

Global Architecture

世界建築

I. M. Pei & Partners

National Center for Atmospheric Research

Boulder, Colorado. 1967

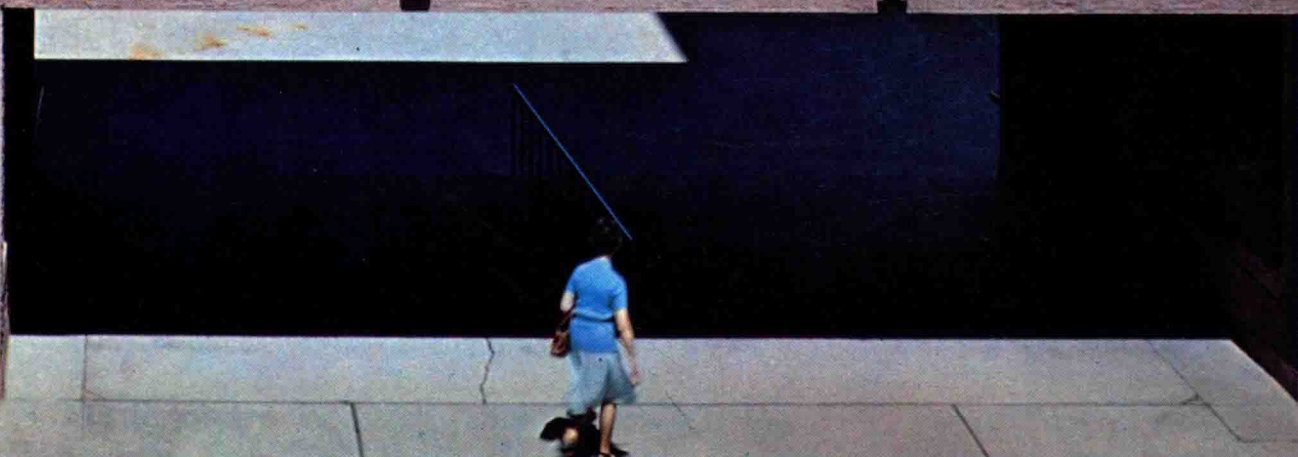
I. M. Pei & Partners and Araldo Cossutta

Christian Science Church Center

Boston, Massachusetts. 1973

Edited and Photographed by Yukio Futagawa

Text by William Marlin



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貝聿銘及鄂拉多・柯蘇塔

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胡氏圖書

孤獨的形象 —— 撰 / 威廉·馬林

The Shapes of Solitude by William Marlin

天主教 Trappist 教派神學家湯瑪士·墨頓曾寫道：「人生之職志在於將一己之孤獨化為推己及人、心智鳴應、以及愛心交感的必要條件。」

或許有人會納悶，這與建築何干？！不過，讓我們先假設本文所介紹的兩個作品隱著某種關聯，並且也思索一下，究竟建築是否也具備了可堪比擬的使命。

事實上，位於科羅拉多州波爾德郊外的國立大氣研究中心（NCAR）以及麻薩諸塞州波士頓市後灣區的基督教科學中心（CSC）這兩幢建築中，均被注入了某種孤獨性。

前一作品，是貝氏公司的創辦人貝聿銘於1960年代初期設計，而在1967年完工。正當NCAR動工之際，貝氏公司在貝聿銘合夥人鄂拉多·柯蘇塔之主持下，正傾力於CSC的設計工作。CSC終於在1968年動工，而於1973年完工。

兩種截然不同的機能或環境，確難相提並論。然姑不論此顯然對比的形態，NCAR及CSC却均能融滙機能與環境而提昇其內在與外在活動的品質。在此，蘊涵其中的入世感以及彼此呼應效果的本質究為何物？有何種交流之存在可言？又對應於墨頓之所思，何能謂此等建築體驗特質之條件係因孤獨而來？

最重要的是，此孤獨也者，並非孤立，也不是隔絕，更不是冷漠。而是較接近於路易士·康每每提及的“沉默”的要素——按照康的說法，是「遠在人類安放第一塊石頭之前」就已經存在的了。在墨頓的意念之中，此乃對大自然賴以展現其秩序之過程與形式的客觀而謙遜的探索

Thomas Merton, the Trappist theologian, wrote, “The vocation of the person is to construct his own solitude as a condition, *sine qua non*, for a valid encounter with other persons, for intelligent cooperation, and for communion in Love.”

One may well wonder what this has to do with architecture. But let us postulate a connection, as the two works that are shown on these pages suggest that we might, and think about whether or not there is a comparable vocation for buildings.

A kind of solitude has, in fact, been constructed at the National Center for Atmospheric Research (NCAR), located on the outskirts of Boulder, Colorado, and at the Christian Science Center (CSC), located in the Back Bay district of Boston, Massachusetts.

The first was designed in the early 1960s by Ieoh Ming Pei, founder of the firm of I. M. Pei & Partners, and completed in 1967. As NCAR was being built, the firm, with his partner Araldo Cossutta in charge, was well into the design of CSC, which finally started construction in 1968 and finished in 1973.

One is hard put to think of two more different functions, or two more different settings. Yet despite such contrasting formal properties, both NCAR and CSC tie function and setting together that the inner and outer lives of each work are enhanced. What is the nature of the encounters that are engendered, or of the cooperation that is being served, and what kind of communion can be said to be occurring? Why can it be suggested, to follow Merton's thinking, that solitude has created the condition for these qualities of architectural experience?

First of all, this is not the solitude of isolation or aloofness or indifference. It is more comparable to Louis Kahn's frequent reference to the element of Silence — one that existed, as he put it, “long before the first stones were laid by man.” It is, in Merton's sense, an objective and humble probing of the processes and patterns

。這種秩序實為一切特異性之基礎——不論此“特異性”是一種科學發現、精神啓示、或人類價值、活動與需求之建築表現。一種緊密編織、嚴格界定的“內在結構”之所以能夠發展，全憑此孤獨、此沉默要素之助。而此內在結構，對所有可稱之為恆久支配人類心智與精神之建築物而言，實乃使“設計”成為可能之因素；更是一種審視施之於人類與計畫的方法與模式，並據此導出對應機能組織之形式體裁的概念化狀態。唯因此一內在結構，才能在一建築物或一群建築物與“外部構造”亦即諸特徵之集結，是屬地景之肌理（如波爾德之NCAR）或市街之景觀（如波士頓之CSC）——之間，確立一種促成推演建築設計之內涵結構（context）的堅實關係。如是，建築之道實非自紛亂狀態中析理出秩序的形貌；而是近乎數學家布洛斯基所提示：「常識並非我們注入世界之物，它是我們在這世界中所“發現”的東西。」的方式。

然則，建築家們在波爾德、在波士頓所發現的內在結構——世界之“常識”的形貌究屬何物？一種衡量的基本向度是科學的程序與形態，如應用於NCAR者，以及宗教的程序與形態，如應用於CSC者。科學與宗教可視為兩種互相依存的使命，儘管科學與宗教不論在意象、譬喻、程序法則以及探索的形式上造成多麼鮮明的對比，它們却都是為了極其類似的理由而面對存在與經驗的問題。科學係關涉事實之完整性；而宗教則在於感受之完整性。二者實為互補之使命，因為它們均試圖以組成世界肌理之內在、整合的力量——從宇宙織錦般最狂縱、無盡境的閃電霹靂，到分子作用間最細小毫末的微動——將我們所知道以及我們所感受到的事物納入嚴密的組織之中。於此更須了解，科學與宗教之所

by which the order of nature reveals itself, this order being the substratum of all specificity — whether the “specifics” happen to be a scientific finding, a spiritual revelation, or an architectural characterization of human values, activities, and needs. This solitude, this element of Silence, is what makes possible the development of a closely woven, tightly defined *inner structure*, and in all buildings that can be said to have an enduring hold on the mind and spirit of man, this inner structure is what has made “design” possible, that phase of conceptualization in which the processes and patterns of the people and program to be served undergo surveillance and thus suggest the formal properties of the functional format. Only this inner structure can assure a consolidating, contributing relationship between a building, or a set of buildings, and the *outer structure* — that is to say, the composite of characteristics, be they the contours of a landscape (as at Boulder) or a cityscape (as at Boston), that make up the context in which, and out of which, a building design is developed. Architecture, then, is not wrenching a semblance of order from a context of chaos. It is to be approached along lines that J. Bronowski, the mathematician, once suggested. “Common sense is not what we put into the world,” he said. “It is what we *find* there.”

What was the inner structure, this countenance of the “common sense” of the world, that the architects found there, in Boulder, in Boston? A basic dimension to be measured was the processes and patterns of science, as they applied at NCAR, and those of religion, as they applied at CSC. Here are two complementary vocations. However contrasting their images, parables, rules of procedure, forms of inquiry — however contrasting these may be, science and religion deal with existence and experience for very similar reasons. Science relates to the integrity of facts; religion, to the integrity of feelings. They are complementary vocations because they attempt to bring the things we know and the things we feel into closer

以處於互補之立場，實因其均基於同一確實性——即“不確定性之確定性”之故。此亦為當前提攜建築之一因素，極似其於50年前即已開始激勵科學（特別是物理學）發展一般。正如德國物理學家海森堡以其“測不準原理”所演示的：我們施之於觀察或度量自然力量之行爲的方法，確乎將影響彼等自然力量顯示其性質與特徵的方式。不管我們的方法論、工具運用、以及演算看來多麼準確，我們都不能企求超過一種近似值。其結果，科學必須接納一種順應的態度，如同工程師可能名之為“寬容”的概念，以便裁量此一基本的事實：“當我們觀察或度量自然之過程與形態之際，我們同時也成為其中的一個參與者”。在原子核中無所謂間接的“粒子”。自遙遠的光源向著我們的掃描器閃動而來的光波中亦無所謂間接的光。一如富勒所言，並無間接的上帝存在。設若能將一種測不準原理導入前文所述的內在結構的概念化形構之中，則必無間接的建築可言。而建築物亦可採取一種順應的姿態——即“寬容”的概念——以裁量遍存於建築物物理情態裏裏外外之接觸、感應、交流的不可預測的、同時性的、重疊的“成份”。今天，這種想法被品評家們總括以“涵構主義”（contextualism）名之——品評家們總愛在某些觀念上冠以“××主義”的稱呼；其實，他們只要像布洛諾斯基一樣總括地說這種觀念，這個“涵構主義”，乃是在世界中發掘常識，而不是勉強將一種常識的先入之見加諸於世界。此處所強調的斟酌裁量，是在討論一組爲了科學之目的建築物以及一組爲了宗教之目的建築物時，必須留意的一個重點。因爲，它是一種使建築得以逐漸擺脫決定論——一種先驗的法則，如國際樣式主義者以革命般狂熱所定下的規範——之枷

alignment with the internal, integrating forces that are the fabric of the world — from the most extravagant, unending bolt of cosmic brocade, to the most minute and microscopic swatch of molecular interplay. It is also important to understand that science and religion are complementary vocations because there is only one certainty informing both — that is to say, the certainty of uncertainty. And it is a factor that has begun to inform architecture in the present period, much as it began to inform the sciences, most markedly physics, 50 years ago. As the physicist Werner Heisenberg demonstrated, with his Principle of Indeterminacy, the ways in which we go about observing or measuring the behavior of natural forces actually influence the ways in which those forces reveal their properties and characteristics to us. However exacting our methodology, instrumentation, and calculations may seem, we can not hope for more than an approximation, and, as a result, the sciences have had to adopt an attitude of accommodation, a factor of “tolerance,” as engineers might say, to allow for this essential reality: *We become a participant in the processes and patterns of nature as we observe or measure them.* There is no second-hand “particle” in the atomic nucleus. There is no second-hand light wave wiggling its way toward our scanners from far-distant sources. There is, as Buckminster Fuller has stated, no second-hand God. Given a Principle of Indeterminacy to inform the conceptualization of the inner structure of buildings, as we have discussed that concern here, there need be no second-hand architecture. Buildings, too, can adopt an attitude of accommodation, that factor of “tolerance,” to allow for the unpredictable, simultaneous, overlapping “particles” of encounter, cooperation, and communion that swirl around, within, and through their physical presence. Today this concern is being summed up by the cognoscenti by the term “contextualism” — there always has to be an “-ism” among the cognoscenti — when one

鎖的調整，又同時它也提示了一種處理生命在意志、價值與行動等諸般生活表現中的調適問題，非但同樣嚴謹，且更科學化的方法。一如不確定性的觀念促成了當前建築理論與實務的進展，它正是催生真正“客觀的建築”的誘因。同時它也是促使建築的認識作用與文化、社會及人文知識等其他領域之認識作用產生緊密關聯——因受阻於現代建築呈現在機械裝置，平滑表面上，對機電設備與技術傳統的默從，而久久無法實現——的因素。

在國立大氣研究中心及基督教科學中心，這種連繫均得以再現。此並非刻意追求“涵構主義”觀念之故；實乃因詳研其內在結構、每一處所及其從屬目的的本然秩序時，便可覺察到每一組建築物必遞衍至更高的次一組情境——整個實質環境的外部構造——的意義。

在國立大氣研究中心，設計者根據深究科學家個人或集體思考與工作之方式的根源而定義其內在結構；而其外部構造則定着在對延昇至平鐵山脈雄闊背景、森林環抱、岩骨嶙峋、蔓草叢生之傾斜臺地輪廓的深思熟慮。那個時候，1960年代初期，國立大氣研究中心的領導人是羅勃茲博士。他以罕見的洞察力設定了此一工程之哲學的、計畫的、環境的綱領。從一開頭，在羅勃茲與建築師的概念中必已浸染了一種不確定性的理念。

試觀國立大氣研究中心的內在結構，習慣上，大家總以爲最佳、最有效的科學實驗機構應該放在具有無限制適應性的建築物內。極像無數的鴿籠構造，它們的特徵是：長長的走廊，走廊的端部接通一群實驗室或辦公室或會議室。羅勃茲與貝聿銘對國立大氣研究中心的設計，顯然

might just as well sum it up, as Bronowski did, by saying that this concern, this “contextualism,” is finding common sense in the world instead of imposing a preconception of common sense on the world. This adjustment in emphasis is a point to be forcibly made in discussing a set of buildings, done in the service of science, and a set of buildings, done in the service of religion. For it is an adjustment which has gradually allowed architecture to throw off the shackles of deterministic, *a priori* laws, such as those laid down with revolutionary zealotry by the proponents of the International Style, and to assume a no less disciplined but considerably more scientific approach to the accommodation of life in its myriad manifestations of volition, value, and action. The factor of indeterminacy, as it informs the progress of architectural theory and practice in the coming period, is what will enable a truly “objective architecture” to evolve. It is also a factor that will enable a closer alignment between the perceptions of architecture and those of other compartments of cultural, social, and humanistic knowledge — an alignment too long prevented by modern architecture’s machine-tooled, smooth-surfaced acquiescence to the glamor of gadgetry and the conventions of technics.

In the National Center for Atmospheric Research and in the Christian Science Center this alignment was restored, and not because of any conscious hankering after notions of “contextualism” but because, looking into the inner structure, the natural order of each place and purpose to be served, there emerged a sense of the meaning that each set of buildings must convey to the next higher set of circumstances — the outer structure of the overall physical setting.

At NCAR the inner structure was defined by delving into and digging at the roots of the ways in which scientists think and work, both individually and collectively. The outer structure was defined

以向這種習常的假設挑戰自許。各種科學以及科學家們之間的相互影響，是非常複雜、極其個人化而內斂的。在國立大氣研究中心裡，空間層序的佈局、流動及其形貌，都是着眼於反映這種固有的複雜性而不是拒斥它。當貝聿銘爲了伏設使空間易於改變使用目的的條件時，首要的因素是科學家們總是一小組一小組地合作。因此這些“分子”簇群便安排成4至6個辦公室爲一群的形式，親密地佈置在若干不同的“領域”中。這個構想，直截了當地說，便是爲了使科學家們在群體中以及他們協同合力的工作中忘我。同時，其他“分子”與“領域”又必須防範其流於公共空間或一般使用空間的形式。國立大氣研究中心每年總有好幾千個訪客，由一個規模動人、格調優雅的大廳引進的公共空間，其位置都經過審慎的壁劃，以避免在訪客、職員和科學家們之間造成干擾。一般性的使用空間，區分爲圖書館與若干爲了會議及研討用的集會室，並賦予它們各種不同的規格、形式，以供獨自沉思、自發的談論以及針對某些問題或論文，有組織的研討。除了冬天以外，最能夠啓發靈感的“一般性使用”空間，可能要數研究中心有形界限以外舒展曠闊的戶外領域。在這個建築物的界面上，很有心地佈置了窗戶、矮而長的牆面以及橋架般的坡道等，使空間像是伸展了出去，盤繞著這一片建築物所座落或如同原本就屬於其一部份的臺地。坡道把科學家們以及他們的專業談論，從一個公共休息室引向大自然環境——貝聿銘本人即曾以睡袋在基地上過了好幾夜，爲的是要以最深摯的方式去了解並崇拜這一片大地。目前已加入著名的亞斯本研究所，專注於研究氣候對世界糧食生產之影響的羅勃茲博士回憶說：「聿銘和我在那臺地上往往一坐就是幾小時，應

by considering the dramatic contours of rock-studded, grassy slopes, edged by forests, rising to the powerful backdrop of the Flat Iron Range of mountains. At that time, the early 1960s, NCAR was headed by Dr. Walter Orr Roberts, who defined the philosophical, programmatic, and environmental dimensions of the project with rare insight and thoroughness. A principle of indeterminacy pervaded his and the architect's conceptualization from the start.

Take NCAR's inner structure. Customarily, it has been thought that the best, most efficient scientific laboratories are housed in buildings of infinite adaptability, rather like anonymous loft structures, which have been characterized by long corridors off of which, and at the end of which, are labs or offices or conference rooms. Roberts and Pei definitely posed a challenge to this assumption in designing NCAR. The sciences, and the interaction of scientists, are very complex, amazingly personal, and intimate. The sequencing, flow, and configuration of space within NCAR was conceived to reflect rather than refute this inherent complexity. While Pei produced conditions for easy conversion of space from one purpose to another, the centralizing factor was that the scientists would be working in small teams — hence, the clustering of these “particles” in the form of four to six offices, intimately arrayed within a number of different “territories.” The idea was, literally, for scientists to get lost among themselves and their collaborative pursuits. At the same time, other “particles” and “territories” had to be allowed for in the form of public spaces and general-use spaces. Several thousand people visit NCAR every year, and the public spaces, beginning with a lobby of engaging scale and elegance, were deliberately located to avoid interference between visitors, staff, and scientists. The general-use spaces, ranging from a library to several meeting rooms for conferences and seminars, provide varied formats for personal reflection, spontaneous discourse, and organized

群悠遊自得地在那片540英畝的遼闊土地上來來去去，說不出的安詳平和。我記得貝說將來在這建築物裡必定少不了一樣東西——必須使鹿群回來，在這裡到處走動。」他們果然做到。

當貝聿銘身處高地，進行漫長的沉思默想的時刻，環繞在他四周的國立大氣研究中心的外部構造，已化成其概念中的直接而統攝的力量。貝聿銘預期發生在此建築物之有形疆界內的接觸、協力、溝通，也幾乎在頃刻間便與“如何從建築物內部去感受基地”，以及“如何從基地去體驗此一建築物”等意念融滙貫通了。

不確定性原理可以再度應用於此處，何故？因爲此一基地，以其所有的壯麗而崢嶸的風貌，可以輕易地支配著對抗的優勢。然則，何不將建築材料，以一種在尺度上看起來像是自地表隆起的岩堆的方式來組合，而不是爲了引人注目，以形式上的計謀來與大地抗爭。

羅勃茲博士解釋說：「我總是對那些古老的山城心馳意動，像意大利的一些山城，它們的城牆事實上正是遠處荒野或耕地的起點。你看到山城，可以感受到城牆內的繁複錯綜與活力；你所看到的大地，別管它們本身的價值與用途，將城鎮烘托得生靈活現。這種意象，與我儘量不擾動自然景象，而使自然景象與建築物彼此調適互相映照的強烈欲望，有很大的關連。」

內部空間中人類交流的穩私感與領域感，再加上對外部空間自然景觀的尊崇，共同塑造出國立大氣研究中心的形式特質。它就像一個山城的縮影，混凝土方管向上聳起，彷彿模仿著山野背景中穩約可見的山岩拔地而起的形態，又同時也表達出內部工作空間的細膩佈局。巍然豎立

discussion of problems or issues. Perhaps the most inspiring “general-use” space of all, except in the winter, is the great outdoors stretching beyond NCAR's material boundaries. Those boundaries — skillfully placed windows, long and low walls here, a bridge-like ramp there — reach out to embrace the mesa on which, or of which, NCAR is built. From a commons room, where shop-talk goes on, the ramp carries people, and their shop-talk, out into a bountiful natural environment — one which Pei himself, spending several nights in a sleeping bag on the site, got to know and revere in the most intimate fashion. Dr. Roberts, who is now with the famed Aspen Institute, concentrating on the effects of climate on world food production, recalls, “Jeoh Ming and I would sit out there on the mesa, for hours, and the deer would come and go, so much at ease amidst that 540-acre expanse. It was so peaceful, and I remember him saying that there was going to be one thing about the building — that the deer would *have* to come back and walk by it.” And so they do.

In the solitude of those hours on the mesa, the outer structure of NCAR, all around him, became an immediate and integral force in his conceptualization. The encounter, the cooperation, the communion that was being envisioned to occur within the building's material boundaries was almost instantaneously spliced into how the site would be experienced from within and into how the building itself would be experienced from the site.

Here, again, a principle of indeterminacy applied. Why? Because the site, in all its splendor and variegation, was simply too dominant a circumstance to compete with. Why not, then, make the building's material massing in such a way that it would appear to be in scale with the setting, rather like a separate outcropping of rock, instead of fighting for attention by way of formal contrivances.

Dr. Roberts explains, “I had always been impressed by old hilltowns, like the ones in Italy, where the town walls were, in fact,

的方管群，顯露出殷望科學研究遠景的神態，與其說它們是空間中的一群物體，倒不如說更像是一系列事件的集合體。而在兩堆方管群的下方，一片低矮的基座容納了所有的公共及一般使用的空間。由於在這個山頭上陽光強烈，故玻璃用得很少，幾不達外牆面的十分之一。在其中的辦公室及實驗室均須有寬潤的牆面，因為這個如同巨石般的混凝土造形，對這一帶刺骨而強勁，足以刮人倒地的寒風而言，它既是象徵的也是實際的緩衝物。如此，國立大氣研究中心雖然極力安排室內與室外之間最接近的連絡通路，它却也能具備一種使科學家們從他們所研究的自然力量之中得到庇護的態勢。誠如墨頓所直截了當陳明的，它的形狀是孤寂的形象；但是一如我們所能觀察到的，國立大氣研究中心不僅為一種雕塑性的獨白，更為動態的、自由發揮的對話，創造了必需的條件。由於它的存在，從中往外眺望，圍繞著它移動、從下方的道路向它靠近、或甚而工作於其中，帶動了無數認識與經驗的“分子”的活動。前文曾論及科學所關切的乃是事實的整合，並非將事實當做凍結的元素，而是視之為邁向法則的確證的指標。當事實隨著時光不斷累積之後，這些法則似將於任何情況中屹立不搖。在驗證此類法則的時候，我們會將行為模式置於清晰的焦點下，作用與反作用之間的有秩序關係也會受到注目，自然過程的結果亦將被賦予某種結構。經由類似的過程，國立大氣研究中心絕非功能需求之淡漠無味的記錄；它是對大自然內在秩序之探求的外在形貌，也是影響此一研究之日常的、時刻的情境本身的外在形貌。

宗教，固然無別於科學，同樣關切統合的問題，但一如本文所述，

the beginning of the wilderness or farming lands beyond. You saw the town, complex and vital inside those walls, and you saw the land, left alone for its own worth and use, setting off the town itself. This image had a lot to do with my strong desire to disturb the natural scene as little as possible so that both the scene and the building within the scene would set each other off.”

It was the intimacy and territoriality of the human interaction within, taken together with the reverence for the natural scene outside, that yielded the formal properties of NCAR. Like a miniature hilltown, shafts of concrete thrust upward, picking up the pick hue of the rocks looming in the background, but also expressing the closegrained configuration of working spaces inside. The shafts bristle, energetically, with all the anticipation of scientific inquiry, as though a cluster of events rather than mere objects in space. Below the two clusters, a low base houses all the public and general-use spaces. The use of glass is minimal, taking up barely ten per cent of the exterior, because sunlight is strong up on the hill, ample wall surfaces are essential inside the offices and labs, and because the monolithic concrete shapes provide both a symbolic and practical buffer to icy gusts of wind which, in these surrounds, can sweep one off of one's feet. Thus NCAR provides a sense of protection from the very elements that its scientists are studying, while devising pathways of proximity between indoors and outdoors. Its shapes are shapes of solitude, as Merton would have understood right away, but as one can see, the vocation of NCAR has created the condition for, more than a sculptural soliloquy, a dynamic and free-wheeling dialogue. Myriad “particles” of perception and experience are set in motion by its existence, looking from it, moving around it, approaching it from the road below, or working inside. It has been suggested here that the sciences are concerned with the integrity of facts, not with facts as frozen elements, but with facts as signposts

宗教尚且關涉感情的統合而擴及我們所抱持之價值的含意、我們運用意志力的實態，以及我們所賴以規範行為、意志決斷的標準等問題。就這一方面而言，宗教所關涉的內容其實並不比科學“遠到那裡去”。而且它們既是深奧的，也可以是實際的。誠如詩人華萊士·史蒂芬斯所言，每一立方吋的空間都可以是一個奇蹟，然而它也是度量關係、距離與量的一種單位。

基督教科學中心將科學、宗教、藝術與波士頓後灣區的日常生活熔於一爐。同時，建立在一片15英畝基地上之此中心的建築群的組織，以一種近乎巴洛克式莊嚴而高貴的姿態將彼此的造形、視景、遠近與空間完美地契合為一個整體。當時，貝聿銘事務所主持該項業務的是鄂拉多·柯蘇塔，柯氏稍後與當時身為該工程首席規劃顧問的文生·龐第另組自己的公司。柯蘇塔對此城市之結構紋理所表現出來的勤勉謙抑精神，堪與貝聿銘對國立大氣研究中心壯麗的自然景象的敬謹態度相媲美。同樣地，建築的內在結構——各別建築物所包容之目的、計畫以及活動的本質——與建築之外部構造——空間、街道、四周既存物的尺度、邊界、以及穿越此一建築結構的事物等——合而為一。這一個建築群的結構包括了做羅馬建築式樣的原始聖母教堂（1894）及其壯觀的圓頂造形的擴建部份（1905）。沿著目前列植菩提樹的狹窄的挪威街，教堂的對面是新古典建築式樣的基督教科學出版協會。這個一度被植物病蟲害所苦，且堆積了殘破難以修復的世紀之交建築物的三角形地段，現在已經煥然一新。那些舊有的建築物與若干新蓋的建築物看來相當融洽而愉快地共聚一堂。

toward the verification of laws which, as facts are accumulated over time, would seem to hold true in all cases. In verifying such laws, the pattern of behavior is brought into clearer focus, the ordered relationship between actions and reactions is under-scored, events of natural process are given a structure. In a similar way, the National Center for Atmospheric Research is far more than a dispassionate, barren record of functional requirements. It is a countenance of a search for order within them, and of the everyday, evermoving circumstances which themselves influence that search.

Religion, not unlike the sciences, is concerned with integrity, but, as it was also suggested here, with the integrity of feelings, to the implications of the values we hold, to the ramifications of the volition we exercise, to the standards by which our behavior and decisions are formed. In this respect, the concerns of religion are no more “way out there” than are the concerns of science “way out there.” And they can be as pragmatic as they are profound. Every cubic inch of space may be a miracle, as the poet Wallace Stevens said, but it is also a unit of measuring relationships and distances and quantities.

The Christian Science Center brings science, religion, and art together with the everyday life of Back Bay Boston, and, in the composition of its buildings on a 15-acre site, engages them in an interplay of form, view, perspective, and space that is almost Baroque in its majesty. Put in charge for the Pei office, Araldo Cossutta, who has since formed his own firm with Vincent Ponte, who was chief planning consultant on this project, proved to be a studiously deferential to the fabric of the city as Pei himself was to that of the splendid natural setting of NCAR. And here, again, the inner structure of the architecture — the nature of the purposes and programs and activities being housed within the individual building — is engaged with the outer structure of the architecture, the spaces

新蓋的建築群包括28層高的教會行政大樓，借用柯蘇塔的話來說，它像是對著從科普萊廣場及普魯登霞中心朝東走來的人們“宣告”本中心就在眼前。三層樓高的主日學校建築形成了本中心一個文雅的端景。它的背面向著園藝廳，而其四分之一圓展開的懸挑正面，則像是把人們的注意力反射到它正對面的聖母教堂和它的擴建部份。

聯繫著行政大樓與主日學校建築的建築群組的主要軸綫，是一座670英尺長，波平如鏡的大水池，周遭點綴著更多的菩提樹、花台、長椅和過往人群。就在行政大樓的旁邊，水池靠市區的一端，是一個直徑80英尺的噴泉。正對著水池，與軸綫平行的，則是一座525英尺長、5層高的柱廊建築。它那重覆的柱列以及上部曲折形的混凝土廊簷，當我們信步走過此建築邊緣或流連於柱廊的內側時，可以感受到它們所造成的豐富節奏。或者沿著水池漫步而過時，池水緩緩洩過弧形的紅色花崗石池緣的潑洒聲，輕柔入耳。

沉浸在這些關係之中，我們便能了解這些建築物，古老的以及新蓋的建築物，所欲傳遞的象徵性的訊息。當我們徜徉其間，或者驅使我們的感官去衡量這些結構物的相對尺度以及視景的序列層次與感受時，我們會發現，每一樣東西都是互相關連的。水池映照出四周的景象，而且，從好幾個位置看來，四周的建築布景好像是事實上被懸空垂吊著一般。這些建築物都使彼此互相隔離自己。柯蘇塔曾將此一景象比擬為戲劇，在戲劇中有的被指定為主角，而其他則扮演類似合音的搭配角色，不過這得視觀看者正巧處於某一瞬間位置而定。行政大樓也許可以當做是這一群建築物的主角來看待，當人們從東邊看過去時，行政大樓框出

了本中心的輪廓，並且因為它的高度，使它扮演了基督教科學中心與附近普魯登霞中心更高建築間的過渡性的角色。從另一個角度看，主日學校變成主角，它將人的視界，越過水池與空間的框架，反彈到古老的教堂建築，再依次反射到教堂擴建部份新建的圓弧形柱列門廊，從此向外的視野是一片新植的、莊嚴而廣闊的草地與樹叢。不論是從平行於軸綫，貼著基地南側而過的漢廷頓大道，或從教堂門廊與公園前面掠過基地一角的麻薩諸塞大道來體驗這個基督教科學中心，我們都會感受到一種經由深刻理念的擘劃所造成的，親善的水乳交融的氣氛。雖然在這些建築物之間，都有一段步行距離存在，但不論是建築物彼此之間，或移動於基地上的人與整個空間結構之間，從不會有疏離感存在。在我們的腳下，基地四周、紅磚鋪面從邊界街道一直延伸到基地內部，在建築物之間，水池周圍，甚至於伸展到建築物的大廳裡面。從頭到尾，這些結構物的基本形式都是精確澆灌的混凝土，然而這些混凝土的結構元素，非但不顯得遲滯呆板，反而都鮮活地舒展開來捕抓光線、陰影與倒影。在所有的建築物當中都用到了玻璃，而且用得非常多。但是這些玻璃面都同樣受到遮護，例如深深地隱退到主日學校弧形的懸挑頂部底下，或者為了防止陽光直射，在行政大樓退縮了六呎的深度。這種形式、材質以及空間的互相穿透與互相倚賴的狀態，正好顯示了柯蘇塔有關結構的箴言：「明晰性的泉源」。基督教科學中心如此地叫人不得不心折，因為柯蘇塔的箴言蘊涵了一種與人類經驗及互動力學，以及工學之精微處密切關聯的結構理念。此亦即柯氏施之於結構物的基本法則所以能成為精煉、具有豐富表達力的語彙底緣故。我們那怕只是驅車掠過這個基地

and streets and scale that surrounds, borders, and at points actually threads into the composition. The composition includes the Original Mother Church of Romanesque design (1894) and the powerful domed presence of its Extension (1905). Across from them, on narrow Norway Street, now lined with grown Linden trees, is the neo-classical Christian Science Publishing Society (1934). Once hemmed in by blight and encrusted with irretrievable turn-of-the-century buildings, the triangular parcel has been transformed in such a way that these existing buildings and the positioning of several new ones are joined in a joyous spatial tension.

The new buildings include the Church Administration tower of 28 stories, which, in Cossutta's words, "announces" the Center as one approaches it from the Copley Square and Prudential Center districts to the east. The Sunday School building of three stories acts as a gentle terminus, with its back facing old Horticultural Hall, while its quarter-circle cantilever deflects one's attention to the Mother Church and the Extension just opposite.

The primary axis of the composition, connecting the Administration and Sunday School buildings, is a 670-foot-long reflecting pool, which is embellished by more linden trees, beds of flowers, benches, and plenty of people. Just to the side of the Administration building, at the townside end of the pool, is an 80-foot-diameter fountain. Opposite the pool, and parallel to its axis, is the 525-foot-long Colonnade building, of five stories, its repetitive columns and continuous lip of curved concrete at the top providing a rich cadence as one saunters alongside the building, behind the columns, or alongside the pool itself where water sloshes gently over an edge of rounded red granite.

To become immersed in these relationships is to understand the symbolic message which these buildings, old and new, are meant to convey. Everything connects, as one moves, or as one's senses

are impelled to measure the comparative scale of the structures and the sequence of view and sensation. The pool reflects, and, at several points, the composition surrounding it seems to be literally suspended. The buildings each deflect, one to the other. Cossutta has compared this to the drama, where some are called on to be leading characters, and others a kind of chorus. But it depends upon where one happens to be at a given moment. The leading character may well be the Administration building, framing the Center as one sees it from the east, its height acting as a transitional element between the Center and the taller buildings of Prudential Center nearby. At another point, the Sunday School becomes the leading character, deflecting attention to the older Church buildings just across the pool and framing, in turn, the new rounded, columned entrance of the Church Extension which looks out across a new and stately expanse of grass and trees. Whether experiencing the Center from Huntington Avenue, a major thoroughfare which runs along the south edge of the site, parallel to the axis, or from Massachusetts Avenue, around the corner, which runs in front of the new portico and park, one is drawn into an affable give-and-take that is the result of deeply principled planning. For all of the walking distance between certain of these buildings, there is never a sense of detachment, either between the buildings themselves or between oneself and the composition. Underfoot, all around, brick paving ranges into the site from the bordering streets, between the buildings, alongside the pool, and into the lobbies. Precision-poured concrete is the grammar of construction throughout, and the structural elements, far from being inert, reach out to grab hold of light and shadow and reflection. In all of the buildings, glass is used, expansive sheets of it. But the glass is also protected, recessed deeply beneath the curve of the Sunday School, for example, or recessed all of six feet in the Administration tower for protection from the sun.

，這一片空間與建築的組曲也會像委婉傾訴般地吸引我們的注意，而且它也確能使我們領悟到，在日常的人類經驗中，和諧的有益的力量。雖然有些評論家批評說，基督教科學中心那種精緻勾勒的景觀以及軸線的安排方式似乎意味著一種過時的設計觀念；但我們不禁要懷疑，既然建築師已經對基督教以及其他一切宗教所追求的深沉的、統一的人類關係的澈悟，做成了直率的反映，那麼這種格調的塑造與巴洛克風格的體裁和空間規律縱有雷同之處，究有何碍？！又如果我們沒有任何理由足以否認確有一種歷史性的設計法則存在的話，那麼這一群建築物的組合對當前時代條件與需求的有力表達，不正好是這種歷史性設計法則的最佳闡釋嗎？！

就像他的家鄉中國蘇州傳說中的“石耕者”一樣，貝聿銘以這兩個醒世之作，將精雕細琢的造形置入淙淙流泉以及人類境遇的喧囂煩憂之中。貝氏並了然於胸的是，在一個，或二個，或甚至於三個世代之內，其他的“石耕者”必會繼起，將這些造形從腐朽的池水中救起，並同樣臨淵履薄地將它們移置在新的院牆與新的庭園之中。建築師——要成為一個優秀的建築師可真不容易——必須平衡、掌握這種經驗的向度；並且一如“石耕者”悉知他的材料以及他所賴以耕耘之水流的本質，建築師必須了解，他的創造的最終形式與性格，乃是決定於某些不盡然可預測的力量以及無法完全洞悉之日後的用途。如此，建築師須單獨面對不確定的確實性，於孤寂中進行他的工作。然而建築師更須殫精竭智於選擇他的表現的要素，縱使物換星移，歷經歲月的撫慰或摧殘，那些表現的要素在一種嶄新的適當性的支配下，仍屬可見、可用與可享。如君所

This interpenetration and interdependency of form, material, and space illustrates Cossutta's precept of structure as "the spring of clarity," and CSC is as compelling as it is because Cossutta's precept embraces an idea of structure that has as much to do with the dynamics of human experience and interaction as with the details of engineering. That is why the grammar of his construction works as a refined, richly enunciated language. The composition pulls people's awareness into its confidence, even as one may be just driving by, and imparts lessons about the useful impact of harmony on everyday human experience. While some critics have observed that the Christian Science Center, with its carefully framed vistas and axial relationships, represents a concept of design whose time has passed, such nuances have less to do with the stylistic and spatial tenets of Baroque, one suspects, that with the architects having directly responded to the reposeful, unifying insights about human relationships which this religion, and all religions, seek. And if there are historic precepts of design at work here, and there is no reason to deny that there are, these have been interpreted in such a way as to have put in place a set of buildings that speak cogently to the conditions and needs of our own time.

Not unlike the fabled "rock farmers" of his native city of Soohow, China, Ieoh Ming Pei has, with the harvest of these two notable works, placed carefully selected forms into the gurgling streams and rushing rives of human circumstances, knowing that in a generation, or two, or even three, other "rock farmers" will come along, extricate the forms from the eroding waters and place them, as carefully, in new walls and new gardens. An architect, and it is very hard to be a good one, has to consider this dimension of experience, knowing, like the "rock farmer" knows his materials and the nature of the flow of the water he works with, that the final configuration and character of his creation will be determined by

見，在波爾德是為科學，在波士頓則為宗教，建築師以其睿智選擇了“岩石”，殷切塑造“流水”的效果，且為“不確定性”留有餘地。此乃湯馬士·墨頓所提示的，在人與人之間、在人類的各種意圖之間、在不同的時代之間，以及在使這一切得以具現的結構與空間之間，保有關聯與連續性的必要條件。終究，此乃事關敬畏崇拜的問題。而建築物之使命乃是使崇敬成為存在與經驗之統合的要素。這兩個作品使我們領悟到，建築並非事物或感情之描述，而是兩者之融合——就一時而言，確是如此；但以一種更深刻的方式來說，就無法逆料之長遠時光而言，亦復如此。如果建築師能深切體認到他所面臨的挑戰乃是在於事物與感情的融合，而且也願意透過對事物與感情之本質更深入的了解，來達成融合兩者的使命。那麼在積聚和諧以服務生命這個工作上，建築成其為一門“藝術”，將更確然不移。

forces that are not entirely predictable and by subsequent uses that can never be fully known. In this way, the architect, too, works in solitude, alone with the certainty of uncertainty but attempting to chose his elements of expression so that, caressed or buffeted by events over time, those elements can be seen and used and enjoyed with fresh pertinence. Here in Boulder, for science, and in Boston, for religion, and architect chose the "rocks" wisely, attentive to the "flow" effecting them, leaving room for uncertainty. This is, as Thomas Merton suggested, the condition for connection and continuity, between people, between human purposes, between periods of time, and between the structures and spaces that embody them all. It is a matter of reverence, finally, and the vocation of a building is to make reverence an integral element of existence and experience. One is reminded by these two works that architecture is not a characterization of facts or of feelings but that it is a fusion of both — for a moment, yes, but in a vital way, for moments not yet dreamed of. If the architect understands his challenge as the fusion of fact and feeling, and is willing to make them one by learning more about the nature of both, architecture may yet an "art," amassing harmony in the service of life.

I. M. Pei & Partners

*National Center for Atmospheric Research
Boulder, Colorado. 1967*

*I. M. Pei & Partners and Araldo Cossutta
Christian Science Church Center
Boston, Massachusetts. 1973*







