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modern
architecture
since
1900

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alvar aalto and scandinavian developments

Nature, not the machine, is the most important model for architecture.

Alvar Aalto, 1938

The process described in the last chapter whereby the ideas of a powerful prototype were transformed to meet various conditions was repeated many times throughout the 1950s and 1960s. Linked to this pattern of dissemination were self-conscious attempts at blending modern architecture with national and regional traditions. Uninventive modern building was dull and seemed to represent technological brashness and social anomie. It was a long way from the poetic power of the finest inter-war works to the dreary housing schemes, offices and schools that constituted the debased International manner prevalent in the 1950s. Some sort of regeneration was evidently necessary.

In the search for new inspirations and primal signposts, peasant vernaculars once again came into vogue. They evoked a reassuring, pre-industrial world in which men, things and natural forces seemed to work in unison. They also suggested keys for adapting to local environments, climates and traditions, and supplied possible correctives to the enfeebled versions of the International Style. Vague yearnings for archetypes were sensed in many of the arts in this period. Universalizing and transcultural psychological theories about 'Man' (derived from Carl Jung's ideas, for example) kept uneasy company with a quest for regional identity which steered carefully around overt nationalist positions. This was one of the ways in which a war-torn Europe sought internal equilibrium. The reverberations were felt by artists as diverse as Le Corbusier and Aalto; they emerged in the debates around the conference tables and in the musings of Team X.

Giedion baptized the mood the 'New Regionalism' and hastened to point out that it had nothing in common with inter-war 'blood-and-soil' ideologies such as those which had led to a neo-vernacular style under Nazism. The idea was to cross-breed principles of indigenous building with languages of modern design. A procured naïvety was evidently to be valued, and modern architecture was to show both greater respect for differences of climate and a more sensitive appreciation of 'place'. At its worst this could end up in tepid imitations of vernacular forms; at its best it led to Le Corbusier's Maisons Jaoul, or to Jørn Utzon's houses at Kingo, in Denmark, of 1956–60 (see below).

In Finland, in particular, the process of 'naturalization' of modern architecture had already begun in the 1930s, particularly in the work of Alvar Aalto. Indeed, the International Style had been a brief interlude and its lessons had soon been grafted to a substructure of national (or else National Romantic) building traditions. One is almost tempted to declare some Nordic genius for the sensitive handling of locale, landscape, light and natural materials. But then conditions were different from elsewhere in Europe: industrialization had less of a drastic impact; timber was plentiful; and the rural vernacular was a continuing point of reference.

Although Scandinavian modern design enjoyed a vogue in the 1950s and was associated with ovoid wooden salad bowls and organic banisters, this was not the whole story. There were also several strands of 'minimalism' which combined sparse abstraction and purity of form with a tactile sense of both natural and industrial materials. In Denmark, for example, Arne Jacobsen demonstrated how Miesian ideas could be refashioned in a steel and glass vocabulary combining elegance of detail with lightness of touch; he also designed furniture, glassware and other objects which were simplified, but sympathetic to the human hand. The manufacture of mass-produced models was aided by the strength of Scandinavian craft traditions, which perhaps took to industrialization with less fuss than had been the case in Germany and Britain.

There was never quite an Aalto School, but he hovered as a sort of father-figure over Scandinavian architecture none the less. His prototypes were well adapted to the scale of the landscape and to the stringencies of the Nordic climate; but he was also inimitable, and the architects who succeeded in translating his basic lessons and emerging with their own creative identities were few in number. Apart from their influence on others, Aalto's late works contained a drama of their own, and they need to be considered alongside the works of the other 'modern masters' in their maturity; as with them, new territories of expression were extended, while certain older themes continued to grow.

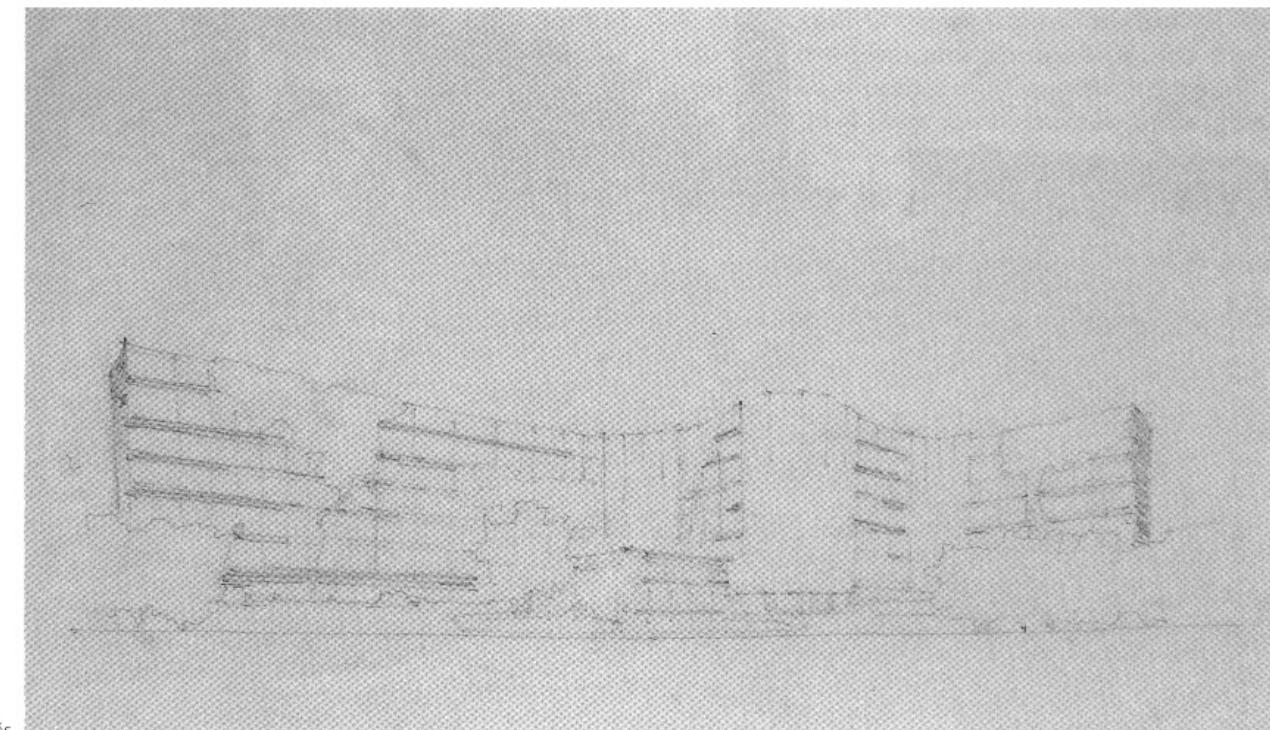
When the war came to an end, Aalto was 47 years old. He had managed to survive stagnant economic conditions in Finland by hazardous trips across the Atlantic to teach in Cambridge, Massachusetts, at the Massachusetts Institute of Technology (MIT),

only a mile away from Gropius at Harvard (but very far removed in spirit). Aalto's first notable post-war commission stemmed from this institutional connection: it was to design Baker House (1947–8), a student dormitory for MIT on a site to one side of the campus, with views over a busy road towards the broad basin of the River Charles. Aalto broke the programme down into its private and communal elements and disposed the former – the students' rooms – in a serpentine spine. This form was no mere whimsy, but had a variety of practical, aesthetic and symbolic justifications. It created considerable variety in the rooms and allowed diagonal views up and down the river; it made for an unmonolithic form of great sculptural vitality; and it marked out a small enclave to one side of the campus. The communal parts of the programme were enclosed in rectangular forms laid out on a diagonal axis at ground level; in fact the lounge and dining area was double-height and part buried below ground. This contrast in geometry was reinforced by contrasts in material between the

564 Alvar Aalto, Baker House student dormitory, Massachusetts Institute of Technology, Cambridge, 1947–8

565 Baker House student dormitory, pencil drawing showing trellising. Alvar Aalto Foundation, Helsinki





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horizontal, hovering concrete and stone-clad roofs of the lounge/dining room area, and the rough red-brick textures of the serpentine wall punctured by the windows of the private rooms. Overall, the organization seemed to suggest that Aalto had taken the formula of the Pavillon Suisse – a hovering rectangular slab for the student rooms, curved rubble areas for the public functions – and turned it on its head. Indeed, the Baker House design started as an oblong block that was only gradually modified into a curved form.

Although Aalto was probably inspired by the local Boston tradition of red-brick houses with sinuous, curved sequences of bays, the thinking behind the building and its forms was rooted in his pre-war explorations. The curves were related to his continuous search for anthropomorphic forms and forms inspired by natural phenomena, in everything from furniture-design to the layout of large schemes on the Finnish landscape. Among the drawings for Baker House is one showing the building covered with trellises of thick greenery, like some geological formation. The rough, brick surfaces gave the impression that the building was already old, and the effects of weathering were anticipated and

invited. The contrast with the mechanical slickness then in vogue in America was extreme, and seemed to suggest a rejection of industrialism in favour of more lasting human themes. It is scarcely surprising that Baker House should have been perceived in America at the time as a challenge to the straitjacket of the International Style stemming from Gropius; it is equally notable that the building had little influence in the United States.

Aalto's idea of buildings as intermediaries between human life and the natural landscape was explored continuously in the post-war years. This was a period of rapid reconstruction and urbanization in Finland (whole villages and townships had been destroyed), and Aalto wished to find some way of blending modern architecture with topography in rural and semi-rural places. He reverted time and again to splayed volumes, to stratification, to layers of platforms and steps, and to irregular silhouettes arising from light-wells and sloping roofs. Behind these fragmentations of form was a larger idea of a democratic society gathering in an informal way within the loose framework supplied by public institutions such as town halls, churches and libraries. Aalto was acutely sensitive to



566 Alvar Aalto,
Town Hall, Säynätsalo,
1949–52

567 Town Hall,
Säynätsalo, plans of
ground-floor, courtyard
and council chamber
levels

568 Town Hall,
Säynätsalo, Council
Chamber

566

the contours of the land, to the angle and direction of winter sunlight, and to the need for convivial social settings linked directly to surrounding nature by meandering routes and framed views. He responded to the need for a new image of community and to a cultural condition between urbanity and rusticity.

Aalto felt that there were almost archetypal building configurations expressing the basic forms of human society. These he was able to intuit in both the vernacular and the most ancient monumental buildings; there was no opposition between 'high' and 'low' traditions where the search for fundamentals was concerned. One such archetype was the courtyard or, to be more precise, the 'harbour', formed by an inward-looking perimeter building on three sides, and linked to the surroundings by overflows of steps and levels. The Villa Mairea (1938–41) had been a variant on this scheme (Chapter 19) and Aalto's own 'experimental house' at Muuratsalo of 1953 was another. Variations on the idea recurred in many of his public (or quasi-public) schemes in the 1950s and 1960s when

a focus was needed which none the less had to be linked to a larger context. Aalto's sensitivity to vernacular precedent emerges in his description of the 'Karelian house' – a type of farmhouse aggregation with a scattering of dwellings, barns and pens around a loosely-defined enclosure – in the remote eastern province of Finland:

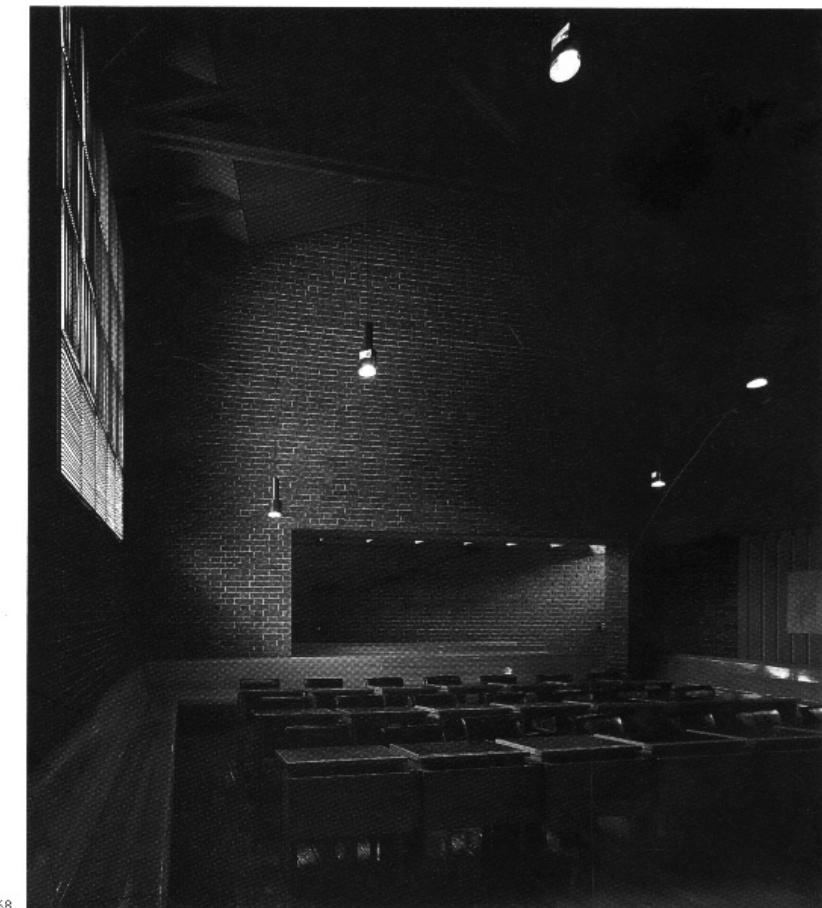
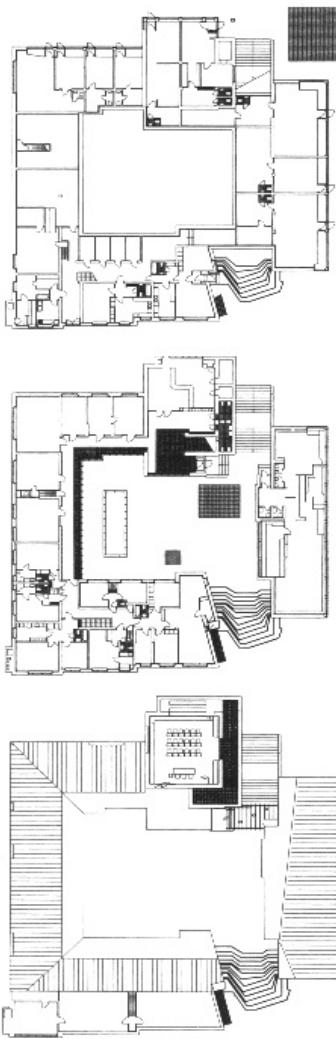
A dilapidated Karelian village is somehow similar in appearance to a Greek ruin, where, also, the materials' uniformity is a dominant feature, though marble replaces wood ... Another significant special feature is the manner in which the Karelian house has come about, both its historical development and its building methods ... The Karelian house is in a way a building that begins with a single modest cell or with an imperfect embryo building, shelter for man and animals, and which then figuratively speaking grows year by year. 'The expanded Karelian house' can in a way be compared to a biological cell formation ...

This remarkable ability to grow and adapt is best reflected in the Karelian building's main architectural principle, the fact that the roof angle isn't constant.

It is interesting to carry this image in mind when one approaches Aalto's town centre at Säynätsalo of 1949–52. This was placed at the heart of an island community – the space at the centre becoming, in a sense, the focal point of the entire local society. The

complex included a Council Chamber together with a public library. At ground level there were shops which could be transformed into government offices once the need arose. The Council Chamber was contained in an almost cubic volume with a slanted roof, and acted as the pivot of the scheme as one approached over the rising levels of land by means of a forest path, then up the stairs and across the court. Some variation of fenestration and texture was employed to articulate the different sides of the building: wooden-slatted windows and balconies were set off against predominant rough red-brick surfaces. With its steps overgrown with grass, its variation of silhouette, and its weathered materials, Säynätsalo had almost the air of an ancient complex of buildings which had grown gradually, bit by bit. The buildings blended with their forest setting and the varying levels of the site. Any lapse into the merely picturesque was held in check by an underlying formal discipline.

The Council Chamber at Säynätsalo had the character of a democratic meeting house and was reached by a circuitous route culminating in a narrow flight of stairs. It was entered off-axis and its naked brick walls, splayed timber roof-beams and broad wooden benches were arranged informally to encourage easy exchange and debate. The benches celebrated local craft (Säynätsalo was a timber town) but were also vivid symbols of egalitarian involvement. Their curved profiles recalled Alto's sketches of the mouldings in Greek theatres. A stark brick room, with light filtering in from above, the Council Chamber contained hidden presences and distilled both local and classical archetypes for political assembly: the Finnish sauna (where all were stripped to the same status and the sense of community was reinforced); and the type of rectangular state chamber for council meetings found in ancient Hellenistic cities such as Miletus or Priene. Säynätsalo was a casual building with





569 Alvar Aalto,
Vuoksenniska Church
(Church of the Three
Crosses), Imatra, 1956–9,
interior

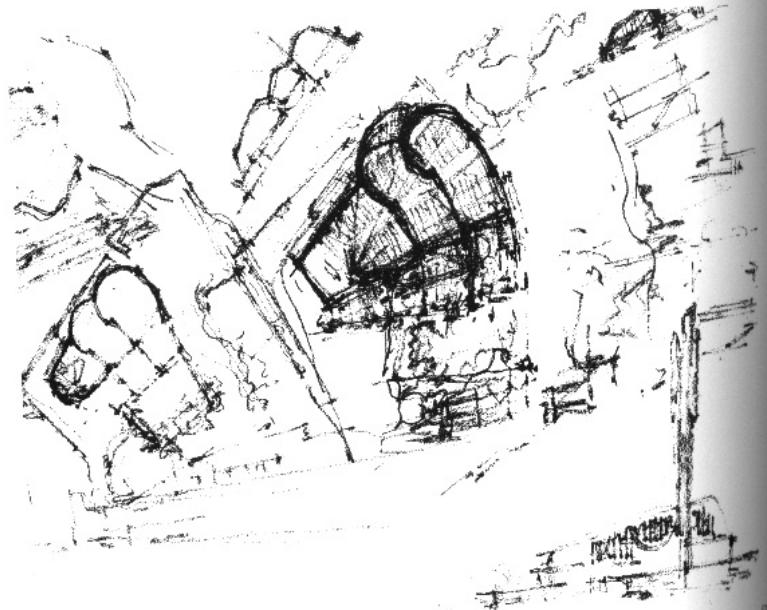
570 Vuoksenniska
Church, sketch plan, 1956

571 Vuoksenniska
Church

572 Alvar Aalto,
Public Library, Rovaniemi,
1963–8, sketch plan

just a hint of ritual; it was civic without being monumental, and lived between urban and rural worlds. In Aalto's private terms it drew together the Greek democratic city in its ruined shape with the scraped glacial contours of the north.

Between 1950 and his death in 1973, Aalto produced an extraordinary number of buildings and projects, receiving commissions in places as far apart as Oregon and Persia. Still, the majority of his buildings were for Finland and other Scandinavian countries. The range of tasks handled was also very wide and included schools, libraries, churches, housing schemes, university plans and entire urban layouts. Each building was marked by a unique response to the aspirations of the client, to the anticipated character of human behaviour, and to the configuration of the particular site whether in countryside or city. Even so there were transcendent themes and typical forms which added up to an architectural language based upon a general corpus of principles. This language represented a mythical

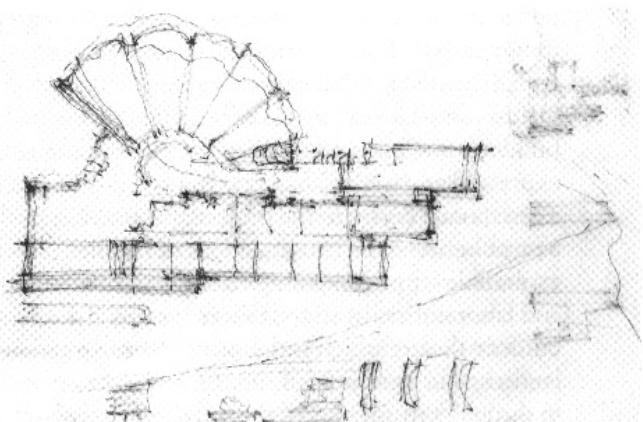




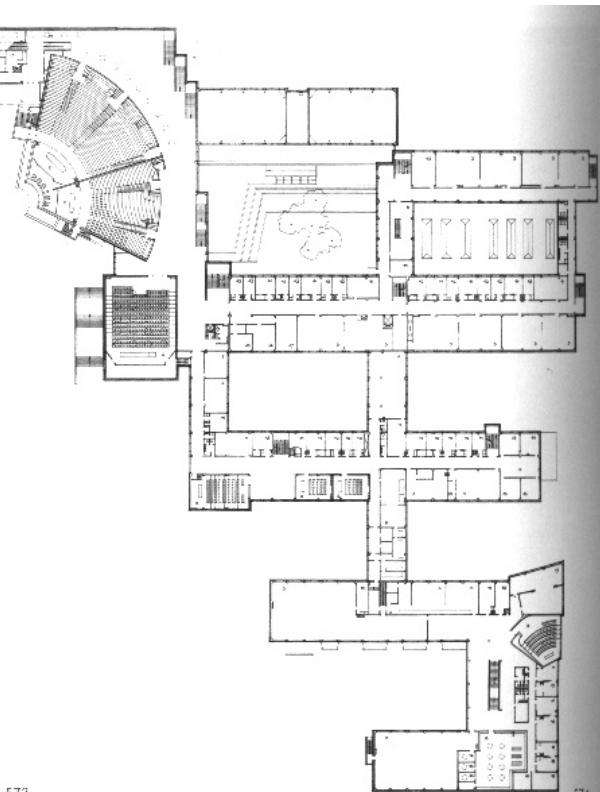
interpretation of society, and reflected the artist's ideas of both nature and history.

Like Wright, Le Corbusier, Mies van der Rohe or any other architect who achieved a genuine style, Aalto distilled many levels of meaning in his system of forms. A single sinuous line could blend the idea of a building as an illuminated vessel with the conception of a structure as a frozen wave of sound. For the Vuoksenniska Church near Imatra of 1957–9, these themes were brought together in a 'polyphonic' space resulting from the interpenetration of uneven curves in plan and section. Slats and louvres over the windows reinforced the rhythm while fracturing the light over smooth white surfaces. In Aalto's late works, layers and levels were often combined in a complex stratification, while tactile details such as railings or handles reinforced the sense of the human body moving through space. The architect had less and less need for a 'rational' order; the vitality of the sketch seemed to be translated directly into the finished form.

One of the recurrent Aalto configurations was a fan shape attached to a rectangle. This occurred in many of his designs for small public libraries (e.g. Rovaniemi, 1963–8) where the rectangle might contain offices, and the fan might radiate from a single central point, across a unified reading room with open book stacks, to finish in an irregular perimeter with small areas for individuals who wished to have privacy, a view and direct daylight. Variations on the fan could also be found in Aalto's many designs for auditoriums and concert halls (e.g. Finlandia Hall in Helsinki); even in the splayed plan forms of the unbuilt Museum of Modern Art for Shiraz in Persia. The fan could also be used to generate space between buildings, and in Aalto's own studio near Helsinki there was an outdoor, stepping precinct that was gently curved. Beyond practical considerations and programmatic distinctions, the combination of the hard-edged rectangle and the curved or fractured fan encapsulated Aalto's idea of the transition from town to landscape, from man-made to natural worlds. Here then was one of these basic patterns intrinsic to a true style. But each time the 'type-form' was employed it had to be rethought in the new context; it was not sufficient just to reuse it like a mechanical formula.



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In the Helsinki University of Technology, Espoo, of 1949–66, the fan form appeared again in one of its most daring manifestations. The site was irregular, bordered on two sides by motorways, with a slight slope in the terrain. Aalto made the main auditorium the focus of the whole group of buildings and placed it in a prominent position, expressed as a wedge-shaped volume. This supplied a ceremonial centre to the project and acted as a pivot between the two directions of parallel, extendible strips containing classrooms, offices and laboratories. In effect, the wedge was also an outdoor theatre which gathered up the surrounding landscape in its stepping form. Light was brought in through the uprights of the steps, then reflected downwards into the lecture halls beneath by means of curved scoops which recalled Aalto's sketches of concave, sound-reflecting surfaces in antique theatres. In the far north, winter light was in short supply and this section was a way of maximizing its brief but life-enhancing presence. But the image of an outdoor theatre pierced by rays of light also corresponded to Aalto's vision of a liberal

academic institution dedicated to enlightenment. The University of Technology was like a small city in the landscape. Its plan implied both hierarchy and the separation of parts; a 'topographical' order which included stepping levels of ground and spaces between buildings. A similar approach to contours, fragments and interrelations informed many of Aalto's urban designs of the 1950s and 1960s (e.g. the city centre at Seinäjoki, or the plan for the area around Finlandia Hall in Helsinki). Beneath the surface of urban existence there was a basically geological metaphor. As early as 1926, Aalto had referred to the stratified rocks in Mantegna's paintings as a 'synthetic landscape', 'a small hint to our present-day urban planners on how they should approach their task'.

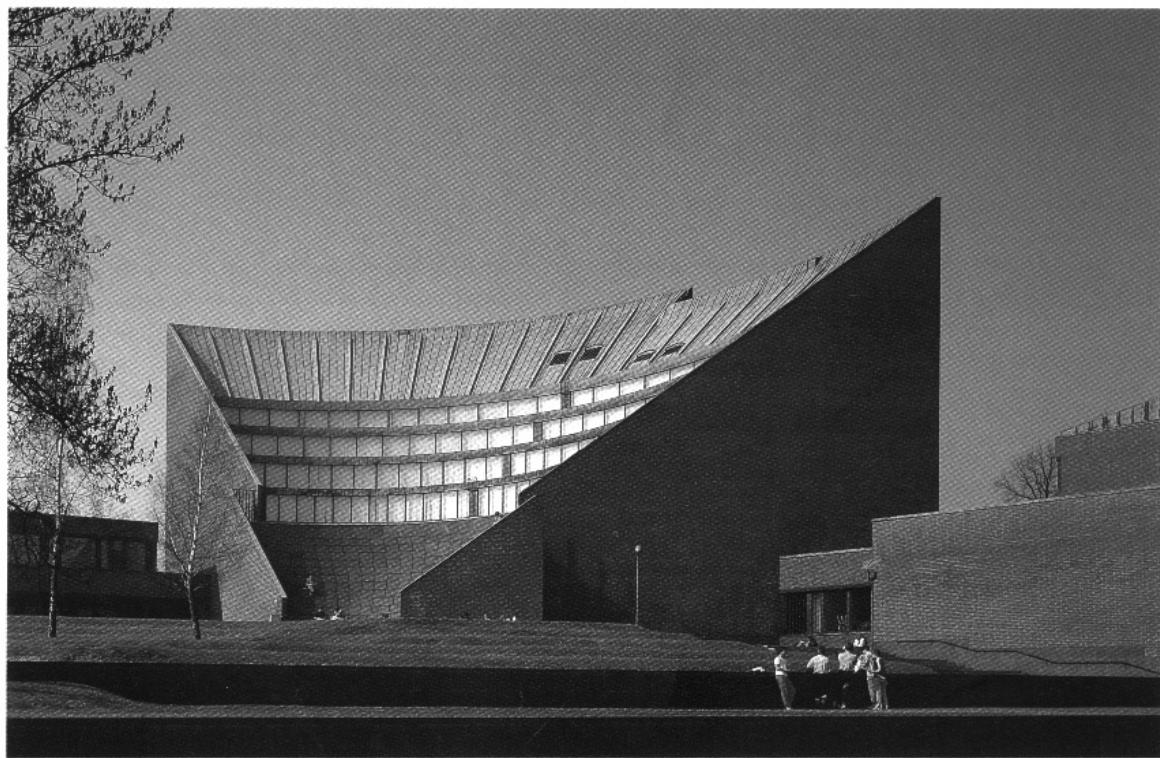
There was some affinity between Aalto's 'land-mass sculpture' approach to architecture, and the late works of Le Corbusier, particularly Ronchamp. Aalto was preoccupied with the idea of an architecture close to 'nature': more than just an insistence on natural materials and local topography, this meant that nature should be

573 Alvar Aalto,
Helsinki University of
Technology (formerly
Finnish Technical Institute
at Otaniemi), Espoo,
1949–66, aerial view

574 Helsinki University
of Technology, plan

575 Helsinki University
of Technology, main
lecture theatre

576 Alvar Aalto, sketch
of the amphitheatre at
Delphi, Greece, 1953



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understood as a source of ‘laws’, as a ‘model for architecture’, in his own words. Like Le Corbusier, Aalto was drawn to the classical world, and to the forceful interaction of the intellectual with the sensual in the architecture of ancient Greece. But whereas for the Swiss the Parthenon was the prime exemplar (a ‘pure creation of the mind’), for Aalto the chief inspiration lay in the way the Greeks arranged their urban sites with amphitheatres, stadia, and ceremonial platforms linked by paths and routes. It was an ‘irregular’ order of this kind – in which there was, none the less, a harmony of buildings, landscape and the spirit of place – that Aalto managed to evoke in his drawings of antique ruins, especially Delphi, and that he attempted to translate into his own architecture and urban designs. It may be that the final touchstone for the fan shape which so obsessed him was the Greek amphitheatre, fractured and eroded by time.

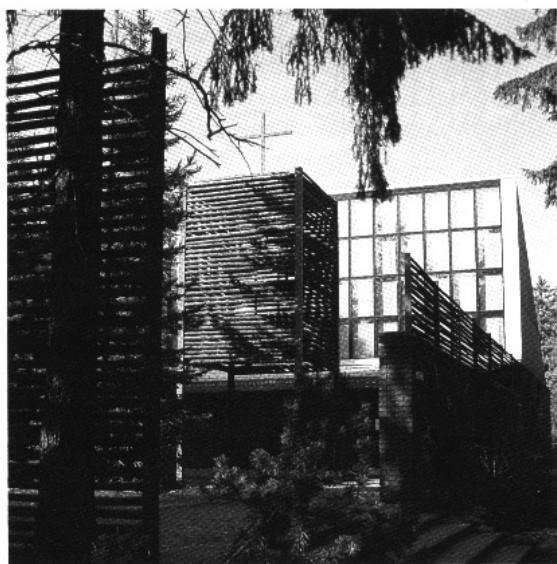
At this point it is worth attempting some generalizations about Aalto’s sensibility in relation to other strands of the modern movement around 1960. In his late works, in those of Le Corbusier, in

some projects by Team X, in the work of diverse individuals like Denys Lasdun, Louis Kahn or Jørn Utzon, even in the art of a painter such as Robert Rauschenberg, one senses a new complexity and ambiguity in the relationship between the art object and its surrounding spatial or cultural field. At some level this was a continuation of the fundamental changes made by Cubism at the turn of the century, but it seems also to have been related to an 'existential' frame of mind. Similarly there was a more overt acceptance of the past, but a past that was often seen in almost archaic terms. This was not a case of returning to nineteenth-century eclecticism, but of blending together, as it were, some of the primary devices of modern architecture with an ancient sensibility. Accompanying this development was a renewed interest in the unique qualities of materials and in the directness of things in themselves: slabs, gutters, rails, construction details. Finally, one notes a shift from mechanistic analogies to ones based upon geological or biological orders. Aalto (who was already working in some of these directions in the 1930s and 1940s) seems to have grasped and incorporated all these tendencies within one huge imaginative structure; but lesser talents paid increasing attention to similar questions at the same time.

Aalto's imitators, like those of Le Corbusier or Wright or Mies van der Rohe, tended to acquire some of the external mannerisms without grasping the underlying meaning or structure of thought. This was usual and to be expected. Nor was it always a bad thing: Altoesque pastiches did at least have a complexity and texture which would have been lacking without his influence. However, there were some artists capable of extending Aalto's principles, and using them to feed their own. Among these was the Finnish architect Reima Pietila, who evolved a metaphorical language of his own, nourished by primal images of the landscape. Aalto's influence spread well beyond national boundaries as well – to the rest of Scandinavia, and even to Spain and Portugal where certain 'Mediterranean' ingredients in his work stimulated architects such as Antonio Fernandez Alba and Alvaro Siza to make a fresh interpretation of their own situations (Chapter 26).

In the Nordic countries, what might be called an 'organic' tendency was accompanied by a precise

minimalism which took several different forms, and which was inspired by the 'lucid quietude' of Mies van der Rohe, by the stern geometries of the vernacular, and by abstract painting. In Finland itself, Aulis Blomstedt was a key figure as a practitioner, theorist and teacher in encouraging a mathematical discipline and a spirit of abnegation. Blomstedt spoke of architecture as 'the art of subordination' and evolved a methodology combining modular standardization and Pythagorean proportions. His terrace houses at Tapiola (1954) were self-effacing but harmonic in form. The Otaniemi Chapel at Espoo near Helsinki (1957), designed by Kaija and Heikki Siren, reduced structure to a sparse framework of walls, stilts, fences and roofs, adjusted to admit light and to frame the view of a free-standing cross in a forest glade beyond the altar. The building defined a geometrical precinct on the edge of the forest, and combined the abstraction of modernism with the tactile values of rural buildings in timber. The fence bounding the site was made of steel, but twig bindings were woven into it: the industrial and the rustic were sublimated by the order of the building. The chapel at Espoo extended an honourable lineage of Nordic courtyard types (including Aalto's unbuilt Funerary Church for Lyngby of 1952 and the smaller chapels in Asplund's Woodland Crematorium). Without rhetoric or forced symbolism, it also reinvestigated some of the earliest forms associated with congregation: the platform, the atrium and the assembly in a clearing.



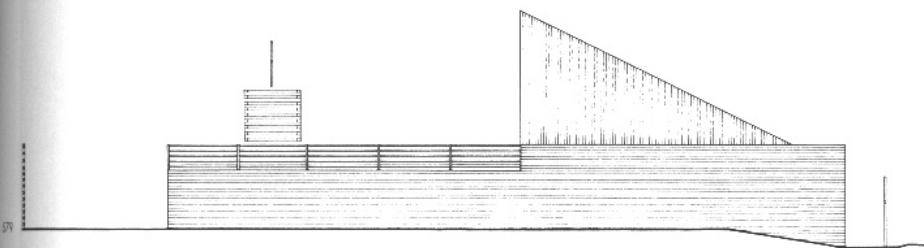
577 Kaija and Heikki Siren, Otaniemi Chapel, Espoo, near Helsinki, 1957

578 Otaniemi Chapel, interior

579 Otaniemi Chapel, elevation



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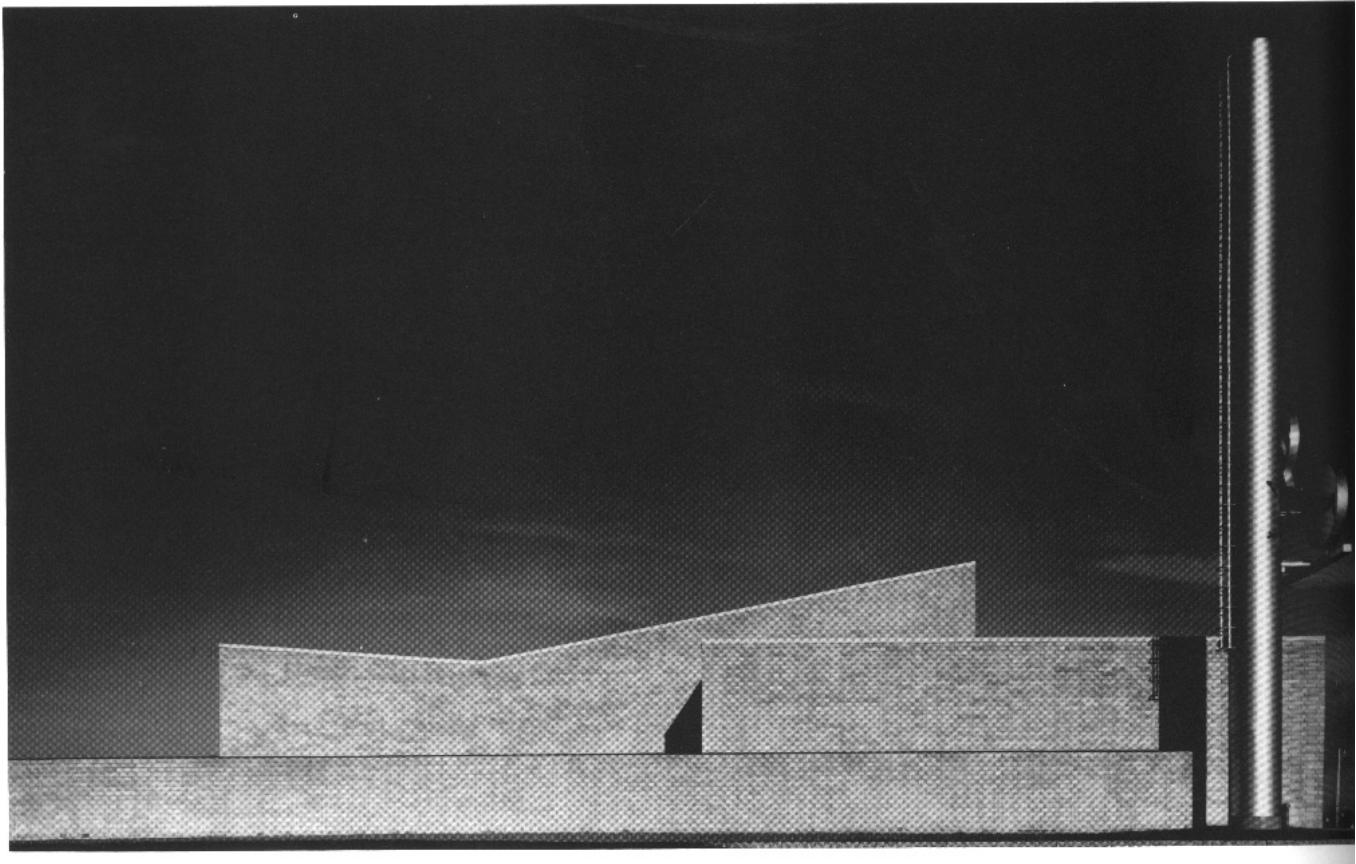
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The Danish architect Arne Jacobsen laid the foundations of his architectural position in the 1930s, but soon moved beyond the obvious features of the International Style towards an architecture of formal restraint and material elegance, inspired by both the purity of the Danish vernacular and the disciplines of modern industrial design. The Town Hall at Rødovre of 1955 and the SAS Royal Hotel in Copenhagen of 1958–60 both made use of prismatic volumes and curtain walls in glass and steel, the latter being a fresh reinterpretation of North American models for the skyscraper. Even when constrained by standardization, Jacobsen was able to maintain a close attention to fabrication in steel, glass, stone, wood and brick. The suspended spiral staircases of several of his buildings, with their intricate expression of joints, connections, suspending-rods and slender treads, were virtually works of art in their own right. In parallel with these larger-scaled buildings using extensive glazing (and

580 Arne Jacobsen,
SAS Royal Hotel,
Copenhagen, 1958–60

581 Arne Jacobsen,
Carl Christensen Factory,
Aalborg, 1957

582 Jørgen Bo and
Vilhelm Wohlert,
Louisiana Museum of
Modern Art, Humlebæk,
1958





582

a vocabulary which owed something to both Mies and Eliel Saarinen), Jacobsen also developed the expressive potentials of the planar brick wall, starting with the funnel-like shapes of the Fish Smokehouse at Odden Harbour of 1942, and going on to the diagonal spatial dividers of the Søholm Terrace Houses at Klampenborg of 1950. In his best buildings, as in his furniture, glassware and cutlery designs, Jacobsen relied upon a clear, dominating idea, a reduced abstract form and a tense, linear silhouette. The Carl Christensen Factory at Aalborg, North Jutland of 1957 combined sharp-cut brick walls with a polished stainless-steel cylindrical stack, and worked along the line between industrialism and traditional craft.

The Louisiana Museum of Modern Art in Humlebaek designed by Jørgen Bo and Vilhelm Wohlert in 1958, drew upon several influences typical of this period in Danish architecture – Wright, Aalto, Mies van der Rohe, Japanese traditional architecture – but established its own ground rules in the exploration of spatial variety on the basis of a few standard pieces. The site was both demanding and rich in opportunity, in that a collection of modern paintings and sculptures needed displaying along a covered walkway between a fine eighteenth-century house and the sea, with the

Swedish coastline in the distance. Bo and Wohlert planned the building to take maximum advantage of this sequence without disrupting the landscape. Essentially the Louisiana Museum was a linear building defined by white planar walls and low wooden roofs; the result was a quiet but elegant structure from which the garden was grasped as a series of vignettes, and these, in turn, enhanced the works of art. One of the most stunning effects was achieved by placing the stick-like Giacometti sculptures in a double volume against a backdrop of marshland and reeds; this particular space was entered at an upper level. The Museum then gradually changed direction, to meander to the water's edge where a path continued (without the building over it) along a coastal way. The splay of the plan and the sensitivity to topography are reminiscent of Aalto. But the Louisiana design also had a certain regional sensitivity, since it seemed to fuse Miesian planar walls and spatial effects with the whitewashed enclosures and wooden structures of the Danish vernacular. The whole was permeated with a fine sense of proportion and a delicate scale which made it a comfortable neighbour for architecture of any age.

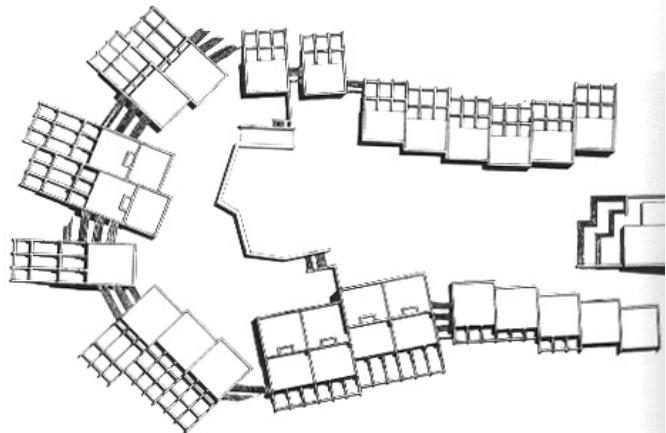
Another Danish architect to transform a variety of modern and ancient influences to good purpose



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was Jørn Utzon, who was born in 1918 and studied at the Academy of Arts in Copenhagen under Steen Ejler Rasmussen and Kay Fisker. The period between the end of the war and 1957, when he won the Sydney Opera House competition, was one of constant travel, few commissions, and a vast absorption of impressions. He worked for a time with Aalto, absorbed much from the work of Asplund and visited Wright at Taliesin; he was also drawn to the sculpture of Henri Laurens, which provided basic lessons in abstraction and anthropomorphism. He travelled extensively in Mexico, the Far East, and North Africa, filling his sketchbooks with ideas and impressions. Among the strongest influences on him were the mud buildings he saw in Morocco and the cubic aggregate forms of Berber villages clustered around platforms and terraces in the High Atlas Mountains.

It is therefore insufficient to see Utzon as a mere follower of his Scandinavian mentors Asplund and Aalto, though he did draw on both in evolving qualities of subtle ordering and spatial complexity. In the Kingo Houses near Elsinore in Zealand of 1956–60, he designed an L-shaped type, into the elbow of which a small garden was inserted. He disposed this standard in a variety of different ways over the topography to create a hierarchy between the individual home and the community, and to maximize a variety of site responses on a gently



sloping terrain. The terrace houses at Fredensborg (1962–3) continued something of this theme, but created an even greater variety of rhythms through a more complex form including towers. The materials were humble brick and pantiles, and the effect was akin to the 'anonymous' vernacular buildings so much discussed at the time. The overall project layout of the Birkehoj at Elsinore (1963) introduced yet another pattern using standardized elements, grouping them around a loosely defined 'harbour' in which the sculpting of land-mass platforms helped to link the parts and give meaning to the spaces between. In this case it is possible to perceive the lingering debts to Aalto and to vernacular

583 Jørn Utzon, Kingo Houses, near Elsinore, 1956–60

584 Jørn Utzon, Birkeholme Houses, Elsinore, 1963, plan

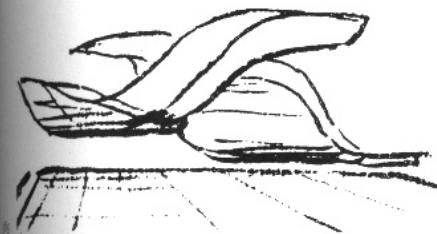
585 Jørn Utzon, Sydney Opera House, 1957–73, preliminary sketch for the vaults

586 Sydney Opera House, aerial view

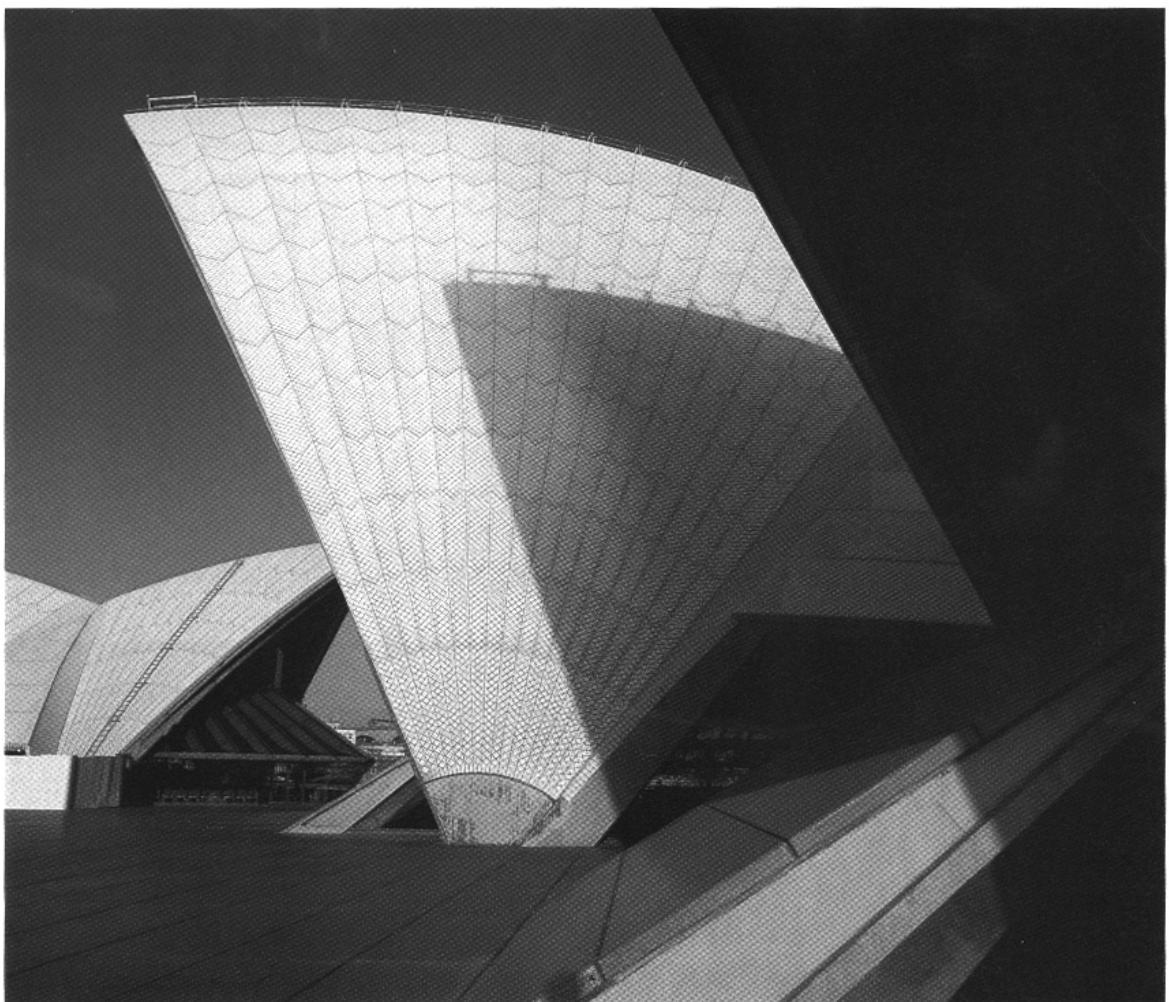
expressions of community, but the style was Utzon's own. Moreover, the arrangement also suggests loose parallels with some of the ideas being pursued by Van Eyck, De Carlo and others at about the same time.

Of course, the major building for which Utzon is internationally known is the extraordinary Sydney Opera House designed between 1957 and 1966, and then brought to completion in a modified form after his resignation. Here is not the place to untangle the only half-known personal and political complexities which led to this sad state of affairs. The results, so far as the architecture was concerned, were that the interior was quite different from Utzon's probable vision; that many of the details (of which he may have had an imprecise idea himself) were also gradually evolved by minds other than his own; and that the shells had a more vertical thrust than that envisaged in the earlier drawings.

But the image of these soaring white curves at the end of Bennelong Point, jutting out into the harbour and echoing the silhouette of the bridge and the sharp curves of the sails nearby, still has great power to move. They rise upwards from low platforms which themselves step up to their highest points at the water's edge. Into the platforms are laid the two main auditoriums on a slightly converging geometry, while a small space to the landward side contains a restaurant. The sails, butting into and slicing one another, rising and pitching against the sky, seem to transmit a visual force felt equally in their tense profiles and their smooth but slightly textured surfaces. The original idea for the interiors is best grasped from a section which shows a sort of counterwave motion of curved ceilings flowing beneath the vast roofs above. The fly-towers, finally, were buried under the highest of the shells, thus disturbing some hard-line puritans who were unable



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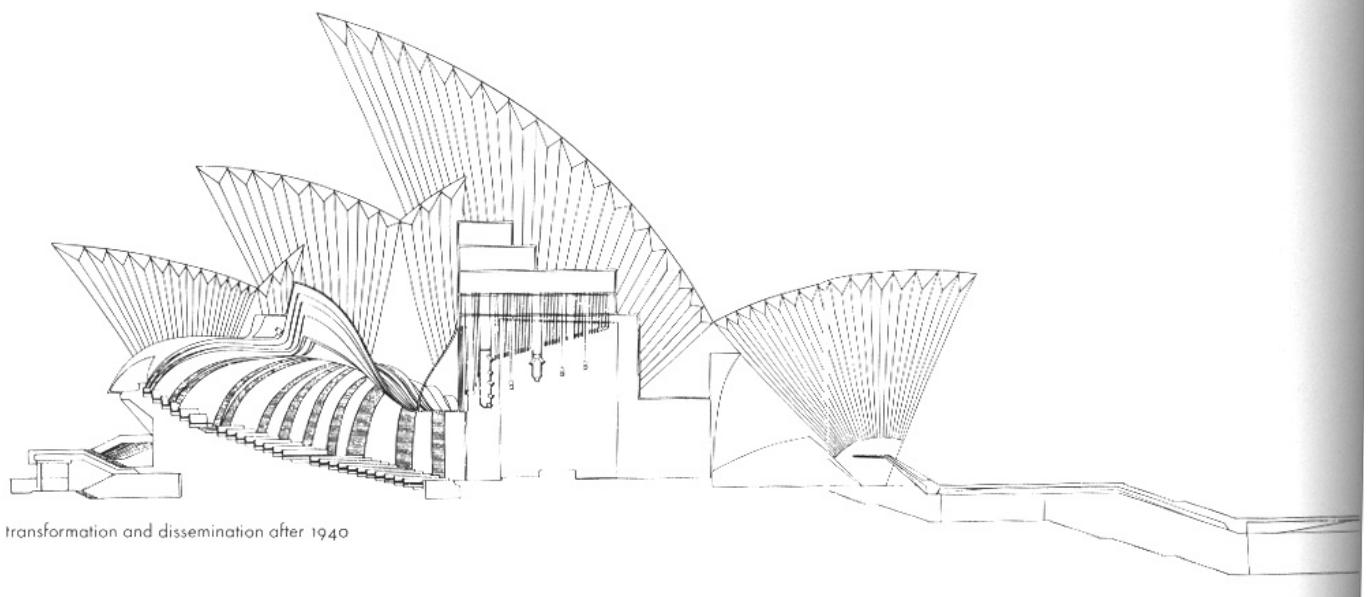


587 Jørn Utzon, Sydney Opera House, 1957–73, detail

588 Sydney Opera House, section through original scheme

589 Sydney Opera House, plan

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transformation and dissemination after 1940

to enjoy the contrasts and complexities between the interior and the exterior.

As is true of any original work of art, it serves only a limited purpose to list possible sources or analogies. The platform theme was on Utzon's mind anyway, as is clear from his housing designs, but in a monumental context it may have been specifically inspired by the artificial hills with ceremonial steps of Monte Alban, the ancient Mexican site which the architect had sketched during his travels. The shells were a staggering invention, perhaps partly influenced by Bruno Taut's curved crustacean abstractions of the 1920s, and perhaps partly prompted by the complex interlacing curvature which Utzon had seen in the work of Aalto; although here too were longer-range echoes, since Utzon's transformational sketches showed an Oriental temple roof hovering above a level plane, even clouds floating above a horizon. Whatever the historical or natural analogies, they were absorbed into a fresh synthesis, an idea which abstracted the waves and sails of the harbour even as it made visual reference to the flow of sound. It is curious that this *symbolic* expression of musical rhythms should in fact have posed considerable acoustic problems. Utzon's entire approach to design involved an oscillation back and forth between abstraction, metaphor and structural thinking. For example, the splayed window struts which were to reconcile the varying curvatures, and to stand up to structural and wind loads in the vast openings, were probably traceable to the architect's interest in the wing structures of birds.

But there were other levels to the symbolism of the building. It was in a sense a modern cathedral consecrated to a supremely important national art. One historian wrote of the concept that it '... concentrates the unconscious meanings of its urban context in the same way as Notre-Dame, situated on the Île de la Cité, does for Paris. It manifests the spirit of the city ...' Utzon himself referred to the Opera House as a sort of church:

... if you think of a Gothic church you are closer to what I have been aiming at ... looking at a Gothic church, you never get tired, you will never be finished with it ... this interplay of light and movement ... makes it a living thing.

Indeed, Utzon attempted to design a standardized system of parts which could eventually be assembled into his free-form design, in much the same way that Gothic architects had used repeated systems to achieve their sublime and complex spatial effects. At Sydney this eventually necessitated both a change in the geometry of the shells so that they conformed to a spheroid profile, and considerable experimentation with pre-cast concrete, in which the engineer Ove Arup played a major part. Many of the details remained to be realized at the time of Utzon's resignation, and the Opera House looked for a time as if it might be a white elephant. At last it opened in 1973, having already become an Australian national icon.

Long before this, the Sydney Opera House had become part of the folklore of modern architecture. Sigfried Giedion published the design in the later editions of *Space, Time and Architecture*, and conferred upon Utzon the mantle of the great tradition. The Opera House was presented alongside Le Corbusier's late works and Kenzo Tange's monumental buildings in Japan as evidence of a new elemental tendency in which the fusion of buildings with their context was held to be crucial to the emergent spatial conception. In a sense the choice was premature, as it was not clear what the Utzon design would really be like when finished; even so, this was judicious appreciation of a great architectural idea. Moreover, it was an idea which, in its combination of the abstract and the naturalistic, in its fusion of the complex and the simple, in its enrichment of the structural and spatial ideas of earlier modern architecture, and in its transformation of ancient monumentality, encapsulated some of the aims of a new generation.

