectural principles, outlined in his seminal work *Ten Books on Architecture*.

The eighteenth century the theoretician Laugier revisits the myth of the rough wooden hut, seeing it as the vegetable origin of thought from which the Ancient Greek concept of order stems. The metaphor of tree vessels forming a forest and the bone structure of animal skeletons are also used as examples to explain the light, natural framework of Gothic churches. Laugier's rudimentary cabin also anticipates the use of the orders in architecture; "The perpendicular wooden elements gave birth to the column; the horizontal elements positioned on top of them brought forth the entablature." "A few branches, cut down in the forest, are the only materials the builder needs. He chooses the four sturdiest and erects them perpendicular to the ground, to form a square. He then lays four more across their top, to which he fixes a further series, tilting inwards and meeting at an angle on both sides. This crudely shaped roof is then clad with a layer of tightly overlapping leaves, preventing the rain from entering and providing protection from the sun. And there the builder had it, a roof over his head." Marc-Antoine Laugier, *Essai sur l'Architecture*, Paris: Duchesne, 1755, p. 9

The rudimentary cabin as defined by Viollet-le-Duc in the second half of the nineteenth century retraces construction practices in the Gothic period. "Epergos would choose two saplings, several paces apart. He would climb onto one of them and use the weight of his body to bend it downwards. Then, with a hook-shaped branch, he would pull the summit of the second tree towards him and attach the intertwining branches of both trees together with rushes." (*Histoire de l'Habitation Humaine*).

Just like Vitruvius, Le Corbusier turned to primitive architecture as a means of legitimating new principles to which he gave precedence. Reference to primitive forms of human habitat also enabled him to endow the affinity between architecture and nature at the core of his ideas with an almost mythical status. As Jean Cuisenier argues, this is not a case of merely interpreting archaeological data or positing primitive man as a figure within a historical framework, but rather of pointing to the square, hexagon, octagon, rectangle and right angle as primary building techniques. By accrediting early man with a spontaneous command of geometry, Le Corbusier imbues the notions at the very heart of his theoretical argumentation – order, the regulatory line and modularity – with a nobility derived from their status as natural, rational building blocks.

"Take the primitive house – it shows that man is a creator of geometry whose actions are governed by geometry. Look how precise he is. Not a single piece of wood is used for its form or force, not a single tie is used without the greatest precision. And he is also economical. [...] One day, surely this hut will be a Roman Pantheon, dedicated to the gods." Le Corbusier, *Une Maison - un Palais*, 1928, Paris: Connivences, 1989, p. 38. (Image 1)

While metal came to the forefront of architectural construction in the latter half of the nineteenth century, only to be followed by concrete in the second half of the twentieth century under the effect of the Industrial Revolution and large-scale prefabrication, the pioneers of modernity continued to take a lively interest in the symbolic and structural role played by wood. When architecture lost its way in the wake of post-modernism in the 1970s and 1980s, a series of reactions were triggered in the work of theoreticians such as Kenneth Frampton who, in 1983, introduced the concept of critical regionalism in his work *Towards a Critical Regionalism: Six Points for an Architecture of Resistance*, in *The Anti-Aesthetic. Essays on Postmodern Culture*, ed. Hal Foster, Bay Press, Port Townsend. In this essay, Frampton advocates a coming together of the universal, progressive values of the modern movement with a need for a heightened attention to contextual data on the part of architects in their designs. This gave birth in the following decades to architectural works which seek

自古以来，早在原始文明时期，木材就已经作为工具制作材料被世界各地所广泛应用。建筑师维特鲁威（Vitruvius）将建筑看成庇护所，它是人类特有的活动形式，是早期人类对火的控制和定居社群的发展结果。从这个角度来讲，最原始的人类生活环境包含由树枝、树叶制成的棚屋以及在山上挖掘的洞穴。维特鲁威对原始庇护所的兴趣在于它们能让他证实一系列的建筑法则，这在他的著作《建筑十书》（*Ten Books on Architecture*）中有所体现。

18世纪，理论家劳西耶（Laugier）再次研究了木屋的秘密，将它看成是古希腊“柱式”设计的植物原型。形成森林的树木和动物的骨架结构也是哥特式教堂轻质、自然框架的原型。劳西耶的原始小屋还显示了柱式在建筑中的运用：“垂直的木元素是立柱的前身，而它们顶部的水平元素则是立柱顶盘的设计灵感来源。”“棚屋的建造者只需要一些从森林中砍下的树枝作为建造材料。他从中选取最粗壮的四根，将其垂直固定在地面上，形成一个方形；然后在它们的顶部放置四根树枝，并由此搭建向内倾斜、呈一定角度的屋顶；最后，在造型天然的屋顶上方铺上一层密实的树叶，遮阳挡雨。这样一来，建造者就有栖身之所了。”（马克·安东尼·劳西耶，《论建筑》；Marc-Antoine Laugier, *Essai sur l'Architecture*, Paris: Duchesne, 1755, p. 9）

维欧勒·勒·杜克（Viollet-le-Duc）在19世纪下半叶所提出的“原始小屋”概念重现了哥特式时期的建筑实践活动。“爱泼格斯（Epergos）会选择两棵相距几步的小树，爬上其中一棵，用自身的重量将其向下压弯，然后利用钩形的树枝把另一棵树的顶端拉向自己，最后用灯芯草将两棵树的树枝缠绕起来。”（《人类居住史》；*Histoire de l'Habitation Humaine*）

与维特鲁威一样，勒·柯布西耶（Le Corbusier）也用原始建筑来验证他的新理论。通过参考人类原始的居住形式，他还在自己的理念核心中提出了建筑与自然的密切关系。正如珍·库斯尼尔（Jean Cuisenier）所提到的，这并不仅仅解释了考古数据或将原始人定位在历史框架中的问题，而且指出了方形、六边形、八边形、长方形和直角是最原始的建造技术。柯布西耶相信早期的人类能无意识地掌握几何图形，并从天然、理性的建筑模块中提取了一种高贵的特质，将其渗透到了自己辩证理论的核心——秩序、基准线和模块化之中。

“原始住宅展示了人是几何图形的创造者，他们的行动受几何图形支配，无比精准。每一片木材都经过了调整，每一个绳结都无比精准。同时，他们还十分经济节约……总有一天，这座小屋会变成罗马万神殿，向众神致敬。”（勒·柯布西耶《一栋住宅，一座宫殿》；Le Corbusier, *Une Maison - un Palais*, 1928, Paris: Connivences, 1989, p. 38.）（图1：勒·柯布西耶在罗克布吕讷-卡普马丹生活最后几年居住的小木屋）



to create meaningful bonds with the immediate context of the site on which they stand, and a natural return to wood, in harmonious union with concrete, in a number of key achievements, such as Renzo Piano's Tjibaou Cultural Centre, built in 1998. During the 1990s, wood returned to the limelight of the architectural stage, becoming a meaningful alternative to the lacklustre repetition and uninspired replication of the defining features of International Style across the globe. Architects turned once again to wood in combination with other materials, seeking through their specific designs to return to a greater architectural authenticity, to buildings which converse with context and the natural landscape. Today, wood gives rise to buildings which are seen as eminently human, closer to the people who live and work within them, with far greater respect for environmental concerns.(Image 2)

I came to wood early in my career as an architect, using it for housing developments lodged within the framework of Bordeaux's historic wine warehouses. I chose wood not only for its structural qualities, but also for the warm and generous atmosphere it creates, providing an environment for people to live in where quality of life takes pride of place. In Northern and Eastern Europe, growing timber is deeply rooted in local tradition, but elsewhere, in France for instance, this is not as yet the case. One often hears inhabitants or political decision-makers saying wood "doesn't age well", or looks shabby with passing time. This is forgetting that like any other material, it requires maintenance, and that some forms of ageing may be anticipated from the outset and thereby prevented, decelerated or cured with a regular lick of paint. It is also forgetting that in some regions, especially those along the shores of south-west France's Atlantic coast, the fishermen's huts so prized today have gracefully accepted the gradual changes wrought to their initial colour, and the subtle silvery grey they exhibit today is now such an iconic feature of the marine landscape that no one could ever imagine them differently.

Wood is a living material. It requires either maintenance or a more insightful acceptance of its evolution, a subject of great significance illustrated in the pages of this book through the varied perspectives offered on this question across the world. They show how pine, cedar, larch or spruce may be used in multiple ways and in multiple configurations. Numerous demonstrations of how wood may be successfully employed are amply illustrated, and the book offers a discerning and informative analysis of such implementation. The example of mixed material buildings, where wood has been used in association with materials such as concrete, glass and metal, shows to what extent a judiciously selected type of timber, implemented wisely, not only contributes to the overall comfort and sense of well being a building exudes, but also provides the means of its effortless integration into the immediate environment.

Wood's thermal and acoustic qualities are still too often underestimated. This book analyses these specificities and presents the reader-architect with tools for resolving practical problems encountered in design processes on an everyday basis. The buildings explored in detail here show just how inspiring a material wood is and how rich its

potential, making this book a valuable addition to any architect's personal library, beautifully page set and illustrated, eminently useful. I would like to invite the reader to attentively examine the projects presented within its pages, in the hope that they will be a source of inspiration for the implementation of a material at the very crux of our century's concerns.

19 世纪后半叶，金属走到了建筑的前线；20 世纪下半叶，在工业革命和大规模预制建造的影响下，混凝土紧随其后。然而，现代主义的先锋们始终对木材的象征意义和结构作用保持着兴趣。20 世纪 70、80 年代，建筑在后现代主义中迷失了自己，引发了理论家们的连锁反应。1983 年，肯尼斯·弗兰普顿（Kenneth Frampton）在文章《论批判性地域主义：反抗建筑的六点》（Six Points for an Architecture of Resistance, in The Anti-Aesthetic. Essays on Postmodern Culture, ed. Hal Foster, Bay Press, Port Townsend）中提出了批判性地域主义的概念。在文章中，弗兰普顿倡导将通用、进步的现代运动价值观集中起来，让建筑师在设计中提高对环境数据的注意。这一理论促使了在未来几十年中，建筑开始寻求与环境之间的融合。木材开始回归建筑，并与混凝土和谐地结合起来，如伦佐·皮亚诺（Renzo Piano）的吉巴欧文化中心（1998 年）。20 世纪 90 年代，木材回到了建筑舞台的灯光下，调节了缺乏生气、毫无特色的全球化国际风格建筑。建筑师又一次将木材与其他材料结合起来，通过独特设计使建筑回归真我，打造能够与环境与自然对话的建筑。如今，木材让建筑更加人性化，更贴近生活和工作于其中的人们，也更尊重环境。（图 2：吉巴欧文化中心）

我在自己建筑师生涯的初期就接触了木材，用木材在波尔多老葡萄酒库的框架上设计了一个住宅项目。我选择木材不仅是因为它的结构特质，而且因为它能营造温暖、热情的氛围，为人们提供高品质的生活环境。在北欧和东欧，木材的种植是一种根深蒂固的传统；但是在法国等国家，则并非如此。一些居民或决策者总会说“木材太容易老化”或者“随着时间的流逝会显得破败”。这种说法显然忘记了木材像其他材料一样，都需要维护。只要在木材表面涂上一层油漆，就能避免一些老化过程或使其减缓。他们还忘记了，在一些地区，特别是法国西南部的大西洋沿岸，渔夫的小木屋是如何珍贵。它们经历了风雨的洗礼，呈现为精致的银灰色，现在已经成为海岸上一道独特的风景线。

木材是一种活的材料。它需要维护，或者是经历微妙而独特的进化。本书通过来自全球各地的设计项目对此进行了详细的讨论。它们呈现了松木、雪松木、落叶松木、云杉木等的各种应用方式和配置。本书充分展示了木材在建筑项目的应用方式并且对其进行了敏锐和详细的分析。在混合材料建筑中，木材与混凝土、玻璃、金属等材料结合起来。它们证明了合理选择木材并进行应用组合不仅有助于提高建筑的整体舒适度，还能使其毫不费力地融入直接环境。

木材的热性能和隔音性能常常被低估。本书分析了这些特点并向读者呈现了如何在设计过程中解决这些实践问题。经过详细分析的建筑项目展示了木材的启发性和丰富的潜力。本书将成为建筑从业人员私人藏书中的精品，拥有精美的页面和实用的图解。我希望读者能认真分析其中收录的项目，从中获得灵感，从而在未来的项目中成功地运用木材，解决我们在这个世纪所面临的环境难题。

Text by Bernard Bühler (Agence Bernard Bühler)
原文：伯纳德·布勒（伯纳德·布勒建筑事务所）

Image 1 The cabin where Le Corbusier spent his last years in Roquebrune-Cap-Martin
Source: Wikipedia

Image 2 Jean-Marie Tjibaou Cultural Centre in Nouméa
Source: Wikipedia

图1 勒·柯布西耶在罗克布吕讷-卡普马丹生活最后几年居住的小木屋
来源：维基百科

图2 吉巴欧文化中心
来源：维基百科



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