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海基宁-科莫宁设计事务所

Heikkinen-Komonen

禅和生成建筑的艺术

海基宁一科莫宁作品中的概念和设计

尤哈尼·帕拉斯玛

第一眼看去,米科·海基宁(Mikko Heikkinen)和马尔库·科莫宁(Markku Komonen)设计的一座座建筑差不多会被当作眼下正流行的极少主义者视觉审美的范例。然而,他们的建筑艺术牢牢地扎根于芬兰的传统和国际化的现代主义。这与其说是排他的,不如说是同化和融合的建筑艺术;与其说是视觉形象的建筑,不如说是一种反映本质的建筑。它同等地吸收,利用了当代极少主义者的雕塑和人性的。古老的符号化构造,同时也融汇了注重实用的地方建筑以及宇宙的几何学和时间之谜。

海基宁-科莫宁的建筑是一种浓缩和萃取过程的产物,融汇了程式化的、功能的和技术参数与文脉背景的密集表现。对这个组合来说,文脉与其解释成真实地点中延续的简单特色,不如理解为人类在罢时空概念上的处境。在还原和简洁的表象下,这种建筑艺术渴望达到一种史诗般宏大的境界。科莫宁引用康斯坦丁·布兰库西(Constantin Brancusi)的一个论点,"简单不是艺术的目的,而是一个最终的结果。"以此作为这个事务所的艺术信条。艺术中有说服力的简单总是一种浓缩过程的结果,而不是减少的结果。科莫宁引用安东·契柯夫(Anton Chekhov)对马克西姆·高尔基的指导来强调艺术的浓缩的重要性,"你仅有的缺点是缺乏节制和稍逊优雅。当某人对一个给定的行为做出最低限度的动作,这就是优雅。你做的太多了……自然描述中的色彩和表达性是通过简单独自达成的,通过像"太阳下山了"、"天渐渐暗了"、"开始下雨了"这样简单的短语。""米科·海基宁和马尔库·科莫宁协力完成的二重唱努力用最少的动作达到高雅。但这些动作都同本质有关。

这个事务所的建筑常常反映了一种高技的氛围,虽然如此,它的作品似乎更多响应了现代主义者中先锋一代的科技诗篇,诸如皮埃尔·夏劳 (Pierre Chareau) 和让·普鲁韦 (Jean Prouve),而不是现在的这些艺术名家的高技风格。与此同时,两位建筑师对机器美学颇有微词。"电梯技术造就的偶像,一种机器浪漫主义,在建筑艺术中是一种青春期的表现,在文化的其他领域也是如此,"科莫宁这样写道。他们总体上都对技术明显地持一种平淡的态度。他们对待技术、结构和材料注重实效的观点反映在了这个公司最近在西部非洲几内亚的一些项目上,这些由基本要素构造的建筑使用了当地的构造方法、技巧和材料(例如,生土、未锯的木材和竹子)。这些自然力作用下的建筑所具有的抒情气质,揭示了诗化构造的建筑观念的力量,无需考虑有无雅致的技术。

建筑师热切地想要一种独特的宁静,以便为他们的建筑所预设的活动清

ZEN and The Art of Making Architecture

Concept and Design in the Work of Heikkinen-Komonen Juhani Pallasmaa

At first glance, a building by Mikko Heikkinen and Markku Komonen could be taken merely as an example of the currently fashionable minimalist visual aesthetic. Their architecture, however, is firmly rooted in the traditions of Finnish and international modernism. It is an architecture of assimilation and amalgamation rather than exclusion, of essence rather than visual image. It draws equally on contemporary minimalist sculpture and humanity's archaic symbolic constructions, on pragmatic vernacular architecture and the mysteries of cosmic geometry and time.

The product of a process of condensation and distillation, the architecture of Heikkinen-Komonen fuses together programmatic, functional, and technical parameters with a dense projection of contextual references. For this team context is interpreted as humankind's conceptual situation in place and time rather than as constituting simple characteristics of the actual site. Beneath its reductive and laconic surface, the architecture aspires to an epic scope. Komonen cites a statement by Constantin Brancusi, "Simplicity is not a goal in art, but an end result." as the artistic credo of the partnership.1 Authoritative simplicity in art is always a result of a process of compression rather than reduction. Komonen underlines the importance of artistic condensation in his citation of Anton Chekhov's instruction to Maxim Gorky: "Your only fault is your lack of restraint and lack of grace. When someone expends the least amount of motion on a given action, that's grace. You tend to expend too much... Color and expressivity in nature descriptions are achieved through simplicity alone, through simple phrases like'the sun set,"it grew dark,"it began to rain."² The collaborative duo of Mikko Heikkinen and Markku Komonen strives for elegance through a minimum number of moves. But these moves are calculated to engage the essentials.

The firm's architecture often reflects a high-tech ambience; however, its work seems to echo the technological poetry of the pioneering generation of modernists, such as Pierre Chareau and Jean Prouve, more than today's virtuoso high-tech style. At the same time, the architects are critical of the machine aesthetic. "Elevating technology to a fetish, a Machine Romanticism, was an expression of puberty in architecture as well as in other areas of culture, "writes Komonen.3 The two clearly take an unromantic attitude toward technology in general. Their pragmatic outlook in regard to technology, structure, and material is reflected in the firm's recent projects in Guinea, West Africa, which utilize local construction methods, skills, and materials (for example, stabilized earth and unsawed wood and bamboo). The lyrical mood of these elemental projects reveals the power of an architectural idea to poetize construction regardless of the presence or lack of technical sophistication.

理舞台,无论其关心的是建立一种家和居住的感觉、创造一个工作的环境,还是通过陈列艺术品来展现它们充满情感的力量。它们仍是可理解的,虽然一种出于风格原因而减少到最低限度的空间往往完全不是中性的:一个创造以中性为支柱的空间必须具有丰富的无形的潜流和混响。一种生动的灰色是由所有颜色组成的。

米科·海基宁和马尔库·科莫宁的团队训练有素,是芬兰理性主义传统的最新一环,芬兰的理性主义始于西古德·弗罗斯特鲁斯(Sigurd Frosterus)和古斯塔夫·斯特伦格尔(Gustaf Strengell)在1904年影响深远的宣传册中提出"铁和头脑的风格"的宣言书,他们反对这个世纪之交时发生的民族浪漫主义的潮流"。理性主义者的信条是如此雄辩,以至于整个民族浪漫主义运动嘎然而止。参照当下对公共注意力和新奇的疯狂追求,对头脑清醒的建筑艺术的呼唤是有实际意义的。

在芬兰建筑随后的历史中,一股古典和理性主义者的潮流——以表现结构的清晰性为基础——同一种浪漫和表现主义的倾向交替出现,后者的重点在于异质的形状和空间。前一种潮流具有国际性的指向,并同社会关注结合,然而后一种方法阐述的是地区主义的主题,并强调个体夸大的概念。发展于20世纪50年代后期的构成理性主义,在1968年统治了芬兰的建筑思想界,其时米科·海基宁和马尔库·科莫宁都刚开始在赫尔辛基技术大学学习。这一年发生了"巴黎之春",这一事件对芬兰建筑师的自我认同产生了强力冲击。传统上不关心政治的芬兰建筑师们,按照芬兰建筑师协会的说法就是"客户的受托人",一下子被卷进了激烈的政治争论,关注社会公正、资源的误用和全球的污染问题。作为艺术的一种表现形式的建筑,其本质也受到质疑。毫无疑问,这种幻灭、觉醒的气氛强化了这个二人组合的现实感,但最终也坚定了他们对于建筑的艺术天性的确信。

20世纪60年代年轻的芬兰构成主义者都是奥丽斯·布鲁姆斯泰德 (Aulis Blomsted)和阿尔诺·鲁苏武奥里 (Aarno Ruusuvuori)以前的学生,这一运动从密斯·凡·德·罗的结构古典主义、20世纪20年代的俄国和中欧的构成派、20世纪40年代末50年代初的加利福尼亚理性主义者以及《艺术和建筑》(Arts & Architecture)杂志,甚至从传统的日本建筑中汲取灵感。布鲁姆斯泰德受的是20世纪20年代功能主义的先锋精神的教育,鲁苏武奥里早就起而反对芬兰战后的浪漫主义运动。他们两人一起离开了在赫尔辛基技术大学建筑系的教席,这时海基宁和科莫宁刚刚进校。但是,布鲁姆斯泰德的

The architects aspire to a distinct quietness in order to clear the stage for the activities for which their buildings are intended, whether it concerns establishing a sense of domesticity and home, creating an environment for work, or displaying objects of art to reveal their full emotive power. They remain cognizant, however, that a stylistically reductive minimal space is usually far from being neutral; a space that creates supportive neutrality has to have rich invisible undercurrents and reverberations. A vivid gray is composed of all colors.

The well-trained team of Mikko Heikkinen and Markku Komonen is the latest link in the chain of Finnish rationalism, which began with the proclamation of an "iron and brain style" by Sigurd Frosterus and Gustaf Strengell in 1904 in their influential pamphlet against the nationalistic romantic tendencies occurring at the turn of the century. The rationalist credo was so convincingly argued that it brought—the entire National Romantic movement to a sudden end. Their espousal of a sane architecture is once again valid in light of the current frantic search for publicity-grabbing and novelty.

In the subsequent history of Finnish architecture, a classical and rationalist tendency, based on a clear articulation of structure, has alternated with a romantic and expressionist orientation that emphasizes idiosyncratic shape and space. The first tendency is internationally oriented and articulates social concerns, whereas the latter approach elaborates regionalist themes and stresses a romantic concept of individuality. Constructivist rationalism, which developed after the late 1950s, dominated Finnish architectural thinking at the time Mikko Heikkinen and Markku Komonen both began their studies at the Helsinki University of Technology in 1968-the year of the Paris Spring, which had a powerful impact on the self-identity of Finnish architects. Traditionally apolitical Finnish architects, "trustees of the client? in accordance with the code of the Association of Finnish Architects, were suddenly drawn into the middle of a heated political debate on social injustice, misuse of resources, asnd global pollution. The essence of architecture as a form of art was questioned altogether. No doubt, this air of disillusionment strengthened the sense of reality of the duo, but eventually it also strengthened their convictions about the artistic nature of architecture.

The young Finnish constructivist generation of the 1960s was composed of former students of Aulis Blomstedt and Aarno Ruusuvuori; and the movement drew its inspiration from the structural classicism of Mies van der Rohe, Russian and Central European constructivism of the 1920s, the California rationalists of the late 1940s and early 1950s associated with Arts & Architecture magazine, and even from traditional Japanese architecture. Blomstedt, who had been educated in the 1920s in the pioneering spirit of functionalism, and Ruusuvuori, who had risen against the

伦理姿态和对农夫般节制的欣赏仍有持久的影响,同样,鲁苏武奥里的极少主义也是如此,他混合了野性主义的混凝土表面和优雅轻巧的细部处理。布鲁姆斯泰德从事于对建筑的和谐性原理的研究,作为一位忠诚的毕达哥拉斯追随者,他代表了一种持续了200多年之久的传统。在海基宁和科莫宁的文章里,他们响应了布鲁姆斯泰德在自然和简单方面的影响,还有他建立在简单数字基础上的比例偏好,以此反对黄金分割这一更为神秘的的比例系统。

20世纪60年代,阿尔瓦·阿尔托在芬兰的建筑风景中是一个无以撼动的人物。然而构成派团体却提供了针对老化的院士们表现主义和浪漫主义方法的纲领性对策。虽然海基宁-科莫宁的作品同阿尔托的建筑只有少许的相像,但它几乎不可避免地从大师那里得到启发。

除了芬兰现代主义的历史之外,在这对伙伴的作品中还能感受到国际化的现代主义成分:欧洲大陆功能主义的抽象白色,朱塞佩·泰拉尼(Giuseppe Terragni)和阿达尔贝托·里贝拉(Adalberto Libera)的意大利构成派的古典主义,以及更新的阿尔多·凡·艾克(Aldo van Eyck)和赫尔曼·赫茨贝格(Herman Hertzberger)的结构主义策略。同样,俄罗斯构成派充满激情和力量的方案也在他们的设计中有所追忆。轻盈漂浮和运动的构思,让人们想起埃尔·利西茨基(El Lisitzky)和卡西米尔·马列维奇(Kasimir Malevich),然而对应的矩形,圆和弧线,则勾起了人们对伊万·利奥尼多夫(Ivan Leonidov)。虚构的畅相方案的回忆

通过他们的投标方案。展览设计以及早期的实际工程,演化出了一套这个团队的独特词汇。1986年,他们的方案赢得了万塔的赫雷卡(Heureka)芬兰科学中心方案竞标,从而在专业上开始成熟并得到公众的承认。他们的设计策略是使用基本元素的体块,通过巧妙的变形置换将一个体块同另一个体块进行渗透和交叉。在海基宁和科莫宁作品的发展过程中可以辨别出三个构成的策略,这就是,基本元素矩形,圆柱形和弧形的体块和形状拼贴在一起,有一个占统治地位的矩形体量或线性的长条,同这个体块一起,包容其中或突出其上的有一些变形的、装饰性的体积元素,最后是一个静态的极少主义的体块,依赖于它由集合的逻辑所引发的重力,材料、质感、透明度,色彩和细部感觉的建筑上的碰撞。

第一个策略来源于构成派和至上主义的先例,第二个类似于解构主义的潮流,第三个策略同美国极少主义雕塑的方法有相似之处。海基宁和科莫宁的设计,起初发展的方向是越来越复杂,从在首层平面中平面化并置的元素到看上去很随意的空间构成,从为格陵兰岛努克市的文化中心所作的竞赛方案,和为拉赫蒂的住宅博览会所作的有趣的儿童小屋中可以感受到这一点,现在

postwar romantic movement in Finland, had both left their teaching posts at the Faculty of Architecture of the Helsinki University of Technology by the time Heikkinen and Komonen arrived. But Blomstedt's ethical stance and appreciation of peasantlike restraint as well as Ruusuvuori's minimalism, which combines Brutalist concrete surfaces with elegantly ethereal detailing, remained enduring influences. Blomstedt was engaged in a fervent study of the harmonic principles of architecture. As a devoted Pythagorean, he represented a tradition that has persisted for more than two thousand years. In their writings, Heikkinen and Komonen echo Blomstedt't affection for naturalness and simplicity, and his preference for proportions based on small numbers as opposed to the more mystical proportional system of the golden section.⁵

During the 1960s Alvar Aalto was the overpowering figure of the Finnish architectural scene. The constructivist group, however, provided a programmatic counterpoint to the expressive and romantic approach of the aging academician. Although the work of Heikkinen-Komonen bears little similarity to Aalto's architecture, it has hardly managed to escape inspiration from the master.

In addition to the history of Finnish modernism,ingredients of international modernism can be felt in the partner's work:the abstracted whiteness of continental functionalism,the Italian constructivist classicism of Giusepp Terragni and Adalberto Libera,and the more recent structuralist strategies of Aldo van Eyck and Herman Hertzberger. The impassioned and forceful projects of Russian constructivism are evoked in their designs as well, The ideal of weightless flotation and movement brings to mind El Lissitzky and Kasimir Malevich, whereas the counterpoint of rectangles, circles, and arcs recalls the mythical projects of Ivan Leonidov.

The signature vocabulary of the team evolved through their competition projects and exhibition designs, and in their early executed work. They first achieved both professional maturity and public recognition in 1986 with their winning competition entry for the Heureka Finnish Science Center, in Vantaa. The architects? design strategy utilized elemental volumes, interpenetrating and intersecting one another in subtle skew displacements, with occasional curved elements. Three compositional strategies can be identified in the development of Heikkinen-Komonen's work: this collage of elementary rectangular, cylindrical, and arclike volumes and shapes; a dominant rectangular volume or linear bar with skewed volumetric and furnishing elements within the main volume or jutting out of it; and a static minimalist volume relying for its architectural impact on a sense of gravity, material, texture, transparency, color, and detail deriving from the logic of assembly.

这个事务所似乎在向一种更为静态和无声的表现方式发展,例如为赫尔辛基的当代艺术博物馆和哥本哈根的滨海音乐厅所作的竞标方案中绷得很紧的矩形空间,赫尔辛基正在施工的艺术与设计大学的传媒中心,或者目前正在进行前期设计工作的德累斯顿从事分子生物学和基因研究的麦克斯·普朗克研究中心。一个不对称的悬挂结构或者一面拉伸的帆布大篷经常被用来作为这种简朴空间的有趣的对比物。在为哥本哈根的公寓中一个小型单元所作的生机勃勃的方案中,说明了这种走向如诗般精简的趋势。这个方案的首层包含了一个黑色原木的小卧室,在它上面是一个轻快的帆布框架,尺度相同,并向天空开放。

建筑的外形往往具有欺骗性、谦逊而简单的元素经过选择放在一起就变成了复杂的空间和形式的游戏,有时达到了一种皮兰内齐(Battista Piranesi, 1720~1778。意大利新古典主义艺术家,擅长雕刻和版画。雄伟的壁画作品使他成为威尼斯画派的代表人物,其代表作为《安东尼和克丽奥佩托拉》,唯一的建筑作品是罗马的圣玛利亚修道院,他的艺术风格具有广泛而深远的影响)式的密集程度,就像在华盛顿特区的芬兰大使馆内的空间。结构网格外的覆层,一些内层的元素和透明度的品质,这些一起创造了一种经验上无法想像的复杂性。村庄的视觉形象频繁地出现,比如在芬兰的库赫莫(Kuhmo)和俄罗斯的克斯特穆尔(Kostamos)为卡累利阿文化所建的两个文化中心的方案;丹麦埃伯尔措夫特(Ebeltoft)的欧洲电影学院的南立面;或者弗埃波(Foibe)老年公寓的门厅以及万塔的康乐中心里都有。秩序排斥偶然和随意,精确消灭不拘小节,停滞反对运动,不透明同透明相对,轻盈要摆脱重力,形式不希望相像。

现代建筑艺术是在同现代艺术富有成果的"异花授粉"—相互影响的基础上发展的。可是在20世纪30年代,建筑开始同艺术拉开了距离,并最终将自己限制在严格的国际化风格的意识形态里。在过去的20年中,建筑重新从艺术中寻找灵感。与此同时,雕塑卓有成效地步入了建筑遗留下的真空,无数的当代雕塑家积极地投身于将场所重新神话化和诗化的工作,目的是将一个无名的所在转化成一个特殊的场所。建筑师们重新关注其他艺术形式定义人类存在基础的方法。无论如何,这种艺术和建筑日益模糊的边界,既导致了真实的艺术的解放,也导致了混乱。建筑师和教育者们常常忘了建筑是一门同雕塑或别的艺术门类基础完全不同的学科,因为它的本质任务是满足实用的空间需求和构造工艺的现实可行。

The first strategy derives from constructivist and suprematist precedents; the second parallels deconstructivist tendencies; the third strategy resembles that of American minimalist sculpture. Heikkinen-Komonen's designs first progressed to greater complexity, from a planar juxtaposition of elements in the floor plan to seemingly arbitrary spatial configurations, in their competition project for the House of Culture in Nuuk, Greenland, and the playful Children's Cabin for a Housing Fair in Lahti. At present the firm seems to be moving toward a more static and mute expression, as exemplified by the tight rectangular packing of spaces in the competition project for the Museum of Contemporary Art in Helsinki and the waterfront Concert Hall in Copenhagen; the project for the Audiovisual Center for the University of Art and Design Currently under construction in Helsinki; or the Max Planck Institute for Molecular Biology and Genetics in Dresden, now in its initial design phase. An asymmetrical suspension structure or a stretched canvas sail is frequently used as a playful counterpoint to the austere volume. The spirited project for a tiny unit in an allotment garden in Copenhagen, which contains a black-log cubicle on the ground level and an airy canvas frame of the same dimensions on top of it, open to the sky, exemplifies this tendency toward poetic reduction the exterior is often deceptive; the unassumingly simple selection of elements becomes a complicated spatial and formal game that at times achieves a Piranesian density, as in the spaces of the Finnish Embassy in Washington, D.C. The overlay of the structural grid, the secondary elements, and the quality of transparency create an unexpected experiential complexity. The visual image of a village frequently emerges as in the two schemes for the Centers for Karelian Culture in Kuhmo, Finland, and Kostamus, Russia; the southern facade of the European Film College in Ebeltoft, Denmark; or the lobby of the Foibe Senior Citizen Housing and Amenity Center in Vantaa. Order plays against accident and arbitrariness, rigor against casualness, stasis against movement, opacity against transparency, lightness against gravity, form against image.

Modern architecture developed in a fertile crosspollination with modern art. In the 1930s, however, architecture began to distance itself from the arts, and eventually confined itself from the arts, and eventually confined itself from the arts, and eventually confined itself to the constricting ideology of the International Style. During the past two decades, architecture has again sought inspiration from the arts. At the same time, sculpture has effectively stepped into the vacuum left by architecture; numerous contemporary sculptors have been actively engaged in the remythicizing and repoeticizing of site, for the purpose of turning an anonymous location into a specific place. Architects have again looked to the ways in which other art forms define humankind's exisstential ground. The current blurring of the borders between art and architecture has, however, caused as much confusion as authentic artistic liberation.

海基宁和科莫宁的建筑方法紧紧地同极少主义的哲学和美学以及概念艺术缠绕在一起。这一点日益显现了出来,马尔库·科莫宁在1995年以去罗马尼亚的特尔古日乌(Tirgu —Jiu)朝圣来庆祝他的50岁生日,他去那里看康斯坦丁·布兰库西的神话般的环境雕塑群"无尽的柱子"(Endless Column,1938)。这些环境中的片段,创造了一条1493m长的轴线,他写道:"没有尽头的比例游戏,以希腊人对和谐和有宗教象征意义的数字的经典研究为基础的,这是根的一部分,从中这个作品的磁力生长了出来。"。

对米科·海基宁来说,则是于1992年到美国的西南部去旅行,研究唐纳德·贾德 (Donald Judd) 在得克萨斯州玛尔法的极少主义雕塑般的建筑。"在各个不同的角度,一个体块同时是实心的和开放的,"他记录了贾德的100个同样的铝制盒子。"一件雕塑的表面可以看作是完全遮蔽的,或者它可以反射四周伸展的草地。你会感觉好像是在看一个魔术师的镜盒,不可能知道一个体块究竟是实际开放的还是在看一个由镜面产生的幻象。光线使这个体块的边缘刀切般的锐利,或者使它们消失并破坏这个空间的实际形状。"7他也指出了贾德的作品也是以小的数字关系为基础,1:2,2:3,3:4——另一个毕达哥拉斯主义者。

海基宁和科莫宁另外也从卡尔·安德雷(Carl Andre)、罗伯特·埃尔文 (Robert Irwin)、沃尔特·德·玛丽亚(Walter de Maria),阿格内斯·马丁 (Agnes Martin)、高登·马特克拉克(Gordon Matta—Clark)、罗伯特·莫里斯(Robert Morris),罗伯特·史密逊(Robert Smithson)和詹姆斯·特里尔(James Turrell)等人的作品中受到启发,但他们将这些艺术家极少主义的雕刻和审美的敏锐感觉转化成了尺度和建筑的可行的现实。一位建筑师必须清楚尺度的变化,从一个遥远的形象到伸手可及的亲近距离。建筑中一个纯粹的形象注定只是保存在视网膜上的图画,除非它成功地使观者相信他或她在日常现实中实际空间中的存在。建筑的艺术就是为强化现实的经验这一最终目标,而使用刹那的幻象。

两位合伙人对原始的人工构筑物和当代的大地艺术同样感兴趣。1995年,科莫宁在赫尔辛基技术大学的就职演说中,详细阐述了Arkhitekton这个专指建筑职业的希腊单词的古老本质,同时也谈到了克里特文明中迷宫的传奇和迷宫的制造者底得勒斯(Daedalus),说明了它们的重要性,底得勒斯是世界上第一位建筑师。"海基宁写了一些东西,关于法国Carnac的史前巨石结构,和俄亥俄琪里考特(Chillicothe)神秘的大地建筑艺术——"沙丘城市",

Architects and educators have to often forgotten that architecture is a discipline fundamentally different from sculpture or other forms of art because of its essential engagement with the requirements of utilitarian space as well as the tectonic reality of construction.

The architectural approach of Heikkinen and Komonen is closely intertwined with the philosophy and aesthetics of minimalist and conceptual art. It is revealing that Markku Komonen celebrated his fiftieth birthday in 1995 by making a pilgrimage to Tirgu-Jiu in Romania to see Constantin Brancusi's mythic environmental sculpture ensemble Endless Column (1938). Of the environmental piece, which creates an axis 1,493 meters long, he writes: "The endless play of proportions, based on the classical Greek study of harmony and religious symbolic numbers, is one of the rhizomes from which the magnetic quality of the work grows."

For his part, Mikko Heikkinen made a trip to the American Southwest in 1992 to study Donald Judd's minimalist sculptural constructions at Marfa, Texas. "From different directions a volume is simultaneously solid and open, "he notes of Judd's one hundred identical aluminum boxes. "The surface of a piece of sculpture may be seen as fully matte, or it may mirror the grass plains spreading around. One feels as if one is looking at a magician's mirror box; it is impossible to know whether a volume is open in reality, or whether one is looking at an illusion created by the mirroring surface. Light makes the edges of the volume appear cuttingly sharp, or makes them disappear and destroys the asctual shape of the space." He also points out that Judd based his work on the relations of small numbers, 1: 2, 2:3, 3:4-another Pythagorean.

Heikkinen and Komonen have been inspired additionally by the work of Carl Andre, Robert Irwin, Walter de Maria, Agnes Martin, Gordon Matta-Clark, Robert Morris, Robert Smithson, and James Turrell, but they transfer these artists minimalist imagery and aesthetic sensibility to the scale and tectonic reality of architecture. An architect must articulate the transition of scales from the distant image to the intimacy of the touching hand. A mere image in architecture is doomed to remain only a retinal picture unless it succeeds in convincing the viewer of his or her existence in the actual space of everyday realities. The art of architecture is to use momentary illusion for the ultimate purpose of reinforcing the experience of reality.

Both partners are equally interested in primordial human constructions and in contemporary earth art. In his inaugural lecture at the Helsinki University of Technology in 1995, Komonen elaborated on the archaic essence of the Greek word denoting the architectural profession, Arkhitekton, and the significance of the Minoan legend of the labyrinth and its maker, Daedalus, the world's first architect.⁸ Heikkinen has written about the dolmens at Carnac, in France, as well as the mysterious earth architecture of Mound City in Chillicothe, Ohio, dating back more than one thousand

它的历史要追溯到一千多年前。"在 20 世纪 40 年代的后期,"沙丘城市"给 巴内特·纽曼(Barnet Newman)的印象如此深刻,以至于他认为"埃及人的金字塔仅仅像是装饰物"。10

作为对照,海基宁关于理查德·塞拉(Richard Serra)的环境艺术作品 "Afangar" 有激情洋溢的著述,这个作品是在冰岛树木不生的Videy岛上的18 对玄武岩柱子。"这个事务所的项目中经常会有地景艺术方面的内容,诸如连接芬兰科学中心的芬兰地质地图、穿过巨大的斯德哥尔摩阿兰达机场停车场的绿化带,或者是顺着通向赫尔辛基沃萨里居住区的公路排列成行的管状打孔钢柱。这些内部发光的柱子让人想起了二战期间在沃萨里点起的篝火,那是为了分散敌人对市中心的轰炸。

在海基宁和科莫宁的许多作品中,他们加入了一些同宇宙的几何图形和尺度吻合的建筑化的艺术作品。这些经常是同芬兰的概念和地景艺术家劳利·安悌拉(Lauri Anttila)一起合作完成的。芬兰科学中心包括了一面有偏振金属表面的墙,墙将光线折射成一个光谱。这面墙同一个画成光谱色彩的钢和玻璃立面并置:一个实际的物理现象同这个现象的艺术表现被并置在一起。一个由正交镜面反射的激光束所形成的虚拟的封闭框架原定同这个作品一起完成;遗憾的是,只有画出的光谱是被实施的。

在罗瓦涅米 (Rovaniemi) 机场,一条斜穿对角的40m长的天窗正好标出了北极圈子午线的精确位置,子午线在两个极端的位置之间缓慢地移动,最后在1990年通过候机大厅。这个建筑屋顶上的一个透镜反射正午的阳光到一个形状为拉长的8字的地球仪8字曲线上(用来在地球仪上表示全年太阳的赤纬和时差一译者注),它是地球椭圆形轨道的投影。从大厅顶棚挂下的白色曲面被设想为一个为北极光的科学影像所准备的投影屏幕。由于缺乏业主方面的理解,北极光还从来没有投射到屏幕上,同时这个带有宇宙信息的大厅已经被机场管理当局所布置的没有品位的圣诞老人装饰所破坏。

这个团队的工作偶而显得同概念艺术类似。像"矩阵·水·马德里"这个项目就既是一个概念性的方案也是一件环境艺术作品。由线性模块组成的最小栅格、树篱和水柱象征了这个城市不可见的地下水库系统。在华盛顿的芬兰大使馆内,一个虚拟的水平面既延续了地板平面也延续了室外穿过树木繁茂的沟壑的结构网格,同样展示了一种概念化的特点。

艺术创作中,美若是故意为之,则易流于做作、感伤和趣味低下。最感人的美的经验好像是作为关注别的事物的结果,比如对清晰,精确和秩序的

years. In the late 1940s Mound City so impressed Barnett Newman that he regarded "Egyptian pyramids as mere ornament." 10

In comparison, Heikkinen has written enthusiastically about Richard Serra's environmental work Afangar, a configuration of eighteen paired basalt pillars on the treeless island of Videy, Iceland.¹¹ The firm's projects frequently include aspects of earth art, such as the geological map of Finland that adjoins the Finnish Science Center, the zones of vegetations that cut across the immense parking lot of the Arlanda Airport in Stockholm, or the rows of tubular perforated steel columns lining the automobile approach to the new Vuosaari during World War II to divert enemy bombers from the city center.

In many of their projects Heikkinen and Komonen have incorporated architectural artworks that engage cosmic geometries and dimensions. These are frequently accomplished in collaboration with the Finnish conceptual and earth artist Lauri Anttila. The Finnish Science Center includes a wall with a polarizing metal surface that refracts light into a spectrum. The wall is juxtaposed with a steel-and-glass facade painted in the colors of the spectrum: an actual physical phenomenon is juxtaposed with its artistic presentation. A virtual enclosing frame consisting of the light of a rectangularly mirrored laser beam was to complete the work; regrettably, only the painted spectrum was executed.

In the Rovaniemi Airport a diagonal forty-meterlong skylight marks a precise location of the meridian of the Arctic Circle, which slowly moves between two extreme positions and last passed through the passenger lobby in 1990. A lens on the roof of the building reflects the rays of the midday sun on an analemma in the shape of an elongated figure eight, which is the projection on the elliptical orbit of the Earth. The curved white surface suspended from the lobby ceiling was conceived as a projection screen for scientific images of the northern lights. Because of a lack of understanding on the part of the client, the northern lights have never been projected on the screen, and this lobby space with cosmic messages has been vandalized by tasteless Santa Claus decorations installed by airport management.

The work of the team occasionally bears resemblance to conceptual art. The project Matrix $\rm H_2O.Madrid$ is a conceptual scheme as much as a piece o environmental art. The minimal grid composition of linear patterns, hedges, and water pillars indicates the invisible underground reservoir system of the city. In the Finnish Embassy in Washington, the virtual horizontal plane as well as the structural grid outside across a wooded ravine also exhibits a conceptual character.

Beauty as a conscious aim in art tends to lead to sentimentality and kitsch. The most striking experience of beauty seems to be as a consequence of other concerns, such as an aspiration to clarity, precision, and

追求。俄罗斯作家约瑟夫·布罗德斯基 (Joseph Brodsky) 在他的著作《水印》 (Watermark) 中批评埃兹拉·庞德 (Ezra Pound) 对美过于直接的依附:"《诗篇》 (The Cantos) 也没有打动我;主要的还是老问题:在美后面追随。对一个在意大利有如此长期居住记录的人来说,很奇怪他还没有意识到美不能作为目标,它总是别的什么的副产品,常常是非常平常的探寻。" 12

这两位建筑师对人为的唯美倾向有所怀疑。米科·海基宁赞赏沃尔特·德·玛丽亚 (Walter de Maria) 在苏黎世艺术之家 (Kunsthaus Zurich) 的 "2000个雕塑",它由800根五边形,800根七边形和400根九边形的石膏长条组成,平行地排列成行。"这个设计看上去没有艺术的经验和个人的责任,似乎那些几何形模具中的一员,除了使我们压抑得打呵欠之外不会再有什么启发。事实绝非如此。变量的数目是有限的,元素的构造组成也是有意识而仔细地贯彻到每一个细微之处。但你不会被某些人——艺术家——打扰,听他讲他的感觉。矛盾的是,这种严格的方法却是使它的目标开放。可以自由展开联想,就像是在凝视大海的泡沫或微风中颤动的树叶。"

当海基宁引用贾德的声明时,对唐纳德·贾德的方法表达了明显的共鸣,他的方法是使艺术没有任何明确的信息。贾德说道:"我不知道什么东西发生在这种注重实效和经验主义的态度上,这种态度关注此地和此时是什么。这是科学的基础,也应该是艺术的基础。只有能够被经验和知晓的,才是雄辩的。真理通过具体的经验而显现,而不是通过形而上学的解释。"15

尽管他们同视觉艺术关系密切,海基宁和科莫宁仍然将他们的工作建立在严格的理性逻辑的标准以及功能和技术的性能基础之上,并且没有从个人经验和他们的技艺所暗示的智慧中得到帮助。他们的设计无视思想的分层,代表了一种现实和理性的态度。他们的建筑解决方案经常落实于令人吃惊的直率而明晰的想法上。为罗瓦涅米芬兰边防军的空中巡逻队基地所设计的规划来自于对飞机的"最紧密的包装",这里有两架"贝尔412"直升机、一架"贝尔AB206"和一架"超级美洲狮"直升机,以及一架轻型的"切罗基的风笛手"飞行器。库奥皮奥的紧急服务学院,通过一条直直地长达200m的走廊组织在一起,表达了"信心、迅速、谨慎和坚定",16这些正是在诸如火灾和事故等灾难性环境下一起工作的救援人员所需要的。

海基宁和科莫宁常常把项目的实效方面和场地的限制条件作为产生解决方案的起点。格陵兰岛无法抵御的风力条件产生了为努克的文化中心设计的一个"完全根据经验的"建筑方案。这个竞赛方案将主要的风和巨大冰块的

order,in his book watermark,the Russiuan writer Joseph Brodsky criticizes Ezra Pound for his too direct attachment to beauty.For someone with such a long record of residence in Italy,it was odd that he hadn't realized that beauty can't be targeted,that it is always a by-profuct of other,often very ordinary pursuits." 12

The two architects are suspicious of aestheticization. Mikko Heikkinen admires Walter de Maria's The 2000 Sculpture (1992) in the Kunsthaus Zurich, which is composed of 800 five-sided and 400 nine-sided gypsum bars set in parallel rows: "The layout seems to lack any artistic expression and personal commitment, seemingly one of those geometric matrices inspiring us to no more than a stifled yawn, Anything but that happens. The number of variables is limited, the composition of the elements is conscious and carefully implemented to the last millimeter. But one is not disturbed by having someone-the artist-dictating one's sensations. Paradoxically, the rigorous approach leaves the end open the associations may run free like contemplating the sparkle of the sea or the leaves shivering in the breeze." 13

Heikkinen expresses a clear sympathy for Donald Judds approach to making art without any explicit message when he quotes Judd's statement"I don't know what has happened to the pragmatic,empirical attitude of paying attention to what is here and now:it's basic ot science.It shoulld be basic to art too.Only what can be known and experienced,is plausibe. The truth emerges through concrete experiences,not through metaphysical constructions." ¹⁴

Despite their affnity for visual art, Heikkinen and Komonen base their work on the rigorous criteria of rational logic and functional and technical performance, and on lessons learned from personal experience as well as the tacit wisdom of their craft. Regardless of the layering of thought, their designs represent an attitude of realism and reason. The architectural solution is frequently grounded in surprisingly straightforward and transparent ideas. The plan for the Air patrol Squadron Base for the Finnish Frontier Guard in Rovaniemi derives from the closest packing of two Bell 412 helicopters, a Bell AB 206 and a Super Puma helicopter, and a light Piper Cherokee aircraft. The Emergency Services College in Kuopio, organized along a straight two-meter-hundered-long corridor, expresses the "confidence, promptness, prudence, and resolution" frequired of rescue workers working with catastrophic circumstances such as fires and accidents.

Heikkinen and Komonen often take the pragmatic aspects of the program and the limitations of the site as starting points to generate solutions. The overpowering wind conditions in Greenland generated an "empirical" architectural scheme for the Nuuk House of Culture. The competition project

视觉形象作为目标,风和冰块漂浮在一个明显无序混乱的外形之上,以此作为发展建筑方案的起点。科莫宁为一个参加展览的鸟舍所作的设计,是用从万塔的Foibe老年中心拆除的浇混凝土的木模板,一个用过的用来运送图纸的纸板筒和木制铅笔的残屑做成的。同样,在阿兰达空中交通指挥中心竞标方案基地的破碎的线性岩石带,并不适于建筑工程,但被很实用地变成了一个景观图案。无可回避的条件变成了一个设计主题。

这个团队探究着秩序和无序、预想和自发之间的张力。它的建筑艺术既严肃又有趣,既经过控制又反复无常。为了强调这种平衡的重要性,科莫宁经常引用保罗·瓦莱里(Paul Vaéry)的格言"秩序和无序,这两个事物没有停止过对这个世界的威吓。"

在寻求建筑的精确的同时,海基宁和科莫宁都被生活中平凡的事件所吸引。海基宁称赞唐纳德·贾德在玛尔法的Chinati 基金会光秃秃的室内,"一个前银行大厅的所有表面层次、家具和装饰都被去掉了。陈旧的手绘墙面、受侵蚀的抹灰和20世纪20年代一位民间艺术家的绘画,从下面被揭出来,让它们保持着被发现时的样子。这种气氛就好像是置身于托斯卡纳人的凉廊。在增加石膏板和乳胶漆之前,一个人会经常地想要在建造的过程之中终止建筑。"16科莫宁描写对面墙上反射的他的公寓的一扇开着的窗的不可思议的图像。"他也描绘了葡萄牙北部一个造纸车间的室内,以此作为建筑中无意识的纪念性的例子:"在这个黑暗的生产空间里,温暖的纸浆滚滚而来。工人们的身影在小小的窗户投射进的光束之间移动。上层的地面是用木板条做的,光线和新鲜空气通过这些木板条涌入。横跨这个空间的是金属丝拉起的蜘蛛网、完成的纸张就挂在上面晾干。晾纸所散发的气味弥漫在这个沐浴在阳光中的寂静的空间里。从楼下传来朦胧的劳动的声音。"18

米科·海基宁用同等的迷恋来描写他访问炼钢车间的建筑体验:"感情用事地说,也许是'秋天之前'的建筑对我影响最深,是那种缺乏有意识的审美目的的建筑。我们看到的东西真的使我们震惊。这大厅完全没有一点审美的内容或矫揉做作。被烟熏黑的车间里,排列着没有尽头的熔炉和滚筒,钢水倾泻,巨大的钢板成堆。这代表了一种从没有在展览厅里见过的建筑和艺术类型。自然的建筑空间——人工制造或自然形成——常常有着同样深沉的效果。当一个人驾车驶过一排排种植规则的小橄榄树林时,这个人将感受一次难以置信的运动经验。一道自然形成的沟壑,一座石头的大教堂,具有比大多数人为纪念物更为伟大的效果。"19

takes the direction of the prevailing wind and the visual image of immense blocks of ice, floating in an apparently chaotic configuration, as the starting point for the development of an architectural solution. Komonen's design for a birdhouse for an exhibition was made out of a board from the demolished concrete molds of their site for the Foibe Senior Center in Vantaa, a used cardboard tube for transporting draings, and the remains of a wooden pencil. The linear zones of cracked rock that intersected the site of the Arlanda Air-Traffic Control Center competition project, unfit for construction, were pragmatically turned into a landscaping pattern, the inevitable becomes a design motif.

The team explores the tension between order and disorder, preconception and spontaneity. Its architecture is at once serious and playful, controlled and whimsical. To underline the importance of this balancing act, Komonen has often quoted Paul Valery's maxim"Two things do not cease threatening the world, disorder and order."

While seeking architectural rigor, both Heikkinen and Komonen are attracted to commonplace occurrences of life. Heikkinen praises the bare interiors of Donald Judd's Chinati Foundation at marfa: "All the layers of surfaces, furnishings, and decorations of a former banking hall were torn off. the old paint surfaces, eroded plaster, and paintings of a 1920s folk artist, revealed beneath, were left as they were found. the atmosphere is as in a Tuscan loggia. How often one would want to stop architecture in its phase of construction before gypsum plates and latex paints are added."16 Komonen describes the magic of an image of an open window of his flat reflected on the opposite wall.¹⁷ He also portrays the interior of a paper mill in northern Portugal as an unintentional example of monumentality in architecture:"In this dark space of production, warm paper pulp steamed. The figures of workers moved between the wedges of light sprouting from the small windows. The upper floor was made of wooden slats, through which light and fresh wind flooded. Across the space, cobwebs of metal wires were spanned, on which the completed sheets of paper were hung to dry. The smell of drying paper filled the silent space bathed in light. Muffled sounds of labor echoed from the lower floor." 18

Mikko Heikkinen writes about the architectural experiences of his visit to a steel mill with equal fascination: "Emotionally speaking, perhaps the deepest effect on me has been made by architecture before the fall, that is, architecture that lacks a conscious aesthetic intention. What we saw really had us quaking. The hall completely lacked an aesthetic content or affectation. The endless rows of furnaces and rollers, cascades of molten steel and gigantic bales of steel sheets in the soot-blackened mill, represented a type of architecture and art that is never seen in exhibition halls. Natural architectural spaces-human-made or formed by nature-often have the same profound effect. When one drives through the regular planted

米科·海基宁和马尔库·科莫宁的建筑概念创造了一种签名式的风格,绝对不会搞错,然而这种风格努力地通过不可避免的必然性以及隐没理性和训练有素的技巧来消灭个体的设计者。"作者自己的特征分解融入到整体之中,这种明确地使表现和媒介退居次位的情况,让人想起了古老的中国神箭手的传奇,神箭手不再需要弓和箭,最后甚至连他的工具的名字也记不住了,"米科·海基宁写道。²⁰这个比喻指点的是建筑的"禅"。瓦莱里曾经说过,"最伟大的自由诞生于最大程度的严格"²¹,海基宁和科莫宁同意这一信条。

注释

1 马尔库·科莫宁,《布兰克西的"桌子"、"门"和"无尽的柱子"》),Helsingin Sanomat 出版社,1995年12月1日,B3版。

2 马尔库·科莫宁,(《建造的技术和艺术》), Arkkitehti 出版社, 1995年4月号, 93页;安东·契柯夫, "给阿历克西·佩斯科夫(马克西姆·高尔基)的信", 1899年1月3日, 选自《安东·契柯夫的信》, 西蒙·卡尔林斯基编辑, 米歇尔·海姆和西蒙·卡尔林斯基翻译(纽约; Harper & Row, 1973), 338页。

- 3 科莫宁,《建造的技术和艺术》,92页。
- 4 "我们芬兰这儿现在有许多的装饰和艺术的天才。我们需要的是一些指导,清醒和理性的力量。这是我们所需要的人,那种坚决地与过去决裂的人,大胆而坚定地面向未来的人。人不仅具有心和灵,而且更多的是头脑和判断力,是思想的英雄,而不是那些Deren ganze Seele in den Augen steckt (所有的灵魂都在眼睛里的人)……我们想要一种钢铁和头脑的风格。"见古斯塔夫·斯特伦格尔(Gustaf Strengell)和希噶德·弗罗斯特勒斯(Siguard Frosterus)、《建筑:一个由古斯塔夫·斯特伦格尔和西古德·弗罗斯特鲁斯向我们的对手发出的挑战》,(Helsinki: Euterpes Forleg,1904;用英语印刷在《柱冠年鉴(Abacus Yearbook)3》,赫尔辛基:芬兰建筑博物馆,1983),49~79页。
- 5 为了一次关于布鲁姆斯泰德的理论的讨论,参见"布鲁姆斯泰德", 《Arkkitehti》(《建筑师》),(赫尔辛基: 芬兰建筑博物馆,1977)。
 - 6 科莫宁,《布兰克西的"桌子"、"门"和"无尽的柱子"》。
 - 7 米科·海基宁, 在高高的天空下——关于唐纳德·贾德的建筑艺术,

rows of an olive grove one undergoes an unbelievable kinetic experience. A ravine formed by nature itself, a stone cathedral, has a greater effect than most human-made monuments." ¹⁹

The architectural concepts of Mikko Heikkinen and Markku Komonen have created a signature style, unmistakably theirs, that nevertheless strives for an elimination of the individual designer through the inevitable universality and anonymity of reason and disciplinary skill. "The dissolution of the author's own signature into the whole, the definite secondariness of expression and medium, makes one think of the ancient Chinese legend of the Master of Archery who no longer needed bow nor arrows and who finally did not even remember the name of his instrument, "writes Mikko Heikkinen.²⁰ This metaphor points at the Zen of architecture. "the greatest liberty is born of the greatest rigor," Valery once said, ²¹ a credo to which Heikkinen and Komonen subscribe.

NOTES

- 1.Markku Komonen, "Brancusin pöytä, portti ja päättymätön pylväs" (Brancusi's Table, Gate and Endless Column), Helsingin Sanomat, December1, 1995,B3.
- 2.Markku Komonen, "Rakentamisen tekniikka ja taide" (The Technology and Art of Construction), Arkkitehti, April 1995,93; Anton Chekhov, letter to Aleksey Peshkov (Maxim Gorky), January 3, 1899, in Letters of Anton Chekhov, ed. Simon Karlinsky, trans. Michael Heim and Simon Karlinsky (New York: Harper & Row, 1973), pp.338.
 - 3. Komonen, "Rakentamisen tekniikka ja taide, "pp.92.
- 4. "We have plenty of decorative and artistic talent here in Finland at present. What we need is some Guiding, clear and rational force. It's men we need, men who are prepared to break irrevocably with the past, to look boldly and resolutely to the future. Men who are not merely heart and soul but are made more of brains and good sense, heroes of thought, more than those Deren ganze Seele in den Augen steckt [whose entire soul is in their eyes]... We want an iron and brain style." Gustaf Strengell and sigurd Frosterus, Arkitektur: en stidskift våra motståndare tillägnad of Gustaf Strengell och Sigurd Frosterus (Architecture: A Challenge to Our Opponents by Gustaf Strengell and Sigurd Frosterus) (Helsinki: Euterpes Förlag, 1904; printed in English in Abacus Yearbook 3, Helsinki: Museum of finnish Architecture, 1983),pp.49-79.
- 5. For a discussion of Blomstedt's theories, see Aulis Blomstedt, Architect: Pensee et forme-etudes harmoniques, ed. Juhani Pallasmaa (Helsinki: Museum of Finnish Architecture, 1977).
 - 6. Komonen, "Brancusin pöytä, portti ja päätymätön pylvas."
 - 7. Mikko Heikkinen, "Korkean taivaan alla-Donalkd Juddin

《Arkkitehti》(《建筑师》), 1993年1月刊, 62页。

- 8 科莫宁,《建造的技术和艺术》, 93页。
- 9 米科·海基宁,空间、时间和建筑,《Arkkitehti》(《建筑师》), 1995 年 1 月刊,74~76 页。
- 10 "俄亥俄, 1949", 巴内特·纽曼著:《文章和谈话选集》, 加利福尼亚大学出版社, 1992, 174页。
 - 11 1 9
 - 12 约瑟夫·布罗德斯基,《水印》,伦敦:企鹅书屋,1997,70页
- 13 米科·海基宁,"史前巨石纪念物和迪斯尼乐园",在关于永远的讨论会上的演讲,未发表,弗吉尼亚理工大学,1996年3月23日。
- 14 海基宁, "在高高的天空下", 63~64页。《与唐纳德·祝德的会谈》 (展览目录册, Kunstverein St. Gallen, 1990), 56页。
 - 15 海基宁 & 科莫宁, 巴塞罗那, Gustavo Gili 出版社, 1994, 30页。
 - 16 海其字 "在宫宫的天空下" 64 而
 - 17 马尔库·科莫宁,未发表的照片和笔记,1994年7月7日。
 - 18 科莫宁,《建造的技术和艺术》, 93页。
- 19《一份建筑的礼物——7条路》,赫尔辛基:芬兰建筑博物馆,1990,179页。
- 20 米科·海基宁,空间的回报,《Arkkitehti》(《建筑师》), 1994年5~6月刊, 14页。
 - 21 保罗·瓦莱里,《对话》,纽约:万神庙书屋,1956,131页。

arkkitehtuurista" (Under the High Skies-On Donald Judd's Architecture), Arkkitehti, January 1993,pp.62.

- 8. Komonen, "Rakentamisen tekniikka ja taide," pp.93.
- 9. Mikko Heikkinen, "Tila, aika ja arkkitehtuuri" (Space, time and Architecture), Arkkitehti, January 1995, pp.74-76.
- 10. "Ohio, 1949, "Barnett Newman: Selected Writings and Interviews (Berkeley and Los Angeles: University of California Press, 1992),pp.174.
 - 11. Heikkinen, "Tila, aika ja arkkitehtuuri."
 - 12. Joseph Brodsky, Watermark (London: Penguin Books, 1997),pp.70.
- 13. Mikko Heikkinen, "Dolmens and Disneylands," unpublished lecture presented at symposium on permanence, Virginia Polytechnic, March 23, 1996.
- 14. Heikkinen, "Korkean taivaan alla, "pp.63-64. "Interview of Donald Judd" (exhibition catalog, Kunstverein St. Gallen, 1990),pp.56.
 - 15. Heikkinen & Komonen (Barcelona: Gustavo Gili, 1994),pp.30.
 - 16. Heikkinen, "Korkean taivaan alla," pp.64.
 - 17. Markku Komonen unpublished photograph and note, July 7,1994.
 - 18. Komonen, "Rakentamisen tekniikka ja taide,"pp.93.
- 19. An Architectural Present-7 Approaches, ed. Marja-Riitta Norri and Maija Kärkkäinen (Helsinki: Museum of finnish Architecture, 1990), pp.179.
- 20. Mikko Heikkinen, "ruumi maasmine" (the return of Space), Arkkitehti, May-June 1994,pp.14.
- 21. Paul Valéry, Dialogues, trans. william McCausland Stewart (New York: Pantheon Books, 1956),pp.131.

