Jørn Utzon: The education of an architect

by

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This is to certify that the master's thesis of

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has met the thesis requirements of Iowa State University

Signatures have been redacted for privacy
To my Mother and Father
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CHAPTER 1. INTRODUCTION

**Jørn Utzon and Mies van der Rohe: the Unlikeliest Confluence**

No one seems to have noticed how profoundly rooted is the genius of Jørn Utzon (b. 1918), architect of the magnificent, exuberant, curvilinear sections of the Sydney Opera House, Silkeborg Art Museum, and Bagsvaerd Church, in the work of that most restrained of architects, Ludwig Mies van der Rohe (1886-1969). My chapters two through four, covering the years 1952 through 1956, remedy that omission and trace the genesis in Mies's work of Utzon's three most important early, realized projects: his first and own house at Hellebæk (Denmark, 1950-52), the House for Svend Middelboe (Holte, Denmark, 1953), and the sixty-three dwelling Kingohusene (Kingo, Denmark, 1956-60).¹

The pedagogical value of this study is, I hope, substantial. Looking at exactly how the perfectly orthogonal Hus Utzon is essential to his great later designs at Sydney, Silkeborg, Bagsvaerd, and Kuwait tells us much about the nature and method of creative work.

Utzon never worked for Mies, by all accounts met him briefly twice, and never admits to other than a very limited presence of Mies in his own architecture. Further, Utzon only writes of specific works by Mies deceptively: first in 1952, to deflect notice of rather than explicate Mies's enormous influence over Hus Utzon. It is a charming bit of misdirection, sending us toward the presumptive inspiration of Mies's Farnsworth House rather than its true source, the German Pavilion for the Barcelona International Exposition. This happens again in 1965 when Utzon excoriates Mies, implying he is a prisoner of the straight-jacket of a dubious, even unintelligent simplicity in the design of the Illinois Institute

Remarkable as it is, Utzon's method evolves out of his response to Mies's work.

Figures 1.4 - 1.6. Mies van der Rohe: Concrete Office Building, 1922; Mies, Seagram Building and Plaza, New York, sketch, 1954; Mies, Crown Hall at IIT, 1950-56. Remarkable as it is, Utzon's method evolves out of his response to Mies's work.
of Technology, even though Utzon's career began in the manner of that orthodoxy he now rejects. But, as I summarize by my fourth chapter, the accumulating evidence allows me to describe Utzon's own house at Hellebæk as a relentless effort to resurrect and render habitable Mies's Barcelona Pavilion through the obsessive repetition of its proportional scheme, overall form, and consequent shapes, all realized by way of close interpretation of the materiality of Mies's European villas.

I next imagine Utzon's critically ignored Hus Middelboe as moving dramatically away from the apostolic shadowing routinely apparent at Hellebæk. As completed it retains only the broadest proportions of Mies's spare, skeletal sketch of his unrealized Glass House on a Hillside, and takes on only those characteristics of Mies's Farnsworth House necessary to assail him. Hus Middelboe is a violent opposition to the Farnsworth House, but one so rigorous in its violence that Utzon surpasses his work's initial nature as oppositional to create architecture that, while unmistakably beholden to Mies, develops its own powerful aesthetic: What began at Hellebæk involving expression of the parts of architecture is now aimed at an authentic simplicity and against its mere depiction.

I then propose that with his housing at Kingo Utzon's break with Mies is far more radical. The compulsions of Hus Utzon and Hus Middelboe are absent, supplanted by fabulous senses of play and relation. It is readily possible, for example, to see the Kingohusene's arrangement on its site as the creative realization of several of Mies's discarded early themes for the Weissenhofseidlung housing exhibit, as a dance with the arrangement of Mies's Lafayette Park housing, and further, in the case of its several permutations on dwelling in plan and section provoked by the exquisitely refined jewel box of Mies's unrealized 1931 Row House, as detailed advances and variations on the ghost
presence of that refinement which is rendered by Utzon merely prototype.

Utzon creates great difference at Kingo, but without the relentless, contradictory quality of the work at Holte which, despite its strength, has the certain air of gainsaying. At Kingo Utzon seems indifferent to opposition and thus able to continue to develop an aesthetic that, while rooted in Hus Middelboe, becomes vastly more rich since expression is now tied to the luxurious variety of life and not oversimply to the elements of architecture.

Chapter five describes the method Utzon develops through 1956 in response to Mies, and demonstrates how this method extends into Utzon's work on the Sydney Opera House, particularly in his reconception of Alvar Aalto's Library at Viipuri (Finland, 1927-1935). My second through fifth chapters, then, give evidence of a vastly more involved connection with Mies than has been previously supposed, and demonstrate how the trajectory of Utzon's approach, over time and work, evolves from a means of generating form to the far more valuable result of generating method.

Following this, in my highly conjectural sixth chapter, I describe Utzon as evolving his method begun in Mies and then through Aalto to other of the most canonical architects and works of the twentieth century: In addition to Aalto's Library again, Utzon appears to deeply engage Frank Lloyd Wright's Guggenheim Museum (New York, 1943-1959) and Le Corbusier's Chapel of Notre Dame du Haut (Ronchamp, 1950-53). All work, no matter how legendary, becomes fair game for contention and play, and I will hazard that no architect ever becomes more bent than Utzon on reconceiving the canon.
Education

When I write, then, Jørn Utzon: The Education of an Architect, I don’t mean to discuss the philosophies handed down by his professors at the Royal Danish Academy of Fine Arts, although I am sure his time there was well-spent. It is instead his work in response to Mies that, as I imagine it, constitutes his primary education, one hardly of the conventional type involving indoctrination and good behavior.

Utzon’s labor toward comprehending or, more accurately, apprehending Mies, is truly remarkable. It involves developing the closest clear scrutiny of the smallest architectural details, and with this the breadth of understanding necessary to seeing through the veil of apparent simplicity shrouding Mies’s work, then reconceiving that and more in built architecture. Easy enough, of course, to criticize anything, but to literally construct responses out of stone and wood and metal are fantastic and committed operations. It is particularly when Utzon reduces Mies’s perfected geometries to simple starting points, as with the Kingohusene, that what I mean by education is embodied: the extraordinary effort of winning knowledge through the intensely concentrated and personal engagement with great ideas.

I believe Mies is still important: he won and keeps the power to provoke us. Even so, his reputation since his death in 1969 has collapsed. Those who remain his disciples are, unlike Utzon, unable to go beyond the minute refinements and incremental adaptations adoration requires. Mies too deserves some of the blame he gets for the invention and spread of placeless, city-deadening, "glass box" architecture, particularly given the imitative rigor of the Illinois Institute of Technology’s curriculum over the twenty years he headed its Department of Architecture. His likeliest heir, Phillip Johnson, lacked Mies’s intensity, skill,
and commitment, and many of Mies's own buildings have not held up well. His first
apartments on Lake Shore Drive, striking at the middle of the last century, now feel crude
and bulky in spite of his attempt to diminish the heaviness of their frames with slender,
nonrepresentative steel sections on their exteriors. Many more of Mies's buildings are even
less what they pretend to be. He seemed untroubled when concealing reinforced concrete
structural frames behind aluminum sections pretending to lightness, though this pretense and
its frequent repetition, yielding only sometimes admirable skin, diminishes his legacy. Too,
those of us not mesmerized note what else Mies has to conceal to force his utopian vision.
The Seagram Building (New York, 1954-58) conceals a five- and ten-story el at the rear in
order to present a pristine elevation to Park Avenue. Similarly, the two spines behind the
Promontory Apartments (Chicago, 1949) streamline the lakefront view, but shortsightedly
hide the majority of the building's surface area from Lake Michigan.

It is rather his lifelong attempts at simplification that, even failing its achievement,
identify the causes of its impossibility. In this too concrete world these are enormously
valuable findings. Mies's chase after a lush and perfect minimum also puts questions of
whether such exists, what form it might take, and what shape. His replies came closest first,
and his work asks us to justify everything beyond it as more than caprice. It is an idea that
still haunts architects, and more, it asks our work answering it to be stronger and more sure, a
spur that brings on Utzon's finest efforts. For myself, I do not always enjoy Mies's work, but
it remains a strong part of my conscience.

My definition of education, then, leads me a little farther along toward understanding
influence, the source of which is often intuitively held, then inexplicable beyond that. It is
surely the work we do with what we choose, or with what chooses us, that creates our
education. That Utzon can grow that strange and astonishing flower in Sydney Harbour out of Mies's terrible restraint and delicate refinements seems an understanding, and an education worth deep investigation.

The Question of Motive

Given his disinclination to discuss the matter in a helpful way, as to why Utzon chooses Mies specifically to emulate, contest, then surpass, I cannot say with certainty. At the time Utzon began a practice in 1950 Mies had been director of architecture at the Illinois Institute of Technology for a dozen years, and his design for its campus was largely realized. The Farnsworth House had just been completed to extraordinary critical acclaim, and the unprecedented and striking curtain walls of his apartments at Chicago's 860-880 Lake Shore Drive were rising above Lake Michigan. He was, then, a towering figure. The appearance of simplicity in Mies's work could very well have appealed to a young architect without clients whose future might be decided by the success of his first house, his own, particularly as its budget and size were severely restricted by the state loan making its construction possible. There is a certain security in, as only one example, the new architect's appropriation, if not theft, of the masters specific and celebrated use of proportion, something that particularly appears in Utzon's work of 1952 and 1953. There may also have been admiration, once, though that admiration becomes camouflage, then scorn. Certainly it was also possible Utzon was realizing a longtime dream of living in the Barcelona Pavilion.

Perhaps, then, Utzon at first steals in order to free his novice imagination to realize those tasks he can manage. He is reported to have said that the details of Hus Utzon were the hardest of its aspects to develop. Given the size and substance of his use of Mies's work
there, and how many architectural problems that use resolved, it is in retrospect hardly a surprising admission.

**Methods and Operations**

In the vein I began, no one appears to have seen the depth and substantive presence of Mies in Utzon's work, and regarding notice of what was to me the unlikeliest of confluences I am tempted to say that while looking at the "simplicity" of Mies I was first struck by how painstaking and laborious he was in arriving at its appearance. Further, Mies's work seemed to have almost nothing to do with what was being written everywhere about it, but rather that published claims for its simplicity and clarity⁴ were being filled by the earliest work of a young and obscure Danish architect. It might then have been an elemental sketch of the Barcelona Pavilion in the Museum of Modern Art's Archive of Mies's drawings that seemed better captured by the spare elevation and materials of Hus Utzon than by Mies's lush realization of it. In this new light assertions for the directness and honesty of the Farnsworth House seemed more convincingly met by the frank piece work of Utzon's Hus Middelboe. Measurements of the Kingohusene against Mies's 1931 Row House followed.

This is not entirely true, of course. The moments of intuition can be clearly held, but the order of them are rarely neat as this, and my work with Utzon's work is correspondingly fiction of a kind also. For example, in establishing the proportional derivations of Hus Utzon from Mies's Barcelona Pavilion, I use a "metaphorical sequence," which can only guess at how Utzon might have accomplished his rehabilitation.

I then use another kind of sequential narrative in order to estimate certain consequences of Utzon's work inside, and posit that he brings its conviction to Hus Utzon's
exterior. This is convenient, but very probably contrivance. I hope largely that the order of
telling conveys my sense that the means through which Utzon begins to differentiate himself
from Mies are more fully realized on the interior than elsewhere. In another sense too this
manner of narrative can hardly be correct, since the idea of consecutive realizations applied
by the artist in order, first here, then there, never accurately reflects the spontaneity and mess
that is creation.

Throughout I state such as "several elements of the Pavilion are now vitalized... as
Utzon rejects the direction taken by Mies... he generates difference... Mies, Utzon states
through the... Utzon will retain almost nothing of Mies at the end... The Kingohusene, in its
initial character of being drawn from Mies...," and so on. All of this, I want to say again, is
imputation. As I wrote above Utzon says little on any of it, and I can only guess at the order
and extent of his intuitions and operations. Conjecture is likely to remain just that, for even
as of 1996 Utzon is willing to go only this deeply:

I grew up during the fifties, traveled out into the world and one can reproach me
for being so preoccupied with the leading architects of the time. I wanted to meet them.
Therefore I want to the United States to meet Frank Lloyd Wright, who I developed a
great passion for. I also met Mies van der Rohe at his school. He sat by his desk in a
large room without walls. On one side of the room sat a woman. I assumed it was his
secretary. I saw an invisible wall between them and felt it would be correct to approach
this woman first with my request to speak to Mies. This proved to be true. She stood
up and walked through the invisible wall to the other side of the room and presented
him with my request, which he had just overheard when I spoke to her. Yes, it could be
arranged. This was conveyed to me by the woman who then accompanied me the ten
long slow strides to Mies' desk. He was very friendly and open, and we spoke well
together. I came with great respect. He cast his magnificent, deep shadow over us
young architects.

Several years later, I was again in the area and wanted to repeat my visit. This
time I was rejected. I lingered a while and asked if I could use the rest room. Two
stairways led there, I chose the one on my right and as I went down the stairs, I saw that
Mies was also on his way to the rest room. He was coming down the other stairway.
When he saw me, he turned quickly and went up again and disappeared.
On this visit, I had just won the Sydney Opera House competition, which he must have abhorred. However, I feel that if I had been given the chance to explain the concept to him he would have understood. I never got that chance.  

In all events I would like to believe substantial pedagogical value follows from the kind of analysis I use. Whether my conjectures are accurate or not, the stories they tell and what surfaces are vastly differing ways of working, seeing, and creating. I have no interest in trying to reduce creativity to a set of mannerisms, but distilling it into an approach may tell us much. To note only a handful of its operations, copying to new purpose, seeking and inventing difference, then greatly extending the conceptions of others, is enormously fruitful. Teaching a studio in this way might bring significant educational rewards.

**Utzon's Writing and Drawing**

I do not for a moment propose that linking Utzon’s architecture to that of Mies ought to preclude other understandings of Utzon’s work, particularly those he himself presents. For balance, then, my seventh chapter, "On Published Work by Utzon," is concerned with the explicit themes of and relationships between Utzon’s essays, interviews, and speeches, and with the evolutions of his inspirations as he would have us understand them: The possibilities for architecture in mechanisms of growth, adaptable geometries, flexible standardization, and close, close attention to site fascinate Utzon, and the evolution of each of these in his writing and drawing is a thrilling and singular education.

For this I look at the essentials of his published output, from the first article, co-authored in 1947 with Tobias Faber, "Tendenser i Nutidens Arkitektur [Trends in Contemporary Architecture]" through the interview by Henrik Sten Møller in 1996. I include in my examination of those fifty years twenty-two representative pieces appearing in print
and attributable to Utzon. Only eleven are written solely by him, and of these, three are extremely brief. Four other pieces of the twenty-two are co-authored; two more, from the *Global Architecture* series, are attributed to Utzon although he does nothing for either beyond contributing previously published drawings. Three more are interviews, one is a speech, and one is simply the entirety of his Sydney Opera House competition entry. This small output is, however, extraordinarily valuable, Utzon's accomplishment enormous. No more brilliant and inventive a section architect has ever practiced and Utzon tells us how, with a superb economy and intersection of text, simple line drawings, and inimitable expository sketches, his visions arise. There are also a very few architects for whom the fact and facts of construction are as bound to architecture, and who explore and attempt to reconcile the contradictions between form and construction so resolutely, even obsessively. As much as the artist can tell how he makes what he makes (even absent here the enormous weight in it of Mies)—spheres into opera houses, clouds into a vaulted nave (figures 1.7 through 1.13), the memory of a buddhist cave near Beijing into an art museum in Silkeborg, Denmark—Utzon does so.6

**Critics on Utzon**

Chapter eight, "Critics on Utzon," provides a map to critics enumerated and discussed in chapter nine, "An Annotated Bibliography of Writing by and on Utzon." There is some pleasure in noting that Utzon is described variously as: standing for the right of expression as the supreme law (by Sigfried Giedion), a gifted proponent of an organic-dynamic modernism (Tobias Faber), an irresponsible expressionist (Charles Jencks), a postmodernist (routinely), a critical regionalist (Kenneth Frampton), a brilliant expositor of Heidegger's dicta on
Figures 1.7 - 1.8. Sydney Opera House, from the west, showing the Yellow Book scheme, 1962, and the derivation of the shell-vaults from a sphere 492 feet in diameter; west elevation.
Figures 1.9 - 1.11. Utzon, expository sketches for Bagsvaerd Church.
Figures 1.12 - 1.13. Utzon, Bagsvaerd Church: section showing cylinder diameters generating the nave vaulting; interior, nave.
architecture (Christian Norberg-Schulz), a modernist (Norberg-Schulz again), a deluded, impenitent soul given to preposterous fixations regarding what constitutes structural honesty (Robert Mark), an architect given to deconstructivist impulses (Frampton again), and as a practitioner who works beyond the realm of fashionable doubt (William J. R. Curtis). None of these differences is particularly the result of dramatic changes in Utzon's writing or work, since his concerns, as I remark in my seventh chapter, while routinely evolving, remain remarkably consistent thematically from the beginning of his career to its end. Nor do I propose that one critic's evaluation is superior, in an exclusionary way, to the rest, though some are so inept, misleading, and widely read (Frampton's Studies in Tectonic Culture heads the list) that I am compelled to dispute them at some length. Utzon's disinclination to repeat his forms and, particularly, his shapes, his aversion to the too easy production of the latter determined in advance of or as distinct from the method of their construction, the astonishing depth of his work, his reclusive personality, and the missing notice of Mies are all part causes of wildly varying critical opinion. Utzon's is the kind of work it is well to think of as a body best viewed from a multitude of points, rather than as a body to be peeled to some imagined core which can then be seen with an ostensibly superior, singular clarity. Further, given Utzon's deep and early roots in Mies, I am also obliged to diminish the contributions of critics whose failure to so note particularly damages their claims.

An Annotated Bibliography

Chapter nine, "An Annotated Bibliography of Writing by and on Utzon," lists and details the material surveyed in chapters seven and eight. On Utzon's writing the bibliography is comprehensive. Its entries locate and detail Utzon's most important essays,
interviews, and published letters, from 1947 to date. Of the critical literature on Utzon the bibliography is also comprehensive. These two parts consist of three hundred entries describing the contents and appraising the intelligence and accuracy of each listed work. Omitted are blurbs, dull fluff, and work duplicated elsewhere. The index following the bibliography is chronological, of Utzon's work both realized and not, and of all entries in both parts of the bibliography.

Given the nature of the preceding as I have described it, that chapters seven and eight provide maps to chapter nine, and in order not to inflict an excess of redundancy on my reader, I have routinely deferred essential information, including a substantial number of quotations, from my earlier chapters to the bibliography.

Influence

The extra length of another version of this book is concerned with the enormous amount I left unsaid about influence under the earlier heading of "Education." One minor remedy may be to summarize that investigation. Readers interested in this kind of thing might want nonetheless to put off the rest of this section until after chapter two, or two through five.

I write that Utzon draws from and against Mies's architecture, and describe that trajectory, to summarize it crudely, as one of emulation, opposition, then play. In pursuing proof of this I cannot afford the comforts of conventional academic criticism, particularly when I claim such as of Utzon's work at Holte, that it starts in violent opposition to Mies's Farnsworth House. On the other side of this issue is Kenneth Frampton, through 1995 the most comprehensive of Utzon's expositors. For Frampton "influence" is scarcely other than
benign, a smorgasbord of equally reasonable possibilities from which the architect freely selects, and Utzon's evolution is described as a thoroughly self-possessed, poised, positive movement leading to an easy, cross-cultural transcendence. Under that too limited apprehension, he:

- tends to seek inspiration outside the Eurocentric domain . . . . his work may be assimilated to the North, that is, to a particularly Baltic ethos . . . . [he] shares a common impulse [with Aalto and Scharoun] . . . . that surely draws some of its inspiration from Paul Scheerbart's prose-poem Glassarkit.8

This is vague to the point of uselessness. The reality is that influence is often a thoroughly contentious affair, an assumption explored by no one more thoroughly over the last thirty years than Harold Bloom. Bloom, in his *The Anxiety of Influence: a Theory of Poetry*, writes,

> My concern is only with the strong poets, major figures with the persistence to wrestle with their strong precursors, even to the death. Weaker talents idealize; figures of capable imagination appropriate for themselves. But nothing is got for nothing, and self-appropriation involves the immense anxiety of indebtedness, for what strong maker desires the realization that he has failed to create himself?9

It is with care that we ought to go much beyond the scope of Bloom's analysis, confined as it largely is to the work of poets, and to lyric poetry in particular. Architecture is not that, and reading a building principally as though it were a text makes for unhappy and hilarious error. The tests of creation too, between poetry and architecture, are hardly unlike, but what similarities exist are not enough to allow direct translation of the principles governing Bloom's thesis to the making of architecture.10 His work is valuable, to be sure, but here to a limited degree.

Let me summarize too briefly. Bloom invents and retains throughout his scrutiny the six terms introduced in *The Anxiety of Influence*. Each of these autopsies the path by which a
strong maker progressively counters anxiety and creates himself: *clinamen*, the initial swerving from the strong precursor’s work; *tessera*, extending the precursor; *kenosis*, an apparent mutual deflation; *daemonization*, a deflation specifically of the parent precursor; *askesis*, again an apparent mutual deflation, but involving self-purgation and aimed at a state of solitude; and *apophrades*, a subsumption, whereby the predecessor’s work now appears as a preliminary to the later artist’s work. In these senses Utzon's own house can be credibly interpreted as an instance of synecdoche, the part standing for the whole, here as a retention of essentials only, and as exemplifying the *tessera* of Bloom’s *revisionary ratio* of *clinamen* and *tessera,* through which

A poet antithetically “completes” his precursor, by so reading the parent-poem as to retain its terms but to mean them in another sense, as though the precursor had failed to go far enough.  

“Failed to go far enough” can be meant in the obverse of its obvious sense: that Mies, according to Utzon, failed to sufficiently strip away all that is extraneous. It is reasonable to decide that at Hellebæk Utzon, while retaining the proportions and simple appearance of the Barcelona Pavilion, concluded that Mies's lavish materials contradicted its distilled appearance, and that Utzon's use of common brick and Oregon pine in the construction of his own house "antithetically completes" the Pavilion. This would be consistent with Utzon's work in plan, bent as it is on eliminating everything "unnecessary."

This is also a credible interpretation, and to try to be sure of catching Utzon in this sense we can use the fact that Bloom (were we inclined only to interpret within permissible bounds), even permits an expansion of his original six terms. Were we to adhere entirely to Bloom’s prescription, in applying that to Utzon we would perforce remain content to invent a preliminary term, *apetetes*. It connotes the deception of camouflage, and accounts for why
Utzon's tribute to the Farnsworth house, "a prolonged and magnificent labor," conceals the omnipresence of the Barcelona Pavilion in Hus Utzon. Further, the term implies a form of preparation for the swerving crucial to Bloom's appropriation of the Lucretian *clinamen*, where the camouflaging takes on the aspect of instinctual masking, of prevarious eluding and elision: it is an aggressive act. Next, following Bloom's *apophrades*, we would add the exaltation of self and other, *ekleipsis*, with its connotations of surpassing and outshining and, consistent with Bloomian anxiety, the threat of a failure to appear. This in its turn applies to Utzon's work on the Sydney Opera House interior halls that vastly extended a conception of Aalto's even as they remain unbuilt. But as we shall see in the labor which becomes play, then dance, with Mies, then Aalto, Wright, and Le Corbusier, it is insufficient to merely extend Bloom's terms and tenets, for no extension or grafting will take us past his grim appraisal of what even the "positive apophrades" offers, and that is oblivion. For the largest irony...is that the later poets, confronting the imminence of death, work to subvert the immortality of their precursors, as though any one poet's afterlife could be prolonged at the expense of another's.

While my characterization of it here will be far too brief, Bloom's relentless emphasis on anxiety as the consummate dread blinds him to the *pleasures* of influence, those apices of realization that one works in the veins of another even as that other runs in one's own veins: The generative self may, *if earned*, become fully distinct. This, I believe, is the spirit of the "prolonged and magnificent labor" of which Utzon writes, and is what happens in the years and work following the completion of Hus Utzon. Rather than subverting his predecessors Utzon extends their work, and therefore his and their generative reputations. It is an immortality gotten for each.
CHAPTER 2.

JØRN UTZON AND MIES VAN DER ROHE:
HUS UTZON AND THE BARCELONA PAVILION

It will hardly surprise even one fairly new to architecture that the work of Le Corbusier, Frank Lloyd Wright, Erik Gunnar Asplund, Alvar Aalto, and Ludwig Mies van der Rohe would surround a Danish architecture student beginning, as Utzon did, his formal studies at Copenhagen’s Royal Danish Academy of Fine Arts in 1937. As of that year Le Corbusier's Villa Savoye (Poissy, 1928-9), meant for a couple whose "home life," according to its architect, "will now be enfolded in a Virgilian dream," was only eight years old, and he had already headed in several fascinating directions with his regionalist—but technically current—Maison de Mandrot (Le Pradet, 1929-32), which combined the rough local stone with metal windows and structural frame, the Petite Maison du Weekend (Celle-St. Cloud, 1934-35), where Le Corbusier brought into close proximity crudely mortared brick, smooth glass block, carefully finished concrete vaulting, and a heavy turf roof and his striking interpretation in concrete of natural form with the brise-soleil sketches of 1936 (figures 2.1 through 2.5). Wright had returned from a decade of near-obscurity through commissions for Fallingwater (Bear Run, Pennsylvania, 1935) and the Johnson Wax Building (Racine, Wisconsin, 1936, figures 2.6 and 2.7). Asplund's designs for the 1930 Stockholm Exhibition remained a vital, liberating impetus, the locus of the modern movement in Scandinavia (figures 2.8 through 2.10). Aalto had completed his Turun Sanomat newspaper office building at Turku in 1930, his Paimio Sanitarium in 1933, the Library at Viipuri in 1934 (see chapter five), and would shortly complete the Sunila Factory Complex (figures 2.11 through
Figures 2.6 - 2.7. Frank Lloyd Wright, Fallingwater (Kaufmann House), Bear Run, Pennsylvania, 1935; Johnson Wax Building, Racine, Wisconsin, 1936.
Figures 2.8 - 2.10. Erik Gunnar Asplund, the 1930 Stockholm Exhibition. Top to bottom: Paradise Restaurant; Transportation Pavilion, axonometric; Transportation Pavilion.
2.16, and 7.4). Mies’s Pavilion at the Barcelona Exhibition of 1929 (figures 2.37, 2.38, 2.43…) was a vivid reminder of the appearance of high simplicity practiced within the modern movement, and he would be appointed to head the prestigious Armour Institute’s Department of Architecture (later the Illinois Institute of Technology) shortly after Utzon begins his studies at the Royal Academy.

Of these five architects the first four were important to Utzon, but lack Mies’s specific and pervasive power in his work. To summarize their lesser, but still important effect, after winning the Sydney Opera House competition in 1956 Utzon reportedly was moved enough by Le Corbusier’s work to spend half the prize money on a tapestry by him. The role of Le Corbusier’s “ultimate metaphysic of form” in Utzon’s work is particularly speculative on my part and will be discussed as it seems to evidence itself, primarily at Bagsvaerd Kirke (1969-1976), and perhaps in more sophisticated and less obvious form at the National Assembly Complex for Kuwait (1972-81). My intuition that both are in significant part transfigurations of Le Corbusier’s Chapel of Notre Dame du Haut at Ronchamp (1950-53) is just that, but such conjecture follows sensibly from Utzon’s increasing distance from traceable formal correspondences over the life of his career, and so receives a few pages in chapter seven. On his way to Mexico in 1949 Utzon troubled to visit Wright at Taliesin, and Wright’s specific architectural forms seem visible in Utzon’s work, though confined to two projects: the Langelinie Pavilion competition entry (1953, Copenhagen), which seems to follow, if we keep to obvious and perhaps superficial resemblances, upon Wright’s Johnson Wax Research Tower (Racine, Wisconsin, 1944, figures 2.17 and 2.18), and Utzon’s unrealized, mid-career Silkeborg Kunstmuseum (1964), a masterpiece of invention and discretion that serves as an implicit and wholesale rejection of the flamboyance of Wright’s
Guggenheim Museum (New York, 1943-1959, see chapter 6). Asplund’s influence came earliest, and determined a way of life and work in the broadest sense. For Utzon the contemporary contempt for the life changing force of the Modern Movement does not apply. Over half a century after one of the movement’s seminal events he remembered vividly the power of its regional apotheosis:

I first became aware [that we, the people, are the crux of the matter of architecture] at a young age, after my parents visited the great exhibition in Stockholm in 1930. This was the exhibition where Scandinavian functionalism had its breakthrough in the Victorianism of that time. Here they experienced the new and simple white architecture that demanded light and space, that let the sun shine in and rejoiced in the functional, the unconcealed, Functionalism if you will. It was the Swedish architect Gunnar Asplund’s exhibition building, a lightweight structure with an expression then uncommon in Scandinavia. My parents returned home completely carried away by the new ideas and thoughts. They soon commenced in totally redoing our home. The concept was space and light, all of the heavy, unpractical furniture was moved out and simple things were brought in. We developed new eating habits: healthy, green and lean. We began to exercise, get fresh air, cultivate light and the direct, so-called natural way of doing things. We were made to sit upright on good, practical furniture. We children had a swimming pool we could visit each day and use our bodies like fish in water. We got bicycles so we could get out in the fresh air and see what nature had to offer. We learned to admire the workingman. Decent, well-done work was emphasized. Conventions were dropped, it was a question of us as people. There were no longer rules and sets of manners. I believe at this time we learned to see, and this quite naturally was a great importance. The empty, dead museumlike feeling about architecture disappeared and it became a living reality. 18

Utzon worked in the office of Hedquist and Asplund (continued under that name by Poul Hedquist after Asplund’s death in 1940) from 1942 into 1945, but Asplund’s hold on Utzon is largely aspecific and precisely because of that largely untraceable. Utzon refers to Asplund’s Gothenburg Law Courts Annex, Sweden (1934-1937, figure 2.19) not as generating particular formal inspiration but as yielding “a feeling of friendliness, warmth and purity. It stimulates expectations of justice and understanding...”19 Utzon also describes Asplund’s Woodland Crematorium (1935-1940, Enskede, Sweden figure 2.20) not as
Figures 2.19 - 2.20. Erik Gunnar Asplund,
Gothenburg Law Courts Annex, Sweden, 1934-37;
inspiring a specific, formal approach, but in terms of its powers to comfort and evoke:

He takes care of the bereaved, who follow the relative to his last sleep, and they come to small simple rooms and into the church itself, which is a darkened room. But when the ceremony is over the whole back wall disappears and you emerge into a landscape like an eternal place in which sky and hill meet.\textsuperscript{20}

Close scrutiny of detail and of specific transmutations of specific forms are essential to my procedure in the next four chapters, and Asplund's generalized presence in Utzon's work is therefore not a main subject. As I mention in chapter seven Utzon worked in Aalto's office in late 1945,\textsuperscript{21} presented Aalto's glassware and Sunila factory complex to illustrate examples of a practitioner working with the logic and spirit of the growth of forms in "Tendenser i Nutidens Arkitektur," and referred to Aalto (along with Asplund) as a member of "my family of architects"\textsuperscript{22} in his speech to the Royal Institute of British Architects upon receiving its Gold Medal in 1978. This inclusion, however, was notable for what it omitted. After "Tendenser..." Utzon never mentions a specific work by Aalto, and despite several references in the literature to Utzon having Aaltoesque tendencies, no one convincingly links the forms or methods of the two.\textsuperscript{23} Significant parts of the Sydney Opera House are, however, surely drawn from Aalto's work, particularly his Library at Viipuri (see my fifth chapter), but this only follows upon Utzon's work with very specific forms and shapes used by Mies van der Rohe. It is Mies who has by far the most pronounced, generative, and invasive effect on Utzon's early built work, and it is Mies whom Utzon initially emulates, then ferociously contests, then vigorously puts into play. Mies's presence, then, and Utzon's engagement with it, are the main subjects of chapters two through five.
Utzon and Mies

On graduating from the Royal Academy in 1942 Utzon left for Sweden, trained there with the Danish brigade in the event of Denmark entering the war against Germany, and practiced in Hedquist's Stockholm office. In the five years following the war Utzon built only a combination water tower and sea marker on the island of Bornholm (1946, figure 2.21), raised a family, entered a number of architectural competitions, and traveled through Europe, the United States, and Mexico.

At the middle of the 20th century observations of a rift in architecture, and even of an opposition were commonplace: Mies's distillations (figures 2.22 and 2.23) appeared in stark contrast to Le Corbusier's shockingly, even arrogantly sculptural Chapel of Notre Dame du Haut (Ronchamp, 1950-55, figure 2.24). An assertion corresponding to the idea of a break was made by Utzon's collaborator in numerous competitions, Tobias Faber, in the latter's capacity as historian. In counterposing Mies and Wright, whose Guggenheim Museum (figure 2.25, early section) proved at least as startling as the new Notre Dame, Faber claimed that in Denmark in the decade following World War Two, and specifically around the year 1950, that

it was Wright's dionysic conception of architecture which made the most eager proselytes. In efforts to find a dynamic architecture with feeling in it and an organic structure searching for close contact with nature, Jørn Utzon was a vital and talented guide to the discovery of new expressions for new architectural tasks, new materials and forms of construction, all to be discovered within conditions set by these things themselves. 25

Given Faber's work with Utzon it is not surprising he places him within the fold of the "organic," and given the superficial likeness of Utzon's Langelinie Pavilion to Wright's Johnson Wax Research Tower it is understandable that Faber links the two. Inexplicable,
Figure 2.21. Utzon, water tower and sea marker, Bornholm, 1946.
however, is that Faber continues by setting up the following opposition:

Trends started by this organic idea [of Wright's] found their first expression in competition designs which awakened some interest, but were offset by a reaction in favour of more classical, stricter solutions. This appeared about 1950, strongly under the influence of Mies van der Rohe.26

What is remarkable here is that Faber is aware of this counter trend, but fails to identify Utzon’s work in this period as exemplary of it, of Miesian tendencies both admitted and discernible. As I mentioned, Utzon for publication refers twice to specifics of Mies's work, in 1952 and 1965. The latter reference, which I will investigate in chapter five's discussion of the Sydney Opera House, is a wonderfully elaborate and rather disingenuous distancing performed by contrasting the geometry of Mies's design of the Illinois Institute of Technology campus (1939-1958) with Utzon’s geometries for the Sydney Opera House (1956-66). The former reference, from 1952, is a brief admission of Mies’s influence on Utzon’s first built house, for himself and his family, in Hellebæk (Denmark, 1950-52, figures 2.26 through 2.28), but the acknowledgement of indebtedness is abbreviated, and strangely askew.

Hus Utzon, Hellebæk, Denmark

In describing one of the guiding principles of his work at Hellebæk, Utzon refers to Mies’s sensibility quite generally, stating it in the form of a commonplace of first-year design studios:

Mies once said to me that once a design was established and finalized, he made every effort to ensure the design was emphasized in the design of secondary elements, such as doors, windows, non-bearing walls, and the like.27

In the matter of specifics, however, he mentions Mies not at all, and even seems to
Figures 2.26 - 2.27. Hus Utzon: south elevation, photo; plan as built.
dilute Mies's presence in the work by directing us to a much earlier exemplar of the same philosophy, adding immediately,

The same logical construction and consistent dimensions occur everywhere in primitive architecture, where these basic elements come naturally into existence while we, on the other hand, must everywhere expend great effort to achieve the same results. 28

The total of this seems the simple acknowledgment of limited indebtedness to Mies, but is surely only the beginning of the matter, as is indicated by a comparison between Hellebæk's north wall and the rear elevation of Mies's unrealized House with Three Courts (1934, figures 2.29 and 2.30), where in addition to their common, nearly monolithic configurations, both are meant in a pale brick. Revealing also is the continuing formal similarity between and similar care given to stepped brick work as mediator between dwelling and ground, both at Hellebæk and at Mies's Haus Esters (Krefeld, 1927-30, figures 2.31 and 2.32). Even at masonry architecture's atomic level Utzon is preceded by Mies,

[who] liked the regular rhythm achieved by the repetition of a module and he enjoyed the craftsmanship involved in the coursing and bonding. His admiration led him to extraordinary measures: in order to ensure the evenness of the bonding at corners and apertures, he calculated all dimensions in brick lengths.... 29

At Hellebæk,

the module of 12 cm. was fixed, a module prescribed by the dimension of the bricks. Then the location of the bathroom and of the kitchen, the only fixed rooms, were decided. The others are defined by the movable partitions, always calculated starting from a module of 12 cm. That is: 48, 60, 72, 84 cm., etc. 30

And even where Utzon might seem to have specifically found his own generative procedure, namely in supplementing or superseding customary architectural practice's near absolute reliance on the priority of drawings over construction, Mies again is there before him. Both architects erected full scale wood and canvas models on-site: Mies in 1912 for the unrealized Kroller House (The Hague, 1912, figure 2.33), Utzon forty years later at
Figure 2.31. Hus Utzon, brick steps of the west terrace, looking southeast.
Figures 2.32 - 2.33. Mies, Haus Esters, Krefeld, 1927-30, brick terrace steps to the southwest, looking northeast. Mies, model on site, Haus Kroller, the Hague, 1912.
Hellebæk. Where Mies’s model was only a careful depiction complete with pediments, colonnades, capitals, and cornices, Utzon reported that his models at Hellebæk consisted of studies meant to discover and define the nature and size of spaces rather than depict construction largely decided in drawing.  

And while Mies drew always as a map from which construction followed, Utzon claims to have intentionally proceeded with the actual construction without such security: “the contracts had been signed and the craftsmen began work without so much as a detailed plan.” This seems a notable dispensing, and a kind of daring given the project’s minimal budget, built as it was only with the aid of a state loan so restrictive it limited the building’s size, but the order of Hus Utzon’s construction (figures 2.34 and 2.35) suggests this adventure is less than it seems, almost a pose, given that the North wall functions comfortably as a precise datum from which strictly orthogonal interior divisions of space readily follow and that, more critically, a version of the plan, published but once (figure 2.36), reveals its extremely controlled nature: it can hardly be coincidence that the house falls so precisely on the dictates of a grid. This conflicts too much with assertions that the work at Hellebæk was freely generated and constructed. Thus far the dependence on Mies, and the comfort taken in grids and datum, is substantial, and it may well not be coincidence that Mies's Barcelona Pavilion was also designed on a grid of squares (figures 2.37 and 2.38).

The Barcelona Pavilion

Utzon closes "Eget Hus ved Hellebæk" with his only other mention of Mies therein, in what seems a simple tribute, and a vague allusion to inspiration: "Mies's Farnsworth House is the result of prolonged and magnificent labor." This is cunning nonsense, and surely
Figures 2.34 - 2.35. Hus Utzon: under construction, from the east, and later, from the southeast.
Figure 2.36. Hus Utzon: gridded plan.
Figure 2.37 - 2.38. Mies, Barcelona Pavilion, 1929, photograph from the northeast; gridded plan
misdirection—it is another of Mies’s work from which Utzon takes his measure.

The Pavilion of the German Reich at the International Exposition at Barcelona (1929) is, of course, one of Mies’s masterworks, the culmination of certain themes in his oeuvre to that date, and one of the great legacies of the early modern movement. The Pavilion itself had no specific function whatever other than the vague accommodation of “a reception for the King and Queen of Spain as they signed the ‘Golden Book’ officially opening the exposition,” and condenses and gives direct evidence of numerous themes and elements present in his designs for one-family houses, particularly the Concrete Country House (1924), and Haus Tugendhat (Brno, 1928-30). This compression becomes even clearer after the selective elimination of “extraneous” forms from both (figures 2.39 through 2.42). In the broad matter of form taking on shape, the comparison is even stronger when made against Mies’s elemental design sketch of the Pavilion (figure 2.43) While the evidence I presented in the previous section is promising it lacks some of the force got from specificity, so it is important to note here Mies’s sketch encompasses and accounts for the essentials of Hellebæk’s exterior: the terrace mediating between grade and interior floor, the walled half-flight of stairs, the entry overhang created by means of withdrawing a substantially open facade from a long roof line, the wall plane projecting past the roof, the flat roof, and the general proportions (figures 2.44 through 2.46). And this is hardly the end of the matter.

Converting the Barcelona Pavilion

The series of plan drawings following explicates in the form of a figurative sequence the operations Utzon might have performed in generating the plan of Hellebæk as he originally intended it (figure 2.48), to include a lap lane to the southwest, and a slightly
Figures 2.39 - 2.42. Mies, Concrete Country House, 1924: sketch with deletions; original; Mies, Haus Tugendhat, Brno, 1928-30: sketch with deletions; original.

Figure 2.47. Barcelona Pavilion, scale 1 : 300, facing east, original orientation.
Figures 2.48 - 2.53. Hus Utzon: scale 1 : 300, plan as originally intended. Four revisions of the reduced Barcelona Pavilion toward the original plan of Utzon's house --metaphorical sequence. Hus Utzon: scale 1 : 300, plan as originally intended.
different configuration for the hybrid fireplace-service core. This sequence (figures 2.48 through 2.53) involves both stripping away all that appears extraneous in the Pavilion\(^{39}\) (figure 2.47, at a scale of 1 : 300) followed by the minimum supplementation necessary to remaking as habitation a ceremonial building; in other words, claiming it for dwelling. With this initial reduction a number of proportional relationships between the works become more evident.

In its original orientation the Pavilion faced east, toward the Plaza España. The initial move in the sequence involves correcting its orientation, in keeping with rendering it habitable, by rotating the pavilion ninety degrees to present its longest open facade to the sun. Following this comes the necessity of reducing its entirety proportionally (figure 2.49). As I have noted, Hus Utzon was built only with the aid of a state loan which also stipulated its maximum plan size at 130 square meters. Consistent with this everything the severe young architect judges excessive is reduced or stripped away (figure 2.50; the reader may also wish to compare figures 2.29 and 2.54): the platform is diminished while the offices Mies awkwardly appended to what is now the northwest are deleted prior to their resurrection as proportional guidelines for the garage and boiler room. Mies's larger reflecting pool is cut down to a healthful lap lane. The second, smaller pool, east, is truncated and emptied to become Utzon's office.

Reductions continue (figure 2.51): Structure and what are now structural redundancies are purged, or merged and made explicit. The south wall and fenestration are merged into Mies's column line. The north line of columns and the north wall of travertine and alpine green marble over concealed steel columns are also merged, then converted into a load-bearing brick cavity wall. Mies's translucent glass partitions, lit from within by hidden
bulbs, remain only as the guidelines for Utzon’s compact entry closet, while the shortest east-west partition and the famous onyx wall (figure 2.54) are abbreviated and retained only to mark the location of the fireplace-service core.

Last, several elements of the Pavilion are now vitalized or used to determine the proportion and location of the minimum elements Utzon needs to complete his conversion (figure 2.52): Mies’s offices are now integrated into the house proper, as bedrooms, or redeployed to determine the proportions of the boiler room and garage; also, the location of their east wall determines the end of Utzon’s west terrace. Reduced, then made more precisely useful, Mies’s translucent glass partitions and the parallel walls to which they are attached are rotated and flipped to become the fireplace-service core. The staggered north walls are tamed, brought into neat alignment, and the unroofed bench, cut short, becomes Hus Utzon’s built-in furniture.

This is dangerous work, and I want to insist that Utzon, if he is doing so, is not merely stealing but also, in his first built house, a work of sensational importance to a fledgling architect, simply getting his bearings. To wit, in his first published article, written in 1947 with Tobias Faber, Utzon wrote:

Our period has still not found its expression, neither in technique or in art, nor in lifestyle, because development continues unabated; and in contrast to the thirties, it has not found a clear direction, but rather it continues to aspire to unanticipated possibilities. In opposition to this uncertainty, many are again sustaining themselves with tradition, with those forms with which there had been a break well before functionalism... Others try to carry functionalism further but are unable to do so without ending up with formalistic results. One might call them motivists, in that they assemble the form of their architecture out of motives torn loose from their origins; motives with which they are infatuated. Their architecture becomes unclear, just like a language without a grammar. Finally there are architects who are in complete contact with today's lifestyle and who come from a school of thought that holds that architecture should embody the framework for this lifestyle—that first and foremost one has to live in it. They base their work on the people's fundamental feeling for
architecture; a feeling which through the ages has always been the foundation of a true architecture. The notion of architectural feeling is employed here in a dual sense; that is the feeling that allows us both to experience architecture and to make it.\(^{40}\)

The concern with misappropriation, with \textit{purposeless} imitation, is evident, even as the article justifies \textit{purposeful} imitation. Certainly Utzon has 'assembled the form (what I would call "shapes") of his architecture' out of motives and motifs not now connected to their purposes in 1929—a pool is not an office, the proportions of offices are hardly automatically suitable to those of bedrooms and garages—nonetheless there is a rightness to Hus Utzon. That for fifty years the first significant work by the architect of the most engrossing building of the century passed without recognition of its origin in another of that century's most striking works testifies to Utzon's early skill at assembling, disassembling, disassembling, and reassembling. Nor does Utzon stop at merely drawing on Mies for the origins of his house's component parts, but in most instances he thoroughly remakes those parts. My next layer of analysis, then, asserts Utzon is not merely copying, and that, for example, his north wall is not mere depiction or pastiche but rather a precisely functioning redeployment of (and in the sense that Hus Utzon will be lived in, improvement on) Mies's vocabulary. I referred earlier to the north wall at Hellebæk in light of its brother at Mies's House with Three Courts, but Mies's court and row house projects of the 1930s were blatantly siteless, and indifferent to compass orientation. In terms of precise function Utzon's wall, on the other hand, addresses its own very specific site considerations, creating a symbolic, acoustical, and visual distancing from an adjacent road. As a load-bearing \textit{cavity} wall, which was not in Mies's vocabulary,\(^{41}\) its inherent thermal break is an adept response to the cold, windy Danish climate.\(^{42}\) Further, the minimal depth of the house, with its shallow south terrace, despite the likeness in plan to the proportions of the Barcelona Pavilion, and while \textit{apparently} imitative,
Figures 2.54 - 2.55. Mies, Barcelona Pavilion: the onyx wall that determined the Pavilion's height. Hus Utzon: the shallow south terrace's yellow clinkers.
seem nonetheless directed also by daylighting considerations, and are thoroughly defensible on those grounds. Hellebæk lies on the same latitude as Barrow, Alaska, and Moscow; each moment of daylight is particularly precious. The south terrace’s yellow clinkers (figure 2.55), continuing the light but not brightly colored brick of the north wall, reflect a healthy amount of daylight into the interior while serving as a mediating device attenuating glare.

I will discuss more, below, of Utzon’s reinvention of the Pavilion by adapting it to a distinct site and context, giving it specific use as a house for his young family. First, though, in an assertion by Utzon decades later, two remarkable rewritings occur which banish not only the presence of Mies, who by 1965 would become an embarrassment to Utzon, but even evade the skewed, abbreviated indebtedness granted in “...Eget Hus ved Hellebæk.” From the north wall and the house entirely Utzon eliminates not only any admission of influence from its very specific sources, but in recreating his house’s genesis and reconstructing in memory as of 1983 its walls, eliminates any trace whatever of Mies (just as he reconstructed in fact in 1959 the house itself—figure 2.56): Utzon claimed,

The house in Hellebæk was built in a forest. To take advantage of the climate of Denmark, to use it well, the house is completely closed on all sides, open only to the south as in Chinese traditional architecture. Therefore the house is facing south with columns, to keep the structure open, but closed to the North— not because the Chinese did it that way but because it’s a marvelous way of protecting yourself from the northeast wind, and to use the sun. 43

The Interior: Conceiving Space, and Joint Work

Given that the form and larger pieces of the exterior, and the proportions and arrangement of the plan still belong so substantively to Mies, my assay following "Converting the Barcelona Pavilion" detected undercurrents, eddies rather than tidal shifts,
Figure 2.56. Hus Utzon, aerial view with 1959 addition to the north (left).
and it is on the move to the interior (figures 2.57 through 2.61) that Utzon significantly shifts his orientation and begins to create both something quite distinct from Mies, and himself as an architect. To take a moment to clear up a potential difficulty, of the interior at Hellebæk Kenneth Frampton writes,

the whole is strongly affected by...the asperities of Danish brick and timber traditions. Nevertheless Mies’s abstract aesthetic is still detectable in the vertical pine board lining of the interior, where full-height doors are rendered in such a way as to be indistinguishable from the planar walls and where the timber stops short of the soffit so as to separate, visually, the ceiling from the walls and induce the sense of an infinite space field.44

But there is nothing rough or uncomposed here and Faber, who spent his life in Denmark, knows that “in the traditional Danish house the plastered whitewashed, oil-painted or wall-papered wall was almost universal.”45 The arrangement of the pine interior instead contradicts utterly both Mies’s "abstract aesthetic,"46 and his concomitant conception of space; there is a reason Mies’s wall to ceiling joints in his designs begun after 1927 never look anything like Utzon’s work at Hellebæk. Contrary to the bright expression of parts perfectly visible in Utzon's interior, for Mies continual suppression of the evidence of piece work, the place where part meets part, is essential in order not to contradict the essential governor of his architecture: It is well understood that Mies (and the early work of another architect fascinating to Utzon) treats the grid as extensive, global.

Le Corbusier and Mies van der Rohe show obvious reluctance to break away from the concept of established space. Both persist in setting out from the idea of a preconceived Euclidean space in which they place their formal accentuations. Both prefer to use an all-embracing system of squares which ties the architectonic forms into a coherent geometric whole.47

These concepts are not, of course, original with either architect, and are only small fractions of the long history of space conception. Albert Einstein nicely summarizes Max
Figures 2.57 - 2.58. Hus Utzon: interior views, looking west, 1952 and 2002. The built-in couch is to the right, and the closest facing wall is, as of the 1952 photo, the east wall of the eastmost bedroom.

The fireplace - service core is central in both photos, and aligned with it the visible ends of the ceiling boards create the subtest of edges between the living area and kitchen.
Figures 2.61 - 2.62. Hus Utzon: interior showing the different hue of brick distinguishing the end of the service core-fireplace wall. Mies, Barcelona Pavilion: a typical edge condition where edge difference and change of planes are minimized; to right: details of wall.
Jammer’s investigations:

Two concepts of space may be contrasted as follows: (a) space as positional quality of the world of material objects; (b) space as container of all material objects. In case (a), space without a material object is inconceivable. In case (b), a material object can only be conceived as existing in space; space then appears as a reality which in a certain sense is superior to the material world. Both space concepts are free creations of the human imagination, means devised for easier comprehension of our sense experience.

These schematic considerations concern the nature of space from the geometric and from the kinematic point of view, respectively. They are in a sense reconciled with each other by Descartes’ introduction of the coordinate system, although this already presupposes the logically more daring space concept (b).

It required a severe struggle to arrive at the concept of independent and absolute space, indispensable for the development of theory. It has required no less strenuous exertions subsequently to overcome this concept—a process which is probably by no means as yet completed.... [and] there is then no “empty” space, that is, there is no space without a field.

In the hands of an architect who desires it, the distinct expression of the parts of architecture can lead to an emphatic expression of their materiality. Expressed parts, then, unless precisely dimensioned to denote the "all-embracing system of squares," will tend strongly to distract from and even undermine that system. As we will see with regard to Mies’s use of brick, his suppression of the parts of architecture dramatically increases around 1928. In projects begun before this, exemplified by Haus Wolf (Guben, 1925-26, destroyed), Haus Esters, and Haus Lange (both 1927-30, Krefeld) doors and, often, windows do not run floor to ceiling, strongly expressed dark door and window frames stand in high contrast to the inevitably white walls, and small dark baseboards reminiscent of the celebration of change in Hus Utzon's various wall-to-all joints (which set off the walls against other surfaces) distinguish markedly between the floor and wall planes (figures 2.63 and 2.64). As of the Barcelona Pavilion these expressions are eliminated. Wall to floor and wall to ceiling joints there are thoroughly suppressed (figures 2.62, 2.65 and 2.66). This is true as well and as
Figures 2.63 - 2.64. Haus Esters and Haus Lange, both Krefeld, 1927-30: interior views.
Figures 2.65 - 2.66. Barcelona Pavilion: the riveted, octagonal, iron capital, beams, and welded el-angles of the columns; column and ceiling after sheathing in plaster and chrome.
rigorously of Haus Tugendhat (where the teak partition could not meet the ceiling plane more unemphatically), the House at the Berlin Building Exposition (1931), and Mies sketches and drawings for the unrealized Haus Gericke (1932), Brussels Pavilion (1934), Haus Hubbe (1935), Haus Resor (1937-40), and the Court House projects (figures 2.67 through 2.74).

Mies goes even further in his project for a concert hall (1942) and at I. I. T.'s Crown Hall (Chicago, 1950-56) where, even at the structural connections, he would prefer to eliminate altogether even the appearance of the joint between ceiling and wall (figures 2.75 and 2.76).

By stopping well short of the soffit and blackening the frames into which the bedroom partition boards are screwed Utzon induces a powerful sense of cessation, a practical and theoretical halt that cannot convey the sense of an infinite space field. The blackened strips, perfectly evident from fifteen meters, create a ruckus that waylays one's eyes' progress along the ceiling plane. These could have been easily made less obtrusive, had Utzon's aim been more to emphasize the ceiling plane as emblematic of a dominant continuity and less to magnify difference and the fact of joint work. Consistent with this is Utzon's work with the longitudinally disposed ceiling boards, and his decision to render readily evident the joints between one board and the next. Running perpendicular to and nailed into the main, structural box beams, they accomplish the neat task of enhancing structural stability while serving equally to differentiate Utzon from Mies.49

The bi-directional stamp of Utzon's ceiling plane emphatically denies the all-embracing nature of the system of space which is conceived, in Einstein's words, as "independent and absolute." Mies's custom, almost without exception from Haus Wolf through the Farnsworth House, was to plaster over and thereby make appear monolithic the variegated parts of his ceilings, rendering them as undifferentiated blanks. If not this, he
Figures 2.75 - 2.77. Project for a concert hall, 1942. I. I. T., Crown Hall, Chicago, 1950-56: section at exterior (exterior truss is at top of drawing) emphasizing ceiling with "gapped" joint concealing structure; I. I. T., Library and Administration Building, 1944, cutaway perspective of dropped ceiling of square-gridded tiles. The beams are in fact concealed.
would drop or suspend his ceilings to form a system of barely discernable squares (also reducing the appearing of structure, figure 2.77) as at Crown Hall, giving the barest reflection of the universal grid and thus avoid weakening, by any contradictory or directional differentiation, the world-embracing conception of infinitely extensible space formed equally and perfectly in all directions.\textsuperscript{50}

\textit{Going Outside: Brick Work}

Despite the emphasis of my earlier points it is not just on the inside where, even while working under self-imposed constraints, Utzon starts to flex a little. There are several intriguing differences with Mies (figures 2.78 and 2.79) in the richly layered view from the living room to the exterior, where the living room’s horizontally sliding glass door-window\textsuperscript{51} and terminal, blackened columns open onto and frame the longitudinal brickwork of the terrace which parallels literally and figuratively the directional quality of the interior ceiling. The longitudinal lines of Utzon’s terrace serve further as minute increments defining, measuring the distance of, and breaking up the space between his interior and the grounds to the south. By increasing the size of the terrace masonry and using pavers with a coarser texture, Utzon further breaks up the possibility of perceiving the work at Hellebæk as a subordinate denotation of a pre-existing, homogenous field. Mies, on the other hand, presses his terrace brick into the service of a larger, unified conception of space, subsuming its rectangular shape into his square grid system, as at Haus Wolf and Haus Lange (figures 2.80 through 2.83), the major systems of which anticipate his work after 1927 and designate the lines of a square grid.

For Utzon the knee wall with its sailor coursing becomes, given its placement in the view from the living room, an emphatic termination of the subtler incremental edges, the
Figures 2.78 - 2.79. Hus Utzon, view from the living room looking south. Mies, Barcelona Pavilion, view toward the offices with drop-off to the right.
Figures 2.80 - 2.81. Mies, Haus Wolf: view from second story terrace down to the garden; close of same showing bricks worked to form squares.
Figures 2.82 - 2.83. Mies, Haus Lange: view of the courtyard and drive; close of same showing bricks worked to form squares.
termini, of his terrace work (figure 2.55). The knee wall then, readily evident from the main living area, heightens the distinction between the house and environs and stands in marked and pointed contrast to the Barcelona Pavilion’s simple uninterrupted drop from its platform to the street. Further, Utzon is adamant in carrying these serrated, serial exclamations (the mortar is deeply raked) in the form of sailor coursing into every part of the construction: the north wall, the east and west walls, the knee and platform walls, the indented window ledge, the fireplace - service core (figures 2.84 and 2.85). It is not coincidence that after a variety of experiments Mies eventually abandoned this kind of coursing that is at once denotative and embodying, directly asserts a terminal state (and the idea that a materialized edge is a difference), has a quite different texture to the touch as well as to the sight, and is far more consistent with the idea of material as distinct from space and not thoroughly contingent upon its presumed organization for that material's particular arrangement of its particular parts. A short history of Mies's work in brick is in order here, for Utzon, while he is both emulating, and forcing distinctions, has the spectrum of Mies's effort from 1923 to 1952 available for study.

Mies's work in brick begins in 1923 with the aptly-named Brick Country House, where sailor coursing caps the knee and high exterior walls, and soldier coursing with a small but significant cornice delimits the upper boundary of the two-story high walls (figures 2.86 - 2.87). In Haus Wolf Mies gives the terrace knee wall with its sailor coursing a presence similar to Utzon's use of it, but also engages in the most complex of his experiments with multiply organized termini, to a similar but heightened effect as those at the Brick Country House, here expressed as a row of brick above the minimal cornice of the projecting roof plane seated over compound soldier coursing (figures 2.88 and 2.89). This arrangement
Figures 2.84 - 2.85. Hus Utzon: sailor coursing as the base of the fireplace; south terrace from the southeast. The panels below the south-facing glass are wood infill.
Figures 2.88 - 2.89. Mies, Haus Wolf, exterior, reverse angle of figure 2.80, showing sailor coursing at knee wall; close of brick work at first story cornice.
yields a powerful feeling of the material and distinctive dimensions of brick, and feels like an experiment in its various possible expressions, where its given shape is provocation to foment a variety of arrangements. Contemporaneous with Haus Wolf is Mies’s Memorial to Rosa Luxemburg and Karl Liebknecht (Berlin, 1926, destroyed, figure 2.90), his first and penultimate use of strongly textured masonry, consisting of roughened planes of purple clinkers where the projecting bearing steel is denoted by sailor coursing. His last use of it, aptly enough, since Mies is no longer interested in masonry as a distinct material with demonstrable properties, is as a demonstration or show wall of the vernacular use of masonry at the Deutsches Volk, Deutsche Arbeit exhibit (1934, figure 2.91). Haus Esters and Haus Lange are two of Mies’s last realized European works in brick. Aside from sailor coursing at the half-walls, he eliminates any vital coursing at the other walls’ upper boundaries. Only the slenderest hint of a terminus remains, at the joints where the capped roofing material is permitted to very, very slightly overlap the wall plane (figures 2.92 and 2.93).

By 1941 and thereafter, and notably at I. I. T., Mies routinely reduces brick to thoroughly constrained panels (figures 2.94 and 2.95). His Promontory Apartments (Chicago, 1949, figure 2.96 and 2.97), where beige bricks were chosen so as not to stand out against the exposed structural concrete frame, go even further by eliminating any significant, telling contrast between structure and infill. Against this, Utzon’s insistent sailor coursing with its deeply raked joints, directional terrace clinkers, dark posts and fascia, and expressions of bearing as with the beam supporting the roof overhang at the west terrace, rejects the direction taken by Mies around 1928. While his work has similarities to Mies’s work of 1923 and 1926-27, the consistency and the examples of Hus Utzon’s interior are
Figures 2.90 - 2.93. Clockwise from upper left.
Mies, Memorial to Rosa Luxemburg and Karl Liebknecht, Berlin, 1926, destroyed.
Deutsches Volk, Deutsche Arbeit mining and coal exhibit, 1934: demonstration wall.
Figures 2.96 - 2.98. Mies, Promontory Apartments, Chicago, 1949: elevation; photo.
Hus Utzon: west terract from the west-northwest, emphasizing sailor coursing.
distinctly his own, and by extending these he begins to bring to the very Miesian exterior at Hellebæk some of the vigor and sheer difference that defines and delimits the interior of Hus Utzon.
CHAPTER 3.

UTZON'S HUS MIDDELBOE AND MIES'S FARNSWORTH HOUSE

[The Farnsworth house] has all the virtues--and we'll say nothing about the vices--of a particular concept of architecture driven to its extreme limits, and, therefore, a kind of landmark demonstration of what architecture could do. Like many extreme statements, it was made at the beginning rather than the end of the period it represents, and it left other architects little to do except to try to make even more perfect that which was already perfected.  

--Reyner Banham

Mies van der Rohe's simplification at the Farnsworth house is the result of prolonged and magnificent labour.

--Jørn Utzon, at the close of his "... Eget Hus ved Hellebæk."

Banham's estimations, Utzon's blind tribute transplanted to this context, and photographs of Mies's Farnsworth House (Plano, Illinois, 1945-1950) and Utzon's House for Svend Middelboe (Holte, Denmark, 1953) from, respectively, the Fox River and Lake Fureso (figures 3.1 and 3.2), suggest a continuation of Utzon's delicate operations at Hellebæk. There the promising struggle to create a distinct aesthetic on the interior mitigated against the substantive emulation of Mies on the building's exterior, and suggested real creative growth. Of these exteriors, however, the very extensive commonalities linking the works illustrated could not appear more disappointing. The proportions Utzon uses are remarkably similar to those of the Farnsworth house, as are the number of bays, the clearly expressed orthogonal framing, the projecting terrace, and the elevated floor plane. All seem to follow Mies so closely as to suggest an obsequiousness that does nothing to advance on the promise of Hus Utzon's interior.

Figures 3.3 - 3.4. Mies, sketch for his unrealized Glass House on a Hillside, probably 1934; Utzon, Hus Middelboe: east elevation.
A second comparison, of Utzon's drawing of Middelboe in elevation against Mies's sketch for his unrealized Glass House on a Hillside (probably 1934, figures 3.3 and 3.4),\textsuperscript{54} compounds the evidence of the first, that Hus Middelboe is merely derivative of Mies's work, and in fact seems bent on eliminating \textit{any} differences with it, given in common the identical number of full structural bays, the elevation of the living floor a full story above grade, the space for a car beneath that, the extruded terrace one full bay long, the integral, compact core leading from grade to the \textit{piano nobile}, and the incredibly precise correspondence between the overall proportion of each in elevation. Between the Farnsworth House and Glass House on a Hillside Utzon seems to be disappearing into the extreme, simplifying passion of Mies, the "prolonged and magnificent labour" to which Utzon refers.

\textbf{Oppositions}

Despite this, however, closer inspection suggests it would be difficult to create a difference greater than that which Utzon generates between his blatantly heavy, rough-textured, black-dyed, concrete posts and beams joined and held in place entirely by their own weight, and the Farnsworth house's pristine steel sections scrupulously welded then ground at the joints so as to eliminate all traces of the labor of joinery, then sand-blasted, and painted again and again in order to eliminate evidence of painting and sand-blasting (figures 3.5 through 3.8).

With this as a beginning I want to suggest that in a pattern similar to the working of Hus Utzon, where we saw how Utzon resurrected and vitalized, corrected and made habitable the Barcelona Pavilion partly through close revisions of Mies's villas, Utzon now realizes, but in a manner that takes it over, again for dwelling as with the razed Pavilion, Mies's
Figures 3.5 - 3.6. Utzon, Hus Middelboe: exterior, east elevation; Mies, Farnsworth House: exterior.

Figures 3.7 - 3.8. Hus Middelboe: exterior, close of posts and beams joint; Farnsworth House: exterior, close of column and header.
unrealized Glass House through the opposed means of the Farnsworth House. In particular, by retaining its overall form, there is the strong suggesting that Utzon asserts the simplicity Mies depicted with the Farnsworth House is a valid aim, but given the depth of correction begun in the joints and, as I hope to demonstrate, carried throughout, it seems that Utzon is deciding the simplicity of the Farnsworth House is not actual but only apparent, and that Mies's aim, what Utzon may be seeing now simplicity's pretense, must be in fact incorporated as well into the means and making of the work, for that simplicity to be actual, then meaningful.

If the weight, texture, and color of structure, and extreme simplicity of joining asserts he is in contest with Mies, then Utzon's approach is to read the Farnsworth House as a deception that includes nothing which cannot be achieved by more direct means. Implicit in that is the Farnsworth House uses unnecessarily and painfully complex means to accomplish such deception. Mies, Utzon states through the directness of Hus Middelboe’s construction, would mask what in certain fact we know, which is the extraordinary labor that went into the mere depiction of what even Jean-Louis Cohen, who is not indulgent, describes, oddly, as “a clear structure and construction.” But much of the structure and the mechanisms of the Farnsworth House’s construction are not made clear. The essential connections of the perimeter's steel C-sections to the floor and roof joists are thoroughly obscured. The joists themselves (as essential to the work as the building's famous eight I-columns) are hidden above the plastered ceiling, and the thousands of pounds of concrete in the roof and floor which are painstakingly concealed behind plaster and travertine (figures 3.9 through 3.15). The Farnsworth house, then, gives us merely the pretense of Cohen's (and Mies's) clarity, a simulation, and in fact gives us its absence: Simplicity is true for only a fraction of the
Plastered ceiling and travertine floor with square grid barely visible (laid over the 2' - 9"
by 2' - 0" construction grid), both from the interior looking toward the Fox River.
structure, and there is clarity only in a minority of parts.

One purpose of welding is to conceal joinery, and I am not the only writer who has had difficulty with this part of Mies's work. Grinding out the marks of welding is a labor which can be used to erase evidence of the work of welding. The clarity of construction in this regard is also a ruse, for

the problems of connecting steel work by continuous welding presents considerable problems if distortion is not going to result from the concentric heat of the welder's torch. Precautions must be taken to release the stresses set up in the metal. Steel prefers to be dry connected by bolting.... Following welding, the welds must be ground smooth to merge the profile with the neighboring metal. This is never a strictly straightforward and economic business.56

Utzon's joints remedy this painstaking obfuscation of more and more complexity more and more hidden, to give both the appearance of simplicity and the fact of it, as the expository axonometric of Middelboe's main structural parts indicates (figures 3.16 through 3.18); this remarkable drawing could double as a complete construction drawing. At Holte, the placement alone of these members is the entirety of the assemblage: In place of the complicated and in all senses uneconomic joint work at the Farnsworth House, Utzon gives us the simplest connection possible, a gravity joint, where only the weight of the concrete holds the beams in place. Referring back particularly to figure 3.4, it is evident that Utzon retains in the finished work the clarity of each part as it is expressed in the axonometric, and expresses as well their conjunctions: where part depends on part in fact, and visibly.

To digress to a purpose, Utzon's radical changes hardly end here, and while specifics of Hus Middelboe are hard to come by we have enough to analyze. Only a few articles on it have appeared, and other than the expository axonometric details of this house with few parts and four bedrooms, and more than rudimentary facts on it, have not yet been published.57
Figures 3.16 - 3.18. Hus Middelboe: expository axonometric of the main structural parts; detail of expository axonometric, end condition; detail of expository axonometric, middle condition.
Utzon himself never refers to it except in passing, and it is never remotely a focus of any of the overviews of his work. Further, one extremely significant detail of the house not evident from black and white photographs are its extremely visible, bright red headers. The wood trimming out the floor boards (what appears to be the upper half of the "split headers") is painted the same bright red.

The house lies immediately northwest of Copenhagen, on the eastern shore of Lake Fureso, in Holte. Its structure, the simple concrete frame to which I have referred, consists of twelve pairs of one tall and one short post each supporting twenty aniline dye-blackened concrete beams of identical dimensions which in turn support wooden joists also of dimensions identical with each other, six at each of two levels per 4.2 meter long bay. The exterior walls are fenestrated, or consist of the frame infilled (as are the partitions) with larch boards of only two lengths, one a few centimeters less than the other (figures 3.19 and 3.20). Both of these wall types are composed of boards overlapped along their long edges in what is called in Scandinavia one-on-two cladding. At grade Hus Middelboe, except for its 4.2 by 4.4 meter service core, is open. To the south the body of the dwelling serves as a carport and, to the north, beneath the open terrace, as a boat shelter, while the whole is meant as a play area. The plan drawings identify at grade an entry, closet, water closet, furnace, and stairs to the living floor. The living floor includes four bedrooms, toilet, sink and shower, kitchen and free-standing counter, two living areas, and an open terrace (figures 3.21 and 3.22). Only the core, which I will discuss in detail later, required intensive labor on-site and is not of parts the prefabrication of which is directed by the architect. The method of construction is otherwise the simplest. Of the frame, "the posts are driven into the ground whilst the beams are supported and held together merely by their own weight."58
Figures 3.19 - 3.20. Hus Middelboe: exterior detail, west elevation, with core on right; exterior detail, east elevation, emphasizing infill of larch boards. The core is on the left.
Figures 3.21 - 3.23. Hus Middelboe: plan at grade; plan at living floor, scale = 1 : 200. Each unit of the square grid measures 1.4 by 1.4 meters; Farnsworth house: plan, scale = 1 : 200. Each unit of the rectangular grid measures 2'-9" by 2'-0".
Just as I speculated Utzon’s structure is black because Mies’s is white, and concrete because Mies’s is not, appears blatantly heavy where Mies strains for the effect of lightness, and is evidently composed of parts in response to the idea that Mies conceals them, it would be insufficient to describe Hus Middelboe’s interior merely as the width of one post less than 55’-1” long, since it is less than 55’-0” long essentially because the Farnsworth House's interior measures precisely 55’-0” (figure 3.23), and because I want to think that at Holte Utzon continues against the Farnsworth House his contest of economy begun with Hus Utzon against the Barcelona Pavilion. I do not mean that Hus Middelboe is precisely the length it is because the Farnsworth House is precisely the length it is, but I do mean that to succeed in this portion his contest it is essential for Utzon to bring in Hus Middelboe at a length if very slightly, then very significantly, shorter than the Farnsworth House. The Farnsworth House was designed for one person, while Hus Middelboe is designed for at least four. Given Utzon’s approach at Hellebæk I do not believe it is coincidence that Utzon keeps the length and width here shorter, as though asserting, ‘not only is the Farnsworth House extravagant for one, it would be excessive if for four.’

I want to turn for a moment to an example of conventional description by Utzon's frequent, early collaborator. Of Hus Middelboe Tobias Faber writes, too simply,

The house is situated on marshy ground by the shore of a lake at the mouth of a canal which, during the summer, carries a heavy traffic of small pleasure craft. In order to protect the living room against the ground mist at nightfall and against view from passersby, and in order to offer the residents a view across the lake, the house is raised one storey above ground.59

It is my disinclination to treat any work in isolation for very long, and I believe Hus Middelboe is “raised one storey above ground” in substantial part because the Farnsworth house, a half-story above grade, is not. I don’t doubt Faber is accurate, but his method of
description, a ubiquitous one, seems incomplete. The kinds of differences I have described are as much, at their broadest, meant by Utzon to differentiate Hus Middelboe from the Farnsworth House and himself from Mies as they are, in this instance, to surmount ground fog.

The differences I will look at now continue in the vein of oppositions, and by referring to them as such I don't mean only in the sense of obvious opposites such as black against white, but also in the sense of examples such as where highly contrasting textures are used in the work as against the elimination from it of strong contrasts. I have discussed thus far differences in structure, color, materials, and height, and there is the additional evidence of a striking number of other instances where Utzon finds valid contradictions against Mies's work.

Where Mies rejects the automobile, refusing to allow it near and mar the purity of his house, Utzon brings it, and a boat, and children at play, all immediately under his house (figures 3.24 and 3.4). If the Farnsworth House is omni-directional, in that there is next to nothing in it (and nothing intentional) that emphasizes one direction over another, Utzon largely closes Hus Middelboe to the north and east and opens it completely to the lake to the west (figure 3.25). At every turn Utzon is bent on finding a different way of doing things.

Where Mies minimizes contrast (contrast germane to what I will describe as "piece work") in his unvarying choice of neutral colors and hues on the interior, and particularly in his scrupulous elimination of any texture that is not smooth, Utzon compels contrasts through his use of black concrete, window frames, and interior trim, red-stained headers and floor, uncolored wood walls and partitions, and white service-stair core. He further highlights disparate attributes and elements through the close proximity of smooth and rough: of the
Figures 3.24 - 3.25. The Farnsworth House: site plan, scale = 1 : 444;
Hus Middelboe: interior, looking north from the south end of the house.
core and one-on-two walls, the smooth floor and rough walls, the core and west-facing glass and the one-on-two counter and, and of the comparatively smooth floor parquet and the far more distinct pieces and exposed knots of the ceiling against the yet rougher one-on-two treatments (figures 3.26 through 3.28).

Where Mies in his rigor pushes the entire kitchen function into the core and deprives the person preparing food and washing up of the magnificent view of the Fox River, Utzon gives a central position and the magnificent lake view to that person. If Mies eliminates utterly the curvilinear, Utzon seems to tweak him for it. I cannot help but find something chiding, amused, and thoroughly assured in Utzon's bringing a set of simple and compound curves to the kitchen counter (figures 3.29 and 3.30).

A Distinction of Parts

To return once again to Hus Middelboe's concrete frame (figures 3.31 through 3.33), with it Utzon continues and strikingly develops the rudimentary but still distinct aesthetic begun in his own house, an aesthetic that serves him very well here and will continue to do so throughout his career. Here, what manifests in the large work of structure appears again and again throughout the building. In the larger view each column and beam is rendered emphatically distinct. The various means of doing so occur in the pronounced overlap of the beams, in the decision to support the floor and roof each with a different set of columns, and in the slight bevel and rounding at the edges of the beams and columns which creates a small but noticeable shadow that heightens the demarcation between each major structural part while very specifically protecting against spalling, a threat specific to the material of concrete. Through these the relation of bearing and borne, and the fact of myriad parts, are
Figures 3.26 - 3.28. Hus Middelboe, interiors: looking south over the stairs, where the varied handling of wood is spectacularly evident in these close quarters; looking south past the kitchen counter, which extends to become the dining table; looking south.
Figures 3.29 - 3.31. Hus Middelboe: kitchen counter, front elevation and plan; diagrammatic sketch by Utzon indicating various layers (the original is in color, with each color distinctly indicating a different horizontal layer in the construction).
made highly distinct. The floor platform or plane consists of the major beams with bright red split headers above (one header secures the floor joists, the other bounds the floor boards and guarantees a seat for the walls), while the roof plane is also divided, also very visibly, into three main parts: the major beams, the headers securing the roof joists, and the concrete planks seated on the roof joists. The ends of each concrete roof plank are also allowed to appear as distinct pieces, five per bay, and are in turn kept distinct from the roof skin's edge. The roof package is thus visibly divided into three levels, each kept distinct by color and line. No attempt is made, as it is at the Farnsworth House, to conceal the various main parts of the roof. In a treatment similar to that given the roof the edge of Utzon's terrace is not fused or made overly discreet but rather continues out the kinds of divisions made clear at the roof and main floor. The terrace beams are allowed to extend past their supporting columns, and the flooring of the terrace is allowed to project slightly but noticeably over the uppermost of the floor plane's split headers. Further in this vein, the staggered construction of the one-on-two larch cladding serves to heighten the sense and fact of the walls as constructed of discrete pieces. The same is true for the cladding continued into the kitchen counter. The interior ceiling boards themselves are narrow, increasing the number of pieces both actual and left visible.

The bedroom interior (figure 3.34) particularly evinces the intense display of parts in close conjunction. As in the main interior, the floor is a parquet for which Utzon uses short, slender pieces of ash, a wood with a prominent grain, rather than longer boards or planks, or wood with a finer grain, and arranges these so as not to harmonize the distinctive grain of adjacent pieces. The one-on-two wall cladding is extremely evident here as is the contrasting
Figure 3.34. Hus Middelboe: interior, bedroom.
top sill of the window and its dark frame. The blackened strips of wood to which the separate part. Finally, for the cladding fasteners Utzon has chosen round-headed brass screws. Projecting from the boards' surfaces they emphasize the place through and device by which parts are joined. All of this is in marked contrast to Mies's approach, which is always both to minimize the distinction between parts, and their apparent number.

The Willful Anomaly: The Stair-Service Core

I have postponed discussion of the stair-service core, prominent in figure 3.25, to the end of this section; it is so thoroughly anomalous in regard to Utzon's other work that it deserves a separate discussion.

What finally and most completely distinguishes the house at Holte as a strong work, owing Mies but thoroughly distinct from him, to become architecture that significantly surpasses both Hus Utzon's substantive emulation and the rest of Hus Middelboe's equally close attachment (though through opposition) to Mies, is its extraordinary, sleek white core. It is as though the pristine body of Mies's work and the thoroughly memorable white of the Farnsworth House proved reducible to Utzon's merely functional core, suited to housing a bathroom, a furnace, pipes. Different as it blatantly is from the rest of his house, the core is hardly sufficient to overpower Utzon's work even though allowed to occupy the very center of it, and is in fact diminished to a useful, contrasting element within Utzon's larger scheme.

In other words, by including this smooth, white body, in plan a perfect square as it enters the piano nobile, Utzon seems to bring intact into Hus Middelboe, which otherwise is full of oppositions and counters to Mies's work, a significantly, formidably, and labor-intensive Miesian element. To read a little more literally, Utzon might be asserting that there
is a place for Miesian works, but that place is minor, in the sense that they are best let
harboring stairs and sinks. Utzon has, with enormous skill, brought this embodiment of Mies
into his play of rough and smooth, black and white, and now, prefabricated and labor-
intensive.

An Aesthetic of Parts

As far as Utzon's development as an architect is concerned his own house, realized
through the veil and sieve of various of Mies's villas, was a covert realization of the unbuilt,
or un-built, and Utzon's work had therefore something of a generalized and thereby a safer
quality. The Barcelona Pavilion, and then Mies's means elsewhere, served as and remained
the template within which Utzon operated, and his greatest departure, while significant,
disturbed little of his overall adherence to Mies's forms and use of shapes, proportions, and
materials. Utzon's distinct conception of space, however, as not a thing that material
primarily and merely denotes involved, as I have described, an emphasis on making an
architecture of discrete parts, where the circumstantial nature of materials, for example the
specific, received dimensions of brick or lumberyard boards, are significant determinants of
their use and therefore their meaning. In other words, the specific natures of materials affect
how space is conceived, and are inseparable from the nature of that conception. Comparing
similarities, Hus Middelboe to the Glass House is more direct than that of Hus Utzon to the
Barcelona Pavilion, and its identification with the Farnsworth House is impossible to
conceal. It is difficult to overestimate the importance of this last. For Utzon, or any
practitioner in mid-century deciding, on the edge of water, for the sake of or in the guise of
providing visual privacy, and because of or with the pretext of dampness and the risk of
flooding, to lift the dwelling above ubiquitous ground fog, nothing could be more obviously the model (particularly given the preceding example at Hellebæk of manipulating Mies's work) than the Farnsworth House. As of 1950 it is *the* precedent for this kind of location and simple program. The contest this sets up might be circumvented, of course, with a demurral, as with Philip Johnson's Glass House⁶¹ (New Canaan, Connecticut, 1949), or through excess (another kind of flight), but the contest must be direct if it is not to provide only an alternative, or merely maintain and become mired in the pattern of emulation begun at Hellebæk. I believe Utzon means Hus Middelboe as a criticism and perhaps even as a denunciation of the Farnsworth house. In its many elements it is as thoroughly engaged with Mies as was Hus Utzon, but the creation of a real, persistent, and thorough aesthetic of parts out of essential philosophical difference, and the devilish subsumption of that which is so emblematic of Mies, bespeaks a remarkable increase in Utzon's depth of thought and maturation in the single year following the completion of his first house.
I described Utzon's house at Hellebæk in part as the resurrection and rendering habitable of Mies's Barcelona Pavilion through both the thoroughgoing retention of its proportional scheme and the corrected means of Mies's villas. It maintained a close overall adherence to Mies's use of form, his resulting shapes, and something of his approach to materials.

I next put forth Utzon's Hus Middelboe as moving dramatically away from any kind of apostolic following: It retained in its final form the proportions only of Mies's spare, skeletal sketch of the unrealized Glass House on a Hillside, and took on only those characteristics of Mies's Farnsworth House necessary to contest him. Hus Middelboe is a violent opposition to the Farnsworth House, but one so rigorous in its violence that Utzon surpasses his work's initial nature as oppositional to create architecture that, while unmistakably beholden to Mies, becomes powerful on its own terms.

I want now to propose that with his housing at Kingo (Kingo, Denmark, 1956-60, Utzon breaks far more radically with Mies. The compulsions of Hus Middelboe are absent, supplanted by dense senses of play and relation. Great difference occurs, but without the relentlessly contradictory nature of the work at Holte which, despite its strength, had the certain quality of gainsaying. At Kingo Utzon seems indifferent to this quality, and these senses of play and relation, as I hope to bring out, develop completely an aesthetic rooted in and parallel to that governing Hus Middelboe, but one vastly more rich for remaining free of
the limitations of opposition.

Utzon's Kingohusene is 63 one-story, single-family courtyard houses disposed in twelve strings over one and a half acres (figures 4.1 through 4.8). Its basic unit, an enclosed el and open near-square shape mated to the el, has its root in Utzon's premiated, unbuilt entry into a 1953 southern Swedish house types (skanske hustyper) competition in Skåne (figure 4.9). Utzon's prototype for the Skåne houses seems, in its turn, if their overall dimensions are conflated, to draw a single, essential proportion from Mies's extremely refined, unrealized 1931 Row Housing (figures 4.10 though 4.13). Here, however, in unmarked contrast to Hellebæk and Holte, Utzon will retain almost nothing of Mies at the end and, entirely unlike either Hus Utzon or Hus Middelboe, even begins with the displacement of a key proportion. After a thorough analysis it will not be too much to say that the Kingohusene as realized are teleological inversions, taking the end state of Mies's supreme refinement as a means, and are proliferations of and plays with the ghost presence of an advance on what becomes merely a prototype.

I want to take a moment here to note Utzon's Fredensborghusene (Fredensborg, Denmark, 1962-63, figures 4.14 and 4.15) has much in common with the work at Kingo. While they are not synonymous (I find the Fredensborg site plan, for example, overly regular), several elements nascent at Kingo find their fulfillment in the later project, and numerous themes are continued. Each dwelling at Fredensborg was meant, to note one instance, to have its own unique courtyard garden, designed by Utzon and Jørn Palle Schmidt. Also, on the Fredensborghusene's larger budget, Utzon was able to realize in plan more of the variety he proposed for the Skåne houses than he was at Kingo (figures 4.16 through 4.21).
Figures 4.1 - 4.2. Utzon, Kingohusene, Kingo, Denmark, 1956-60: site photo; site plan, scale at 1 : 850.
Figures 4.3 - 4.6. Kingohusene: view to the north over the pond; section; the two plan types.
Figures 4.7 - 4.8. Kingohusene: courtyard; screened courtyard.
Figure 4.9. 1953 southern Swedish house types (skanske hustyper) competition in Skåne: plan.
Figures 4.10 - 4.13. Left pair to right pair. Mies’ unrealized 1931 Row Housing and Utzon’s prototype for the Skåne houses, at the same scale; Mies’ unrealized 1931 Row Housing, and Utzon’s prototype for the Skåne houses, with their overall dimensions conflated.
Figures 4.14 - 4.15. Utzon, Fredensborghusene, Denmark, 1956-60: site plan; photo from the south of the west half of the complex.
Figures 4.16 - 4.21. The Fredensborghusene: eight plan types are derived from flipping each of plans A - D along their north-south axes. The bottom row shows two garden plans for house type D.
I will return to Kingo and Mies's Row House shortly. Other works essential to understanding the Kingohusene in its broader outline are Mies's work on the Deutscher Werkbund's Weissenhofseidlung (Stuttgart, 1925-1927), and his own Lafayette Park housing (Detroit, 1955-63).

**The Weissenhofseidlung and Lafayette Park**

The Deutscher Werkbund was founded in 1907, its chief aim [being] "the refinement of workmanship and the enhancement of the quality of production." [It was formed] as an alliance of architects, artists, industrialists and businessmen, who were to collaborate in producing honest goods of artistic value. It had its roots in the early English industrial reformers and the ideals of William Morris and his successors. However, unlike them, it recognised that their goals could only be attained in collaboration with industry, and not in a nostalgic return to the Arts and Crafts movement. The fundamentally new approach of the Werkbund was this reconciliation between art and industry and a full collaboration between the two.64

In 1925 Mies, then vice-president of the Werkbund, was appointed director of its prestigious Weissenhofseidlung exhibit. His claims for it are vague, but useful:

The cries for rationalism, standardisation and for efficient living only deal with part of the problem; these may be important issues but they only gain sufficient significance when they are contemplated in the proper perspective. The overall problem is spatial, it is the creation of living space. This is a spiritual problem for which there are only creative, not mathematical or organic solutions. I have therefore forgone to set up any kind of rule-book but have instead opted to select collaborators for this project who I feel have contributed in interesting ways to the phenomenon of New Living. The exhibition was originally conceived as an experiment, which is why it will retain its validity irrespective of possible results.65

Mies himself was given responsibility for all site decisions and the project's overall coherence. Fifteen other of Europe's most prestigious architects designed from one to three of the exhibit's twenty-two apartment buildings (figures 4.22 and 4.23), while Mies's particular responsibility in that regard was for a four-story building at the rear of the site.
Figures 4.22 - 4.23. The Weissenhofseidlung: site axonometric and site photo with Mies's four-story apartment building on the far right.
Utzon's Kingohusene can be understood as realizing several intriguing aspects of Mies's early site model (1925, figures 4.24 and 4.25) missing from the Weissenhofseidlung as built. Through deft and intense spatial touches Mies's model gives the appearance of a complex unity, and the promise of skillful and varied engagements and interactions both within the site's topography and with the contiguous public streets. The lower edge of the model, for example, possesses remarkably varied horizontal and vertical relationships to the off-site ground adjacent, whereas Mies' 1927 realization of this involves a vastly reduced interplay with and completely uninteresting detachment from the public street: Absent engagement, the bland blank of his minimally varying perimeter wall is a barrier that remains only a barrier (figures 4.26 and 4.27).

Utzon, on the other hand, retains, enriches, and builds the complexity of Mies's neglected, early model, and does so on a budget much more modest than that of the Weissenhofseidlung. The walls of each of Utzon's houses are stepped to create various kinds and degrees of privacy for each dwelling, fluid views outward, and complex relationships between dwellings, between dwellings and smaller common spaces, between dwellings and water, and between smaller and larger common spaces (figures 4.28 through 4.31). Finally, there is a striking virtuosity here, one I imagine Utzon was aware of: that of a solitary young architect testing himself well against the work of sixteen of Europe's strongest architects.

Mies's Lafayette Park in Detroit consists of one, two, and twenty-two story apartment buildings on 78 acres cleared for urban renewal (figures 4.32 through 4.35), the new site plan for which was designed in tandem with Ludwig Hilberseimer. At Mies's insistence the existing street grid within the acreage was eliminated, though Mies's and Hilberseimer's new
Figures 4.24 - 4.25. Utzon, Kingohusene. Mies, the Weissenhofseidlung: 1925 site model. Utzon captures the complex interplay of Mies’s unrealized early scheme, both within the site and with the surrounding terrain.

Figures 4.26 - 4.27. Utzon, Kingohusene: view from common land into courtyard; Mies, the Weissenhofseidlung: the bland blank of the perimeter wall as built between the exhibit’s grounds and public street (see also figure 4.22). Utzon continues the interplay begun at the scale of the site into each courtyard house.
Figures 4.28 - 4.29. Utzon, Kingohusene: view of courtyard from wall; view into courtyard from common ground.
Figures 4.30 - 4.31. Utzon, Kingohusene: view from courtyard into common land; view to pond to the south from courtyard.
Figure 4.32. Mies, Lafayette Park, Detroit, 1955-63: overall site plan of one-, two-, and twenty-two-story apartment buildings on 78 acres.
Figure 4.33. Mies, Lafayette Park: partial site plan showing one-story courtyard apartments (c), and two-story apartment buildings (b).
Figure 4.34. Mies, Lafayette Park, partial site plan showing plans of one-story courtyard apartments and two-story apartment buildings.
Figure 4.35. Mies, Lafayette Park: aerial view of one- and two-story buildings.
internal street grid runs parallel and perpendicular to the existing Lafayette Avenue. The one-story buildings are Mies's one realized, grouped, courtyard housing scheme. Throughout, as a whole and in its parts, Lafayette Park embodies principles of the organization of multiple dwellings or buildings, in both its site work and in the disposition of Mies's early court house projects of the 1930s (figures 4.36 and 4.37), of a kind remarkable for their consistency in his work from then until his death in 1969 (figures 4.38 through 4.40). A juxtaposition of Lafayette Park and the Kingohusene (figures 4.41 and 4.42) helps the following comparison. To enumerate only five constants in his work, of which Lafayette Park is highly representative:

First, Mies is indifferent to the orientation of his buildings except as their sides follow consistent directions parallel or perpendicular to each other, and to streets. Oddly enough these streets often align with the existing road grid, itself a pattern hardly immune to circumstantial factors. The orientation of fenestration is also essentially a matter of indifference except as it is consistent with the orientation of wall planes. Second, the automobile is kept as remote as is feasible from Mies's buildings in large part, as at the Farnsworth House, in order not to mar the overall desired appearance of simplicity and rectilinearity. Third, dwelling is combined with dwelling in a manner strictly linear and orthogonal. If the extruded oblong is considered the best form for a given dwelling, then dwelling is connected to dwelling to create larger extruded oblongs. Fourth, buildings are placed as distinct, isolated objects in conformance with the larger, gridded field. Fifth, and consequently, buildings are placed in perfectly orthogonal relationships to other buildings.

Utzon's approach is distinctly different. First, he places dwellings only in specific relationship to solar orientation, site, wind, and adjacent or contiguous dwellings. The main
fenestration faces south and either east or west. Second, he brings the automobile by or into each dwelling. The type, "house," has largely disappeared from industrialized civilizations, replaced by the type, "car(s)-and-house." The Kingohusene is a model example of this newer type. Third, Utzon puts into service, but does not give primacy to, orthogonal relationships, such as that of dwelling to dwelling; the totality is not merely linear in any but the most conventional sense. The unorthodox relationship of dwelling to dwelling instead optimizes sunlighting and daylighting within adjacencies and contiguities, and Utzon's near-squares are useful shapes, but not expressions of a primary, indispensable, unalterable form, as Mies intends his squares. Any given dwelling (it is not quite possible to distinguish all of them, given their common walls) is so placed in relation to another in order to enhance the combinations of desirable characteristics such as wind protection, the creation of larger, harboring neighborhoods, working with and taking advantage of the topography, and looking out over the pond. Fourth, orthogonal relationships between buildings are retained, but also subsumed. The primacy of this conventional ordering device is disrupted, and orthogonal positioning becomes a tool towards something greater, including the shaping of common ground. Fifth, dwellings are placed as contingent, connected, mutually dependent objects. They are not considered distinct or discrete objects, and in fact are designed so as not to remain distinct objects, but rather as parts of a larger series of relationships.

Ends as Beginnings

I proposed above that Utzon, in regard to Mies, engages in a neat play on teleology by inverting what, in the 1931 Row House, was an end, an ultimate refinement. Here, at the Kingohusene, that end serves only as a beginning. For the 1953 Skåne competition, the
the template for Kingo, Utzon foresees the houses and yards as places for an enormous variety of activities and designs each dwelling to both allow for and encourage additional construction by the inhabitants. The origin of the scheme lies in some pleasant research he did in 1953 as prelude to his Skåne entry. According to Utzon,

I simply walked around and saw how the existing Swedish villages were. I found old boats in the gardens, rabbit hutchs, chicken coops, a crack-brained grandfather who fiddled with old motorcycles, a place where old bicycles and other junk was piled up along the hedge, playthings lying helter skelter. I then imagined ten such families, a set of wonderfully plump parents, a home smelling of baked cakes, a playground, a crazy beekeeper for whom bees were everything, another nut who lived only to keep his sailboat in shape, and a family who spent all their time growing special types of roses, and so on.

For Utzon this thoroughgoing integration of architecture and indweller is a powerful difference with what, for Mies, was instead a long distillation towards an essential emptiness, where the desire to eliminate future alteration or variation in the Row Houses was a primary aim. The open-endedness of the Kingohusene instead begins in this emptiness. Returning to close comparison of Kingo and the Row House, it is important to resume by noting that Utzon moves the smaller square representing the courtyard away from an edge and to the center of the larger square representing the perimeter of the dwelling. With this single shift he readies an enormous number of changes. In contrast to Mies Utzon gives the courtyard and its openness a centralized primacy, and in so doing creates room for a remarkable variety of additions to the basic unit, reduces the width and thereby the sizes of the rooms, extends the contest of economy begun at Hellebæk and continued at Holte, and increases his awareness in a direction very different from that chosen by Mies: "We shall examine one by one every function of a building and use it as a basis for form."

Utzon's displacement of one of the 1931 Row House's two key figures is therefore
only his beginning. His 1953 competition entry also included four plans elaborating on the prototype (figures 4.43 through 4.50). In each he retains the prototype’s compact grouping of kitchen-eating space, bath, furnace and hot water heater, entry hall and closet, and a living room which can serve during construction as a bedroom. Utzon's thinking is refreshingly frank for the 1950’s, and includes how the prototype is adept at accommodating a woman whose husband has left the marital bed. The plans for the four variations allow for or account for a terrific variety of possibilities.

Measuring 20.8 by 20.5 meters overall the first variation (figure 4.9 and 4.44) of the four most closely retains the dimensions of its prototype, and the overall proportions of the Row House and its one bed. Through these retentions it is the Skåne project’s most direct address of Mies, and holds on to enough of the Row House to bring clear parallels and therefore greater intensification of meaning to Utzon’s changes: Due to these the rest of his program and resulting spaces could scarcely generate more extreme difference with Mies's work. Instead of an emptied, denotative grid of perfectly square floor tiles within a larger perfect square Utzon’s courtyard includes in its southwest corner a fenced area for hens with henhouse adjacent, a storage room against the south wall, French beds for the intensive, compact cultivation of vegetables, and an el of fruit bearing trees gently dividing the yard. In keeping with the idea of adding to the spare minimum of the prototype, a small, shaded bedroom is appended to the living room and is tucked between it and a covered outdoor space of comparable size, a means of extending the living room into the courtyard, and demonstrating a lack of interest in clearly marking, by way of the roof, indoors against out of doors. Added to the prototype’s intact kitchen and dining space is a room with baking ovens, and a shop for the sale of baked goods, vegetables, and eggs, accessible from both the
Figures 4.43 - 4.44. Utzon, skaanske hustyper competition. Prototype and first variation, scale at 1:250.
Figures 4.45 - 4.47. Utzon, skaanske hustyper competition, second variation: section, plan, section, scale at 1:250.
Figure 4.48. Utzon, skaanske hustyper competition: axonometric of boat-building (second) variation.
Figures 4.49 - 4.50. Utzon, skaanske hustyper competition: third and fourth variations, scale at 1 : 250
Kingohusene's common land and the narrow, discreet pedestrian passage leading to the courtyard.

With all of this Utzon imagines the entirety of a hypothetical indweller's life, one of great variety involving the immediate proximity and cooperative presence of commerce, privacy, garden, animals, bearing trees, and partly enclosed outdoor shelter. The result and embodiment is an active and inclusive self-sufficiency that could not be more different from the ungenerative emptiness and self-containment of Mies's Row House, itself a depiction of solitude, one that excludes all that makes solitude possible. In so doing it seems to preclude rather than increase possibility.

The complexity and inclusiveness of Utzon's first program and variation is continued into the second, the only one for which he includes sections (figures 4.45 through 4.47). Like the first it is radically different from Mies's work and further heightens the sense of contrast with the plan of the Row House (and its perspective, figure 4.51). It is as if Utzon is of a mind with Wolf Tegethoff who, in 1981, writes of Mies' courthouse projects, including the Row House (and might as well be writing of the one-story courtyard housing at Lafayette Park, figure 4.52),

[A further important advantage of the Court House concept which has already been discussed in some detail in another context] is that with the individual courtyards, clearly defined open spaces have been created that can be visually integrated into the interior layout. Thanks to these projecting "expansion zones" the spatial integrity of the interior is now preserved as much as one might wish in spite of the fact that the exterior walls are totally given over to glass. The relationship between the structure and its surrounding has, however, changed fundamentally. This sealing off toward the outside precludes the subtle integration into the landscape that still largely characterized [Mies's] buildings and projects of the twenties and early thirties with their wings reaching out in all directions. Landscape has now been reduced to mere prospect, an unreal, beautiful "picture" beyond the precinct set off by walls. The former interdependency has thus given way to a relationship of separateness and seclusion."
Figures 4.51 - 4.52. Mies, 1931 Row House: perspective (compare also figure 4.29); Mies, Lafayette Park, one-story courtyard housing: exterior. The similarity to the blank perimeter wall of the realized Weissenhofseidlung is noteworthy.
Probing the definitions some, “clearly defined” means distinctly bounded, here by level, roof high wall planes where the substantial wall height, specifically above eye level, eliminates the uncontrollable variety of the street. “Visually integrated” is meant in the simplest sense: material is kept monolithic; brick of the same coursing and color is used inside and out. By “expansion zones” Tegethoff means the expansion or projection or continuation of the interior to the exterior. In the most direct terms this involves (but is probably not limited to) maintaining materiality (brick), orthogonality, space conception, and constant wall height from interior to exterior. The projection of the “spatial integrity” of the interiors is denotative: that which makes and defines the space that becomes and is the interior is not contradicted (contradiction being relentlessly excluded) in the external, courtyard space. Simply, the gird is unbroken. The maintenance of “spatial integrity” requires the minimization and preferably the elimination of contradiction, and is extended also by simply extending the height, planes, material, and dimensioning of the interior walls. Tegethoff’s first use of the word “landscape” is in its customary usage: the original ground of the site. His second usage refers to the condensing of all that is not the building into the constructed courtyard. Nothing, then, could be less like the sense of Tegethoff’s analysis, and its last two sentences in particular, than Utzon’s courtyard.

As to ready matters of fact, in Utzon’s second variation the bedrooms are placed on opposite wings of the basic el, allowing the dimensions to be squeezed to 17.7 by 20.3 meters, and giving the smaller bedrooms more private views into and quieter relationships to the courtyard. There is again, as with all the variations, substantial covered outdoor space and, delightfully, a roofed but not otherwise enclosed area within which Utzon imagines a boat under construction.
There is also a covered picnic table to the southeast, garden furniture, a carport, a child's swing to the northwest, and the entry has been judiciously relocated away from the bedroom and to the joint of the wings. The first section (figure 4.45) shows the walls cut down between areas given over to specific, roofed activities, opening the prospect of the courtyard to the prospect of shared land beyond. The whole has been narrowed against the prototype by over three meters, and the necessary width of the rooms decides the overall dimension, as though to assert there is simply no reason, other than consistency for its own sake, to keep the overall dimensions of the various plans constant.

The third variation shifts all three bedrooms to the east, allowing Utzon to again vary his dimensions, now to 21.7 by 19.0 meters (figure 4.49). The north edge is thereby less given over to necessity and allows for the elongation of the prototype's living room. A workshop now appears in the yard at the southwest corner.

The fourth variation (figure 4.50), at 19.2 by 21.0 meters, is a straightforward elaboration of the prototype and retains its east-west dimension while abbreviating that of the north-south. Within this, however, the living room is pushed out of shape, truncated in order to run three bedrooms along the north side of the courtyard. A covered space to the south and west with windows or screens running floor to ceiling supplants the third variation's workshop and results in roofing the entirety of the perimeter.

In this variation a carport is placed by the kitchen and serves as well to yield a separate, distinct room for a grandparent, or to rent, and includes a sleeping alcove, storage, toilet and sink, seating, and a desk. I do not believe it is a stretch to see Utzon, with this, as declining to posit his own work at Skåne as minimums that are merely alternatives to Mies's minimum, but asserting rather that this last arrangement is in fact the true minimum, and
showing us what that must include. Given it is drawn by hand, it is unlikely only coincidence that this miniscule unit approaches the shape of a perfect square; further, it seems wholly like the willfully anomalous Miesian core at Hus Middelboe, in that it is symbolic of Mies while at the same time reducing his presence. This small square (in shape identical to Utzon's core at Holte), like the 1931 Row House meant for one person, diminishes any reading of Mies's work as the necessary, essential minimum.

**Displacement**

Returning to my earlier comparison, Utzon accomplishes a significant shift in emphasis and creates significantly different opportunities, consequences, and results in regard to Mies's Row House by centering and in the same instant displacing its smaller square within the larger. If the implicit rules prohibit building within the smaller square this move immediately halves the width of all enclosed spaces and commensurately brings the furthest reaches of those spaces into twice closer proximity to the courtyard. The courtyard thereby becomes less a space subsidiary to the dwelling or mere extension to it, and more a portion integral to it. This centering gives the courtyard both a figurative and actual equivalence to the interior, and perhaps more. It becomes that around which the house is located, constructed, and oriented.

In addition, this centering displacement allows construction against all four sides rather than two of the smaller square. In return for halving of the width of the rooms (effectively continuing Hus Utzon's and Hus Middelboe's measures of economy), the length of the internal, smaller perimeter along which Utzon will build spaces that vary substantially from dwelling to dwelling commensurately doubles. Further, by reducing the sizes of his
spaces relative to Mies’s spaces, and relative to the courtyard, the areas and lengths of the spaces requiring full-height enclosure by the perimeter walls are correspondingly reduced. Utzon thereby frees a good part of those outer walls for cutting and shaping, the acts of which create a potent social aspect throughout the Kingohusene, and again differentiate him thoroughly from Mies.

**The Kingohusene as a Progress**

The differences between the above changes begun by displacing a key figure and Utzon’s previous work at Hellebæk and Holte are striking. Utzon’s permutations at Hellebæk augment the limited function of the Barcelona Pavilion and, in dramatically reducing the size of Mies’s masterpiece, have something of a fevered quality of relentless parsimony, even of admonishment, against a perception of its unnecessary splendor. At the same time Hus Utzon has the charm of bluster and nerve—did he think it would all go unnoticed forever? But Utzon’s inability to significantly displace any of the Barcelona Pavilion’s signal elements (his changes are in the manner of fixing, supplementing, or remedying) means his work is in the main beholden to Mies. Similar to Hellebæk in this regard is Hus Middelboe, which thoroughly retained the proportional scheme of Glass House on a Hillside, and to a remarkable and substantial degree the relational scheme of the Farnsworth house: of a given kind of space to another, of the entirety to the core, in the placement of the bedrooms, the more private rooms, at one end of the work, in extruding the terrace directly from the floor of the enclosed part of the dwelling, and in elevating the whole above the ground. Other of Utzon’s changes were routinely quantitative, as when he arranged and shrunk the dimensions of the Farnsworth House in a literal contest of physical
economy. Conversely, now, with Skåne, the displacement of the courtyard is predominantly a qualitative change, resulting in substantive, purposeful, relational changes, sufficient to thoroughly alter the nature of Utzon's buildings in regard to Mies's Row Housing, the Weissenhofseidlung, and Lafayette Park, in ways going far beyond Hellebæk and Holte.\textsuperscript{76}

Also important is that while there are clearly differences between the Kingohusene and the Row Housing, these are not oppositional. Utzon's single-sloped roofs are not contraries of the Row Houses' flat roofs; nor are Kingo's cut and shaped brick walls merely the opposite of Mies's long, straight brick walls. That Utzon is willing to use a favorite material of Mies's, brick, is more evidence of his indifference now to opposition, and to the independence of his flowering aesthetic. A further point, and perhaps the most important, is that Utzon's changes are full of play, an essential ingredient of transforming any possible anxiety associating with influence into the pleasure of influence. Utzon's formal transformations, and the freedom and resulting play they yield, are beautifully evident in Skåne's variations, and make way for Utzon's descriptive philosophy of design.

Another of Utzon's great accomplishments here, in terms of what it will portend for the remainder of his career, is his elimination of the orthogonal grid. No doubt he's aware of the dimensions, the necessary widths and lengths of rooms, but the disappearance in fact and implication of the grid from his prototype and every other Skåne drawing is extremely telling, for in each variation the press of room for life is used to push the walls in plan out of square. This is both a practical consequence of electing to vary the programs of the units, and of the invention, then use, of those programs to push out of shape the square, which in plan is perfectly emblematic of Mies's oeuvre.\textsuperscript{77} Of particular interest is Utzon's demonstration of the irrelevance of the grid, this in stark contrast to the 1931 Row House's
perfect adherence to a square grid, and to Mies's work which, after 1924, is always orthogonally gridded, and to Utzon's previous work at Hellebæk and Holte, both of which were confined to square grids. Noteworthy is the fact of his working without that particular net, if you will, something he wanted us to believe but could not yet accomplish with Hus Utzon.

At Hellebæk the relation to Mies was essentially apostolic, continual, and compulsive, while with Hus Middelboe Utzon still abided, compulsively, by the limits set by Mies, even in the very physical and specific sense of altering the solar orientation of, and view from, a glass house by fitting his changes into the Miesian frame, the perimetal limits of the as yet inviolable box dictated by a grid of squares. At Kingo Utzon detonates this manner of regulation. I want also to propose the key to surpassing a Bloomian anxiety, if such ever existed for Utzon, involves a profound sense of play surpassing opposition. The changes at Skâne and Kingo are very far from the relentless oppositions of Hus Middelboe, and it is no longer possible to routinely make the kind of direct, specific references or immediate comparisons, either emulative or oppositional, as it was at Hellebæk and Holte, between Utzon's work and that of Mies. Looking again at the site plan of the Kingohusene against Mies's work, it is as though Utzon had taken Lafayette Park dancing.
Summary figures 4.53 - 4.57. Clockwise from top. Mies, perfectly repetitive arrangement of the 1931 Row Housing. Utzon, Skåne courtyard housing prototype; three variations of the prototype.

CHAPTER 5.

UTZON'S SYDNEY OPERA HOUSE
AND ALVAR AALTO'S LIBRARY AT VIIPURI

In these next two chapters I outline the essentials of what would comprise a companion volume following this one, namely a study of the impetus behind the forms, shapes, and technics of four of Utzon's most significant later designs in light of the strength and lessons he drew from emulating, contesting, then freeing himself from Mies with Hus Utzon, Hus Middelboe, and the Kingohusene: in this chapter, the Sydney Opera House (1957-66-73), in the next Bagsvaerd Church (1969-73), the National Assembly Building for Kuwait (1972-81), and the unrealized Silkeborg Art Museum (1964).

As I have remarked, following his statements in "Eget Hus ved Hellebæk" in 1952 Utzon is silent regarding Mies for thirteen years. Then, at his moment of triumph, when the publication of his "Three Building by Jørn Utzon" declares resolved the remaining problems stalling completion of the Opera House, he troubles by way of contrast to denigrate as implicitly simple minded Mies's most extensive labor. On the first two pages of his forty-six page article Utzon wrote,

Architectural elements can very rarely be defined and shaped from one requirement only, for instance the structural -- that is too limiting for the usability of the element....

First of all, a 100% geometrical orientation in space is necessary so that the desired shape is clearly defined. In a rectangular architecture as for instance, Mies van der Rohe's I. I. T. the geometrical orientation is simple. Mies van der Rohe orientates himself and defines his shapes from a 90° grid system in all three dimensions. By this method, all his building parts are defined 100% in size and position and their neighbour relationship is a clear 90° cube.

In a similar way I for instance, sub-divide space by grids of converging planes fanning out from a point at even angles. This grid can intersect with other defined
shapes. As shown in the following cases the elements or building parts are defined by
the intersecting lines and the neighbour relations can easily be solved.

If I want to make a shape with a step-like character, a curved shape or a double
curved shape, my geometrical grids vary, -- they are not formed in advance, they vary
in each case and they are the instrument I use to enable me to define in drawings and
later to produce my element. The geometrical grids are therefore also influenced by my
choice of materials, and the production method....

Therefore, instead of making a square form, I have made a sculpture -- a
sculpture covering the necessary functions, in other words, the rooms express
themselves, the size of the rooms is expressed in these roofs. If you think of a Gothic
church, you are closer to what I have been aiming at.79

By so vigorously asserting difference Utzon suggests a debt, and what I also want to
suggest is that while there is no longer a specific evidentiary formal chain linking Utzon and
Mies, the specific lessons of the Kingohusene with regard to Mies still apply, and that method
of evolving a powerful design out of an existing work while nonetheless becoming perfectly
distinct from it, remains valid, generative, and authentically creative. In the matter of
specifics, I have discussed how Utzon's progress through the Barcelona Pavilion, Farnsworth
House, Weissenhofseidlung, 1931 Row House, and Lafayette Park frees him from the
constraints, conceits, and imperatives of Mies, that most influential of mid-twentieth century
architects.80 I believe this progress frees him, however, not only from Mies, but sufficiently
and substantively enough also to positively contest, extend, and surpass other canonical
architects and in so doing address major, innovative works of three of the four architects I
discussed in my introductory chapter as particularly affecting Utzon: Aalto, Wright, and Le
Corbusier. No other architect is as remotely bent as Utzon on so thoroughly reworking
specific canonical buildings and their precepts and formal impetuses and, as with the three
previous works of his I examined at length, this path and method gives his work an
increasingly remarkable power. I also speculate these four projects following are not
possible without the self-imposed apprenticeship of, particularly, 1952 through 1956. While
I cannot prove a negative, that the extraordinary works and especially the building sections following could not have been arrived at by other routes, other pedagogies, there is compelling evidence that Utzon’s methods of emulation and surpassing, and his revelations, at Hellebæk, Holte, and Kingo, are essential to making the unprecedented forms of his later work possible. Of these the Opera House most lends itself to the kind of close analysis I have used previously, its intended interiors in particular being directly based, or so I believe, on the free play Utzon achieved with his Kingohusene.

The Sydney Opera House and Aalto’s Library at Viipuri

The contretemps over the Sydney Opera House during its construction is well-known and well-documented, and I have no interest in examining here the competing claims surrounding its politics and financing. If it is possible to claim a building is terribly awkward statically while nonetheless brilliantly constructed, the Opera House shell-vaults are those parts of such a building. It is fairly well-known that the exteriors of the roof-walls are segments conforming to the curvature of an imaginary sphere 492 feet in diameter (figures 1.7 and 1.8). The result is twenty main, curved fan shapes that house a major hall, a minor hall, and a restaurant (figures 5.1 and 5.2). The fan shapes are linked by subsidiary pieces also decided by the surface of that great sphere. The fans themselves are constructed from hollow concrete ribs widening and braced internally both perpendicularly and diagonally as they rise while the ribs themselves, in the example of the second shell of the main hall, are made up of ten shorter pieces threaded together on steel cables which are anchored at the top and bottom of said compound ribs, grouted throughout, then put under enormous tension to fix each rib in place (figures 5.3 through 5.7). Less well-known but
Figures 5.1 - 5.2. Utzon, Sydney Opera House: view from the east-southeast; plan.
Figures 5.3 - 5.4. Utzon, Sydney Opera House: west elevation showing posttensioned concrete ribs with smaller sections at upper right of drawing; west elevation showing the tiles covering the posttensioned concrete ribs.
Figures 5.5 - 5.6. Utzon, Sydney Opera House: under construction, from the west; Section through shell showing varying concrete rib segment shapes on the left margin, and section detail through rib at upper left
Figure 5.7. Utzon, Sydney Opera House: under construction, showing chevron-shaped tile lids over posttensioned concrete ribs.
critically of the same kind of piece work and aggregation as at Holte and Kingo is the basis of what Utzon intended for the unrealized interiors of the two halls. Giving the example of the hall more developed at the time of writing, in 1964, he states,

The minor hall is a drama theatre with 1,200 seats arranged as an amphitheatre. By hanging a plywood reflector above the amphitheatre and suspending it from the concrete shell ribs, we had complete freedom in shaping the reflector and could follow the acoustical needs [figure 5.8 and 5.9].

While it has been my practice to seek out precise or close formal correspondences between works, it has not been my method to propose that because one thing looks like another it must be like that other. Rather, the exploration of formal likeness and the degree to which that likeness involves rethinking the original is routinely and enormously revealing of the nature of creativity. Conversely, this approach need not lead to neglect or preclude appraisal simply because a work lacks an obvious mirror or formal precursive resemblance. As Utzon's work becomes increasingly sophisticated, the programs of his buildings more elaborate, it becomes correspondingly more important to expand upon my earlier approach and look past visible likeness and direct formal correspondences to other, less obvious forms he might use to generate his shapes. Given this, I believe Aalto's lecture room in his Library at Viipuri (Finland, 1927-35, figure 5.10) provides the basis for Utzon's Opera House halls.

Asserting improved acoustical performance would result Aalto defined his lecture room's ceiling by linking segments drawn from the surface of imaginary cylinders meant to shorten acoustical bounce while accounting for the room's projecting beams (figures 5.11 through 5.13). As I mention in chapter seven Utzon talks of Aalto's work primarily in vague terms, and just as he deflected the motive and form for his own house in Hellebæk from the Barcelona Pavilion to the Farnsworth house, and never mentions the Farnsworth house or
Figures 5.8 - 5.10. Utzon, Sydney Opera House, Minor Hall as of 1964: longitudinal section, cross-section; Alvar Aalto, Library at Viipuri, Finland, 1927-35: lecture room.
Figures 5.11 - 5.13. Alvar Aalto, Library at Viipuri, lecture room: section; section showing Aalto's projection of acoustical reflections; section through ceiling and beam.
Glass House on a Hillside in relation to Hus Middelboe, and never refers to Mies's 1931 Row Housing, Lafayette Park, or the Weissenhofseidlung in relation to the Kingohusene, in his explanation of the genesis of the Opera House's acoustical ceilings Utzon never once mentions Aalto or his work. He says only,

Many shapes were tried out. The final form gives a very fine acoustical performance. Its stepped surface with convex cylindrical undersides, gives a great diffusion and richness and brilliance to the sound. The final form has also a very strong architectural character because the shapes are fanning out from one point on the stage so the spectators' eyes are concentrated on the stage opening.

But it is impossible Utzon would have been unaware of Viipuri: He worked in Aalto's office in 1945. He was a student in Scandinavia from 1937 to 1942 during which time Aalto was the preeminent Scandinavian architect. Aalto's work with curved elements was highly developed and well-publicized, from Viipuri through the Finnish Pavilion at the World's Fair (New York, 1939), the Baker House dormitory at the Massachusetts Institute of Technology (Cambridge, U.S.A., 1947-48), and the Villa Carree (Bazoches-sur-Guyonne, France, 1959, figures 5.14 through 5.16). These constituted sustained, dynamic, exciting, even allegedly dangerous developments. Nor is it credible that Utzon would have been unaware of the generative method of Viipuri's lecture room's ceiling--never mind that it is not hopelessly difficult to deduce--it is as unlikely as a north American architecture student in 1960 remaining ignorant of the fact that Wright's Guggenheim Museum was developed from a helix, or in 2000 going unaware that Polshek and Partners' Rose Center for Earth and Space replacing the Hayden Planetarium presumes a sphere and a cube.
The Relationship Between the Sydney Opera House and Utzon's Housing at Kingo

Where Aalto derives his ceiling from cylindrical segments Utzon derives his from both cylindrical segments and Aalto's use of them (figures 5.17 through 5.21). It is apt now to describe Utzon's ceilings as Aalto's lecture room ceiling and method freely, purposefully, and fantastically extended (similarly, the Major Hall, figures 5.22 and 5.23). Utzon concludes his description of his Minor Hall with,

As seen from these drawings, a very simple geometrical system is capable of completely defining the elements, enabling the setting out in space for erection, giving the possibility of finding the neighbour relationships between elements and also, to organise an organic decoration. In the finished Hall, the geometrical section will reveal that the elements are members of the same family and also revealing their individual positions in space.

The similarity between this technique and application and Utzon's method at Kingo begs the reproduction of parts of two site plans (figures 5.24 and 5.25) I paired in chapter four, and a paraphrase of Utzon's conclusion, above. Of his method at Kingo, he might have written,

'As seen from the site plan, a very simple, geometrized system is capable of completely defining the organization and perimeter of each dwelling, thus enabling the ready marking out of the site with its multiple, varying slopes, for construction while remaining, as a system, flexible enough to generate and maximize the possibilities of neighbour relationships: between dwelling and court, dwelling and dwelling, and dwellings and common space. In the finished project the expressed, unadorned construction and kindred dimensions reveal that the dwellings, while remaining part of a greater unity, each receive distinct expression even as they also retain and reveal their individual positions in space.'

If this paraphrase is accurate the similarity between Utzon's creative methods at
Figure 5.17 - 5.18. Utzon, Sydney Opera House, Minor Hall, later section showing circles generating segments of the curved acoustical ceiling; Aalto, lecture room at Viipuri, section showing radii generating segments of the curved acoustical ceiling.
Figures 5.19 - 5.22. Utzon, Minor Hall: Minor Hall, curvilinear box beams, drawing; box beams, two models, the lower emphasizing the piece work; box beams, eleven models, which would cover one half of the hall; Major Hall: section showing the acoustical ceiling's derivation from cylindrical geometry like that generating the Minor Hall ceiling.
Figure 5.23. Major Hall: model.
Figures 5.24 - 5.25. Utzon, Kingohusene: site plan; Mies, Lafayette Park: partial site plan.
Kingo and Sydney are striking, and it is correct to state that Utzon's remarkable transfiguration of Mies' 1931 Row Housing and Lafayette Park prepares his extraordinary resolution, nine years later, of the design of the Opera House's acoustical ceilings.

**Individual Positions in Space**

Worth particular emphasis is Utzon's explicit attention to "individual positions in space" at Sydney, for it follows from an implicit, like attention at Kingo. As I claimed previously and want here to emphasize in several particulars the Kingohusene, in its initial character of being drawn from Mies but immediately manifesting, then realizing, the desire to be free of him, required from Utzon a substantive and detailed reconceiving of what it means to dwell in concert. This reconceiving involved an enormous amount of attention to possible relationships between dwellings and between concentrated interior spaces, and to the means through which these relationships might become possible and dense. The result of that attention was a fertile, flexible system governing the specific physical links between dwellings toward, in other words, creating distinctions between parts of space (typically through particular human uses of them), and contemporaneously devising a method of dimensioning and using materials in order to, in various combinations, shelter and link and separate and overlap and combine these distinctions. Utzon's method involved using a template already departing from the comfortable configuration of a square within a square, and evolved the dwellings' interiors to adjoin between one and the next at most forty percent of each dwelling's total perimeter wall length. This crafting caused the remaining sixty percent, and often much more, of each exterior to remain available to be manipulated (cut, or opened, if you will) so as to make possible and rich the "neighbour relationships" between
dwelling, court, and common ground and, most germane to the example of the Opera House ceiling pieces (if we think of the dwellings at Kingo each as a very similar kind of element), between dwelling and dwelling. Akin to the Kingohusene the Minor Hall's cylindrical segments are, to paraphrase Utzon, of a shape, dimension, and kind to also allow the fluid, useful, and interesting link of each to each (figures 5.26 through 5.36). For Utzon, then, a method of shaping materials, whether these are dwellings or acoustical elements, is inseparable from the desire to work them in combination.90

**Parallel Conceptions of Space**

To note just one example of numerous other parallels, there is a strong similarity between Kingo and Sydney in their respective conceptions of space, and between their definition and treatment of space as medium and thing. Space is not simply something into which something else goes, though nor is it more real than what by custom is called matter. While Utzon did not endorse Miesian space at Hellebæk and Holte, his contest with it was limited by his continued placement of objects in conformance with that, the square grid, which denoted it. In so doing he preserved Miesian space in one of its essentials as a thing existing and regulated prior to architecture. Grids were manifestations of this a priori regulation, and the architect then placed objects into this primordial space which, before and after the introduction of objects, possessed a distinct identity. The Kingohusene, rejecting this, made the creation of objects and space mutually contingent acts, and once space is considered as plastic as what is conventionally thought of as material, the relationship of one space to the next becomes as critical as the relationship between one material and the next and, now, is approached by Utzon with equally identically scrupulous care. Space is no
Figures 5.26 - 5.27. Utzon. The "mother drum or cylinder" from which all elements of the Minor Hall's acoustical ceiling are formed. This diagram is consistent, for example, with the third box beam from the top in figure 5.21; Utzon, Kingohusene: partial site plan. The methods above and below are quite similar despite the use of two very different elements.

Figures 5.28 - 5.35. Diagrams comparing parts of the Kingohusene site plan with various sections through the Minor Hall. Each ring is taken from the "mother drum." Utzon's method reaches its maturity here.
Figure 5.36. One of nine full page diagrams from "Three Buildings by Jørn Utzon" in *Zodiac* 14, each showing a different section through the minor hall. Each ring is taken from the "mother drum."
longer the larger thing to be divided and enclosed by material for contingent use, but rather a
ing thing shaped and in part brought into existence, into being, by material. *Space is itself*

*material and further, it is as material as brick or wood;* both fluid *and* a solid, and equally
capable of shaping other material. There is a fertile ambivalence, a rich ambiguity, to this
conception, and that it continues from Kingo into the Opera House is apparent from Utzon's
"solid" model of the Minor Hall "space" (figure 5.37).

**The Opera House Again, in Light of Aalto**

Utzon's play at Sydney is, if anything, even more fantastic than it is at Kingo, but
absent from it is Kingo's quality of criticism following from the immediate and close address
of the precursor work: He does not demonstrate Aalto's work at Viipuri *deficient*. Limited,
yes, but not flawed, and this stems from Utzon's decision, unlike at Hellebæk, Holte, and
Kingo, to work from a model with a significantly different program. Aalto's lecture room is
a simple one with literally straightforward requirements: The speaker is supposed at a
specific point at one end of a room rectangular in plan, addressing an audience of 90 to 198
people sources seated in straight rows perpendicular to the direction of the speaker's voice (figure
5.38). Utzon's Minor Hall, on the other hand, seats 1200, and has to account for the
requirements of a variety of performances. The differences in scale and program do not by
themselves generate difference and therefore the increased possibility of meaning, but they
do invite it. To summarize, Utzon creates and then accepts this invitation, and extends and
vitalizes to the point and end of transformation, and this amounts to reconceiving Aalto's
work. At the Opera House, and in its Minor Hall specifically, this reconceiving has
particular aspects which are to some degree distinguishable. In four parts then:
Figure 5.37. "Solid" model of the Minor Hall "space."
First, Utzon *does* take advantage of the vastly different scales of his auditorium to effect essential changes, one of which is entirely reshaping the plan of the lecture room at Viipuri. Counterposed to Aalto's arrangement Utzon has musicians or players playing to an audience seated in segments of concentric circles (figure 5.39). These segments in turn are limited by two trapezoids which substantially mirror each other and which are joined along the longer of their implied parallel lines, or mirror line. I say he takes advantage because even with these seminal differences in seating and plan shape Utzon, if his intent had been primarily and merely to preserve and extend Aalto's room, might have simply curved Viipuri's cylindrical segments along their long axes, bending them to follow overhead the concentric seating, thereby only adapting (as he did in regard to Mies at Hellebæk) rather than transforming his predecessor's scheme. Here he instead takes Aalto's simple form, direct method of prismatic derivation, and resulting basic shapes, and changes the latter two by setting up a governor geometry distinct from Aalto's through which to expand, through adjacency and overlapping, the number and kind of possible links between the individual ceiling pieces. This geometry and its application takes the form of a truncated fan generated by exactly the type of anti-Miesian grid Utzon lauds in his opening to "Three Buildings by Jørn Utzon." The fan itself has twenty-two blades or segments which are further subdivided into a total of one hundred and twelve pieces (figure 5.40). He uses the relationships between individual positions in space where a distinct position on stage and the twelve hundred individual positions in space that are the Minor Hall's seats are linked through the paths of desirable sound reflection. This attention is not only to distinct positions in space but, of course, to the relationships between those positions, and results in the marvelously varying, playful, purposeful, distinct positions in space of the ceiling elements, each of which
Figures 5.40 - 5.41. Minor Hall, reflected ceiling plans: diagrammatic version; version emphasizing generation from a fan grid. The fanned ceiling has twenty-two "blades" or segments which are further subdivided into a total of one hundred and twelve pieces.
directs, bridges, and reflects sound emanating from the stage to a distinct area of seating. Each of these distinct areas contains an average of 1200 divided by 112 ceiling elements, or 10.7 seats, a number and area even smaller than the average, per ceiling bay, at Viipuri.

Second, the fan grid then is far from a geometry different merely for the sake of difference, and Utzon exploits the difference in the implied shape of the Minor Hall’s plan as against the oblong plan of Aalto’s lecture room in order to create, as I quoted Utzon, above, a directional quality to his ceiling that Aalto’s ceiling lacks. Utzon appears, however, not to register an additional and striking benefit of his arrangement, that the literal reverse is true: Not only do the ceiling elements become an integral part of a setting which enhances the audience’s focus on the performance, but the performer in turn sees the means through which his instrument or voice fans out to his audience. This yields a distinctly different relationship between performer and audience than does Aalto’s room.

Third, Utzon next finds meaningful difference in the means of making and manufacturing his ceiling. His use of cylinder segments lets him shorten and direct sound waves while the constant circumference of these one hundred and twelve distinct pieces, drawn from the master cylinder’s constant curvature, allows him, without having to imagine sacrificing performance, to render the construction amenable, as Aalto does not, to repetitive production, though in fairness this was not particularly necessary in Viipuri’s comparatively small lecture room. In so rendering Utzon takes and advances on his difference with Aalto down to the means of fabricating his ceiling. He writes simply, "... it was my desire to build the acoustical ceiling of mass-produced elements.... [figures 5.19 through 5.21]"

Fourth, the fan grid, while it avoids modifying much of the curvature in section of each ceiling piece, dispenses with the prismatic section of Aalto’s segments. In so doing,
even the basic component of the construction is altered. In creating the first trapezoid which, abutting the stage, widens as it reaches out into the audience to generate his governing fan shape, Utzon alters the essential shape of Aalto's cylindrical segments—he now takes the making of difference into the work's most basic component. A further benefit is this procedure discourages the manufacture of identical elements, thereby demonstrating that repetitive production need not lead to the tedium of a long series of identical parts.

Utzon's ceiling elements not only reveal their individual positions in space, as he states, but his procedure clearly results from great attention to individual points in space. In transfiguring what was for Aalto an irreducible component, the prismatic cylinder segment, Utzon's operation is identical to his transfiguration through the Kingohusene of the perfect square irreducible to Mies. Given that it is the fan grid that makes this last essential transfiguration of Aalto's ceiling possible, elemental, and complete, it is now apparent that Utzon's declaration of freedom with regard to Mies, won at Kingo and with which he opens "Three Buildings by Jørn Utzon," measures equally his independence from Aalto.

To state this in another way, though the program and results are entirely different, Utzon's approach is as suited to a medium-size housing project as it is to the acoustical ceiling for a 1200 seat concert hall. The work of free and purposeful play with closely scrutinized elements of an existing work is fertile and rich enough to become a method through with which to reconceive, to the point of transformation, other existing works. And it is these qualities of reconception and transformation, where the essences of preexisting works are used, are put to work, in ways not foreseen by earlier architects, which reveals possibilities the precursor could or would not see. At Sydney as at Kingo this takes Utzon to
and past dogged, merely critical opposition nascent at Hellebæk, in full bloom at Holte, of which he was largely freeing himself at Kingo, and is thoroughly free of at Sydney.

**Conclusion**

The Sydney Opera House extends Utzon’s method at Kingo, and shows how it is possible to go even farther with it. If there is anything the Kingohusene lacked, in that it still retained the too limiting strictures of contest, it was in Utzon's essentially confining his materials to the orthogonal. To reiterate, it is now apparent his fan-like grids distance Utzon not only from his stated precursor and context, but also from his unstated precursor and contest at the Opera House: Aalto and his work at Viipuri. Utzon's rejection of Mies's "cubic" grids becomes as well a surpassing rejection of the last self-imposed restraint on the Kingohusene; further, the example he uses, that of I. I. T., given that Utzon never engages it, is a nice bit of misdirection comparable to how his admiration of the Farnsworth House at the end of "Eget Hus ved Hellebæk" deflected the actual indebtedness to the Barcelona Pavilion. At Kingo Utzon maintained the major term of Mies's relentless orthogonality, the identification of (but not with) Mies in order to free himself from Mies, this through a demonstrable, comparative superiority as opposed to the creation merely of an alternative. Utzon's constructions at the Opera House advance on this method, and render the presence of the lecture room at Viipuri in it so thoroughly only one part his composition as to allow him, were he so inclined, to coequally claim the method, and fully claim the richer result, as his own, an advance possible only after the free play won at Kingo against the Weissenhofseidlung, 1931 Row House, and Lafayette Park. Through all of this Utzon seems certainly to understand the arbitrariness and limitations of innovative and even canonical
works and architects, and takes them as subjects to work from, rather than toward. In that
light they inform and spur, serving simply as beginnings against which, in the maturity of
Utzon's architecture, he no longer needs to contend. This is the key virtue of his self-
imposed apprenticeship, and it goes smartly against the dominant pedagogy of every college
and university's department of architecture studio class with which I am familiar, where
canonical or approved works and architects are to be, if not frankly followed, at a minimum
"properly understood." Utzon knows, now, the arbitrariness and limitations of these, that
they do not generate universal or final principles, apply only to specific situations despite
pretensions to universality, and may even have remarkable weaknesses. He understands
what these works and their architects accomplished, as well as their limits--the terribly
restrictive rigor of Mies, Aalto's caution--and that they serve well as foundations.

Utzon's extremely close work is a won freedom which allows him next to press the
limitations of another of the giants of twentieth-century architecture and one of that
architect's favorite, most innovative, and canonical buildings: Frank Lloyd Wright and his
Guggenheim Museum in New York City.
Summary figures 5.42 - 5.44. Alvar Aalto, Library at Viipuri: lecture hall; lecture hall section showing radii of circles generating segments of the curved acoustical ceiling.

Summary figures 5.45 - 5.46. Utzon, Sydney Opera House, Major Hall: model; section showing circles generating segments of the curved acoustical ceiling.
CHAPTER 6. UTZON AND THE CANON

Much of Utzon's work after the Minor Hall, in particular his two major realized public commissions, continues his method brought to fruition at the Opera House, wherein he took something essential from a canonical work and reformed it to a new purpose, advancing the earlier architect's conception. The subjects of this section, exemplary of that method, are Bagsvaerd Church (1969-76), the National Assembly Building at Kuwait (1972-81) and, because of what I believe is its intriguing engagement with Wright's Guggenheim Museum, Utzon's unrealized Silkeborg Art Museum (1963-64). My approach to each of these is meant to be suggestive only, and is almost entirely conjectural. The absence in these three works of the kind of demonstrable formal kinship with the work of Mies and Aalto as at Hus Utzon, Hus Middelboe, the Kingohusene, and the Sydney Opera House, coupled with Utzon's disinclination to reliably discuss his source material, makes the hypothetical approach necessary though not, I hope, unfruitful, and there may be significant pedagogical value in the following comparisons between works, one tested against another, and in imagining the extension of Utzon's method as it evolved in chapters two through five. In any event, this chapter is meant to encourage further investigation. I make no claims to accuracy or success.

That said, my very personal conviction is that what I called Utzon's "free play" with Aalto's lecture room at Viipuri makes possible an even freer play with it soon enough, and with other canonical works, and through this I mean to further the pedagogical value of Utzon's method as diagnosed in chapters two through five. In the absence of formal correspondences that can be pursued in detail, however, I will aim to be brief.
Utzon's Silkeborg Art Museum and Frank Lloyd Wright's Guggenheim Museum

During the advanced development of his scheme for the Opera House Minor Hall Utzon was approached by the artist Asger Jorn, founder of the COBRA art movement (its members lived primarily in Copenhagen, Brussels, and Amsterdam). Jørn asked Utzon to design a museum to include work by COBRA artists and others. Context was a crucial factor in Utzon's design. He wrote:

The [new] art gallery, which is situated in an old landscaped garden together with an existing building, is buried so that it does not disturb the surrounding, but concentrates inward 100%.

A building in several storeys above the ground would seem like a bull in a china shop, and the regard for the existing, beautifully proportioned museum has resulted in a solution which will not, by its size, dominate the surroundings.

It seemed natural to bury the museum in the ground to a depth corresponding to the height of a 3-storey building and let rise above ground level only the upper part—the 1-storey high skylights of the museum [figures 6.1 through 6.12].

I proposed regarding the Farnsworth House that, as of the middle of the twentieth century, it was the model for a raised house by water. Similarly again for Utzon in 1963, contemplating the design of a curvilinear art museum complete with sloping ramps, what could loom larger than Wright's Solomon R. Guggenheim Museum, finished but four years previously?

Wright's reputed arrogance (I prefer "confidence") was legendary, and hardly absent from his decision to plunge a closed curvilinear concrete building into New York's stately Fifth Avenue (figure 6.13). While it is difficult to imagine he said it absent humor, Wright's claim for the intended (and, one imagines he felt, earned) permanence of his museum, is startling:
Figures 6.1 - 6.2. Utzon, Silkeborg Art Museum, Silkeborg, Denmark, 1963-64, plans: roof and ground level.
Figures 6.7-6.11. Silkeborg Art Museum. Sections, top to bottom, A, B, C, D; elevation: south.
Frank Lloyd Wright, Guggenheim Museum: exterior from Central Park.
The ramp, which is coiled in the shape of a true logarithmic spiral, is one continuous piece from top to bottom, integral with the outside wall and the inside balcony. When the first atomic bomb lands on New York it will not be destroyed. It may be blown a few miles into the air, but when it comes down it will bounce.36

As I proposed with Hus Middelboe in regard to the Farnsworth house, that Utzon found great, fertile grounds for disputation with Mies, here I suggest he carries on another sort of disputation, but one characterized more by the depth of engagement he grew into with his Kingohusene and Sydney Opera House than by his opposition at Holte. It is a measure of his increased sophistication as an architect over the intervening decade that this new disputation, with Wright, is not marked by Hus Middelboe's extreme closeness of formal correspondence (by which I have never meant "likeness"), which did, after all, carry an element of gainsaying. Utzon's play with the Guggenheim is less specific than it was with the Farnsworth House, and does not draw on as specific an element as did his Minor Hall with the generating cylinders of Viipuri. As a result what appears here is a more sophisticated endeavor, less play with a form than with a concept; Utzon's atria, their several variations on the "perfected" geometry of Wright's single, logarithmically-derived helix (figures 6.14 through 6.17), instead reminds me of the variations at Kingo derived against the "perfected" geometry of Mies's 1931 Row Housing.

I am proposing that Utzon breaks up Wright's enormous central space into smaller, more intimate spaces more precisely concerned with the specific activities he aims to harbor. Utzon's ramps, for example, give the viewer a remarkable number of positions from which to contemplate exhibited work, whereas in the Guggenheim one loses the middle-distance view particularly for larger paintings.

In addition to reserving the possibility of exhibiting smaller works adjacent much of
Figures 6.16 - 6.17. Silkeborg Art Museum: plan, repeated for convenience
Wright, Guggenheim Museum, plan, to same scale.
his system of ramps, Utzon states,

In the Silkeborg museum, it is possible to exhibit paintings and sculptures as high as a 3-storey house in such a way that one can walk around the object at all levels on a system of ramps. The possibility for this form of exhibition may lead towards a completely new development of decorative art. The different works of art can be exhibited individually or in groups, in all possible ways. It will also be possible -- in one of the big caves, to isolate one large painting or a sculpture which needs to be studied alone. 97

Utzon's conjecture that one result of his design might be "a completely new development of decorative [i. e. non-architectural] art" suggests his ego here is not less than Wright's, but he is also willing to balance it with his desire to submerge his museum for the sake of its site. Further, the variety of his spaces gives Silkeborg a complexity and subtlety Wright's museum lacks. The shallow depth of the Guggenheim's ramps make it unfit for the display of sculpture meant to be seen in the round, and my own experience is that Wright's great, unified space has a significant cost in terms of limited vantage points and continual distractions. Particularly intriguing to me is the idea that Utzon arrives at a superior solution by breaking down the continuous, unifying ramp Wright worked so laboriously to create. Utzon also asserts his museum has been designed so as to be susceptible to the mass production of its parts, something the Guggenheim was not. He claims,

A simple geometry will form the basis for the construction of mass-produced elements. The external visible curved shapes will be clad with ceramics in strong colours so that the components of the building will appear like a shining ceramic sculpture. Inside the museum is all in white.

Through my work with curved shapes on the opera house I have been inspired to go further into free architectural forms, but at the same time to control the free forms by a geometry which makes it possible to erect the building out of mass-produced components. I am fully aware of the danger of using curved forms in contrast to the relative security of basing architecture on rectangular forms, but the curved form world offers something which one will never find in rectangular architecture. The ships' hulls, the caves and the sculptures prove it. 98
Utzon's Church at Bagsvaerd and Aalto's Library at Viipuri

Utzon's church at Bagsvaerd, a suburb of Copenhagen, was commissioned by its Unitarian congregation in 1969, and completed in 1976. Located between a highway and an access road, it is intelligently comprised of five atria largely closed within a simple concrete frame planned on a module of 2.2 meters. The frame is infilled with precast concrete panels, and roofed variously by corrugated metal, and by glass rectangles triangular in section (figures 6.18 through 6.24).

The Opera House Halls are, as I wrote in chapter five, of a size dramatically greater than Aalto's lecture room at Viipuri. So too the 13.2 meter high nave of Utzon's church. It is particularly when the scales of the nave and the end bay of the lecture room are conflated, that the similar means of their derivation become directly evident (figures 6.25 and 6.26).

Recall that of the Opera House Utzon wrote,

The minor hall is a drama theatre with 1,200 seats arranged as an amphitheatre. By hanging a plywood reflector above the amphitheatre and suspending it from the concrete shell ribs, we had complete freedom in shaping the reflector and could follow the acoustical needs.99

Substituting "symbolic" for "acoustical" (see especially figures 1.9 through 1.11) indicates how readily Utzon has extended here his method at Sydney, and I suspect that Bagsvaerd Church would not have been conceivable without Utzon's earlier practice of successfully revising and extending Viipuri on a massive scale inside the Opera House.

Utzon's Church at Bagsvaerd and Le Corbusier's Chapel at Ronchamp

At Bagsvaerd, at a scale smaller than his Opera House, Utzon to some degree is willing to dispense in the making of his vault with the issue of mass-production and instead
Figures 6.18 - 6.21. Utzon, Bagsvaerd Church: south elevation, plan, north elevation, section showing derivation from cylindrical segments.
Figures 6.22 - 6.24. From top left, clockwise. Bagsvaerd Church, from the south southwest; toplighting through the second (gallery) level also allows light to filter into the nave; from the westmost atrium looking east.
Figures 6.25 - 6.26. Bagsvaerd Church: nave, showing the various diameter cylinders from which the vaults are derived. Aalto, Library at Viipuri, lecture room: end bays showing the various radii from which the ceiling is derived.
designs it to be built without benefit of repetitive production techniques. The vault is of concrete sprayed over wire mesh. The wood boards below the reinforcing mesh catch then hold the concrete in place (figures 6.27 and 6.28). The finished vault spans 17.6 meters and measures only 3 3/16 to 4 inches thick. With the structural frame, Utzon takes the opposite approach. Its square concrete posts, stabilizing rectangular cross-pieces, and concrete panels or glass infilling are repetitive elements of the simplest types. It is not impossible to view the distinction between the labor-intensive nave vaulting and readily produced frame as an impressive revision of Le Corbusier's Chapel at Ronchamp (figures 6.29 through 6.31). Utzon would of course have been aware of Le Corbusier's work, but chapels and churches with strong curvilinear elements completed some two decades apart are more difficult to link than buildings of similar use and formal components designed only a few years apart.

It is possible nonetheless to see the corridors at Bagsvaerd as an improvement on the structural work at Ronchamp which Le Corbusier labors mightily to conceal. Utzon's corridors and Le Corbusier's walls are, perhaps not coincidentally, of similar depth, and each supports a curvilinear ceiling. Utzon's tectonic and evident frame allows the corridors adjacent the nave to filter daylight into it, while the second level corridors also act as a gallery spatially integral with the nave while providing added lateral structural support. The frame, beautifully and intriguingly proportioned, has an expressive quality Le Corbusier's rather forced, stagy arrangement lacks, and the light so important to Le Corbusier—and the main reason for the depth of his chapel's walls, particularly to the south—seems gained by Utzon through more direct and expressive means (figures 6.32 and 6.36).
Figures 6.29 - 6.31. Le Corbusier, Chapel at Ronchamp: plan, axonometric, exterior.
Figure 6.32. Bagsvaerd Church: corridor with toplighting.
Figure 6.33. Bagsvaerd Church: nave, looking toward gallery and corridor.
Figures 6.34 - 6.36. Chapel at Ronchamp: south wall section drawings; under construction, typical wall arrangement of piers and lateral stiffeners. The whole is concealed behind the wall finishes; nave during service, with the south wall to the right.
In 1971 Utzon won the international competition run by invitation to design the Kuwaiti National Assembly Complex (1972-81) housing its Parliament. It is, in simplest terms, two posttensioned concrete "tents" set at right angles to one another, these erected adjacent a contrastingly regular and rectilinear complex of offices (figures 6.37 and 6.38). The whole stands on Arabian Coast Street, immediately by the Arabian Gulf. The tents harbor, respectively, the National Assembly Hall and, closest the Gulf, the "Covered Square." Utzon said:

The central street [of the office complex] leads toward the ocean into a great open hall which gives shade to a big open square, where the people can meet their ruler. In Arab countries there is a tradition for very direct and close contact between the ruler and his people.

The dangerously strong sunshine in Kuwait makes it necessary to protect yourself in the shade - the shade is vital for your existence - and this hall which provides shade for the public meetings could perhaps be considered symbolic for the protection a ruler extends his people. There is an Arab saying: 'When a ruler dies, his shadow is lost'.

This big open hall, the covered square, between the compact closed building and the sea, has grown out of this very special situation in quite a natural way - caused by the building's position directly on the beach. This big open hall connects the complex completely to the site and creates a feeling that the building is an inseparable part of the landscape.100

This, Utzon's last significant public building, seems also to engage Le Corbusier's Chapel at Ronchamp. If Bagsvaerd Church may be read in part as an improvement on the chapel's irrelevant concealment of wall structure, and as a remarkably vigorous demonstration of the upper reaches of inventiveness once a nave vault is freed from certain structural concerns, Utzon's work at Kuwait reads well as an improvement on Le Corbusier's walls, and on the chapel's arbitrary roof shape, by which I mean that the latter is essentially unrelated and indifferent to the load-bearing behaviors and tendencies of its spanning
Figures 6.37 - 6.38. Utzon, Kuwaiti National Assembly Complex: exterior, plan as built, where the "Public Square" is shaded by the tent to the left in the upper photograph.
materials, except as those characteristics support the roof's essentially predetermined form, whereas the profile of Utzon's tents is determined by the weight of concrete strung on tensed steel cables (figures 6.39 and 6.40). So much at Ronchamp is rigorously concealed, and it seems as though structure there is, to Le Corbusier, as it was to Mies at the Farnsworth House, an irritant. Le Corbusier stashes the structural piers within rubble walls plastered over, conceals as much as he can the way the piers take the roof load, hides the remarkable number of the pieces of the roof above a skin of more plaster, and so forth, whereas Utzon, working out the aesthetic of parts he developed at Hus Middelboe, finds ways to express all of these, and at the great scale of a National Assembly Complex (figures 6.41 through 6.45). Le Corbusier has described how the inspiration for the roof shape of his chapel came from a beached crab shell he discovered while walking.\textsuperscript{101} A startlingly favorable view of this approach to design comes from William Jordy:

\textit{[Le Corbusier] translated the angular violence of the crab shell into the heaving, sagging anguish of his chapel, which appears to be miraculously sustained by the towers, the prow-like prop and the upward curve of the collapsed roof at its edges (inside, by a sliver of light between walls and roof so that the sagging canopy overhead seems to float barely free of support).\textsuperscript{102}}

This sort of analysis, like Jean-Louis Cohen's claim for Mies's Farnsworth House repeated in my third chapter, and any of the numerous claims for the "hovering," "floating," and other seeming gravity-defying qualities of Mies's work, depends on the degree of our ability to pretend that the elements making up these kinds of architecture are not frankly heavy—claims like Jordy's seem to me to be as unimportant as adults after a magic show cooing over the marvelous fact that so many rabbits can inhabit one hat. Why we should suspend our knowledge of weight, gravity, and structure, so that Le Corbusier can seem to
Figures 6.39 - 6.40. Kuwaiti National Assembly Complex, section through "tent."
Chapel at Ronchamp, section looking south.
Figures 6.41 - 6.42. Kuwaiti National Assembly Complex: under construction, showing the taller piers of the tent closest the Gulf, the "Covered Square." Chapel at Ronchamp: under construction, showing structural piers, with roof finish largely completed.
Figures 6.43 - 6.45. Kuwaiti National Assembly Complex: elevation, large piers; exterior of piers; "Covered Square" with finished roof.
miraculously suspend his ceiling is not clear to me, but any further conjecture as to whether Jordy is right I leave to the reader. Utzon's posttensioned roofs, on the other hand, fuse the structural and symbolic—he is imaginative enough not to have to sacrifice one for the other, and it is through expression rather than concealment that he brings this about, advancing on Le Corbusier's inability to express the two contemporaneously. Roger Connah, for one, is impressed with Utzon's "suspension of the usual heaviness associated with concrete." This suspension is accomplished through Utzon's creative approach to posttensioning, and through his deep understanding of the structural behavior of steel reinforced concrete as displayed in the complex's striking half-round columns, each of which becomes at its apex a slender finger. Connah concludes, "...it is also tempting to say Utzon makes concrete breathe, or perhaps sigh."

I do not mean my earlier comments in a puritanical sense, as the result of a primary conviction that all buildings should "honestly" exhibit their skeletons, but rather that architecture treating structure merely as scaffolding for its symbolic overtures is never as interesting as architecture integrating creatively and beautifully made structure into those offerings (figures 6.46 and 6.47).
Figure 6.46. Kuwaiti National Assembly Complex: central street.
Figure 6.47. Kuwaiti National Assembly Complex: close of large piers of Covered Square
I believe Utzon breaks down the unifying ramp and single atrium of Wright’s museum because, as he writes, “the possibility for this form of exhibition may lead towards a completely new development of decorative [nonarchitectural] art.”

In his church Utzon amplifies the scale and complexity of Aalto’s lecture room while also making light and structure essential elements of his construction.
Summary figures 6.52 - 6.54. Utzon, Bagsvaerd Church, nave, facing the expressed structure of the light-filtering corridors. Le Corbusier, Notre Dame du Haut at Ronchamp: axonometric; interior, looking toward the south wall. The structure is concealed in order to achieve a theatrical ambience.

Summary figures 6.55 - 6.56. Utzon, Kuwaiti National Assembly Complex: the concrete "tent" of the Covered Square. The individual elements each achieve expression in a unity between the structural and the symbolic. Le Corbusier, Notre Dame du Haut at Ronchamp, the south wall of 6.53 under construction.
Phase One: 1947-1958

As I noted in my introductory chapter, Utzon has published only a little, but even this little constitutes riches. The better to sort this treasure I separate his published work into three phases: two of twelve years each followed by the remainder of his career, these corresponding to changes in his interests as an architect and an author. The first phase, from 1947 through 1958, includes six representative pieces. In none is Utzon’s part lengthy, and in none of the four that are co-authored is Utzon’s part dominant. Their brevity, content, and format are the work of an architect for whom writing and publishing are asides to his practice—even the essays take on the colors of a competition entry—but these pieces constitute also the preliminary work necessary to the mature combining of the symbolic and the technical, the organically modeled and the mechanically refined, in the written work of the second phase. Utzon's earliest published pieces are a pair of articles in the July-September 1947 issue of Arkitekten maanedshaefte. The first, co-authored with Tobias Faber, "Tendenser i Nutidens Arkitektur [Trends in Contemporary Architecture]," condemns what the authors see as a postwar tendency towards mannerism. (Throughout this and the next chapter, the first reference to a work listed in my annotated bibliography is accompanied by information sufficient to locate it there; otherwise full citations are given.) They propose instead varied mechanisms of the growth of organic and mineral form including, implicitly but identifiably enough, accretion, aggregation, and accumulation as the foundations for an
authentic architecture rooted in enduring laws. The second, companion piece, generated from the principles of "Tendenser...", includes in addition to Faber the Danish architect Mogens Irmeng, and is titled and is the group's entry into the 1947 "Konkurrenceforslag til Crystal Palace i [Competition for the Crystal Palace in ] London." The third article in this phase, "Jørn Utzon: Eget Hus ved Hellebæk [His Own House in Hellebæk], Danmark," appears five years later and consists of four pages of photographs, one plan, and one page of text. In it Utzon details the design of his own house in Hellebæk (1950-52) and inserts a vigorous bit of misdirection: While I explicate this and what follows in my second chapter, suffice it to say here that Utzon troubles to pay lavish verbal tribute to Mies van der Rohe and his Farnsworth House (1945-50), strongly suggesting it as the inspiration for Hus Utzon, whereas my evidence demonstrates that Utzon in fact uses Mies's Pavilion for the German Reich at Barcelona (1929) covertly, to govern his own house's form, plan, ideas, and proportions. With the exception of this misdirection and his introduction thirteen years later to "Three Buildings by Jørn Utzon," a moment of great triumph wherein he troubles to denigrate Mies's work, Utzon studiously avoids direct reference to Mies and his high, rationalizing, formalist manner, and relentless efforts to render the simplest possible appearance. Despite this it is scarcely possible to understand Utzon's work in full absent awareness of the essential part in it of the deep and persistent character of Mies's thought, and of the specific proportions of Mies's architecture. While my second chapter through fourth chapters offer evidence and an interpretation of it, all this is worth noting here, for too much goes missing if we fail to grasp the complex nature of Utzon's work as it alternates between and eventually synthesizes, albeit with difficulty, two powerful and hardly always harmonious forces: the organic impetus as it first appears in "Tendenser..." and "...til Crystal
Palace," and manifests in, for example, Utzon's Langelinie Pavilion (Copenhagen, 1953, figure 7.1), and the strict tectonically and constructionally expressive sensibility derived first from copying and then opposing Mies, and which dominates Hus Middelboe (Holte, Denmark, 1953) and other of Utzon's work during this phase, such as his Housing in Morocco (1947, figure 7.2). The profundity of the eventual synthesis of these streams may also go unappreciated for Utzon is as much secretly Miesian even in his built work (how that plays out is fascinating) as he is overtly fascinated and inspired by principles of growth. While these two forces are historically opposed, part of Utzon's genius is to eventually realize that in truth they are not.

On a distant note, in the same year as Hus Utzon and "Eget Hus...," there appears a short piece authored by PAGON, the Norwegian branch of CIAM (Congrès Internationaux d'Àrchitecture Moderne), on the need to reconsider contemporary approaches to mass-housing, which Utzon co-signs with ten other architects. Another five years later his entry for the Sydney Opera House competition is published and, last in this phase, in 1958, Utzon publishes his Red Book, a short collection of intent and illustrations from Utzon and the various consultants to the Opera House design.

Of these, "Tendenser...," particularly because it is coupled with and directs the method of design in "Konkurrenceforslag til Crystal Palace," strikes the most durable balance between theory, symbolic content, and the pragmatic aspects of realization, and despite being the first published pieces in Utzon's career are particularly worth returning to. Both are highly representative of Utzon's published work and in several ways germane to both the separate streams of and eventual combination of the rationalizing impulse and organic principles in his architecture. Establishing the tenor and format for the first two phases of
Utzon's writing, he and Faber compose their mild manifesto along the lines of a competition entry. "Tendenser..." starts with one page of text followed by twenty-seven extensively captioned photographs which can be divided into six distinct kinds, each of which illustrates either an inspiration or a principle of growth which can be extrapolated into the practice of architecture (and works themselves manifesting such principles). These are: unadulterated landscapes, unattributed or anonymous architectures, urban formations, forms capable of growth either organic or mineral, impromptu construction, and canonical architecture of two types. The first of these latter types exemplifies the mannerism the authors condemn, where formal concerns and orthodox, rigorously symmetrical geometries dominate (figure 7.3), while the second kind uses work by Alvar Aalto and Frank Lloyd Wright as counterexamples to this (figures 7.4 and 7.5). This second kind is not, however, idealized in the text, in the sense of architecture perfected, but is presented rather as works following from enduring principles of organic and mineral growth. Thus even at this early date Utzon's fascination with generative, originary principles rather than with architecture as the mere realization of form imagined prior to consideration of how it will be made is evident, and both beautifully depicted and stated:

In the thirties architects had a sound functionalist program.... The forties, however, are largely empty of such a foundation.... against this emptiness many now find solace in recourse to traditional forms.... in favorable circumstances this recourse to tradition becomes at best a series of refinements, but in unfavorable circumstances it reverts to mere functionalism. Others try to develop functionalism further but are unable to do so without ending up with formalistic results. We term them "motivists," given that they assembled the shapes of their architecture out of motives rent from their origins.\footnote{106}

It is difficult to overstate the importance of "Tendenser...", particularly since five of its six generative principles or examples dominate Utzon's work from 1945 through 1987. While there is overlap between them, of the kinds of growth Utzon and Faber depict
Figures 7.3 - 7.5. Louis LeVau, Versailles, 1669-85;
Alvar Aalto, Sunila pulp mill, Sunila, Kotka, 1936-37 / 1950-54;
Frank Lloyd Wright, Hannah house, Stanford, California, 1936-37.
crystalline accretion, where there is an increase in size, a change in overall shape, and growth by gradual, external addition is the principle Utzon chooses for the generation and development of both his Crematorium (1945) where one brick is added at each funeral ceremony, and Farum Town Center (Denmark, 1966), which Utzon describes as "conceived as a growing structure."107 (Figures 7.6 through 7.11.) Another kind of growth, represented by the aggregating effect of mushrooms sprouting, where form is created and extended through the successive addition of sizable identical units, and where the shape of the original cell is retained and readily evident, governs both the design of Crystal Palace and, four decades later, on the Copenhagen waterfront, the Paustians Hus furniture showroom (1985-87, figures 7.12 through 7.14). That face of aggregation in its more strictly botanical definition, where a totality is considered with necessary attention to its essential, constituent parts, here the parts of architecture, is particularly evident in the National Assembly Building for Kuwait108 (1972-81, figures 7.15 through 7.17), and informs much of Utzon's Additive Architecture (1966-70), where another part of the definition of "aggregate," in the sense of objects crowded or massed into a dense cluster, is visible in the folded concrete plates of the grandstand of Jeddah Stadium (Jeddah, Saudi Arabia, 1967, figures 7.18 through 7.20). The progress of fern and coral growth, where there is a general pattern of increase across species predictable or definable to a certain degree, and where growth of one section determines the pattern and location of the next, is evident in Espansiva building kit (prototype erected at Gammel Hellebæk, Denmark, 1969), and the School Center at Herning (Denmark, 1969, figures 7.21 through 7.31). The way anonymous architecture is often clustered, and its homogeneity of materials that Utzon and Faber feature appears in Utzon's housing at Kingo and Fredensborg (both Denmark, 1956-60, and 1962-63, figures 7.32 through 7.34).
Figures 7.6 - 7.8. Utzon, Crematorium, 1945; crystalline accretion as it appears in Utzon and Faber, "Tendenser..."; Crematorium, later stage.
Figures 7.9 - 7.11. Utzon, Farum Town Center, 1966: street elevations with basic modules composed to form "a gently curved bazaar street;" plan variations of basic modules; growth of various modules and town center over time.
Figures 7.21 - 7.26. Fern and coral as they appear in "Tendenser..."
Utzon, Espansiva house building kit: plans and schematic diagrams showing various possibilities of growth.
Figures 7.27 - 7.31. Utzon, School Center for Herning, 1969: the growth of the plan in three stages, then two variations on the flexible classroom modules of which it is comprised.
Figure 7.32 - 7.34. Utzon, Fredensborghusene, 1962-63; anonymous Arabian housing as it appears in "Tendenser..."; Utzon, Kingohusene 1956-60.
Beyond direct matters of form, after featuring the Sunila plant in "Tendenser..."
Utzon continues to pay tribute to Aalto the architect and his working method in both his
speech accepting the Royal Institute of Architects' Gold Medal in 1978 and the 1983
interview "Elements in the Way of Life," and extends to an extreme point and purpose
Aalto's work, specifically the lecture room of the Library at Viipuri (1929-35), in the Minor
Hall scheme (1962-66) for the interior of the Sydney Opera House. The 1956 competition
entry for the Opera House has the feel of forms growing (figure 7.35), as opposed to drawing
on specific shapes or properties, and this kind of broad inspiration, from "Tendenser's...
unadulterated landscapes, can be seen in Bagsvaerd Church (particularly figures 1.9 - 1.11).
Further, "Tendenser's..." illustrations of the cumulative covering property of dozens of
mushrooms, and of an impromptu shade-giving beach tent (figure 7.36) made of rope, poles,
and blankets (which, despite its ad hoc nature, accords nicely with the laws of statics) inform
and supplement the principles expressed in the designs in "...til Crystal Palace...." The
latter's three pairs of illustrations each juxtaposes a model of the authors' proposed
Udstillingshallens with a feeling and figure that extends the ideas of mushrooms in number
and the temporary tent. "...til Crystal Palace" uses the cumulative harboring properties of the
massed umbrellas of street vendors photographed from above and beneath and a shot of tree
trunks in a forest to show that the essential properties of temporary shapes may fit with the
imperatives required of more permanent structures (figures 7.37 through 7.39). Like the tree
trunks, one column may be added to another and another to extend the Udstillingshallens
(and the proposal's many varied buildings) in any desired direction.
Figures 7.35 - 7.39. Sydney Opera House, competition entry, 1956; impromptu beach tent, in "Tendenser..."; street vendors umbrellas, tree trunks, and Central Hall as in "Konkurrenceforslag..."
Phase Two: 1959-1970

Sparked by Utzon's selection in 1957 as the winner of the Opera House competition, the publication of seventeen of his significant projects as "Jørn Utzon: a New Personality" in 1959 begins the second phase of Utzon's writing career. While the majority of "... a New Personality" is written by others the section by Utzon on his Birkehøj housing project (1959, North Zealand, figures 7.40 and 7.41) continues the tenor of his approach in the first phase, and particularly that of "Tendenser..." and "til Crystal Palace:" It has the brevity and density of a competition entry, almost to the point of being telegraphic, and is primarily and heavily illustrated. In the two short paragraphs explicating nine plans, nine sections, one site plan, and two site sections Utzon easily mentions small Italian villages, the importance of following the landscape and utilizing its values, and the creative use of standardized building elements; he further deplores dull repetition and counsels the avoidance of it, notes the absurdity of conventional rectilinear architectural arrangements, and brings up the experience of Karen Blixen and the grouping of African huts according to each other, the sun, and trees.109

This is all of a kind with Utzon's best work in this phase, his most prolific. Between 1959 and 1970 nine of the twenty-one pieces attributable to him appear. Five of these are essential reading, while four should be of interest to readers beyond those primarily concerned with Utzon. The necessary five include all three of the remarkable pieces appearing in the influential, defunct Italian architecture magazine, Zodiac. In addition to "... a New Personality" there is "Platforms and Plateaus: Ideas of a Danish Architect," (1962), and "Three Buildings by Jørn Utzon" (1965). Supplementing this last is "Roof Tiles," which details the long segment in "Three Buildings..." given over to the Opera House. Finally,
Figures 7.40 - 7.44. Utzon, Housing at Birkehoj, North Zeeland, 1959: site plan and elevation; from "Platforms and Plateaus..." temple and platform, Yucatan, Mexico: expository sketch, expository sketch of hovering forms and platform
there is the issue of *Arkitektur* from February 1970 devoted entirely to Utzon's Additive Architecture, and so titled. This last will seem like the disappointing coda to a career that is fortunately revived in its third phase by Bagsvaerd Church and Kuwait, and by a kind of writing unique to that phase.

"Platforms and Plateaus..." appears three years after "... a New Personality," is the best known of Utzon's texts, and deserves the attention and praise it receives. In it Utzon brilliantly registers his feeling for the architectural power of the Mayan platform. His article's only weakness is tactical. The writing turns fat when Utzon delays by several pages the translation of the Mayan platforms of the Yucatan and its sudden sky into the platform and contrasting, hovering forms of the Sydney Opera House (figures 7.42 through 7.44). He blunders by describing the advantages of the platform in segregating various kinds of traffic, as though this effect were somehow comparable to the spiritual effect of the platform he so beautifully describes. The description of Monte Alban and its effect is, however, wonderfully evocative literature, and Utzon largely recovers when he relates the Mayan experience implicitly to the platform beneath the Opera House's shell-vaults. Both become "a new planet."  

Yucatan is a flat lowland covered with an inaccessible jungle, which grows to a certain uniform, defined height. In this jungle the Mayans lived in their villages with small pieces of land cleared from cultivation, and their surrounding back-ground as well as roof was the hot, damp, green jungle. No large views, no up and down movements.

By introducing the platform with its level at the same height as the jungle top, these people had suddenly obtained a new dimension in life, worthy of their devotion to their Gods. On these high platforms -- many of them as long as 100 meters -- they built their temples. They had from here the sky, the clouds and the breeze, and suddenly the jungle roof had been converted into a great open plain. By this architectural trick they had completely changed the landscape and supplied their visual life with a greatness corresponding to the greatness of their Gods.
Following this he registers other instances of the platform in world architecture, then translates the effects of those examples and develops new ones in eight projects including the magnificent stair and platform of the Opera House.

"Three Buildings by Jørn Utzon," published three years later, is the apogee of a different but also essential kind of writing on architecture. While giving us their symbolic impetus Utzon tells with superb clarity how his ideas are brought to their material realization, and in so doing tells us as much as anyone can tell another how a work is created. "Three Buildings..." gives detailed descriptions of how various parts of the Opera House are made, and why they must be exactly as they are. Further, the section on the Opera House taking up the bulk of "Three Buildings by Jørn Utzon" is refined even further in the extraordinarily detailed supplement "Roof Tiles." We might not expect riveting reading from eight pages so titled, but this is where Utzon tells why the over one million tiles covering the roof vaults must be finished precisely as they are, and why they are shaped and laid the way they are. Of equal interest is his explanation of why other possibilities would not have worked. All this daunting finish work is directed toward the most powerful of the overall impressions the Opera House is meant to convey (figures 7.45 and 7.46):

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 — when you pass around it or see it against the sky. It is as if something new goes on all the time and it is so important — this interplay is so important that together with the sun, the light and the clouds, it makes it a living thing.112

From the Sydney Opera House to Additive Architecture

There is, however, a substantial and unfortunate change in Utzon's writing and work between 1965 and 1970 (when the writing--and drawing--is the work) due entirely, I believe,
Figures 7.45 - 7.46. Sydney Opera House: exterior from west; close-up of shell-vault tiles.
to his forced resignation\textsuperscript{113} from the Opera House. The myriad and brilliant problem solving there served to realize Utzon's conception of, to cite only two examples, the intrinsic harmony of the roof-vaults' sphere segments, and "moment beams," an invention allowing extraordinarily long clear spans, here running the entire ninety-two meter width of the platform, done so that the act of parking ones car is absent the customary dismal thicket of soiled concrete columns (figures 7.47 through 7.49), which will interfere with Utzon's desire to use even the automobile's path to, as he puts it in another context, prepare an audience for a festival\textsuperscript{114}. This extraordinary creativity devolves, by 1970, following and in response to questions about Utzon's technical and fiscal competence, into "Additive Architecture," (1970), a series of exercises that while striking for their virtuosity, resolve only terribly reduced denotations of function. For Utzon, of the Opera House, in 1965, it was important to write in the manner I noted above, comparing his own work to one of the most enduring types of architecture and, just as audaciously and marvelously in the previous year, to go as far as to suggest an ambition for the "caves" of his Silkeborg Art Museum it would be difficult to surpass:

In the Silkeborg museum, it is possible to exhibit paintings and sculptures as high as a 3-storey house in such a way that one can walk around the object at all levels on a system of ramps. The possibility for this form of exhibition may lead towards a completely new development of decorative art\textsuperscript{115}.

In "Additive Architecture," on the other hand, Utzon's writing takes an ominous, regrettable turn, most notably in explaining the most detailed of its eight projects, Jeddah Stadium, where he writes of it in terms only of the meanest problems to be solved. Whereas the function and design of the ground immediately surrounding contiguous with the Opera House was meant to enhance free association\textsuperscript{116}, in low contrast, at Jeddah,
Figures 7.47 - 7.49. Counterclockwise from top. Sydney Opera House: platform, with parking concourse beneath its left end; sections through concourse's "moment beams," or folded slab; parking garage beneath concourse with view of moment beams.
The design was also influenced by the desire to match the layout to the movement patterns of the thousands of spectators who walk from and to different parts of the grounds [and] imperceptibly force the spectators to follow the marked paths and ensure a complete control...¹¹⁷ (Figures 7.50 and 7.51.)

Utzon also writes of Jeddah, "After the architectural overall impression derived from the composition of these roof and bridge units [of the stadium walkways] in any combination and quantity...,"¹¹⁸ but he never says what that overall impression might be, or what he desires it to be, and it is impossible to take any but the meanest inference from the static line drawings and models presented (figures 7.52 - 7.53). This could hardly be in stronger or more disappointing contrast to Utzon's intention for the overall impression of the Opera House, "...a Gothic church [turned inside out]..."

**Phase Three: 1971 to date**

While he realizes five buildings of interest during the third phase Utzon as a writer is essentially done as of "Additive Architecture." From 1971 on seven published pieces of note appear. Only one of these, "The Importance of Architects," passes muster as an essay, and of the remainder one is a speech, three are interviews, and two are entries in the *Global Architecture* series to which Utzon contributes no new material. Nonetheless this phase of Utzon's work, in both his writing and architecture, is remarkable for its recovery from the emotional and symbolic austerity of Additive Architecture, and for how it corresponds to a thoroughgoing change in emphasis, demonstrated most acutely in his assertion in 1978 upon receipt of the Royal Institute of British Architects' Gold Medal, that "intuition is the architect's main way of figuring things out."¹¹⁹ It is not that the complexity of Utzon's work is dramatically less--Bagsvaerd and Kuwait are highly demanding buildings in a technical
Figures 7.50 - 7.53. Jeddah Stadium: site plan; site model; stadium walkway bridge and roof units; models.
sense—but rather that entirely gone is the second phase's painstaking presentation of an idea's material realization. Instead, and wholly opposite the tenor of "Additive Architecture," Utzon uses the third phase's four original texts to ally himself within a contemporary circle of his own choosing, of original thinkers he believes of a mind with the Swedish painter Gunnar Külper whom Utzon cites admiringly: "He had an exhibition and on the catalog or ticket he wrote 'please hang your preconceived ideas with your coat in the cloakroom.'" Within this circle the complete list of artists and scientists Utzon includes is: Külper, Buckminster Fuller, Asplund, Aalto, his own father (a naval architect), Le Corbusier, Luis Barragan, Carl Kyberg, Pier Luigi Nervi, the Danish painter Egil Jakobsen, Cristo, Ralph Erskine, Niels Bohr, Steen Eiler Rasmussen, the Swedish architect Thun Ohle, and Peter Smithson. This interest in the absence of preconception has a clear antecedent thirty-one years earlier in "Tendenser's ..." emphasis on close, new scrutiny of what is, and complementary disparagement of mannerism, which is, after all, an over reliance on precedent and convention absent their reconception, and a shallow interest in and pursuit of the merely formal. Utzon also says in his speech, "I learned from all these people and I feel that I began from inside. I consider if I design a space for people to meet in, I place them around a table, pour some light over them...." This is consistent with what Utzon writes over the entirety of the phase following the successful penance of "Additive Architecture." Technique, which is the application of technology, so elevated in 1970 by Additive Architecture, is no longer desirable for its own sake, as a demonstration of a certain kind of withered brilliance, and has been placed now in the service of something greater. The Møller interview, coming ten years after Utzon's speech to RIBA, describes the method, but more importantly, where that method leads (italics are mine):
Møller: How do architectural styles originate?

Utzon: Frank Lloyd Wright claimed styles originate when an architect is fortunate enough to create something so beautiful that others are obliged to imitate it, then there is a new style.

--Yet you have never started a school or a style!

--I have evidently never designed anything that was so beautiful that others wanted to imitate it.

--Or?

--Well there could be another explanation. I always seek new points of departure. I search high and low for a place to begin. This takes work. When I start, I say to myself: Put yourself in this place. I always start from the very beginning, under the actual conditions of the place. I can't use theories and the experience of others. This can be unbelievably tiring. But when I stand on the site I can sense its particular ambience, one could almost say, its mood. I [try to see it] ...in a special way, where it would be pleasant to sit, I continue, gathering impressions and learning from being there.

--What happens when you have studied a site?

--When I have absorbed it and have it all in my head, I can then describe it with my hands. This is how it was with the 1100 rooms at the Sydney Opera House. I could draw them in the air with my hands. The whole world of form is in my head. It is so terribly painful if it is never realized, I am in agony.

--Yet you dream on?

--Yes. A building is a force, with an enormous power, yet at the same time it should be pleasant to be in, a joy, and [an] experience. 122

This is a synthesis with technique, however, and not a dismissal of it. While Utzon, as I noted at the beginning of this section, puts a premium on intuition, he returns in his last essay, in 1984, to the balance struck in 1947 in "Tendenser..." and "...til Crystal Palace," between theory and the practice of it:

Architecture... is based on science as well as intuition, and if you want to become an architect you will have to master technology in order to develop your ideas, in order to prove that your intuition is right, in order to build your dreams. 123
CHAPTER 8.

ON UTZON: A REVIEW OF THE CRITICAL LITERATURE

Utzon is fascinating work for a critic. Placing the divisor between the Opera House and everything else he is both one of the best and least documented of major architects, and keeping it there he is as well perhaps one of the best and least known. His method and impetus are often elusive, his translations delightful, startling, never obvious. Too, given Utzon's lifelong method particularly as it crystallized in the Møller interview, where that method is not determinate of form and thereby makes conventional criticism difficult and stylistic analysis pointless, it becomes too limiting to claim Utzon is best understood from any one vantage point. Utzon himself is little help with this. He is, as he says, an admirer of Asplund and of Aalto, but he is also secretly Miesian, and far more engaged with the work of Mies than he is with any other architect. Although he does not identify himself as such he is surely part modernist, as Christian Norberg-Schulz has it,124 in the sense that he reimagines origins, but he is also just as surely, even though he also does not identify himself as such, a critical regionalist (modernism's seeming antidote), as at Bagsvaerd Church. Kenneth Frampton has it right, that Utzon's church is, in part,

a work whose complex meaning stems directly from a revealed conjunction between, on the one hand, the rationality of normative technique and, on the other, the arationality of idiosyncratic form.125

Thus I do not favor one over the other writers who claim Utzon as a modernist, or a critical regionalist, but prefer to note which critics make the most intelligent case for each kind of assertion.
The following, then, is divided, roughly, into four parts: critics who have written well and severally on Utzon, critics who have written well and only once, books on Utzon, and work by those who are usefully critical of Utzon. I give special credence to intelligence, additive rather than exclusionary points of view, well-stated hostility, and sheer inventiveness.

The Critics

No one has ever collaborated more closely with Utzon, nor was more intimate with his thought and work toward the realization of the ideas begetting the Sydney Opera House than the extremely gifted Danish-born structural engineer Ove Arup, who was invited by Utzon in 1957 to join the project as his structural consultant. Arup, direct but never insensitive, strikes a remarkable balance in describing Utzon's imperatives, his difficulties with various concepts, and his productive (and at times dismaying) intransigence. Arup's several accounts of the work at Sydney are wonderful descriptions of the structural concepts explored and the formal compromises the Opera House survived, and strong lessons in a kind of pragmatism that attempts to closely realize a dream of form (figures 8.1 through 8.12).

In this more technical vein Peter Keys, with Trevor Mowbray or Colin Brewer, wrote ten articles as a series of progress reports chronicling the development and detailing the construction of the Opera House from 1954 through 1972. These constitute the most thorough published series of this kind I have seen, and has my highest recommendation. Of architects who collaborated with Utzon Tobias Faber is as familiar with his thinking as anyone, but Faber discloses not very much more than do general surveys, articles and short biographies that include Utzon's work. Faber points out the vernacular inspirations for
Utzon's housing in Fredensborg, but these are connections one can readily make from studying Utzon elsewhere, and Faber seems simply not to notice how linked is the Fredensborghusene to Mies's Weissenhofseidlung (1925-27, Stuttgart), 1931 Row Housing, and Lafayette Park housing complex (1955-1963, Detroit). There is also, disappointingly, only the most vague reference in Faber's *Jorn Utzon: Houses in Fredensborg* to several unnamed competitions Faber entered with Utzon, and nothing at all of their content or thought. Nonetheless, Faber is a useful, if general, guide through Danish architecture and Utzon's place in it, and to some of the broader ideas behind Utzon's housing. Far more penetrating, even though it takes us only through 1967, is Sigfried Giedion's masterwork *Space, Time and Architecture*, revised and enlarged for its fifth and last edition almost entirely so as to include a rich chapter on Utzon, whom Giedion nominates for the position of leading architect of "the third generation," or that following the leaders of the first and second, Le Corbusier, then Aalto. In his excellent overview describing the breadth of Utzon's architectural sources, Giedion has a sharp eye for what goes unremarked elsewhere, for example, the importance of the "cuts" in the walls of the Kingohusene, and how these cuts bring about a compact interplay of public, semi-private, and private space. Giedion is the rare critic who interprets Additive Architecture favorably, and comes to an intriguing decision to call Utzon, because of his realization of the Opera House roof-vaults from sphere segments, a master of the fragment. "Whether we like it or not, the fragment is a mark -- a symbol -- of our period."\(^{127}\)

From 1980 on existentialist Christian Norberg-Schulz writes wonderfully well on Utzon, particularly of his work at Sydney, Bagsvaerd, and Paustians Hus (no one sees it with more insight), Can Lis, and Can Feliz. Norberg-Schulz, author of *Meaning in Western*
Architecture, is consumed with the meaning of dwelling in its broadest sense and how the architect makes meaningful dwelling possible. As much a charming, dogged humanist as original thinker, Norberg-Schulz's claim for a basic thesis for Utzon, inferred from the Opera House and "Platforms and Plateaus," as "help[ing] man find a foothold in space, that is, on the earth under the sky,"\textsuperscript{128} is delightful, as is his insistence on Utzon as a brilliant expositor of the Heideggerian fourfold.

William J. R. Curtis places Utzon as highly as anyone, and the space Curtis devotes to him in his Modern Architecture Since 1900 (a textbook in many college architectural history courses) equals that given over to Louis Kahn. Curtis asserts Utzon's handling of concrete, light and space echoes the probity of Le Corbusier's Parliament at Chandigarh.\textsuperscript{129} Though his attempt to connect Utzon to Aalto is sloppy and thoroughly vague, Curtis does a decent job of elucidating some of the principles underlying Utzon's work: how he establishes a "hierarchy between the individual home and community at Kingo [and Fredensborg]," his handling of the platform as an important architectural element at Sydney and, also at Sydney, "how Utzon attempted to design a standardized system of parts which could eventually be assembled into his free-from design." Also worthy of note is Poul Erik Skriver, a former editor of Arkitektur, who follows Utzon's work from 1959 through 1986 in six articles of useful if conventional analysis.

Kenneth Frampton's nearly illiterate chapter on Utzon, "Transcultural Form and Tectonic Metaphor," in Studies in Tectonic Culture, brutally scars his otherwise impressive twenty year long critical engagement with Utzon's work, most notably his use of Bagsvaerd Church as the centerpiece of "Towards a Critical Regionalism: Six Points for an Architecture of Resistance." I detail some shortcomings of Studies in Tectonic Culture in my annotated
bibliography; suffice it here to say that among other sins Frampton indulges himself in the worst kind of lazy, erroneous source-hunting. He asserts again and again that because one thing looks like another it must be like, and is even inspired by, that other.

Books

Three recent books are of particular interest for very different reasons. Phillip Drew's *The Masterpiece. Jørn Utzon: A Secret Life*, is the most personal of these, covering Utzon's life in relentless detail from his early years through 1999. Consistent with Drew's historical and psychological, rather than architectural approach to its subject, there are few illustrations compared to the other two books. The chronology given is valuable.

While Françoise Fromonot's *Jørn Utzon: the Sydney Opera House* is primarily concerned with Utzon's most famous work, she does not confine herself to it, instead placing the Opera House at the apex, rather than outside, of Utzon's oeuvre. Consistent with this Fromonot treats Additive Architecture as a logical and successful continuation of Utzon's work with prefabrication and modularity at Sydney, and she is one of few authors to view positively that phase of Utzon's career. Fromonot, a very good writer, makes a fine balance between overviews and details of projects. The photographs are excellent.

Richard Weston's *Utzon: Inspiration, Vision, Architecture* has the breadth of Drew's book, but in an opposite sense. Where Drew's book is mostly text, Weston's is copiously illustrated; the photographs of Utzon's work could hardly be better. Several projects not or rarely published elsewhere are documented here: Hus Banek, Hus Herneryd, Utzon's 1964 Madrid Opera House competition entry, an unrealized Art Gallery for U. C. L. A. at Berkeley in 1965, and a second, also unrealized project for the Silkeborg Art Museum. Many projects
published elsewhere are newly photographed, with striking results. The text, however, is perfectly ordinary. Weston is content to rehash conventional understandings, and to repeat Kenneth Frampton's errors of interpretation. These limitations are particularly disappointing as Weston had substantial access to Utzon during the writing of this book. A last complaint is that Weston gives us disappointingly few of the splendid architectural details of Utzon's early work. All told this is a satisfying monograph but, aside from the photography, not a compelling one.

Two books written during the construction of the Opera House, Michael Baume's *The Sydney Opera House Affair*, in 1973, and John Yeomans's *The Other Taj Mahal: What Happened to the Sydney Opera House*, in 1967, are particularly good, though for quite different reasons. Baume's is the more single-minded work (and somewhat more literal--a number of documents are reproduced verbatim), interpreting events in regard to how they led to Utzon's forced resignation. Yeoman's book, despite appearing six years before *The Sydney Opera House Affair*, is much more broad in scope. There may not be anyone associated in a significant way with the project whom he failed to interview. Both are very worthy books, though Yeomans's is more likely to interest the causal reader. Also of interest to the casual, intelligent reader will be Vincent Smith's sympathetic and well organized *The Sydney Opera House*, a richly illustrated book that does an excellent job of describing both the technical and organizational difficulties of the project.

Elias Duek-Cohen's *Utzon and the Sydney Opera House: a statement in the public interest*, published in 1967, espouses Utzon's point of view at every step. Duek-Cohen's partisanship is fierce and touching and, given the volume of unnecessary criticism directed at Utzon in the year after his resignation, a valuable redress.
R. E. Curtis's book, *A Vision Takes Form*, is the most personal and subjective, to date, of the books on the Opera House. He painted it on canvas numerous times during its construction, and these paintings and his text emphasize Curtis's emotional responses to Utzon's developing work; it makes for an unusual and enjoyable balance to other, more fact-based works.

**Important Essays**

A number of critics who attend Utzon once deserve mention. Bjorn Sandaker and Arne Egger, in their book *The Structural Basis of Architecture*, provide the only sustained commentary on Utzon's invention and development of "moment beams." Keld Helmer-Petersen put together, in 1959, "Jørn Utzon: a New Personality," the first comprehensive article on Utzon's work, and his discussion of the inspiration Utzon finds in the mechanisms and patterns of organic and mineral growth is both extraordinarily acute and notable for its lack of reliance on the clichés which plague this topic. It is also the only source of information on several of Utzon's early work and projects. Roger Connah's analysis of the National Assembly Building of Kuwait in *Living Architecture*, and his emphasis on Utzon's superior handling of concrete, is sensitive and probing. Kjeld Vindum's interpretation of Utzon's Silkeborg Art Museum, "Ein Höhle für [A cave for Asger] Jørn," as an antidote to the tyranny of infinite Cartesian extension is thoroughly intriguing.

Five writers who deal with Utzon once, but are critical of his work, include Lucy Grace Ellem, who writes an extremely well reasoned essay, "Utzon's Sydney Opera House," faulting him for failing to faithfully realize his "organic" competition vision. She describes the Opera House Utzon re-designed and brought to fruition as heavy, mechanical. If there is
a flaw in Ellem's reasoning it is in her decision to want to hold Utzon to his original conception without regard for the merits of his later work, or even the possibility he may have improved upon his competition scheme. Further, while Ellem does not mention it, Additive Architecture would be impossible without the thoroughly geometrized work at the Opera House--and Ellem's critique of what she claims is the devolution of the Opera House's design interestingly parallels the increasing formalization, to the exclusion of other qualities, apparent in Additive Architecture. Robert Mark, in *Light, Wind, and Structure: the mystery of the master builders*, is less kind, skewering Utzon for his allegedly misguided and extravagant view of structural honesty. He also implies that Utzon "is insensitive to the issue of 'honest,' versus logical, hidden structure..." 

As wrong as John Winter is, his highly critical "Utzon at Bagsvaerd" is almost unique for being that, and as such might provoke a more rich, fully realized, and accurate criticism of Utzon's church. Certainly Utzon's decisions to use concrete panels of two different colors on the exterior in order to denote the shape of the interior vault, and to use and expose the heavy, triangular concrete shapes forming the altar and other furniture are debatable, as is his willingness to paint concrete.

From Gerhard J. (Jack) Zunz in "Sydney revisited" we get the refreshingly unawed perspective of one of Ove Arup's two chief supervising engineers on the Opera House project. Zunz writes, "...it was probably just as well that Utzon's romantic concept flew ignorantly in the face of current engineering dogma....however, taken as a whole, it functions pretty well," and, of the program as initially laid out in the competition brief, "the stage was set for one of the most accidental, random and astonishing acts of architectural patronage of modern times."
CHAPTER 9.

AN ANNOTATED BIBLIOGRAPHY OF WRITING BY AND ON UTZON

This chapter is intended as comprehensive rather than exhaustive. Published references to the Sydney Opera House number in the thousands, but the enormous majority of these are of minimal help in any serious study of Utzon's work, consisting as they tend to do of brief encomiums in tourist guides, popular magazines, and the like. Only when one of these relays useful information unreported elsewhere is it included.

Regarding the enclosing forms of the Opera House, where a given author or article does not refer to them by a specific designation, I have adopted the term "shell-vaults" as being the most accurate shorthand description of their structural behavior. Utzon refers to them as shells, and the project's structural engineer, Ove Arup, with his usual diplomacy, refers to them simply and collectively as "the roof."

Reflecting the complete participation of Utzon's sons Jan and Kim in the firm, Jørn Utzon Architects became, in 1987, Utzon Associates. The last project primarily attributable to the father was the Paustians Hus furniture showroom on the Copenhagen waterfront (1985-1987). I have therefore omitted from the bibliography references to work not clearly by Jørn Utzon.

Archives and Libraries

It is impossible here to list all the technical reports, memoranda, public documents, and so on variously held. The two main collections of these are: the Ashworth Papers,
collected from 1954 through 1968, and held in the Manuscripts Section of the National Library of Australia in Canberra, and the Jørn Utzon Papers, gathered from 1957 through 1966 and held in the Manuscripts Section and Pictures Section of the Mitchell Library, State Library of New South Wales, in Sydney.

Arrangement of the Text

The format of this chapter follows that suggested by Kate Turabian in her *A Manual for Writers*, 4th ed. (Chicago: The University of Chicago Press, 1973).

Following writings by Utzon the arrangement of the bibliography is predominantly alphabetical. In the case of authors with multiple entries, those entries are given chronologically, as are entries listed by title when a given title has been used more than once. In the absence of a much comprehensive work on Utzon's oeuvre, not to mention the fragmentary documentation that exists for most of his individual projects, the reader seeking a particular illustration of a given work may find the search inordinately frustrating. In hope of allaying this, illustrations accompanying books and articles are individually enumerated under one or two heading, "photos." (photographs) and "drawings," except in the occasional instance when illustrations are too numerous to list singly, in which case they are summarized, with exceptional photos or drawings so noted, or when text and illustrations are so intertwined that they demand unified annotation.

A chronological index follows the bibliography. Executed projects are given solely in upper case, unexecuted work in upper and lower case. Articles for each year follow project entries, listed by author when signed, by title when not signed. Books and monographs noted
by author or title are followed by an asterisk. Years not in bold face indicate that Utzon began no architectural projects during that year.

**Abbreviations**

Jan: January Feb: February Mar March Apr: April Jun: June Jul: July Aug: August

Sep: September Oct: October Nov: November Dec: December n: number v: volume por:

portrait SOH: Sydney Opera House

Projects are often abbreviated by their place names, with the following exceptions:

the Paustians Hus furniture showroom (Copenhagen, 1985-1987), is abbreviated as "Paustians Hus," the Bank Melli, Teheran, is "Bank Melli." Other, nonspecifically cited projects are abbreviated by type: the Crematorium, Denmark (1945), is "Crematorium," the 1962 projects for an "Airport," and for a "Shopping Centre," are so called, and the projects Utzon includes in his 1970 article, "Additive Architecture," are referred to by the names he gives there.

**Sample entry for magazine article**

Explanation

An article by Steen Eiler Rasmussen, entitled "Eine Dane sieht danische Architektur," and translated by this author as "A Dane Looks at Danish Architecture," appears in Bauern und Wohnen, volume 17, number 2, pages 53-56, in the February 1962 issue. Accompanying the article are four illustrations: one photograph taken from an unidentified rooftop in Utzon's Kingo housing project, and three drawings reproduced from Utzon's Sydney Opera House competition entry: one in plan, one in elevation, and one in section.
Jørn Utzon


The text is intimately tied to twenty-eight photographs. Seemingly odd juxtapositions buttress the authors' claims for the interrelatedness of so many apparently disparate things, and call into question customary formal distinctions. The pattern of cracks in the mud of a dried sea bed is shown to strongly resemble the pattern of nocturnal illumination in Hollywood, California. The "natural" architecture of plants is demonstrated to bear a marked resemblance to aggregations of Moroccan and Swiss vernacular architecture. Consanguinities between, in turn, crystal formations, Italian vernacular architecture, and Aalto's and Wright's work is depicted.

The trends referred to in the title are a renewed appreciation of architecture's inevitable associations with more natural environments and elements, to its susceptibility to biological metaphors, and to the heightened interest following the devastation of World War II in vernacular and spontaneous architecture.

Photos: models (3), a stand of trees, a Balkan streetscape where an aggregation of vendors' umbrellas form a collective roofscape (2).
Drawings: site plans (2), elevations (3), vignettes in perspective of various parts of the scheme (4).

The text deals primarily with the competition brief, recounting its requirements for a park, an exhibition hall, a theater and concert hall, an arena and sports hall, and a stadium seating 100,000. The architects' response as they describe it here was to base each of the major programmatic elements on a stepped platform, the overall shape of which determined the shape of the park as well as the location of another element of the park's boundary, the stadium.

Photos: exterior (4); interior (4).
Drawings: plan.

The brief text describes one basis for the house in a module taken from the dimensions of a full brick. There is a basic description of the materials used and the state loan program through which the house was built limiting its size to 130 square meters. Utzon mentions his inspirations and names Richard Neutra, Gunnar Asplund,
and Mies van der Rohe, from whom Utzon quotes this commonplace: "Mies once said to me that once a design was established and finalized, he made every effort to ensure the design was emphasized in the design of secondary elements, such as doors, windows, non-bearing walls, and the like." While the house is surely drawn from Mies's Barcelona Pavilion, Utzon never mentions it and ends his article with a misdirection, stating "Mies's Farnsworth house is the result of prolonged and magnificent labor."

_____. "ciam." Byggekunst, n6-7 (1952), unpaginated.
In Norwegian.

See under "PAGON."


With its companion piece (Utzon, Jørn. "The Sydney Opera House Competition: Jørn Utzon's Winning Entry," same issue) we are given Utzon's complete competition entry, an infrequent occurrence. The text describes the task confronting the jurors, their comments on Utzon's design, and doses with the required written statement by Utzon that accompanied his entry.

Drawings: plans (5), elevations (3), sections (3).

With the report on p. 200 of this issue ("An opera house keeps in keeping") this amounts to a complete set of reproductions of Utzon's competition entry.

_____. The Red Book. Published by the author March 1958, unpaginated.
Photos: Sydney Opera House: models.
Drawings: sketch; plans and elevations at 1/32" and 1/80" = 1'-0.

Featuring Utzon's work on his design since the 1956 competition, this volume's contents and intentions are aptly described in his preface: "I am happy that with this book I am able to give the Premier, the Rt. Hon. J. J. Cahill, and the Opera House Committee a project which realizes in practical form the vision of the competition. After interesting and intense work with the various specialists, we are convinced that the far-seeing aspirations and efforts of the committee, the sponsors and other supporters of the scheme can be crystallized in a building which in a functional, festive and inspiring manner will shelter the activities of the life lived..."
within it and in so doing enhance the face of Sydney." Included are diagrams and text by each of the principal consultants: Structures, Ove Arup and Partners; Acoustics, V. L. Jordan; Mechanical Services, Steensen and Vanning; Electrical Installations: M. Balsev; Theater Techniques: S. Malmquist.

The title given this volume is colloquial, and refers to the color of its covers. Only a few copies exist.


This is the first published article of any length on Utzon's oeuvre and is indispensable for its inclusion of early competition work rarely reproduced elsewhere. While the work shown here is already remarkably mature, the seeds of future developments are clearly present: the project for a Crematorium (1945) contains an indispensable ingredient of Additive Architecture (see Utzon, 1970), Teheran's Bank Melli (1959) includes the cross-vaulting Utzon will again apply at Bagsvaerd Church (1969-1976), and in a comment remarkable for its anticipation of Utzon's geometrization of the Sydney Opera House shell-vaults, Helmer-Petersen describes Utzon's first realized work, a water tower / sea marker on the island of Bornholm (1946), as "a fine piece of applied spheric geometry."

Other projects illustrated and described here are Utzon's own house in Hellebæk (1952-53), Hus Middelboe (1953), the Langelinie competition entry (1953), a project for a small town to be built in Birkehoj, North Zealand (1954), the Elineberg, Sweden, housing competition (1954), the Kingo housing project (dated 1956 here), and the Sydney Opera House.

Photos: Kingo: exterior (2), courtyards (3).
Drawings: site plan, plans (5 versions, including one giving a furniture layout, one showing the "minimum unit plan," one incorporating a baker's shop, and two versions of the typical three-bedroom plan. These five comprise the most comprehensive published set of plans of the project).

Utzon's brief remarks on his Kingohusene emphasize the court house unit both as a distinct entity, and as a type which can be endlessly combined toward "the creation of typical neighborhood units, precincts, market squares, open spaces and enclosed courts." He notes also the variable screening effects obtainable through variations in perimeter walls, the increased density possible with the court house type without the sacrifice of privacy, and its "excellent possibilities as a building element. A chain of such houses can be flexibly adapted to undulating ground, and can absorb both horizontal and vertical stagger."
The Yellow Book. Published by the author, January 1962, unpaginated.
Drawings: front cover: diagram showing the spherical geometry governing the shell-vault surfaces; three alternatives for prefabricating the roof.

This volume includes notes by various consultants. As with The Red Book the title is colloquial, taken from the color of the covers. This volume also includes notes by various consultants.


This is by far the most well-known of Utzon's writings, and with good reason. It is a profound analysis of the plateau as a geographical element, and then of the plateau's translation into a platform, a particularly flexible and significant architectural element. Utzon notes the presence of the platform in the architecture of numerous and varied cultures and epochs, studying particularly its relation to accompanying roof forms. There follows illustrations and explanations of many of Utzon's recent projects using the platform. In their entirety these are:

Sydney Opera House: six views of models show the integration of stairs with the concourse platform, and the point loading of the shell-vaults. Sketches show the relationship between the floor plane of a Japanese house and a Chinese temple to their respective roofs. Other sketches translate clouds above a calm sea into forms hovering above the Opera House concourse.

Town Plan for Elviria, Spain: reproductions of the competition entry include its overall plan, and a sketch, plan, elevation, and section of one of its primary features, a "Humanistic" or Cultural Center.

Competition entry for the World Exhibition, Copenhagen: roof plan, plan, sections (2).

Project for a High School near Elsinore, Denmark: roof plan, ground floor plan, sections (2).

Project for a "platform, courtyard - house:" conceptual sketch in elevation, and again in section.

Scheme for a Shopping Centre (no location given): ground floor plan, roof plan, elevation, sections (2), diagram depicting sixteen moment-beam cross-sections. In the accompanying text Utzon describes the many technical difficulties a plateau project must overcome, and mentions a solution used in the Opera House.
Project for an Airport: sketches.

Scheme for a High School near Elsinore, Denmark: site/roof plan, section. "The platform in the High School scheme stands in a slightly undulating landscape and emphasizes, by its squareness and straightness, the soft movements of the landscape."


Drawings: conceptual plan drawn in salt, roof plan, plans (3), elevations (4), sections (4).

The text and illustrations are identical to those appearing in Utzon (1965), with the exception of an introductory paragraph by the editors introducing the project, noting that Utzon was particularly influenced in his design by Asger Jørn, the artist who commissioned the gallery's design. After publication of this article, Utzon will refer to the project as a "museum."


The three buildings are the Sydney Opera House, the Silkeborg Art Gallery, and the winning entry in the 1964 competition for a theater in Zurich. Illustrations of the Opera House are too numerous to list here individually, and will be summarized below.

Of the other two projects, included for Silkeborg are its complete plans, sections, and elevations. In the three columns of text accompanying these Utzon describes his response to the low-lying site, and his inspiration for the cave-like quality of the design as stemming from his visit to the Buddhist caves of Tatung, near Beijing. He also describes his hope that the museum's ramped, three-story exhibition spaces "may lead towards a completely new development of decorative art." A description of the geometry of the project and its susceptibility to mass-production follows.

Accompanying the model, plan, roof plan, and section of the Zurich project is a column of text translated from the *Zurcher Lokalchronik* lauding Utzon's exceptional sensitivity to the urban site.

The bulk of the article describes and copiously illustrates the results of Utzon's 1962 inspiration to generate the forms of all of the shells from a single sphere with a radius of 246', thereby resolving hitherto insurmountable problems of construction through the possibility of mass-producing the ribs (the shells' component elements) from a limited number of forms. Included also are Utzon's solutions to the need for flexibly dimensioned corridors, multiple curvatures in the glass walls at the shells' mouths, and mass-producible acoustical canopies for both halls.

Photos: experimental mock-ups of the tiles used to clad the Opera House shells, joinery details, sequence of the process of assembling a "tile lid" for attachment to the shells.

This is fascinating for what it reveals about Utzon's thoughts on "organic decoration." He states, "right from the beginning, the question of the external cladding to the roof shells has been considered one of the most important aspects of the concept of the scheme. The cover for these gigantic curved forms has the greatest influence on visual impact-the wrong material would ruin the appearance, so it was imperative for me to find a material of quality that could match the simple and powerful geometry and thereby emphasize the vigorous shapes." He then describes the numerous other imperatives that led him to travel to and study the art of ceramics in Japan and China, and the problems involved in cladding doubly-curved surfaces. His conclusion encapsulates much of his thinking on craft, and machine-production: 'the conventional approach would have resulted in a surface covered with a standard tile [several mock-ups were made using a rectangular tile] and applied by many different hands, which could not possibly produce a uniform surface, however much time was spent on the laying: "Instead, we have a machine-made product—a tile designed especially for the purpose and applied by a machine process which virtually eliminates human error. The tiling process should be seen as an example of the possibility of utilizing the machine as a tool but in such a way that the qualities of the hand-made article are still retained."


This is an edited version of Utzon's letter to Davis Hughes, New South Wales Minister for Public Works, described by the Forum editors as "rejecting Hughes' terms for Utzon's return to the Sydney Opera House project." The letter's most significant contention is the unacceptability to Utzon of the following: he writes, "it seems to me that [the proposals enclosed with the Minister's letter of 1966 March 11] envisage that I should no longer be the architect in control of the project but should be relegated to the subordinate role of 'design architect'... merely to prepare designs in accordance with instructions and leave it to others to supervise construction. Such a proposal is not only unpractical but quite unacceptable to me." He then details the folly of separating the architect from the responsibility of supervising construction, and doses by offering to work with, but not under, the Minister's representatives.

As the text and illustrations in this article are so completely intertwined (each project is briefly introduced in text, then further explained in paragraph length captions accompanying the over two hundred illustrations), I have chosen to summarize first the article's introductory pages, then each project in the order it appears.

"Additive Architecture," Utzon's term, is the formalization of his theories regarding the ubiquitous relationship between architecture and mass-production refined by him during his work on the Sydney Opera House. At its center is the idea of "flexible standardization," (see Utzon, 1983) where the architect need not surrender her creative intuitions to the imperatives of optimized building technology. Nor is the frequently anonymous client subjected to a "solution" to a situation that cannot be anticipated in advance. In its material aspect Additive Architecture appears as a set of kindred components (Utzon likens these to the blossoms on a cherry tree, where there are consanguinities, but no two blossoms are identical) which, depending on the degree to which the program can be anticipated, are capable of being assembled in the largest number of configurations. Additive Architecture is also very much in keeping with Utzon's conviction that, in this century, the architect must master technology and its processes if he or she is to build his or her dreams. The projects in the issue are as follows:

Espansiva (1969): a kit of parts that may be assembled into buildings ranging from sheds to the most intricate multiple-bedroom dwellings. Included are photographs of a prototype house (both under construction and completed) at Gammel Hellebæk demonstrating the possibilities of this kit. Also shown are plans, models, diagrams, and exploded axonometrics indicating an extreme variety of possible configurations.

Project for a School Center with Technical Colleges (1969): an extension of the Espansiva system into a more public realm, and at a larger scale. This system is meant to accommodate construction in stages, or as a continuous process where structures from earlier stages are occupied as construction continues. Shown are plans, sections, and elevations of both component parts and those parts assembled in a variety of configurations. Three model versions show possible large-scale assemblies. Only one small assembly of this system was ever actually built (see "Inspector's House, 1972").

Farum Town Center (1966): this was conceived as a response to a competition for a new town center to be sited "at the edge of an existing town, bordered by a school and access-free roads. Access to the town center must therefore be confined to a few points." While the general location was known, the program was uncertain, hence "the center is composed of units designed to a geometrical principle so that the components can be prefabricated in a strictly limited number of variants. The units can be combined to form a gently curved bazaar street from which the shops and other premises can be built in stages as required." Illustrations include site plans.
anticipating several stages of construction, a model of the first stage, and plans, sections, and elevations of the prefabricated components separately and in combination.

Jeddah Stadium, Saudi-Arabia (1967-70): here, the program, a stadium seating 30,000, was known but the site was not. The entire stadium was meant to be constructed from only six types of precast concrete structural units manufactured on site in simple factories. Utzon notes that "the system (of access paths and roads) is able to grow just as organically as a tree in the forest, avoiding at all times that unpleasant impression of unreadiness otherwise associated with buildings erected in stages." Numerous drawings and models illustrate the assembly of the six structural units into a completed stadium.

Utsep Møbler (1968): "this furniture system has been developed from a study of man's natural desire to form groups and to sit together in large or small clusters." The small number of components includes trapezoidal units which allow for a great variety of angles and curves in the overall arrangement. This proposal achieved some small commercial success, and is illustrated by photographs, plans, and elevations (which may also be greatly varied) depicting a variety of layouts. Of the Møbler (furniture) system Phillip Drew (1972, p. 40) states "the variety of permutations obtained from a system of components enabled Jørn Utzon to develop patterns of public seating to promote social contact." See also Schmidt, Torben, (1968) and "Sculptured furniture by Jørn Utzon" (1968).

A New Angle (1968): whereas Utsep Møbler consisted of structurally independent units, this system distinguishes between supporting and supported pieces. The "angles" are variously sized structural frames of aluminum that can be assembled as desired. Cushions, table tops, and screening partitions are then inserted. This system is specifically conceived to encourage its users to create their own designs, or "furniture landscapes." The project is illustrated primarily by photographs of a full-scale prototype of the system. See also Gray, Ilse (1968).

New York architect Kenneth S. MacKay described to me these projects as Utzon's weakest work. If this is the case I suspect a significant part of the explanation lies in their "sitelessness" relative to his other work. A profound response to site is one of Utzon's great strengths, and he demonstrates it once again in his work on the Kuwaiti coast even as those buildings exemplify the principles of additive architecture. In this regard see also Connah, Roger (1986). Other reasons would likely be Additive Architecture's lack of metaphorical or symbolic foundations.

This is the most complete published account of the awards ceremony (RIBA did not begin publishing acceptance speeches in their entirety until 1986). It includes edited versions of introductory speeches made by Utzon's co-sponsors for the award, Sir Denys Lasdun and Norman Foster.

In his acceptance speech Utzon cites several powerful influences on his development as an architect: Buckminster Fuller's gospel, to begin any work "with no preconceived ideas," and thoughts in a similar vein expressed by the Swedish painter Gunnar Külper. Utzon describes Alvar Aalto and Gunnar Asplund as members of his "architectural family" and as his teachers, and emphasizes the great impression Asplund's work at the Stockholm exhibition of 1930 made on himself and his parents (see Utzon, 1988). Aalto is hailed particularly for his insistence on beginning to design by working in section: "He never cared about anything but sections and spaces --and elevations just came." Other highlights include Utzon describing his own method of working as seeking combinations of geometry and voids centered around specific human activities, references to growing up with a father who was a naval architect (curved architectural shapes therefore being both practical and familiar), and remarks on lessons from the Opera House: "we had learned about construction in a different way, we had learned to discipline a building with geometry." He notes the genesis of his own theories of functionalism: "functionalism with a spiritual superstructure--you call it poetry."

In English and Japanese.
Photos: exterior (15), interior (9).
Drawings: sketches (4); competition entry: plans (3), elevation, section; shell-vaults as executed, with Utzon's scheme for the interior; roof plan, plans (2), elevations (3), sections (4), and diagram showing "Geometrical construction of the Major Hall shells."

Futagawa's photographs in this fifty-fourth entry in the Global Architecture series are excellent. The various vantage points from which the exterior shots were taken convey very well Utzon's intention to make a building that would constantly change depending on the lighting, and on the viewer's position relative to it. Norberg-Schulz's introduction is annotated herein under his own name.

______. Jørn Utzon: Church at Bagsvaerd, near Copenhagen, Denmark, 1973-76.
Photos: exterior (12), interior (13).
Drawings: sketches (2), section with the vaulting's (here, not dimensioned) regulating cylinders imposed.
The second through seventh of Futagawa's photographs brace us for a sequence of approaching and entering that does not come off. This is unfortunate, particularly given the sense of anticipation that develops, and given Utzon's acute awareness of the aspects common to the various possible approaches to the interior. Otherwise, the photography is excellent, and the occasional detail is so crisply focused as to suggest a great deal about the architect's intentions. This volume constitutes the sixty-first in the Global Architecture series of monographs. Norberg-Schulz's introduction is annotated herein under his own name.


This interview by Markku Komonen occurred shortly before the completion of the Kuwait National Assembly Complex. Komonen elicits from Utzon his opinions on three major themes: changes in the thinking of the architectural profession, "the significance of cultural identity and local tradition where convergent technology and global information meet," and industrial fabrication. Utzon considers the "rediscovery of the open spaces between buildings, such as squares, courtyards, streets and gardens," a significant advance, citing Aalto in particular as being extraordinarily adept at "show[ing] us the relation between buildings, squares and open spaces." He next describes his dependence "on the locality of the building (local tradition), on the client, the people for whom [I] am building (cultural identity), and on the technological development and potential of the country involved." Utzon further notes the impossibility of technologically sophisticated architecture in the absence of the kind of precision obtainable only through prefabrication. This last is elaborated upon in regard particularly to Sydney and Kuwait.


Utzon pays a fine tribute to Aalto, then describes him looking to the example of cherry blossoms in his solutions to the problem of standardization in architecture. Utzon's interpretation goes, "if you look at a cherry blossom, a group of cherry blossoms on a tree, each flower has a different position according to the sun and according to its neighbor. Each blossom is different, because of its position, but they are all in the same family." He then relates how this influenced the way he housed the families in his Kingohusene. Utzon also speaks well but vaguely of Aalto's
influence on his solutions for the Sydney Opera House, and only by way of generalizations about geometry and building with industrialized components.

Utzon's introductory notes on what is required of an architect guide the rest of this article: "Human beings experience their surroundings in different degrees. If you have an extreme sensitivity for the impact of the light and shapes, colour and space which are surrounding you, you have the inborn qualities of an architect and artist." He then goes on to offer a definition of art and architecture, claiming that the latter "is based on science and intuition." After summarizing the thinking of Danish painter Egil Jakobsen, Niels Bohr, and Pier Luigi Nervi, (Nervi in regard to what constitutes an "outstanding" building), Utzon discusses at some length two buildings he considers "among the finest examples in Scandinavian architecture," the Forest Crematorium in Stockholm, and the Gothenburg Courthouse, both by Gunnar Asplund.

In the body of the article, referring to each as a kind of "house," Utzon applies the concerns of his introduction to his work on the Sydney Opera House, the Kuwait National Assembly Complex, and Can Lis. Other topics include the architect's working methods, where Le Corbusier's thought is emphasized. Utzon concludes that "of all the persons involved in the building process, the architect is the only one whose aim is to create the most ideal conditions for human beings out of the programme and the means given to him."

Utzon's salute to his friend and collaborator is well summed by his statement, "[Korsmo's] ability to perceive a situation is precisely the most essential ability for an architect who does not want to fall into mannerism or stylization, but who wants express a particular combination of a site, people and functions in a completely genuine way, without a "straitjacket".... All of Arne's undertakings, be it the many fine sketches which flowed unceasingly from his hand, or his projects, bore the stamp of his kindness and sense of poetry, which is what man rightfully needs most of all."
The opening question in this excellent interview is Møller's "how do architectural styles originate?" An amusing sequence follows:

JU: Frank Lloyd Wright claimed styles originate when an architect is fortunate enough to create something so beautiful that others are obliged to imitate it, then there is a new style. HSM: Yet you have never started a school or a style! JU: I have evidently never designed anything that was so beautiful that others wanted to imitate it. HSM: Or? JU: Well, there could be another explanation, ...

Utzon goes on to describe the foundations of his architecture: seeking always after new points of departure, extreme attention to the site, the example of nature, and the behavior and desires of people and how beautiful they are in crowds, uncontrolled. Of his own work he discusses Kingo, the Opera House, the Fredensborghusene, an ideas competition for housing in the south of Sweden, and Kuwait. Other emphases are Luis Barragan's remarks on beauty and architecture, the work of Swedish painter Carl Kylberg, and Gunnar Asplund's work at the Stockholm exhibition of 1930.

The photography is exquisite on every page of this valuable recollection by Utzon both of his long career and the design and construction of Can Feliz (Happy House). His fascination with how architecture is put together never flags. He says, at age seventy-eight, "I would rather have spent an hour at the Saint Peter's building site in Rome, than have read all the books written about that church." Utzon also talks about the local craftsmen, working in the native stone, how he found the right place on the site for the latest Hus Utzon, and his fascination with spaces between spaces. He fondly recalls lessons drawn from Wright, Le Corbusier, and Aalto, while his very odd visit with Mies I recount in full in my first chapter.

Photos: major hall superstructure under construction.

Drawings: competition entry: east elevation; longitudinal section of the shell vaults as constructed with "top of dimensions, the 12 seriously considered schemes for the shell vaults in section from the competition entry through the scheme as finalized in 1962-63, axonometric, sphere details, shell to shell joint details, west elevation of the major hall superstructure, cross-section through shell 2 (housing the Major Hall), main rib segment and cross-section, isometric view of roof under construction.

The author examines the differences between the competition scheme, and the Opera House as realized through Utzon's solution to the problems of construction by his generation of the form of each shell-vault from the surface of a sphere with a radius of 246'. Adachi is of the opinion that both designs have substantial merit. For a contrary opinion, to the effect that in its geometrized realization the original concept's virtues were irretrievably compromised, see Ellem, Lucy Grace (1980). Adachi's acknowledged source material for much of his information on the designs and many of the illustrations is Arup, Ove N. and Zunz, G. J. (1969).

This article is one of five that appeared in this issue, pp. 3-36, under the heading "Special Feature: Sydney Opera House." See also: Hoshijima, Kohei; Isozaki, Arata; Seike, Kiyoshi; Takeyama, Minoru.


Drawings: site plan, site perspective, elevation, section.

This article gives the results of a closed competition for a housing project, and illustrates each competition entry. The invitees were Utzon Associates; Nielsen, Nielsen & Nielsen (the winners); Arkitektgruppen i Aarhus; I. C. Johannesens Tegnestue.


Photos: exterior (3).

Drawings: site plan, plan.

Following a brief overview of the current housing situation in Denmark,

Aldington describes 12 housing projects by various architects, calling Utzon's courtyard housing at Fredensborg "the highlight of the tour.... an object lesson in the restrained use of materials," and noting that the houses occupy the "undulating
landscape in a monumentally sculptural manner and yet their scale is small and domestic."

"Almost Ready to Sail on Cultural Seas: Opera House Called Engineering Marvel."
Photos: exterior, interior.

Written in anticipation of the Opera House's successful October 20 1973 opening, the one-plus columns of text describe the posttensioned structure of the shell-vaults.


The author traces the roots and types of Scandinavian competitions and describes their frequent occurrence relative to those held in North America. Andrews also notes that a suggestion by Utzon was honored when, due to his commitments in Sydney, he recommended awarding the commission to the architects who finished second to his 1958 competition proposal for the LO school in Elsinore, Denmark.

Ove N. Arup

Arup, a Dane already possessing a substantial reputation as an engineer, was invited in 1957 by Utzon to serve as structural consultant for the Sydney Opera House, a post he retained through the project's completion. Arup's two chief assistants on the Opera House, R. S. Jenkins and G. J. "Jack" Zunz, also assisted in the preparation of several of the articles cited below. While on various occasions, both publicly, or in print, Jenkins and Zunz have been critical of Utzon, Arup's behavior in this regard is nearly impeccable. While his 1965 report on the structural impossibility of Utzon's scheme for the Opera House interiors, published in Baume, Michael (1967), was the direct cause of their falling out, a rift only healed at the RIBA awards ceremony of 1978, I do not doubt that Arup believed absolutely in his report's accuracy.

Between 1947 and 1984 nearly 200 of Arup's talks and writings were published. A number of these after 1956 contain passing references to the Opera House. I have included them below only when their sense or substance does not appear in Arup's lengthier contemplations on the work in Sydney.

Photos: model, exterior under construction (2).

An edited version of Arup's address given in London on Jan 14th, 1965, at the invitation of England's Prestressed Concrete Development Group and occasioned by concern that so little information regarding the constructional and structural techniques had been disseminated. According to Arup, the Sydney Opera House is "not so much a job as a battle." He discusses the construction of the concourse (what Utzon calls the "platform") and notes at some length that the original cost estimates, and the undertaking of the foundation construction before the means to build the shells were known, both resulted from political pressures. Arup discusses the structural reasons why the original scheme could not be built as drawn in the competition entry, but notes that in consultation with Utzon both men concluded that other schemes would utterly destroy the original conception. He says, "so in the end, Utzon and I decided that the scheme had to go forward as designed by Utzon, more or less." He adds revealingly, "it is one of those not infrequent cases where the best architectural form and the best structural form are not the same." What decided the "more or less," is also discussed. Mentioned as well are the difficulties encountered when trying to finish closing any shell with glass.

See also Arup, Ove N., "Address to the Prestressed Concrete Development Group," (1967). Both it and this article contain in several instances mutually exclusive excerpts of Arup's speech.

A wonderfully succinct and amusing account of Arup's involvement in the Opera House, emphasizing the extraordinary aspects of the job: "the site is unusual... the brief is unusual... the Architect is very unusual... the Assessors [jurors] for the competition were also very unusual." Arup discusses in detail the design of the concourse, and the development of the geometry of the "so-called shells" from 1957 through 1963. Of their construction, termed formally "Stage 2" (the foundation and concourse constituting Stage 1, the interior constituting Stage 3), Arup states "the whole structure acts as a mechanism with sliding joints and adjustable bolts and what not. There is ample opportunity for plenty of headaches to arise."

See also Arup, Ove N., "Problems and Progress in the Construction of the Sydney Opera House," (1965).
While stating that Utzon "believed in the architect having control of every visible detail... and he undoubtedly was an architectural genius," Arup faults Utzon for underestimating the kind of organization required to tackle "large, technically sophisticated jobs," such as the Sydney Opera House. There and elsewhere, according to Arup, the architect must act as an "architect-conductor," coordinating, listening to, and leading large groups of specialists. This constitutes Arup's most severe public criticism of Utzon.

The material in this article is taken from a lecture with slides originally delivered before the Building Services Engineering Society, October 26, 1972.


The text of a speech given May 6, 1968 constitutes one of the single most important articles devoted to Utzon's extraordinary attention to detail, here in the design of the "moment beams" supporting the Opera House concourse. Arup relates the five major schemes considered for the concourse, in actuality a type of folded slab. In each of these five cases the balance Utzon and Arup attempted to strike between the aesthetic and the structural, constructional, and functional aspects is detailed, as are what Arup asserts as the competing claims of architecture and engineering.

After a brief statement by each, Arup and Jenkins respond both to the audience in attendance and from readers of the April 1968 issue of Proceedings... (the November article assumes the reader has access to that presentation and refers to several of its illustrations). Arup opens with remarks on the "architect-engineer collaboration,"* while Jenkins is critical of Utzon for his insistence that the area beneath the concourse be column-free. The audience's comments and questions range from compliments on the concourse as "sculptured engineering" and a follow-up inquiring more deeply into Arup's opinion of it, to "I am sure that as a workable opera
house, this scheme was dead from the start." There are inquiries regarding deflection, and the use of Freyssinet flat jacks. The authors respond jointly, and emphasize that "for the architect to design a structure and the engineer to come in to calculate it afterwards is obviously wrong." Arup also amends Jenkins's opening criticism.


A useful distillation of Arup's writings and pronouncements on the project, including several on Utzon, with related comments by Zunz.


This summary of Arup and Jenkins's speech of 6 May 1968 (published elsewhere as "The evolution and design of the concourse at Sydney Opera House," so completely distorts its tenor I have included this entry as a warning.


As the authors note, "this paper sets out to give a brief description of the project, the constituent parts of the structure and how some of the problems were solved. It describes in some detail the geometry of the roof, its structural behaviour and the loads to which it has been subjected." There follows an extraordinary amount of structural and technical information on the design and its execution, with particular emphasis on the collaboration between engineer and architect necessary to realizing the executed scheme. Included are all the major design variations and modifications.
(twelve in all, from the competition scheme through 1963) that for a variety of reasons were not built. A bibliography is appended.


Copious notes such as "in this house constructional details form the sole decoration" comprise this valuable article on Utzon's own house in Hellebæk. Ascoli describes in detail the materials used, the decisions that went into the siting, and the building as a manifestation of Utzon's architectural philosophy and way of living. The only error is one of inexactitude, in the following instance. The author states "the building was conceived through the medium of models." While it seems Utzon did erect of lath and canvas a full scale model on site, I am skeptical of the actual value of this, something I address in the fourth chapter of my text.


The photography in what amounts to a richly captioned photographic essay is exceptionally good. The text emphasizes material facts, and notes that in realizing his design Utzon renounced his original "free-form" design in favor a form more susceptible to construction through techniques of mass-production. This solution is pronounced "simple and elegant."
"Atriumhauseidlung in Kingo [Courtyard houses at Kingo]." Bauen und Wohnen, v17 (1962 Feb), pp. 74-75.
In German. English summary on the third page of the unpaginated blue pages.
Captions in English and French.
Photos: exterior.
Drawings: site plan, plans of each of the two types of court houses, elevations (2), section-elevation.

The text gives a straightforward physical description of the project, concluding, "the arrangement of the sixty-three maisonettes on the site is lively and proves that standardization does not necessarily lead to monotony, provided it is well thought out."

The entire issue is devoted to Danish architecture.

"Atriumhuizen te Helsingor in Denemarken [Courtyard Housing at Elsinore, Denmark]." Bouwkundig Weekblad (Amsterdam), v80 (1962 Mar), pp. 134-136.
In Dutch.
Photos: exteriors (4), courtyards (2).
Drawings: site plan, two versions of house plans, section.

The half-column of text describes the site, and the materials used. The photographs are poor reproductions of those found in Skriver, Poul Erik, "Gardhuse," (1959). The drawings are also taken from Skriver's article.

In Danish.
Photos: exterior (1), interior (1).
Drawings: section including basement; numbered plan.

The author notes the issue of cost and other difficulties involved in realizing Utzon's design. The budget was a particularly sensitive matter as Danish church construction and upkeep is largely funded by the government. There are also straightforward comments on the substantial differences between the church's interior and exterior.

Photos: portrait, section model, exterior, interior (3).
Drawings: plan.

The distinctions between the descriptions given here and those by Utzon (1959, with Keld Helmer-Petersen) are minimal. This is not surprising given the
article's signatory initials, "J. L.," which probably belong to Jon Lundberg, an architect who apprenticed under Utzon at the Opera House. Of the illustrations, only the photos of the helical stair are original to this report.


This undergraduate thesis is held by New York's Columbia University and may be viewed only on the premises of its Avery Library. I have not seen it.

Photos: portraits (3), exterior (8).
Drawings: competition elevation; elevation and section as built, comparison in elevation of competition scheme and the shells as built, isometric and isometric detail, cartoon, various (6).

Beginning with "the decision in 1954 to build a hall to be used mainly for concerts but to be called [for its prestigious associations] 'Opera House,' " Baume's entire focus is on the events that led to what Utzon called his "forced resignation," in March 1966. All events discussed are selected for their relationship to that focus, or are discussed from its vantage point. While this single-mindedness gives the book its vigor it is a correspondingly narrow scrutiny, although one of Baume's strengths is his willingness to let the participants speak for themselves. In that vein, and extremely valuable, are the book's fifteen appendices which include several examples of correspondence between Utzon and his client, the New South Wales government, and three reports by the structural engineers Ove Arup and Partners, not published elsewhere. In his epilogue, "Function is not a 'Dirty' Word," Peter Hall (the architect appointed by the N. S. W. government after Utzon's departure to complete the Opera House) gives a succinct and heartfelt description of his intentions and hopes in taking on an extraordinarily thankless job.

Reviews: see Carter, John (1967).

'Bekroond entwerp operagebouw to Sydney [Results of the Sydney Opera House Competition]." *Bouwkundig Weekblad*, v75 (1957 May 7), pp. 221-224.
In Dutch.
Drawings: rendering (by A. N. Baldwinson, frequently and erroneously attributed to Utzon); competition entry: site plan, plan (2), section, perspective.

A description of the competition conditions, the site, and the jurors' reasons for selecting Utzon's entry. The rendering was commissioned locally by the client in response to public demand for a look at the winning scheme-Utzon's drawings were considered too sketchy to be shown unaided.
Photos: exterior (3), interior (2).
Drawings: conceptual sketch, plan (2).

The editors note Boyd passed away before completing this article, and that they are publishing it both as a tribute to its author, and to Utzon. There follows a short history of the tumultuous politics surrounding the Opera House. This leads Boyd to raise, then address, "a number of universal questions. These include the efficacy of open international competitions, the delicacy of architect-client-consultant relationships, and the insecurity of architectural philosophy today." Boyd also discusses the changes wrought between the competition entry and the Opera House as realized, assessing them as "the [difference between the] feminine and masculine versions of the same concept."

Photos: exterior (2).

A description of the reasons for and reactions to Utzon's resignation, along with a reference to Opera House competition juror Eero Saarinen's erroneous 1957 conjecture on the structure that would be required to realize Utzon's design (four-inch thick reinforced concrete shells) as leading to the early underestimations of construction costs.


A report on the reasons for Utzon's resignation, and the reactions of his supporters and detractors.


One column on the architects appointed by the New South Wales government to replace Utzon, and mention of a financial dispute between Utzon and the government.

In Italian. Captions in English.
Photo: model.
A history of the various executed and unexecuted projects for the Zurich kunsthaus, including Utzon's 1964 design and works by Karl Moser and Robert Curjel (executed 1907-1910), Mario Campi and Franco Pessina, and Willi Egli. The latter three are reported as involved in plans for the expansion and reorganization of Moser and Curjel's buildings.


The author, then vice-president of the Royal Academy of Fine Arts in Copenhagen, laments in a September 1980 speech to RIBA both the disappearance of craftsmen and craftsmanship from which young architects can learn, and the turning away of Danish architectural schools from attempts to deal with the omnipresent use of industrialized building components. After summarizing the work of several Danish architects, particularly in their use of prefabricated building components, Breyen closes his speech by referring to Utzon: "[He] may through his latest work be able to suggest some lead. Some years ago Utzon developed a system for flexible prefabricated housing based on the natural use of materials [a reference to the Espansiva system published in Utzon, 1970]. His church in Bagsvaerd is the result of skilled treatment of new building technology, the free use of all basic architectural principles, and an understanding of local and international themes."


In his emphasis on the foundation work and the concourse Carter focuses on the engineering ingenuity thus far required, but describes the work as "technically orthodox, except for its scale and complexity."


In this review of Michael Baume's *The Sydney Opera House Affair* Carter's opinion, in sum, is "the author is remarkably objective [but] the crowding of detail and documents will be no compensation for the absence of depth."

Carter provides a succinct history of the Opera House's origins (or, more precisely, the dream of it) under Minister J. J. Cahill. Early difficulties are recounted, especially those requiring resolution between Utzon and the engineers. Utzon's move to Sydney following his geometrized resolution of structural and constructional imperatives (see Utzon, 1965) in 1963 is chronicled, as is a statement in 1965 by the new Minister, Davis Hughes, boding ill for Utzon's continued supervision of the work. The period following Utzon's forced resignation, March 1, 1966 through April 28, 1966, is thoroughly recounted. Carter unfortunately concludes with some second-rate psychological diagnostics.

Photos: Can Lis: two full-page shots of the exterior.
Drawings: site plan, plan, elevation.

The photography is attributed to Guillermo de la Fuente and is appended to Frampton, Kenneth in this issue.

Ciampoli, Dr. Marcello, "Il complesso per l'Assemblea nationale del Kuwait / The Kuwait National Assembly complex," L'industria Italiana del cemento, n12, 1984, pp. 772-91.
In Italian and English.

Extensive and well-done photographs document the construction of the Kuwait National Assembly Complex, and there are several useful detail drawings, particularly showing the placement of the reinforcing steel.


A letter to the editor by a member of Utzon's staff in Sydney in which the writer describes in detail Utzon's designs and conceptual thinking, noting also their innovative quality: "his final solution for the glass walls was a positive contribution to furthering the techniques available for connecting the different systems of geometry involved in enclosing vaulted space." Comparing this with the executed designs of Hall, Todd, and Littlemore, Compagnoni continues, "the glass walls as built [see Keys, Peter and Trevor Mowbray, August 1968 and 1970, and Sowden, Harry] are clearly unlike those described here in intention or in spirit. The intention of having as little material as possible other than glass, together with the forms adopted, indicates a failure to comprehend the significance of Utzon's original contribution. Utzon's parallel mullions and his folding of the glass wall in one plane only as expressed in
the north walls avoid, through their linear nature, the expression of solidity now apparent in the conical geometry and the radiating glazing bars of the built form."


Following a description taken largely from Yeomans, John (1973) giving the reasons why a competition was held, this article focuses on the unusually flexible competition brief, the stature of the jury, and the major points the jury looked for in the entries. An edited version of the jury's comments on Utzon's design are presented, then followed by a very summary history of the events that led to Utzon's forced resignation. One episode in its aftermath, largely unremarked elsewhere, is that the replacement architects were permitted to sidestep the problem that had occupied Utzon for years, namely, how to fit all the requirements for an opera performance within the confines of the main hall. They simply eliminated it from the program. The article contains numerous minor errors of fact.


Connah contrasts Utzon's Kuwait National Assembly Complex with Riema Pietila's work in that country. Their very different methods lead to narratives of "a mutual and metonymic dignity." Connah, reminding us of Utzon's conception, Additive Architecture, notes its presence here. He is equally impressed with the Assembly Complex's in-situ work, locating precursors of Utzon's "suspension of the usual heaviness associated with concrete" in the work of Nervi and Morandi. Connah concludes, "accenting this weightlessness it is also tempting to say Utzon makes concrete breathe, or perhaps sigh. Not a particularly easy achievement this side of the eighties."

Connah's article immediately follows that of Skriver, Poul Erik, in this issue.
Photos: pors. (2). exterior emphasizing glass walls, glass wall details and associated equipment (15).
Drawings: axonometric (1); of the glass walls: plan, elevations as developed surfaces (3), overall geometry (1), diagrams of the effects of heat and loading on laminated glass (5), details (3), pane dimensions (3).

The authors, both engineers for Ove Arup & Partners, worked from 1969 through 1971 on realizing the glass walls designed by replacement architects Hall, Todd, and Littlemore. While Utzon is not mentioned except in the briefest of notes, he would have encountered many of the issues Croft and Hooper discuss: the choice of structural systems, the method of glazing, numerous remarkably interesting geometrical calculations involving the attachment of glass to doubly-curved surfaces, and details essential to sealing and waterproofing. For his most developed published ideas in these regards see Utzon, "Three Buildings by Jørn Utzon" (1965).


Curtis's delightfully personal account is subtitled, "A graphic record of the building of the Sydney Opera House during Stages One and Two." Stage One is the term commonly used to denote all foundation work and the construction of the concourse. Stage Two denotes the construction of the shell-vaults. The author was present in Sydney during these two stages and while factual material is included, he continually draws the book back to his feelings about Utzon's work through both the text and a series of his own paintings. Covell's Foreword is "an account of the factors leading to the decision to build a music center for Sydney."

Photos: Kuwait: exterior.
Drawings: site plan.

Despite its earlier publication date it is useful to read the author's comments on Kuwait as an extension of his evaluation of Utzon's oeuvre in Curtis (1987), where he only briefly touches on the National Assembly Complex. Here he notes the architect "had the difficult task of giving shape to a unique governmental system combining regal, tribal, oligarchal and bureaucratic elements." How this informed both Utzon's decisions on the general layout and the structural system is discussed, with Curtis deciding "his handling of concrete, light and space echoes the probity of Le Corbusier's Parliament at Chandigarh."
In a page given over to a brief biography, Curtis describes Utzon as an architect who creatively draws "on Aaltoesque qualities of subtle ordering and spatial complexity." In discussing many of Utzon's projects the author finds particularly evident the kind of sensitivity Sigfried Giedion labeled the "New Regionalism." Utzon's houses at Kingo are declared to be on a par with Le Corbusier's Maisons Jaoul in terms of their mutual "respect for differences of climate and a more sensitive appreciation of 'place'," traits then scarcely overwhelmingly displayed by modern architecture. Curtis's remarks on the Opera House are slightly off, such as when he describes it as "a modern cathedral consecrated to a supremely important national art." A convincing contradiction of this appears in Yeomans, John (1973).

Curtis closes his book (frequently used as a textbook in college architectural history courses) with Utzon's church at Bagsvaerd, "a building conceived beyond the realm of fashionable doubt." The amount of text and illustrations given over to Utzon's work in this volume rivals that devoted to Louis Kahn.

In Italian. French and German translations in unpaginated pink pages.
Photos, exterior (3), tiling details (3).
Drawings: orthogonally gridded plan not published elsewhere.

The brief text notes that Charles Eames recently toured the Opera House in the company of Peter Hall, the architect in charge of the design after Utzon's 1966 forced resignation.

Photos: por., model of third-place entry.
Drawings: Utzon's entry: plan; second place entry: perspective.

This report gives a portion of the jury's (Eero Saarinen, Cobden Parkes, Prof. H. Ingram Ashworth, Prof. Leslie Martin) announcement citing the reasons for their selection of Utzon's entry: "the drawings of the winning design were simple to the point of being diagrammatic. Nevertheless, we have returned again and again to the study of these drawings. They have the merit of great simplicity of arrangement and
unity of structural expression." Of the three premiated designs, Utzon's is calculated as the least expensive. Its projected cost is $7,840,000.

Two factual errors mar this report. Utzon is described as working in partnership with his two brothers. His partners on several projects were in fact brothers, but their names are Erik and Henry Andersson, and they are unrelated to Utzon. Also, the author's information regarding the finishing of the shells is erroneous. Utzon notes on his competition entry that they are to be surfaced in ceramic tile.

Photos: Hellebæk: exterior (3).
Drawings: plan.

Of the three houses noted, one, his own, was designed by Utzon. The brief text compliments its siting and includes a description of the materials used, several of which are mentioned in no other publications: "the construction consists of a ground floor slab (in which is embedded the overall floor heating element) and a roof slab of wooden box beams which span from the rear wall to the framing of the all glazed south front, which is structural. These beams incorporate rockwool insulation and are covered with aluminum decking as the external finish. Windows are double glazed in wood frames, wall are of a clean yellow brick, woodwork being finished with a dark preservative."

Photo: exterior with fireworks detonating above.

This covers the festivities of Oct 20, 1973, the date of the Opera House's official opening. The writer notes that "Sydney went mad for 24 hours and became the only major city in the world to have a great modern building as its symbol."

Dellora, Daryl, and Wansbrough, Ian, directed by Dellora, *The Edge of the Possible*, (Australia: Film Art Doco Pty Ltd and the Australian Film Finance Corporation Limited, 1998), 56 minutes.

This film is said to cover the story of the Opera House from beginning to end and includes a lengthy interview with Utzon plus archival footage of the lost models for his plans for the Opera House's interior. I have not seen it.
Photos: Paustians Hus: exterior, interior (2).
Drawings: plan, section; proposed Hotel and Conference Center: model, section.
Other illustrations include drawings of Copenhagen harbor in 1611 and 1700, contemporary maps of the area, and numerous representations of proposals for development by various architectural firms.

The editor of Arkitekten relates the ongoing "battle of Copenhagen docks," a fight between those who would move slowly if at all in developing this historically rich area, and those who wish to remake much of the waterfront. Part of the battlefield includes the Langelinie pier, currently a popular spot for pedestrians, and the site for which Utzon Associates has been retained by a development firm to design a huge conference hotel. This proposal has met "massive opposition," in part because "Utzon's [sic] proposal ruthlessly eliminates two of the finest warehouses in Frihavn. Designed by Vilhelm Dallerup, they could certainly be incorporated in a more considerate proposal." On the other hand, Dirkinck-Holmfeld notes in his captions to Paustians Hus that it is "one of the few new buildings of any quality built so far in Copenhagen docks... a very simple and delicate building with, internally, a wealth of light effects which Jan [and Jørn as well, see Norberg-Schulz, Christian, 1989] Utzon likens to the daylight in a forest."


While useful, this bibliography is incomplete, and contains typographical errors and errors caused by the apparent verbatim repetition of bad material in previously published bibliographies.

Illustrations: projects depicted in photographs, and (primarily) drawings. are SOH, Additive Architecture, Hellebæk, Middelboe, Kingo, Fredensborg, Birkehøj, Elsinore High School, Zurich, Silkeborg, and the World Exhibition in Copenhagen.

Following Sigfried Giedion's 1960s coining, "The Third Generation," to describe those architects following chronologically the generations of first, Le Corbusier, and second, Alvar Aalto, Drew claims "third generation architects have bartered individual expression for expression of community. Unselfconscious architecture provides a model of an anonymous architecture organized for and expressing collective values." In addition to Utzon, the Smithsons, Aldo van Eyck, and Moshe Safdie are considered to exemplify this. Symptomatic also of the third generation is their translation of "the unconscious model" into "environmental
structure," i.e. kits of parts which may be related "organically," which I interpret here to mean merely "non-orthogonally," and generally without a predetermined form in view. Utzon's projects are examined by Drew almost exclusively toward the end of proving this conjecture.

I have two major difficulties with Drew's argument. The first is simply that while some of Utzon's projects qualify as additive, many do not. Drew does not make the distinction evident and so overreaches, causing his claims in several instances simply to expire. The second is the issue of distortion. When Utzon compared his Opera House to a Gothic cathedral (Utzon, 1965) he was talking only in terms of the interplay of light and structure. Drew, however, because it serves his claim that "the anonymous form-generating structural system of Gothic architecture illuminates Jørn Utzon's design intent in the Sydney Opera House..." decides without the slenderest justification that Utzon was discussing structure. Several like examples mar Drew's writing throughout.


Given the title it is tempting to think of this as Drew's masterpiece. At 574 pages the book gives us an extraordinary number of previously unpublished details concerning Utzon's life. While Drew uses such admirably written chapter titles as "A Cathedral in the Air," and "A White Radiance," he is unsparing with regard to Utzon and Faber's plagiarism from Albert Frey's 1939 book, In Search of a Living Architecture, in their article "Tendenser i Nutidens Arkitektur." Drew adds ominously but without further substantiation, "It would not be the last occasion that Utzon would present other people's work as his own. He made such a fetish of originality he found it difficult to acknowledge external intellectual or creative debts."

Utzon's 1949 visit to America is recounted. Drew is of the correct opinion that "Utzon was pulled in two directions: towards Wright's organic synthesis and infatuation with landscape and, equally powerfully but opposed to this, towards Mies's recasting of the steel and glass vocabulary."

All the major projects are covered, and readers interested more in what may have motivated Utzon as a man, and less in the architectural details of his work, will find this an extremely rewarding book.

Illustrations: One hundred and fifteen photographs and drawings, including excellent detailing of the skin and its joints.

Drew does an excellent job describing the development of the Opera House interiors, while elsewhere his understanding ranges from good to poor. His section
titled "The Aalto Inheritance" is very weak. Drew begins, "the architecture of Alvar Aalto was also a deep influence on Utzon, and the source of many of the ideas behind the Sydney Opera House." Though he continues in this vein for two columns, Drew never makes any sustainable or original points. There is also an unfortunate attempt to pad out the thin text by ending columns of it in mid-air.

This is a fairly weak entry in an ordinary series.


On Utzon: cover and pp. 1-7 in the section headed "National Opera House, Sydney, Australia."

Photo: SOH: model.

Drawings: sketch, site plan, plan, section.

In their one page introduction the authors cite the four buildings featured in MOMA's exhibit as examples that decline to accept the limitations imposed by mass-produced "standardized rectangular units" and seek instead "monumental scale and a variety of memorable shapes.... Allusions to non-architectural images-ranging from the merest hint to an explicit statement-are used to express emphatically some distinguishing aspect of the building's function or location." The authors are disinclined to claim these four buildings constitute a trend, but note that each has been designed within the proceeding five years, suggesting "that this is a direction of increasing interest to many architects."

In addition to the Opera House the exhibit features Guillaume Gillet's Notre Dame du Royal, Harrison and Abramovitz's 1st Presbyterian Church, Stamford, Connecticut, and Eero Saarinen's TWA Terminal, New York.


Photo: model.

Drawings: competition entry: site plan, elevations (2), perspective; reflected ceiling plan of completed interior keyed to the wattage of fixtures, details of light fixtures.

The authors seem to be laboring under a misapprehension regarding Utzon’s conception of the interior and its relationship to the exterior. A clear, unsophisticated relationship between interior and exterior is not particularly the goal of Scandinavian (and other) architects who have learned that exposed structure (one of the necessary conditions for the kind of transparent relatedness the authors espouse) is not particularly desirable in certain climates. Utzon's early model for the interior as depicted and explicated in Utzon (1965) explicitly does not attempt a simplistic relationship but rather one based on consanguineously derived forms. Dryver and Waldram continue that, given the plethora of "services" required in most large
buildings, particularly those with certain specific functions that require addressing, "a practically inevitable result is that the relationship between the exterior and the interior of the building is liable to be lost, because between and within them the nervous system, and the lungs and the means of transport have to be accommodated." The authors believe that given the clarity of the exterior forms a very similarly appearing clarity should have been retained on the interior. They do not say why this should be a goal (as opposed to the demonstration of different but similar kinds of clarity), and conclude that a "happy synthesis of form and function... is not achieved in the Sydney Opera House."

Illustrations: too numerous to list singly, these include pors., photos of models and the exterior and interior, and drawings in plan, site plan, elevation, and section.

The author, an Australian architect and teacher, single-mindedly and convincingly espouses Utzon's point of view at every turn. One of his formal means of doing so includes countering a common perception of Utzon at that time as something of a dreamer by raising a number of points given the heading "Practicality...." For example, under "Practicality 5," Duek-Cohen describes Utzon's intentions for the auditoria interiors, noting "at the time of his withdrawal he had carried his ideas in this respect to an advanced stage.... had he been allowed to complete his work, great advances could have been made in the use of plywood in building... and also in the development of industrialized processes for large building elements. The manufacturers with whom Utzon collaborated and co-operated closely will bear witness to his practicality." It is only in relation to this last sentence and similar instances throughout that the book disappoints by insufficiently documenting its assertions.

Reviews: see Gretton, Robert (1968), and Szokolay, S. V. (1968).

Photos: exterior (2).
Drawings: sketches (2), diagram of the geometrical construction showing the shells of the major hall in elevation, elevations (2); competition entry: site plan, elevations (4), perspective.

In this extremely well reasoned and well organized criticism Ellem begins by stating "[the words that] best convey the spirit which brought the Sydney Opera House into being, and the ideals which initially inspired its architect" are those of Walter Gropius: 'Ideas perish as soon as they are compromised. Therefore... build in
fantasy without regard for technical difficulties. To have the gift of imagination is more important than all technology, which always adapts itself to man's creative will."

In cataloging the differences between Utzon's competition proposal and the Opera House as built the author is primarily concerned with what she discerns as the inevitable loss that occurred when "on a freely drawn, organic design, a machine-age technology requiring strict geometry and mechanical precision was imposed."

Ellem's conclusion states "certainly the aura of the building remains. But to Utzon the aesthetic effect of the original design had been of primary importance, just as it was to the assessors who awarded him first prize.... a building begun in an organic tradition, and inspired by a romantic, emotional response to the elements of the natural world, was completed by the imposition of an abstract order which has its origin in the controlling logic of the rational mind.

The essay's only shortcoming is Ellem's disinclination to deal with Utzon on his own terms, for one of the seminal principles of his approach to the rationalizations involved in prefabrication and mass-production is that there is no inherent conflict between the organic and the rational. One may, as he demonstrates in "Additive Architecture," (Utzon, 1970) readily result in the other.

*Pamphlet for the "Exhibition of Unknown Architects," 1919.

On Utzon: pp. 204, 207-209, 211, 218-219, 242, 244-245.
Photos: Kingo: exterior, courtyard; Middelboe: exterior.
Drawings: LO Technical College (Faber terms it a "Folk School" in deference to its populist origins and emphasis on vocational studies. Utzon refers to it as a "High School") competition entry: freehand site plan, plan, elevations (2); Kingo: site plan.

Following a short description of the Danish landscape Faber's book is divided into sixteen chapters, from "Prehistoric Times," through the era in which Utzon is discussed, "Developments 1950-1963." The overall tone is never less than admiring, and Faber depicts Utzon as a "vital and talented guide to the discovery of new expressions for new architectural tasks, new materials and forms of construction, all to be discovered within conditions set by these things themselves." Utzon's interest in anonymous (i.e. vernacular) architecture's "refined harmony between form and living conditions, climate and available materials; and between materials, construction, building and landscape," is linked to his studies of the problem of designing for the unknown client (in this vein see Utzon, 1970). In addition to descriptions of the projects listed above as illustrated Faber devotes a page each to Utzon's own house in Hellebæk and the Sydney Opera House.
Faber's lengthy introduction concentrates on trends since 1926, a year he regards as seminal due to the dissemination in Denmark from 1926 through 1928 of *Kritisk Revy* (Critical Review), a journal which promoted apparently simple, functionalist design—a not insignificant event in a country where the architectural journal of record, *Arkitekten* omitted notice of the existence of the Bauhaus until eleven years (Faber says ten) after that school's founding. The other seminal year of note for Faber (and Utzon, see 1978, and 1983) is 1930, when the Stockholm Exhibition, dominated by the Swedish architect Gunnar Asplund, brought built functionalist architecture to the Nordic countries. As of Faber's writing Utzon's career had entered its mature phase, and in the introduction sporadic references give a useful picture of its maturation.

The body of the book concentrates on events since 1950. Arranged by building type (Museums, Churches, and so on), it is useful primarily as a means of researching specific projects rather than getting a coherent sense of an architect's career. While this is a minor limitation the illustrations are of excellent quality and the brief text accompanying each project is invariably useful, often nicely supplementing what the crisp black-and-white photographs cannot reveal.

This is essentially a slim, coffee table book, and while the text is minimal, and several of the drawings are not scaled, the photographs are quite good in terms of both vantage points and resolution. The text describes the inspiration found for numerous aspects of the design in examples of vernacular architecture such as those encountered by Utzon on a visit to Morocco immediately after World War II, a period in Utzon's life Faber is familiar with, having collaborated on an article and a design competition with Utzon (see Utzon and Faber, and Utzon, Innings and Faber,
respectively) around that time. Unfortunately, this is only a small, and misleading part of the story, something I detail in chapter four, above.

Photos: por.; SOH: exterior (2); Kingo: courtyard; Bagsvaerd: interior; Can Lis: interior (previously published—here the image is inadvertently reversed); Paustians Hus: exterior, interior. Drawings: diagram showing the generation of the SOH shell-vaults from the surfaces of spheres; unidentified yacht designed by Utzon's father.

Given their substantial early collaboration (on "seven or eight architectural competitions," according to Faber), there is a disappointing lack of new information in what amounts to a perfectly straightforward summary of Utzon's career.

Photo: the Opera House under construction.

Photos: exterior (5), courtyard (2), interior (6).
Drawings: sketches (2), site plan, keyed plan, elevations (2), section.

The tone of Frampton's observations is best summarized by his statement, "without ever acknowledging it explicitly, Utzon's entire career seems to have been predicated on a profound understanding of the broken legacy of human culture so that perhaps more than any other living architect he has embraced the exclusively modern destiny of attempting to create a world culture." The implications of world culture and its cross-pollination with Paul Ricouer's sense of "universal civilization" is the focus of Frampton (1983, 1992). Specifically, here, he notes that "Bagsvaerd inevitably evokes the vexed question of how a religious building should be represented in a secular age; an issue that is complicated in this instance by the fact that the complex is both sacred and secular.... One senses that through devices [such as those employed by Utzon] the de facto secularization of the church tends to convert it into a theatre."

Drawings: Bagsvaerd: section, elevation.
In this seminal essay Frampton creates a reading of Bagsvaerd (serving here as the architectural centerpiece) which specifically promotes his agenda for critical regionalism: "The scope for achieving a self-conscious synthesis between universal civilization and world culture may be specifically illustrated by Jørn Utzon's Bagsvaerd Church, built near Copenhagen in 1976 [sic], a work whose complex meaning stems directly from a revealed conjunction between, on the one hand, the rationality of normative technique and, on the other, the arationality of idiosyncratic form."


This is a useful introduction to Utzon's career in the sense that nearly all major works and projects are illustrated (the only significant omission is Bank Melli), albeit cursorily. Frampton's text laments Utzon's tragic status as a truly major figure in architecture whose enormous worth is only now becoming fully appreciated. He as much says that Utzon's career is in a decline that began with the Paustians Hus furniture showroom. The less mournful emphasis is on the poetic quality of Utzon's juxtaposition of platform and roof form. Citing Utzon's 1962 essay (misattributed to 1954), "Platforms and Plateaus: Ideas of a Danish Architect," as "an essential key to Utzon's work," Frampton interprets its most seminal conceptions as pertinent to "the strange transcultural opposition of the pagoda and the pyramid, or in more generic terms, of the vaulted roof and the podium [platform]." Frampton goes on to link this to Bruno Taut's conception of the city crown, that combination of typologies where "buildings that are essentially crowns (i.e. monumental religious or civic structures) and buildings that are essentially dwellings (i.e. the unit parts of a potential city)" truly engage each other. Frampton lastly conjectures on the effects of P. V. Jensen Klimt's Grundtvig Church (outside Copenhagen, 1913-1926) on Utzon's mature work.

Following in this issue is a photographic essay of Can Lis by Pita, Estanislao Perez, and the unattributed "Casa en Porto Petro, Mallorca."


This revision of "Towards a Critical Regionalism: Six Points for an Architecture of Resistance," (1983) maintains the position of Bagsvaerd Church as the essay's seminal example. Of particular interest to me is the alteration effected in
the paragraph by Frampton I quoted under the 1983 entry. Here, it reads "we may construe these different forms of concrete construction [in the church] as setting the rationality of normative technique against the arationality of symbolic structure."

Given that the vaulting of the nave at Bagsvaerd is disciplined by a conceptual substrate of cylinders of various radii (this drawing appears in Rossi, Lamberto, 1990) it is not surprising that Frampton has displaced the emphasis of "irrational" from form to symbol: the former example requires an argument vastly more difficult to sustain here. Also, relationships are seen in the later essay as more highly charged, as the reader may have noted from the use of "setting ... against." The "dialogues" (as Frampton calls the invocations construed between part and part, conception and construction) are more numerous here than in the 1983 essay.

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I would prefer it otherwise, but Frampton's errors, omissions, and misstatements are so many and so continual I am constrained to confine my remarks and corrections primarily to his version of the motives behind and influences upon Utzon's two Danish courtyard housing projects, at Kingo and Fredensborg. What is particularly unfortunate is that Frampton's book is used in university courses and is the first comprehensive overview of Utzon's career since the publication of the fifth edition of Sigfried Giedion's Space, Time and Architecture in 1967.

There is a kind of critical exposition that seems almost standardized, tells us almost nothing, and comprises the majority of critical investigation. Regarding a work or architect, this pretense to thought approvingly quotes other critics, refers, often vaguely, to the earlier work of another architect (claiming some sort of derivation or making some sort of thoroughly generalized attribution), then refers us to various other works, noting the most superficial similarities and mere likenesses, but presenting these as though there was in fact a genuine connection.

This is precisely the formula Frampton, in his Studies in Tectonic Culture, follows in discussing Utzon's Kingohusene. He says vaguely it is inspired by Wright's work, and just as vaguely refers to the work of Gottfried Semper, and Clarence Stein's and Henry Wright's Radburn, New Jersey ['neo-Radburn,' one of Frampton's many such coinings, is the lazy man's way of saying 'it looks kind of like it']. Frampton next announces that Kingo uses, is similar to, or evokes: tile-capped Chinese walls, Middle Eastern ventilation shafts, the wind towers of Iran, Iberian culture, Japanese rock gardens, Scandinavian dolmens, and so on. He then gives us equally scattered, generalizing, and vague quotations from other critics.

It is not possible in this limited space to address every error. I will therefore analyze at some length a single paragraph. Frampton writes,
As I have noted before [there is no such note] Wright's Usonian house is unquestionably an influence on the Utzon atrium dwelling as this appears in both Kingo and Fredensborg, the debt being acknowledged, as it were, by the use of Wrightian cherokee red as a finish for the timber fenestration of Fredensborg [p. 262].

The declaration, "unquestionably," is impossible to fathom. There are a number of constants to Wright's Usonian work, which began in 1936 and continued through his death in 1959, and of which there is no evidence at Kingo and Fredensborg. Further, the Usonian el is a type (beginning with the first Herbert and Katherine Jacobs house, in Madison, Wisconsin, 1937), which comprises only a very small fraction of Wright's work. A partial list of the improbabilities:

1. Wright considered all walls in his Usonian houses screens, which is quite the opposite of what Utzon does with his north and closed east and west walls. Also, Utzon's south and sun-facing east and west walls with their brick knee- and half-walls don't qualify as screens either (they are integrated into and integral to the structure), and bear no resemblance to Wright's work.

2. Wright never enclosed his courts in this kind of housing, never came close to doing so. It would have separated the house from the prairie landscape and would have been anathema to him.

3. Wright never grouped his el-shaped Usonians, preferring a pinwheel or Greek cross arrangement as was the case with his design of the Suntop homes in Ardmore, Pennsylvania (1938). Thus it is a significant mistake to even talk about Utzon's houses in Kingo and Fredensborg as though they existed in isolation, or could be compared with designs, such as Wright's Usonians, that were precisely intended to be isolated dwellings.

4. Wright's ubiquitous overhangs and cantilevers, and emphasis on the horizontal, the essence of Usonia and Usonian houses, are entirely absent.

5. Utzon's houses are simple els precisely defined. Wright always fades or draws back or staggers his plans, and always varies the shape of his houses, finding every pretext to give expression to different functions and distinct rooms. This approach also allows him to vary the position of the screen walls in relation to the landscape, lessening the likelihood of its being read as particularly distinct from, rather than of, the landscape. Utzon does none of these things.

6. Everything to do with the Usonian house is on a module, both horizontal and vertical. Nothing about Utzon's work in his housing at Kingo is modular and, as I propose in my text, is intentionally so.
7. The single roof slope used at both wings of Utzon's houses has a great deal to do with controlling the effects of direct and indirect daylighting. This is not an arrangement Wright used, and it is only peripherally concerned with factors central to Wright such as his treatment of the roof in terms of integrating its form and appearance into the appearance and idealization of the landscape.

8. Dark red, yes. Cherokee? Even this is debatable.


Inside the front cover Fromonot writes, "the remarkable images are by Australia's most eminent photographer, Max Dupain," and there are, to be sure, a striking number of new or rarely reproduced illustrations in this thoroughly researched recounting of Utzon's work on the Opera House. Fromonot has also made excellent use of of the papers, drawings, and models given by Utzon to the Mitchell Library in Sydney. The cover itself, showing a photograph of the Opera House and beneath it, "reflected" in Sydney Harbour, a line drawing indicating the precast concrete ribs making up the shell-vaults, smartly reflects Fromonot's interest in presenting both Utzon's completed ideas for the Opera House as well as the ideas and constructions behind them.

In her Introduction Fromonot implicitly prefers Sigfried Giedion’s 1967 overview of Utzon's career to Kenneth Frampton’s attempt in 1995, and sees herself as filling the gap since the earlier work. She writes, "For at least two reasons, the Sydney Opera House had to be the key to a book on Utzon. Firstly, it is the architect's masterpiece: it embodies the intentions of his youth; the themes that he developed over the course of this project were to be extended in his later schemes; it was with this building that his universe of ideas and forms was crystallized in the most striking way."

In addition to her wonderful feel for the way architecture is built, and for the kind of details a reader needs in order to understand difficult work, Fromonot writes delightfully well. Of Can Lis: "The teeth of the saws used to cut the blocks of stone have left a pattern of concentric marks, highlighting certain of the walls like half-effaced bas reliefs which, at a momentary glance, appear to resemble the interlocking circular motifs developed for the Opera House. As he had done in Sydney, Utzon placed great emphasis on form, constructing it from elements which, in the final result, remain discreet, almost confidential. Here, as with down there, the modular assemblages do not generate the ensemble, they remain submissive. Utzon returns to Asplund's Woodland Cemetery: the order of the building is cast into its form; the use of a single material charges it with abstraction, the tonality of the stone and the dimensions of the blocks accentuate its archaic gravity. Perched above the Mediterranean, Can Lis is a refuge for a returning Odysseus."
In a close perhaps more provocative than enlightening, Fromonot states, "Utzon remains the guardian of fugitive ideals, those whose rise he had contributed to, those he had fulfilled in such an unexpected manner. But his œuvre, even carried by these shared ideals, was probably to idiosyncratic to be exemplary, too radical to be followed. The Sydney Opera House remains a magisterial lesson, his other projects singular successes and his whole quest in life—the total fusion of all aspects of his discipline—that of a humanist, desperately modern."

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"Un ricordo delle Hawaii [A dream from Hawaii]." *Architettura e Progretti*, pp. 24-37.
In Italian and English.

Copious illustrations relate Utzon's expository sketches of clouds used to form the vaults of Bagsvaerd Church to Utzon's sketches of the same type done ten years earlier for the Sydney Opera House. Fromonot then ties this to her claim that Utzon has been inspired even more by Chinese architecture at the Opera House, and by the encyclopedic *Ying-tsaо fa-shih*, than he has stated. She then makes an interesting case that the plan of Bagsvaerd was drawn almost directly from the plan of a court yard house in Beijing. To her credit, Fromonot also notes the similarities between Bagsvaerd's vaulted nave and Utzon's unrealized scheme for the Opera House interiors, but misses the connection to Aalto's Library at Viipuri.

Photos: Kuwait: exterior (5), interior (1), under construction (2).

Gardiner relays Utzon's comments on his project for the Kuwaiti National Assembly Complex (here and elsewhere frequently referred to as the "Parliament") and its fit with his theory of "additive architecture," most explicitly described and illustrated in Utzon (1970). Here Utzon specifically refers to the complex's ability to accommodate change "without doing harm to the order of the overall idea." Gardiner asserts that the 610,000 kg. (each) roof beams over the national assembly for 2,000 people, and over the assembly's entrance, "sweep down with the lightness of canvas." He closes by claiming "the architect's dramatic sense of aesthetic timing is flawless. His grip on the great, historic occasion, is total."

On Utzon: pp. 79-81.
Photos: Fredensborg: clubhouse exterior (2), house exterior (2), courtyard; Kingo: site plan
This article contained the only published color photographs of Fredensborg prior to the 1991 publication of Tobias Faber's book. While the photographs themselves are all slightly out of focus they provide contrast showing how extremely well the work has held up.


A preview of some of the new material to appear in the 5th edition of *Space, Time and Architecture* (1967). Here the emphasis is on the Opera House and Utzon's expository sketches for it, and on Utzon's travels to Mexico where his apprehension of the platform as an significant architectural element was ignited.


The numerous illustrations include: a comparison between the Opera House concourse's grand staircase and the Temple at Uxmal; three of Utzon's conceptual sketches illustrating an ongoing theme in his work-comparatively freer forms hovering above a horizontal ground plane; a comparison between the Opera House (in section) and Le Corbusier's Project for the Palace of the Soviets (1931); models demonstrating the extraction of the form of the Opera House shell-vaults from spheres with radii of 246 feet; a juxtaposition of Utzon's conception for the Opera House glass walls with a bird in flight; a plan drawing from the Opera House competition entry; a model of the Zurich Theater project (1964); the site plan and photographs of the Fredensborghusene.

The fifth edition of Giedion's masterwork was released almost solely for the sake of including the chapter devoted to Utzon's oeuvre where, in the author's opinion, "several sensitive characteristics of the third generation [Le Corbusier belonging to the first, Aalto to the second] are sharply delineated."

Giedion describes Utzon as a "master of the fragment, symptomatic of our time," and calls his piercing of a wall in the Kingo housing project a cut of extraordinary, surgical brilliance, in its delicate opening up to one another of public and private arenas. Numerous projects are cited and illustrated in this concise and laudatory overview. Subheadings include "Relations to the Past," "The Horizontal Plane as a Constituent Element," "The Right of Expression: The Vaults of the Sydney Opera House," "Empathy with the Situation: The Zurich Theater 1964," and "Sympathy with the Anonymous Client."
An interesting albeit brief description of Utzon's conception of architectural space including his engaging interplay between interior and exterior. His creativity with the mass-production of architectural elements is also noted.

In this letter to the editor Giedion expresses outrage over the forces that drove Utzon to resign from the Opera House project, and laments the design changes the replacement architectural team inflicted.

The author, a senior partner in the quantity surveying firm for the project, describes in extraordinary detail the foundation work necessary to support adjacent to water a building the concourse alone of which weighs twenty million pounds. Goddard is also familiar with the folded slab, or "moment beams" of the concourse, and among other interesting tidbits notes that reinforcing steel was required simply in order to place the main reinforcing steel of the slab.

This article on the "New Angle" modular furniture system gives information in excess of that provided in Utzon, 1970. She writes, "Jørn Utzon himself explains the system in terms of vertical and horizontal surfaces of different heights and positions in space. Creative use of his frame and infilling system can produce 'any required surface anywhere in space .... Because my system is based on structural frames of different dimensions,' he says, 'the system develops a character as beautiful as the trees with their branches do in the forests. The bigger the branches, the bigger the spans, and the smaller the branches the smaller the spans.'"
A salutary review of Elias Duck-Cohen's *Sydney Opera House: a statement in the public interest*, which Gretton describes as "an extraordinary document, compiled by an architect dedicated to seeking justice for Utzon," and as "a case history in claim and counter-claim, a sorry record of bad judgment, misunderstandings and confusion."

"Habitation préfabriquée à [A Prefabricated House in] Middelboe, Danemark."  
Photos: exterior (3).  
Drawings: plans (2).

The text is translated from "Vorfabriziertes Einfamilienhaus in Middelboe, Danemark," (1956) and with three omissions the illustrations are reproduced from that article.

"Heating and Cooling Sydney Opera House."  
Photos: interior (2).

As advertised: a description of the seventy separate air systems installed, the necessary sound-suppression systems required, and a note on the harbor-fed heat pump used below the concourse.

Heath, Tom. "Sydney Opera House."  
Photos: exterior, interior.

Heath, an Australian architect, declines the customary recitation of the project's controversies and examines it instead as architecture which must fulfill certain functions, many of which have been altered from the original program published as part of the 1956 competition brief. Since much of Heath's scrutiny is concerned with the interiors as developed by the replacement architects, it is difficult to entirely separate the effects of their design from the consequences of Utzon's work. This remains nonetheless a valuable study, and immediately follows "The Sydney Opera House: Cathedral of Culture," in this issue.

Hellard, R. Baden.  

This letter to the editor written in sympathy with John Carter's article "Sydney Opera House: What went wrong?" (1967) is typical of a certain kind of voluble
criticism prevalent after Utzon's forced resignation. Hellard complains that the Opera House wouldn't have gone "wrong" if international competitions were more stringently regulated, and if entries were required to provide more ready details. More intelligent detailed criticism of Utzon's work is available in Ellem, Lucy Grace (1980), and Mark, Robert (1991).

Photo: Chair and footstool.

This encyclopedia includes a description and illustration of a "Chair and footstool, 1969," designed by Utzon and manufactured by the firm of Fritz Hansen, Allerød, Denmark. "The molded plywood chair has fabric covered foam upholstery and a chromed-steel support structure. It was intended to be mass-produced, and is from the Floating Dock line of furniture." The biography on p. 392 is unreliable.

Photos: exterior (3), courtyards (2).
Drawings: site plans, two versions of house plans, section.

In the minimal text Hoffmann states "the congenial atmosphere is created by a successful mixture of Danish dwelling culture with well-nigh Japanese austerity. An attractive feature is the deliberate renunciation of technical perfection, reflected, e.g. in the use of raw ceiling boards, unconcealed rainwater drainage along channels, bright brick walls." For more on this "renunciation" see Faber, Tobias, *Jørn Utzon. Houses in Fredensborg* (1991). Hoffmann, in a unique aside, notes a delicate touch of contrast against the ubiquitous buff-colored brick in Utzon's use of exposed, concrete lintels.

In Swedish.
Photo: model of an early version of the Opera House.

An advertisement by the manufacturers of the shell-vaults' exterior tiling boasting of their association.

According to Holgate, "this case-study highlights the problems of interaction between clients, architects, and structural engineers, and the influence of politicians both within and outside this group." He describes his sources for the above as "accounts written by the structural engineers for the projects, Ove Arup and Partners, and presented as papers to learned institutions, and books written in a journalistic style." Holgate provides an adequate summary of the give and take between Utzon and the numerous other parties involved, specifically describing these interactions in regard to the designing of the concourse beams and the shells. He concludes that despite its enormous scale, the Opera House is quite representative of "the wider problems of design."


This article is one of five that appeared in this issue, pp. 3-36, under the heading "Special Feature: Sydney Opera House." See also Adachi, Kenji; Isozaki, Arata; Seike, Kiyoshi; Takeyama, Minoru.


The exterior shot is the only extant, published photograph of this small building, while the model and drawings are taken directly from Utzon's 1970 article, "The Work of Jørn Utzon: Additive Architecture." The "Inspector's House" (as it is also named there) was originally intended as part of a much larger educational center in Homing, Denmark which would have included classrooms, studios, dormitories, and laboratories.

This article is one of five that appeared in this issue, pp. 3-36, under the heading "Special Feature: Sydney Opera House." See also Adachi, Kenji; Hoshijima, Kohei; Seike, Kiyoshi; Takeyama, Minoru.


Recounts the damage to the National Assembly Building, the competition for its restoration, and declares that Utzon's work has stood as a potent symbol of national identity.


This article gives a lengthy description of the restoration of Kuwait's National Assembly Building by the U.S. Army Corps of Engineers and Hellmuth, Obata & Kassabaum following the destruction of the interiors by Iraqi troops during the Persian Gulf war, but refers only minimally to Utzon, and not at all in reference to his original designs for the interior.


Jencks makes a specious link between a bloody, 1920s jeremiad by Hans Scharoun and Utzon's "extravagant" work at Sydney, an implicit critique of Giedion's defense of the architect's right to expression in *Space. Time and Architecture* (1967). Typical of Jencks' hit and run style of criticism, he serves up a number of grounds on which Utzon might be criticized without committing himself to any one of them, and moves on.

The previously unpublished photographs by Harry Seidler are the meat of this article. Briefly mentioned is the question of whether the alterations the design underwent in order to be constructed have damaged its aesthetic value. On the one hand Joedicke recalls Robin Boyd in the negative; "Utzon succeeded in translating his original scheme, a romantic idea from the 50s, into the idiom of the 60s [a somewhat loose characterization by Joedicke],&quot; and on the other hand summarizes the thoughts of "other critics" to the effect that "the originally elegant conception may have become rigid, mechanical, clumsy."


A brief biography.

Peter Keys, Trevor Mowbray, and Colin Brewer

Between September 1960 and February 1972 Keys co-authored a total often (the first three with Mowbray, the remainder with Brewer) "progress reports" on the Sydney Opera House. Most of these reports are quite technical, and there is a pronounced emphasis on constructional, structural, and architectural details and detailing. The reports also contain factual material regarding budgets and organizational hierarchies not published elsewhere. The quality of the series in consistently high.

Due to the extraordinary number of illustrations making up the bulk of the progress reports I have in most cases summarized rather than enumerated their content.


Events beginning November 30 1954 and leading to the decision to hold an international competition for the Opera House are chronicled. Utzon's initial visits to Sydney and his activities there are thoroughly covered, including several changes he had since made in his competition design proposal both on his own initiative, and in order to accommodate suggested programmatic changes. Undated photographs
document the foundation work over what is apparently a period of two years.

Particular attention is paid in the body of the report to the foundation work, particularly the formwork, the mixing and placing of (enormous amounts of) concrete, and the quality of the concrete mix.

Eleven photographs document three models: one is of the exterior of the shells and concourse, the second is of the major and minor halls in section, and the third is of Utzon's studies for the stage arrangement. This last, while crude (and perhaps because of this crudeness), is of signal interest since the Opera House's interiors were at this juncture the least developed aspect of the design.


The authors give a thorough chronology of political, organizational, and technical developments between September 8, 1959 and March 1961. Illustrations include numerous photographs of study models showing the development of the major hall acoustical canopy resulting from electronic stressing analysis, wind tunnel analysis, and studies of service corridor walls and ceiling linings. A photographic essay titled "Report on Progress," showing construction on Bennelong Point almost monthly between March 1960 and January 1961, is included. There is also a detailed discussion of the folded slab of the main concourse accompanied by moment beam sections, and diagrams of the beam-anchorage blocks. The report doses with twenty-three photos of construction details, and photographs of study models indicating the shells' outlines.


This report also opens with a chronology of events from August 15, 1961 through October 18, 1962, and includes an account of Utzon's visit to Sydney in the spring of 1962 in the company of G. J. [Jack] Zunz, a senior engineer for Ove Arup, for the purpose of finalizing contractual arrangements for the shell roofs. A second chronology gives the completion dates for various phases of the construction. Five photographs from the same vantage point document the progress of the concourse between September 1961 and October 1962. The remainder of the report consists of fifty-three photographs, most of good quality, documenting the underside of the concourse as well as a wide variety of details and finishes occurring throughout the project.

There are two articles by Utzon here. The first, on the Opera House, is a condensed version of the material appearing in his 1965 "Three Buildings by Jørn Utzon." The second, previously unpublished and not reproduced since, "Roof Tiles," is listed by that title under "Utzon."

The rest of this progress report lists events occurring from January 1963 through October 1965, then features a photo essay depicting the construction sequence involved in erecting the ribbed arches composing the shell vaults.

5th in the series.

This, the first of the series written after Utzon's forced resignation, notes of that event in its customary opening chronology (here from February 1966 through April 1968) only the following: "February 1966: resignation of Jørn Utzon!" This, remarkably enough, is the last direct reference to Utzon in this series.

As of the date of publication the shells had been erected and their cladding with a tile specially designed by Utzon (see Utzon, 1965, and Hoganas, 1964) was essentially complete. The tiling of the shells by the use of Utzon's "tile lids," and the difficulties both inherent and encountered in cladding a doubly-curved surface is particularly well documented here in text, photographs, and detail drawings. The other two main subjects of this report are the cladding and paving of the concourse, and the acoustic tests done using 1 to 10 scale models.

6th in the series.

The article is exclusively concerned with the "Concert Hall Sight Line Report," information for which was provided by Peter Hall and Lionel Todd who, with David Littlemore, were appointed to complete the Opera House in April 1966. Six full-page plans follow the introductory text.

7th in the series.

One of the most interesting challenges resulting from shell design is the enclosure of its doubly-curved openings, particularly when the enclosing material is itself curved. This report concerns itself entirely with the preliminary designs for the shell-vaults' enclosing glass walls, and descriptions and illustrations of the geometries
involved. The glazing techniques it was necessary to invent for this project are also
described. Illustrations include several model studies, diagrams of the interfacing
geometries, diagrams of transitions between glazing at the shell-vault mouths and the
vaults and concourse, a full-scale mullion detail, elevations, and a section. While
Todd, Hall and Littlemore claim to have interpreted Utzon's drawings for their design
of the glass walls, Utzon has stated his extreme disapproval of their scheme. Other
critics hold a similar opinion. See Compagnini, Peter (1972).

8th in the series.

This report's illustrations include the following: cardboard model "showing
the relationship between the acoustic shell and roof shell arches"; interior of
acoustic testing model; section of stage, minor hall; section of minor hall
auditorium; plans of minor hall seating and stage. Also included are target dates for
the completion of various phases of the interior, and a self-congratulatory statement
by Davis Hughes, New South Wales Minister for Public Works, on the presumed
accuracy of the estimates.

The configurations of the interiors shown bear no substantive resemblance
to Utzon's designs, although several of the materials employed have been
manipulated according to various processes he developed.

9th in the series.
Photos, exterior: day, with Sydney Harbour Bridge as background, and at night; other
photos taken from marvelous points of view, with many details.

The text here is confined to a calendar of construction completed since June
1968. The remainder of the report consists of marvelous photographs of the largely
completed exterior (concourse and shells), corridor details, and the shell's interiors
dominated by complex scaffolding.

v61, n1 (1972 Feb), pp. 73-79.
10th in the series.

After a chronology of contracts entered into or executed this report, the final
one in the series, is concerned with two specific areas: the glass walls enclosing the
shell-vaults, and the concert hall and opera theatre interiors. In the case of the former
there is substantially more specificity than in the seventh report, and five "critical
requirements" taking into account structural and aesthetic imperatives are detailed. The last of these requirements may suggest to the uninitiated reader some of the difficulties involved: "the system for A4 (concert hall, north) and B4 (opera theatre, north) finally developed consists of an elliptical cylinder, an archimedian [sic] spiral and a cone for the three big upper surfaces. The cone terminates on a horizontal ring beam connected to the podium by widely separated piloti. Below this ring beam the glass is an inclined cylinder with no vertical metal components..." As for the interiors, both the ceiling suspension system and the completed visible ceiling are documented in texts and photographs.

Photos: exterior and interior (14)
Drawings: plan, building section. Includes 3 illustrations of Utzon's and Utzon Associates' work on the Copenhagen waterfront.

This is a straightforward, poetic description of the materials, layout, and symbolism of the church.

Photo: exterior.
Drawings: plans (2), isometric, section.

In this advertisement Koppers notes it has installed various sound suppression devices throughout the Opera House.


This advertisement includes a brief reference to the participation of Utzon Associates in the harbor's development and includes an unattributed sketch of proposed construction. For a thorough report on the controversy surrounding this and associated projects see Dirkinck-Holmfeld, Kim (1989).


Larsen describes the six entries in a closed competition for a hotel project near Kalvebod, Brygge, Copenhagen. The invited firms mentioned here are Utzon Associates and H. Remmen Holding, Raaschoou-Nielsen and J+F Johnston + Partners, Henning Larsen, and PLH Arkitektur.

Ligo summarizes the opinion of Phillip Drew in the latter's *Third Generation. The Changing Meaning of Architecture* (1972), and places Utzon among a number of architects whose work "indicate[s] that buildings now being constructed are embodying an existential position of the unity of subjective and objective knowing." While it is not clear how this relates to Ligo's study of function, his writing is notable for its attempt to distance Utzon from the more predominantly rationalist (and, presumably, strict functionalist) concerns of "first generation" architects. A more comprehensive study of Utzon's views on function and functionalism has yet to be undertaken despite their unmistakably powerful influence on his work (see Utzon, 1978).

Photos: section model, exterior (10, including three of the construction), interior (5, emphasizing the ribbed construction).
Drawings: sketches (6), diagram showing the generation of the shell-vaults from the surfaces of spheres, elevations (2) of Utzon's intention for the acoustical canopies of both halls, glass wall section, plan over which the shell-vaults are superimposed.

Loyer calls the construction of the Opera House the major architectural event of the 60s in terms of the controversy surrounding it and its employment of untried technologies. This article is a useful if not exceptionally detailed recounting of the project's political history and Utzon's development of the design. The sketches shown are thoroughly captioned.


This overview and analysis of the architect's career includes a number of rarely reproduced illustrations of Utzon's work. Inclusively, by project, they are: four photos taken from Utzon and Faber, Tobias (1947) demonstrating analogies between plants and vernacular architecture; the Crystal Palace competition entry: site plan, and a model comparing the proposal for an exhibition hall to a photograph of tree trunks in a forest; Kingo: photo of the rooftops; Southern Sweden house types competition: plan and isometric; Hellebak: exterior photo from the northwest, and plan; Silkeborg: sketch in salt, roof plan, plan, elevation, section; Frederiksberg town plan: site plan; Elviria: sketch; section sketch, elevation; Odense University: site plan, site elevation; SOH: four conceptual sketches; Additive Architecture is represented by the Espansiva system, a Cultural Center for Farum, Jeddah Stadium, and a School at Herning.
The thrust of Lund's article relevant to Utzon is consistent with my sense that the statement of beliefs laid down in Utzon and Tobias Faber (1947) have guided the former's work since then. Lund writes, "they felt that modern architecture should be based on 'man's original sense of architecture, that which has always formed the basis of true architecture.' They attempted to elaborate this idea by pointing to the architecture of nature, 'as it is both clearer and simpler to perceive from the same perspective than all the various periods of architecture.' This vision of organic architecture was not an attempt to find a new idiom or work method."


The author, writer of a regular column for Architecture Australia, claims, somewhat facetiously, that Utzon's most profound influence on the built form of Australia occurred as the result of a desperate search by the Australian government around 1960 for a satisfactory model for public housing. It and its architects turned to Utzon's Kingo and Fredensborg housing projects for inspiration. MacLean goes on to explains why the courtyard house is not particularly suited to Australian mores.

Photos: exterior (4), two of which are unusual and unique to this article: one was taken from and is primarily of the roof, and the other shows the house under construction, with only the foundation and brickwork in place.
Drawings: plan, elevation.

In addition to a useful description of the siting and materials, there is reference to the 12 cm. module based on the long dimension of a single brick and used throughout the design, and mention of occasional overheating caused by the plentiful south-facing glazing

Photo: aerial view of the Opera House from the Harbor.

In an ably-reasoned argument, the author excoriates Utzon for his allegedly misguided and extravagant view of structural honesty-extravagant due to the architect's "inappropriate notion of 'honest' structural design." Mark favorably compares Sir Christopher Wren's work on St. Paul's to Utzon's in Sydney (he is
thinking specifically of the concealed chains and timber collar that are essential to the support of the London dome's masonry, and possibly of Utzon's opinion that Wren's dome is a deplorable example of structural deceit), and in his footnotes claims that what is substantially at issue, and in error, in Sigfried Giedion's defense of the Opera House in Space. Time. and Architecture, is that Giedion (and, by association, Utzon) "is insensitive to the issue of 'honest,' versus logical, hidden structure..."

Photos: Bagsvaerd: exterior (3), interior (3).
Drawings: plan with modular grid included.

McLean describes the siting, the layout of the exterior and interior, materials, and seating arrangements along with interpreted comments from Utzon and a quotation from Bagsvaerd's pastor. There is also an interesting description of state-subsidized, post-war church building and preservation in Denmark, the council for which had some authority over Utzon's design.


A Danish TV production which includes interviews with Utzon, and discusses the history of the Opera House up through the events leading to his forced resignation. Not seen.

Photos: exterior (3), interior (5), site plan, plans, sections.

By the end of the Paustians Hus project Jørn Utzon, Architects, had been renamed Jørn Utzon Associates, reflecting the significant roles of Utzon's sons Jan and Kim in the firm. The significant aspects of the design, however, are clearly attributable to the father (see Norberg-Schulz, Christian, 1989, and his recollected discussion with Utzon).

This is the best of the short articles (in terms of both text and illustrations) on the furniture showroom. The English summary in its entirety reads, "Paustian, a distributor and manufacturer of furniture, planned this store in the city's north harbor area; it was to contain showrooms, which should [sic] be used both as concert hall and exhibition hall, design ateliers, offices and a restaurant. Utzon's hall design is dominated by the vertical lines of its concrete columns. In the interior, the forest of columns supports asymmetrically-placed galleries which divide the space into separate areas yet allow a spacious atrium open to the exposed beamed ceiling and skylights. The restaurant is conceived as a walk-in sculpture: closely-spaced,
oversized columns form deep door jambs, with small windows above in the closed wall." A negative review of this project can be found in Frampton, Kenneth (1987).

Photos: site (2), exterior (7), interior including courtyards and often featuring furniture designed by Utzon (18).
Drawings: plan and section, both crude sketches, and amusingly labeled "'working drawings' for small house in Spain from Jørn to Denys [Lasdun, I presume]."

Essentially a photo essay (by Per Nagel--there is something of a nonlinear narrative quality to the sequence of photographs) accompanied occasionally by florid captions and fragments of text. Møller writes of the "design process" that "Utzon arrived here [at the site] early one morning, studied the surrounding landscape and returned the next day with a package of sugar cubes. On the table of a cafe in the little fishing port, he built a model of his house, which was later realized in fine sandstone ashlar..." Møller makes particular note that Utzon's sense of place defines his design approach, as opposed to the rather more typical method of working in a predetermined style, and recalls a local architect claiming Utzon understood the spirit of the place "even more so than our local architects."

Photos: Hellebæk: exterior; Middelboe: interior; Hjalmar Frank house: interior.

With only brief references to Utzon's use of wood in each of the three projects, this is significant for its inclusion of a photograph of the rarely published Frank House.


In its entirety, Mumford's dismissal of the Opera Houses reads: "but the advances of technology which have opened those breathtaking possibilities for new forms that Eric Mendelssohn so brilliantly anticipated in his imaginative sketches back in the twenties, have also revealed the possibility of two new architectural perversions. One of them is the utilization of sensational methods of construction merely to produce equally sensational form which have no purpose other than that of demonstration the aesthetic audacity of the designer. The external shell of the new opera house reveals this order of design; so for that matter, does the too-often quoted Guggenheim Museum . . . ."

Photos: the concourse and shells under construction (4), model of the sphere segments used to decide the shape of the shells, model of the interior emphasizing the acoustical canopy of the main hall, tile lids and their large scale application (3), concourse moment beams.

Drawings: sphere segments diagram, glass wall mullion elevation, master cylinder from which were to be generated the halls' acoustical canopies, section with canopy diagram.

The author, who worked on the Opera House under Utzon, brings a number of fresh insights into Utzon's thinking to this piece. The "unfinished story" of the article's title refers to the fact that while much of the exterior of the Opera House was completed under Utzon's tenure, almost none of the interior work had even begun. Myers excoriates "this now forgotten partnership" of architects who completed the interiors for their abysmal failure to even suggest the genius of Utzon's conceptions. A fair portion of the text is given over to examples of the brilliance and technical ingenuity of Utzon's executed work in Sydney, and through this Myers successfully bolsters his argument that in the absence of the original design for the interiors the Opera House is indeed an "unfinished story." He ends by noting that there exists substantial support for completely redoing the shells' interiors in accordance with Utzon's design drawings of three decades ago, now held in Sydney's Mitchell Library.


Drawings: competition entry: site plan, plans (5), elevations (3), sections (3), diagram of acoustical principles (2), perspective.

In addition to the competition drawings (reproduced here in their entirety) this article gives "the architect's specification" (the mandatory statement accompanying the entry) in full. Also reproduced is an extract of the general considerations of the jury, which included siting, "internal circulation and planning, and... whether the completed will have an architectural significance." The article closes with the complete comments of the jury, from January 29 1957, on Utzon's scheme.


One paragraph of text notes the sources of inspiration for and current status of each of five projects designed by Utzon Associates from 1987 onward. These are:

Paustians Hus: photos: exterior, interior (3), conceptual sketches (3), elevations (2).

Langelinie complex for the Copenhagen waterfront: model (3 views), perspectives (2).
An accurate if incomplete chronology of Utzon's works is appended.


Drawings: sketches (4), and diagram showing "Geometrical construction of the Major Hall shells."

Norberg-Schulz's introduction to this, the fifty-fourth entry in the Global Architecture series, recounts first the winning of the Opera House competition in the context of developments of that period (Le Corbusier's Ronchamp, Hans Scharoun's Philharmonic), then describes the project in the context of Utzon's development as an architect. A lengthy quotation from Utzon on the intentions behind his design are given, followed by the jury's comments. Norberg-Schulz closes with his interpretation of the building's power as residing "in the juxtaposition of solid base and hovering vaults,. the roof again becomes a manifestation of how man is on earth under the sky."


The author attempts to clear up a number of misapprehensions regarding the modern movement, particularly in regard to its attitude toward functionalism: "It is not correct... to put a sign of equation between "functionalism" and "modern architecture." In the writings of the pioneers of the modern movement the word "functionalism" does not appear, and when the need for a rational or scientific approach is asserted, it is generally added that it only represents one of the faces of modern architecture. In 1935 Gropius wrote:... rationalization, which many people imagine to be the New Architecture's cardinal principle, is really only its purifying agent... the other, the aesthetic satisfaction of the human soul, is just as important as the material." In this light Utzon, in the company of Robert Venturi and Paolo Portoghesi, is particularly noted for "the creation of authentic places," while Utzon alone is cited for making "a regionally valid modern architecture .... His juxtapositions of solid platforms and hovering roofs reveals a true understanding of what it means to be between the earth and sky."
In his introduction Norberg-Schulz describes Utzon's sketches in the context of a history of church, and for what they suggest about the architectonic space created from them at Bagsvaerd. A brief disquisition on contemporary church-making follows, concluding with the opinion that "a modern church should not copy this original solution [of the early Christian basilicas leading the visitor along a symbolic path towards Christ as represented by the altar], but it ought to offer an analogous explanation." Representative of a continuing theme in the author's work is his statement that Bagsvaerd "shows how modern architecture may visualize the qualities of a particular place." He closes by claiming that Utzon "has recovered the most difficult of all architectural images, the image of the church," and in this regard places him equal with Wright, Le Corbusier, Aalto, and Kahn.

Norberg-Schulz begins with a recollection of Utzon's friendship and association with Norwegian architect Arne Korsmo and their use of found objects in the Swedish archipelagos as the inspiration for a poem "describing the joy of our common spatial experience [---Utzon]." The author continues by describing Utzon's search after the essences of things themselves, both in nature, but also "through the many fragments of human activity, evidence of [specific] human participation in general contexts." These essences are then expressed, in part, by revealing their structure. Norberg-Schulz defines nature very broadly: "from the great cosmic context to the place itself, with its trees, rocks and beaches, not to mention light and the clouds of the sky." After relating this to Utzon's work at Sydney and Bagsvaerd, Norberg-Schulz concludes Utzon's basic thesis is: "Architecture as the meeting place of heaven and earth."

On Paustians Hus the author translates for us (as does Utzon) its inspiration in Danish beech forests into a sophisticated spatial experience. It is not "... the imitation
of forms... but more an interpretation of the essentials in harmony with time and place. He proves that an interpretation of this kind becomes a truth when actually built. His open building systems reflect nature's adaptive growth patterns, while still being the product of contemporary industrial production methods." Norberg-Schulz closes with the note that Utzon's sons successfully led the project's construction.


The author brings his customary intensity regarding what it means to dwell to this excellent essay on Utzon's vacation house in Mallorca. Norberg-Schulz is particularly sensitive to details and describes a plethora of them here, relating each to the specific sense of place he gains from the house. He also describes Can Lis in terms of Sigfried Giedion's claim, "contemporary architecture had to take the hard way. As with painting and sculpture it had to begin anew.... It had to reconquer the most primitive things, as if nothing had ever been done before." Norberg-Schulz states this "is exactly what Utzon does: he reconquers the most primitive things .... what we call the origin, that is, what is always valid." According to the author, "Utzon tells us that the origin resides in the place and in the human being: place with its topography, vegetation, light and "mood"; and man, who acts. interacts and dwells." I believe the last quote is Norberg-Schulz's interpretation of Utzon's work and writing rather than a recollected discussion.


Caution: The text is a weakly edited version of Norberg-Schulz's "Church at Bagsvaerd" (1981).
Photos: SOH: aerial view.
Drawings: approaches to the Opera House, section through the upper and lower concourse levels, Sydney Cove *circa* 1880.

As part of Ove Arup & Partners' commission to handle various engineering assignments for the development of Sydney Cove, Mutt examines the foundation work for the Opera House concourse and concludes it has held up well.

Nygaard, Erik. "Tre Hvide Huse i Herning [Three New Buildings in Herning]."

Of note here solely due to the site plan (p. 338) which locates Utzon's "Espansiva House," apparently the only surviving house of this type which was developed as a commercial demonstration of "Additive Architecture," and described at length in Utzon (1970).

Drawings: cartoon.

When no winner was declared in the open competition for the redesign of Copenhagen's telephone kiosks, the competition committee appealed to Utzon for a design. Nothing came of it.

pp. 30-31.
In French.
Photos: early model, concourse under construction, concourse beams (2).
Drawings: lateral concourse section-elevation (rarely published) elevations of concourse (2-also rarely published when depicting this phase of the work, competition site plan.

The author notes that the jury's selection of Utzon's scheme (characterized here particularly in regard to its contrast between the delicate shells and the massive base) on the grounds of its boldness and novelty is unlikely to be contested, but in so
doing also takes note of the difficulties that can arise when the architect's conception substantially proceeds the arrival of the engineer. The author declines to take into account the political pressure placed on the contractor to begin work on the foundation before the design was finalized in order to put an illusion of progress before an impatient public.

The entire issue is devoted to innovative structures.


Part of the regular feature "Today's News," this is a detailed account of the project's costs to date, and includes a table dated July, 1965 summarizing estimated future costs. Given that Utzon would resign within three months this is of particular interest for its notice of disagreements and points of contention.


Photos: model (a strangely retouched version of the wooden hemisphere model demonstrating the extraction of the shell-vault surfaces from a sphere), exterior (3, featuring the construction of the shells), the tile lids and their placement (7).

Drawings: site plan, elevation of major hall superstructure indicating all individual rib segment locations, keyed isometric of major hall shells, diagrammatic detail of side shells with tile lids and slabs partly removed, isometric of the major hall during construction indicating the relationship between the cranes, conveyers, erection arches, and structure, details of tile lids and lid placement (7), typical rib segment cross-sections (7), arch and side shell details (7).

As the reader may have decided based on its illustrations this article is concerned ("enamored" is probably the more accurate word) with Stage 2 of the construction: the structural and civil engineering work involved in raising the roof. After describing Stages 1, 2, and 3 of construction the text is keyed to the illustrations, noting weights, dimensions, and so on. The only flaw here is the minor credit Utzon receives relative to Arup for the roof design.

PAGON. "ciam." Byggekunst, n6-7 (1952), unpaginated.

In Norwegian.

PAGON was the acronym for the "progressive arkitekters gruppe, Oslo, Norge," the Norwegian branch of C. I. A. M. This is its statement on the need to reconsider contemporary approaches to mass-housing. The signatories, inclusively, and in order, are Carl Corwin, Robert C. Esdaile, Sverre Fehn, Geir Grung, Arne Korsmo, P. A. M. Mellbye, Hakon Mjelva, Christian Norberg-Schulz, Erik Rolfsen,
Odd Ostbye, and Jørn Utzon. I have heard the undocumented assertion that Utzon was informally involved in several CIAM projects.


Drawings: SOH: competition perspective.

A brief reference to Utzon occurs in the text of this lecture (including audience comments) given at a meeting of the Royal Institute of British Architects, January 10 1961: Pevsner quotes Pier Luigi Nervi describing the Opera House as "an eloquent example of the most straightforward anti-functionalism from the point of view of statics as well as construction." Pevsner also claims a visual affinity between the Opera House and Hermann Finsterlin's design for an Arts Center without making anything meaningful or even interesting of the purported likeness.


The Opera House is briefly mentioned as one of a number of recidivist designs giving away in its expressionistic vulgarity what the modern movement worked so diligently to accomplish.


This delightful photo essay follows Frampton, Kenneth, in the same issue.


Discusses Can Lis and Can Feliz. Not seen.


Utzon is described as the paradigm of an architect successful due to design work rather than to practical accomplishments. Prak emphasizes the Opera House to
the detriment of Utzon's other built work. While the author's intentions are not other than benign, his distortion of Utzon's career is unfortunate, and unfortunately fairly typical.

In Danish.

This brief note recounts the awarding of Israel's Wolf Foundation prize for architecture to Utzon, Sir Denys Lasdun and Frank O. Gehry. The Opera House and Bagsvaerd Church are mentioned in passing.

"Projet pour L'Opéra de Sydney [The Sydney Opera House Project]," Architecture d'Aujourd'hui, v28, n73 (1957 Sep), pp. 36-37.
In French.
Photo: model (3 views).
Drawings: competition entry: site plan, plans (2), section.

The one-column biography claims that Utzon worked on school buildings with Paul Hedqvist from 1942 through 1945, on rebuilding and restoration for Aalto in 1945 and 1946, went to the Nile Valley on behalf of Unesco in 1956, and has done sufficient work prior to winning the Opera House competition that he is expected to measure up to the task of realizing his winning design for this international competition.

Utzon has not discussed for publication the work he did for Hedqvist or Aalto, and in at least one respect the biography is in error. According to Schildt, Goran (1994) Utzon worked in Aalto's Helsinki office only from October 25 to December 5, 1945. Also, there is no evidence in the Aalto archives that he was involved in anything but new construction during Utzon's employment.

Rasmussen, Steen Eiler. "Ein Dane sieht die danische Architektur [A Dane Looks at Danish Architecture]." Bauen und Wohnen, v17, n2 (1962 Feb), pp. 53-56. In German.
Captions in English and French. English summary on the third of the set of unpaginated blue pages.
Photo: from a rooftop of the housing at Kingo. Drawings: SOH competition: plan, elevation, section.

The text is drawn from the German Architects' Confederation summer conference, 1961, where Rasmussen spoke on the subject "Modern Architecture in Denmark."

Rasmussen, one of Utzon's professor's at Copenhagen's Royal Academy of Fine Arts, notes in this rare published comment on Utzon's work that the Sydney
Opera House is a building "replete with rhythm, rising up like a flower in the horizon."


Of interest for the description of the damage done to Kuwait’s National Assembly Complex by Iraqi troops, specifically here the National Assembly Hall, and for the unilateral appraisal by the firm hired to renovate the interiors, Hellmuth, Obata & Kassabaum, that the "clean, modern lines of the original architecture of the space," required the insertion of elements with Islamic motifs.

In Italian and English.
Photos: exterior (4), interior (7).
Drawings: plan, elevation, section, section showing the vaulting's dimensioned cylindrical governors.

In addition to providing a handful of useful notes on construction and siting, the brief text states, "... strange it is, both in the outer skin so spare yet rich in tensions and the amazingly simple layout, in the incredible sculptural quality of the inner vault and the elegant and restrained details. It is, indeed, the product of a great moment of ripeness. While embodying the essence of the Modern Movement experience, it fully expresses the challenge and complexity of this period of transition.... it directly points to a new phase of making architecture." Rossi's photographs depict a narrative sequence of discovery, as described in part above.

Sandaker, Bjorn Normann, and Arne Petter Eggen. *The Structural Basis of Architecture*.
On Utzon: pp. 48, 93-95.
Drawings: Swimming Hall, Lake Peblinge: rendered elevation; Zurich Theater: section; LO-School, Elsinore: roof plan, section.

Chapter 4.4 of this survey of structural principles serving as the basis for architectural order is titled "Utzon's Moment Beams." After an explanation of Utzon's interpretation of the platform as an architectural element (drawn directly from Utzon, 1962), and the desire for contrasting its horizontality with a freer roof form, the authors describe the "folded beams with varying cross-sections" Utzon has used in all the projects noted as illustrated, above, with the exception of the Swimming Hall. As these are the only authors beside Utzon and Ove Arup to have investigated Utzon's work with structure other than at the Sydney Opera House, I am including their summary: "at the supports, the profile of the beams was nearly a T-shape, while
the middle of the span forms a U. In this way the beam's mass was moved to the region of the cross section where there was the most use for it. At the span's middle, where the moment was greatest, the mass was concentrated at the bottom to take up the tension in the beam's underside. When the moment diminished as it neared the supports, the bottom width of the beam's profile was reduced, and the mass was elevated as the profile neared the T-form."

In their separate page on the Swimming Hall project the authors' choice of illustrations is unfortunate, only barely suggesting their assertion that here "we have a complex that is characterized by structural order."

Photo: Bagsvaerd, nave.
Drawings: Bagsvaerd, section.

Utzon's designs are placed in the context of recent Danish architecture. Bagsvaerd particularly is described at some length, and Sigfried Giedion is quoted to buttress the author's contention that the church is an extraordinary building: "[Utzon] is able to have direct contact with the cosmic elements of nature and the past and also complete control of contemporary methods of industrialized production—especially prefabrication. As a result he is able to detach prefabrication from its purely mechanistic attributes and bring it nearer to the organic."

A useful bibliography on Danish architecture is appended.

Photos: exterior (3), interior (3).

Saville focuses on several aspects of construction without precedent in other architectural projects: the erection of the prefabricated, posttensioned shell-vault rib segments (which required the design and construction of special cranes); the making and fastening of the concrete tile lids; on the custom interior of white birch plywood (techniques and a radial saw were developed to cut curves into already curved plywood sheets); saws with inbuilt capacities for shaping the edges of fenestration as they cut; and the method of affixing glazing to the frame of the shells. In a different vein the author remarks on what I call the "connotative" placement of the shell-vaults' matte tiles in relation to the glazed tiles, where the matte tiles suggest the joints of the structural rib-segments beneath. Readers wishing to follow up on this tendency in Utzon's work will find the color photographs of Bagsvaerd Church's two tone exterior concrete paneling in Utzon (1981), of interest, particularly when compared with the Church in section.
Photos: model placed before the shells, exterior and interior emphasizing scaffolding (5).

On the development of the unique, arcuated scaffolding required to place sections of the prestressed roof segments.

In German.
Photos: models, exterior (2), interior.
Drawings: site/floor plan, plan, elevation, section.

The brief text notes that Utzon's entry, which won a closed competition in 1964, has been the subject of concerns over cost, and the feasibility of its roof structure. There follows a summary of Utzon's entry's response to this particularly rich, urban site.


Schildt, in an appendix, notes that Utzon worked under Aalto from October 25 to December 5, 1945. Two projects were begun that year in Aalto's office: a competition entry for Nynashamn Town Hall, in Sweden, and plans for "Negro Village," Huutoniemi, Vaasa. Text elsewhere states "in 1945 Aalto designed a central warehouse and packing plant for the [Oy Stromberg Ab] works." This information is especially useful given the routine error in most chronologies of placing Utzon in Aalto's office in 1945-1946, or 1946, and that elsewhere Utzon is also occasionally described as having worked on projects for Aalto that apparently never existed.


The minimal text emphasizes the serpentine arrangements possible with the Utsep Møbler system of modular furniture components. The photographs, plans and elevations appear as part of a longer article by Utzon (1970).

Photos show the Utsep Möbler system ("four seat elements and two backs") both as distinct components, and assembled into two distinct configurations. A more complete description of this project is given in Utzon (1970).

In Japanese. Contents page and captions in English. The pagination given in the contents page is inaccurate.
Photos: exterior under construction (2).
Untranslated.

This article is one of five appearing in this issue, pp. 3-36, under the heading "Special Feature: Sydney Opera House." See also Adachi, Kenji; Hoshijima, Kohei; Isozaki, Arata; Takeyama, Minoru.

"Scharoun, Aalto e Utzon in gara [Scharoun, Aalto and Utzon in Competition]."
In Italian.
Photo: site model.
Drawings: plan.

The three premiated entries (Scharoun first, Aalto second, Utzon third) into the competition for a theater in Wolfsburg, Germany are noted. In addition to Utzon's entry Scharoun's and Aalto's proposals are similarly illustrated.

Photos: SOH: exterior (6), interior (3);
Drawings: master cylinder, fragments of which were intended to provide the basis for the interior acoustical canopies; glass walls: section; competition entry: elevation.

Sharp gives the usual synopsis of the Opera House's history, but follows with a well-reasoned, albeit largely conjectural, hypothesis regarding the inspirations for its design.

Photos: SOH: exterior (9, many from unusual vantage points), interior (3).

In anticipation of its official October 20, 1973 opening this article reviews the project's history from 1954 through the present, emphasizing its early impetuses
(particularly in the enthusiasm and politicking of conductor Eugene Goosens, and Minister Cahill), the competition itself, "Utzon's solution," and cost increases, concluding: "the Sydney Opera House will stand as one of the most important additions to our architectural heritage to be completed in this century."

Photos: model, frontispiece of the shells under construction.

A comparison between the Opera House and Viljo Revolt's Toronto City Hall with more attention paid the latter. The author writes "Utzon's Sydney has been heaved with medieval effort into architecture of almost medieval mystery,..."

In Danish, captions in Danish and English.
Photos: Kingo: exterior (6), courtyard (3).
Drawings: Kingo: site plan, plans (2), sections (2), elevations (2). Fredensborg: site plan.

Following a history of the courtyard house as a "type," Skriver admires Utzon's translation of it into the "language" of Danish architecture, characterized here as an unpretentious use of materials and detailing. He is particularly taken with Utzon's manipulations of the type in a way which allows for the projects' ready adaptation to undulating terrain. Skriver also admires the delicate penetrations of perimeter walls so that they allow substantial screening without rending the public from the private, and the high density Utzon achieved which resulted in substantial common parkland for the residents.

Photos: exteriors (4), courtyards (2).
Drawings: site plan, two versions of house plans, section.

With the exception of an unattributed paragraph describing the general layout of Utzon's Kingohusene, sixty-three linked, single-family, low-rise, high-density court houses, this article is an abbreviated reprint of Skriver's "Gardhuse," (1959). The photographs are of good quality, taken directly from Skriver's negatives, with slightly different cropping.
In the context of American influence on young Danish architects Utzon's house in Hellebæk is characterized as "the most lucid and best among the buildings which broke with the nationally coloured wartime romanticism." Skriver goes on to discuss the architect's method of working. "[Utzon] says himself that it was the clarification of the structural details which had called for the greatest effort. The house, situated in a clearing of a small wood, is not designed in the usual way. Its proportions, the shaping of the rooms and other essential features have come about by way of experiments with a full-size model erected with laths and canvas on the spot." Utzon's influence on other Danish architects through his housing at Kingo is also noted.

Richly illustrated here are the SOH, the "competition project for the development of the Elviria district on the Spanish Mediterranean coast," "competition project for buildings for a world fair in Copenhagen," and "the first sketch for [Utzon's] own house in Sydney." The only unique drawing here is one of the Opera House shells posed against an orthogonal grid.

Skriver describes the South American landscape (with particular references to the Yucatan, and Uxmal), a mosque in Old Delhi, the Akropolis, a Chinese temple, and the generic traditional Japanese house, all of which were examined by Utzon (1962). Each of these with its use of a platform-like element is related to the projects illustrated.

In this extremely well-illustrated article (including photographs, models, and drawings) Skriver gives a tour through the architecture of preColumbian Mexico and discusses (briefly) its influence on the work of Utzon, Frank Lloyd Wright, Louis Kahn, and Le Corbusier. Particular reference is made to Utzon's interpretation of the preColumbian platform as the seminal architectural element in many of his projects.
With Roger Connah's criticism immediately following in the same issue this constitutes the most thoroughly illustrated report on Kuwait. See also Ciampoli, Dr. Marcello, 1984.

Skriver, a former editor of Arkitektur and long-time follower of Utzon's work, finds the assembly complex "beautiful and captivating." He describes it as exemplary of Utzon's Additive Architecture, noting that that concept insists that each element, while intended to dovetail with other elements, must also be detailed so as to stand alone. Other notes include a description of how Utzon solved both the programmatic and symbolic "tasks" of the design. Skriver writes, "so close to the gulf the lobby achieves a special use and monumentality without the use of affected symbols.... [Utzon] shows a respect for the Islamic building culture in both his spatial definition and treatment of daylight. He rewrites the Islamic architectural idiom in a contemporary language."

At the article's head, the "Architect" is listed as "Jørn Utzon Associates [previously Jørn Utzon Architects]," indicating the increasing involvement of Utzon's sons within the firm.


The first part of this richly illustrated book is given over (after a brief prologue) to a description of the various parts of the Opera House. Smith then discusses the decisions that led to the desire to build a hall for the arts, gives a history of Bennelong Point, describes the site, the design, Utzon's first visit to Sydney, the unusual early financing of the project (a regularly scheduled lottery), and the various methods of construction employed and invented. This is a useful if not very technical volume suited to the non-specialist, or to the reader interested primarily in the broad strokes of the story. Nonetheless the descriptions of the physical and organizational difficulties involved in putting the Opera House together are extremely well done, and while there is a dearth of technical or detail drawings, the descriptions somewhat compensate. Smith's overall tone is quite sympathetic to Utzon.


Not seen.
Photo: exterior. 

It is not clear what the author's point is. He writes, "The difficulties [in the Opera House's construction] may have been rooted in the general procedures used and therefore might have occurred in a conventional design process as well. As it turned out the building is a breathtaking work." Unfortunately he does not pursue or resolve this speculation.

In German. On Utzon: p. 557  
Drawings: plan, elevation, and section of Utzon's unbuilt scheme for an art museum in Silkeborg, Denmark.  

Of interest primarily for its context, a special issue of *Architekt* devoted to below grade design.

Sydney Opera House: an annotated list of sources (architectural drawings and models). Site:  

This site is an excellent resource for those who are particularly interested in attempting to view original documents.

Sydney Opera House: an annotated list of sources (monographs and serials). Site:  

A thoughtfully composed three page bibliography of the best technical and personal writings on the Opera House.

In Japanese. Contents page and captions in English.

Subtitled "A description of the engineering services," this article claims that given "the architect's strong plastic structure," conventional heating and cooling systems would not have worked, and notes that a sea-water heat pump was chosen due to aesthetic (it is almost entirely invisible to the casual spectator) and economic considerations. The concentration is on heating and cooling systems and their relationships to acoustical requirements.

Written just prior to the beginning of the interior work this reports states facts regarding the concourse's finishing, the shell construction, plans for the glass walls, and acoustic problems. The role of the computer in various stages of the work is emphasized.

In addition to the above illustrations sequence of eight photos of Bennelong Point taken from 1957 through 1972 is included, as are a rendering of the competition entry by A. N. Baldwinson, a diagram of spheres from which the form of the shells were taken, and two sketches, all of these under the headings "Genesis of an Idea," and "The Idea into Form."

This heavily captioned photo-essay is notable for its excellent photography, and its concise lists of facts regarding the project's consultants, structure, services,
finishes, and square footage of the main program areas. The four-page section titled "Sydney Opera House: Glass Walls Construction," is taken from Sowden, Harry, (1972).

Within this article is a separate piece of criticism by Heath, Tom.

"Sydney Opera House Concourse: Collaboration Between Architect and Engineer"
Photo: underside of the completed concourse.
Drawings: competition sections, diagrams of longitudinal layouts.

Caution: A summary of Ove Arup's speech of May 6, 1968 to the Institution of Civil Engineers (see Arup, 1968) focusing on the "demands" of the architect and the "difficulties" created by his aspiration to "have a structure 'truthfully displayed'." The tone of this summary is highly critical of Utzon whereas Arup's speech in its entirety is quite the opposite.

Photos: section model complete with miniature audience watching the second act of *Tosca* (3 views), exterior under construction (2).

Emphasizes the models that were built and attracted interest around Australia and suggests the Opera House will not be completed prior to 1968.


In summary, Szokolay's review of Duek-Cohen, Elias (1967) states, "it is clearly partisan, but in putting the case for Utzon, it helps to form a balanced view of what had happened .... it draws a portrait of Utzon as not only a great artist and perfectionist, but also a highly practical man with great technical skill.... this booklet - although not comprehensive - is a valuable contribution to the case history."

Takeyama, Minoru. "Pedagogical Architect: Jørn Utzon and the Sydney Opera House."
In Japanese. Contents page and captions in English. The pagination given in the contents page is inaccurate. Untranslated.
Photos: the Opera House under construction (10), all by Harry Sowden.
Drawings: competition scheme: plans (3), elevations (2), section; conceptual sketches (3); finished scheme: roof plan, elevations (4), sections (6); diagram showing
extraction of shells in elevation from sphere fragments; floor plans (6); section including concourse. Comparison in section and elevation between Utzon's designs for the glass walls and the walls as built.

This article is one of five appearing in this issue, pp. 3-36, under the heading "Special Feature: Sydney Opera House." See also Adachi, Kenji; Hoshijima, Kohei; Isozaki, Arata; Seike, Kiyoshi.


Takeyama summarizes Scandinavian [sic] architecture's rebellion in the 1930s against the tenets of strict functionalism, and states "in the past, in order to subjugate standardization, Aalto effected a union between standardization itself and irrationality. Later Utzon further elevated the method to the point where, surpassing function, it achieved a certain autonomous right." For Utzon's statements on Aalto and "flexible standardization" see Utzon (1983).


In presenting Utzon's third-place entry in this German competition the half-column of text describes the programmatic requirements and relates them to Utzon's conception as it appears in the illustrations.


Jon Lundberg, a former apprentice to Utzon, discusses the Dane's influence on his work in this interview.


This article illustrates ten of the unpremiated competition entries (Utzon's entry took third prize). The reference to Utzon describes his house in Hellebæk and
the manifestations of his philosophy in this competition entry, and is evidence of the interest Utzon's work was generating even this early in his career.


An interestingly overwrought description, upon the event of performances of _Aida_, of the ease with which it was staged without resort to a fly-tower (a frequent point of contention with Utzon's design). Thorne claims an important lesson of the Opera House is "one of understanding the function of a building and suspecting at all times that the client and user may not be able to truly express the conceptual function in anything but descriptions of conventional built forms."

"Utzon Gets the Gold." _The Architects' Journal_ (1978 Apr 12), pp. 674-675. Photos: por, SOH, Fredensborg, Can Lis, Bagsvaerd (all exteriors, one each), Utsep Møbler.

The single column of text appeared upon the occasion of the announcement that Utzon was to receive in June of that year the Royal Institute of British Architects highest honor, the Gold Medal. It gives highlights of Utzon's career and states that Utzon's citation (by RIBA, in their advisory to Queen Elizabeth II) praises his work for its "life-enhancing spaces, a fine sense of appropriate form and a quality and richness of means that is warm, humanly satisfying and that should endure."


The author gives a brief overview of what she considers to be Utzon's bipartite career: buildings such as the Opera House and the National Assembly Complex in Kuwait, conceived in "the grand manner," and his "simpler" work in housing and at Bagsvaerd. The Paustians Hus furniture showroom with its prefabricated construction is put in the latter category. Included in the article are comments on Utzon's work by Steen Eiler Rasmussen. Several remarks by Utzon on the impetus for his design and the rather informal design procedure itself follow.


In reporting on Utzon's forced resignation and the resumption of construction the emphasis here is on the disagreement between Utzon and Ove Arup with regard to
the latter's claim for "the structural impossibility of Utzon's acoustic ceilings."

It was Arup's report (published in Baume, 1967) that gave Davis Hughes, New South Wales Minister for Public Works, the leverage he wanted in order to impose conditions for the continuation of his work on the Opera House that were obviously unacceptable to Utzon. On recent sentiment in favor of gutting Peter Hall's interiors and rebuilding them according to Utzon's designs see Myers, Peter (1993).


Photo: model.

This announcement states "Denmark's first skyscraper will be a 44-story tower with apartments, hotel restaurants, offices and shops."


Photo: SOH: exterior.

Drawings: competition entry: section.

Caution: I have listed this and the next compilation to caution the reader against accepting on faith even the most basic material appearing in works of this kind. The Thames and Hudson entry is marred by serious inaccuracies such as its claim that Utzon worked for Gunnar Asplund for three years in Stockholm, when in fact Asplund regrettably had died two years prior to Utzon's gaining employment in the firm that bore Asplund's name.


Caution: The unnamed author states Utzon was a pupil of Alvar Aalto's (he was not. Utzon worked in Aalto's office from October 25 to December 5 in 1945), and that "grave difficulties in the construction of the [Opera House] shells [were] brilliantly solved by the engineers," when in fact Ove Arup has stated on a number of occasions that it was Utzon who both developed the scheme which allowed the Opera House to be built and made the early, crucial decision that the structure would necessarily require posttensioning.


In German and English.

Drawings: Silkeborg: plan drawn in salt, roof plan, plans (3), elevations (4), sections (4).
The impetus for this unexecuted project was the artist Asger Jørn's bequest of his art collection including the work of the group, Cobra, and his own work, to his hometown of Silkeborg, Denmark, and his specific request that a museum to house all of the above be designed by Utzon. Utzon's inspiration for the substantially underground design are the Buddhist caves in Tatung, near Beijing. Vindum takes the very interesting view that "in the ground, Cartesian geometry has lost its specific constructive reasons." The design is praised on the grounds that it embodies Asger Jørn's statement that no thing can be "isolated from the other in its function, where the borne can be bearing and the bearing borne." Of this Vindum notes somewhat obliquely that "ideological reasons for the organic form are thus made superfluous. Their reason lies in the situation," and that "in a formidable manner [Utzon's design] utilizes the fact that the specific formal and constructive characteristics of the cave are the antithesis to not only the Cartesian but also to the classical universe." Of the design Utzon is quoted as stating "I have been inspired to go further into free architectural forms, but at the same time to control the free forms by a geometry which makes it possible to erect the building out of mass-produced components."


The author claims that the house's siting by a pond and a canal have determined the architectural parti, or formal concept, of placing the living quarters well above grade. The architect's decision to work in plan on a three meter by three meter grid is commended as being in keeping with his decision to entirely prefabricate the concrete structural elements.

The detail photographs here have not been reprinted.


This work consists of forty pages of illustrations and six pages of text. Aside from several diagrammatic plans the illustrations are black and white photographs of excellent quality taken by Ross Westcott during Stage 2, the construction of the shells. Pat Westcott's introduction takes us through a description of the 1956 competition and Australian reaction to Utzon's winning entry. The site's history is mentioned, as are the foundation problems that resulted from the political decision to begin work before the designs were completed. Included are descriptions of prefabrication for Stage 2, the shells' geometry, the shells' ceramic tiling, and several quotations of Utzon describing his intentions for the play of light on the exterior that I have seen nowhere else.

The photographs and drawings throughout are beautifully done and often new. Weston has troubled to photograph many of Utzon's projects from the air and the results are at the least intriguing. Several projects rarely or never published are also presented, including the striking Hus Banck, Helsingborg, Sweden, 1958, and Hus Herneryd, also Helsingborg, 1958-62, the Madrid Opera House competition entry, 1964, an unrealized Art Gallery for U. C. L. A. at Berkeley, 1965, and a second project toward a Silkeborg Art Museum. Weston's unprecedented access to Utzon's archives also yields such treasures as early studies for Utzon's own house, intended for Bayview, Australia, 1963-64, and the colored sketches towards Bagsvaerd Church, Kuwait, and the Jetta Theater project. The Kuwait project in particular is well-documented, an important event given it is under appreciated, but the decision to merely reproduce the pages of Dr. Marcello Ciampoli's 1984 article, "Il complesso per l'Assemblea nazionale del Kuwait / The Kuwait national Assembly complex," is curious and unfortunate. Many of its illustrations are made too small in Weston's pages to be illuminating and Weston, no engineer, does not discuss in any real detail the marvelous feats of construction and engineering Ciampoli describes.

Weston's foreword states, "The fact that there has previously been no full account of Utzon's work is largely of his own choosing. Wary of falling prey to the kind of overly academic art history he distrusts, and dreaming some day of editing his own account of the work, he declined the many requests to co-operate with the production of a major monograph. This book also began without Utzon's involvement but happily, with the business of gathering material from forgotten sources and interviewing former staff well under way, he decided to give it his full backing.... Utzon has read the text, corrected errors of fact, and commented on aspects of interpretation [these latter appear scattered throughout Weston's text]." That Utzon chose not to alert Weston to the role of Mies (and Weston's notice of it is conventional, minimal, and vague) in his architecture does make Utzon's comments on Weston's interpretations throughout suspect.

Another difficulty is that Weston seems to accept Kenneth Frampton's peculiar opinions in *Studies in Tectonic Culture* as gospel, including Frampton's odd and unhelpful notion that Utzon's Kingohusene chimneys were inspired by "the wind-catchers of Iranian towns such as Yazd."

My particular quarrel is that this is not quite an architect's book. Significant architectural details for too many projects are absent or few, a regrettable omission from a book with a handsome budget.

Photos: model (2 views).
Drawings: site plan, plan, elevations (2), sections (2).
This "p/a news survey" reports public reaction to Utzon's scheme along with his comments on the design regarding the remarkably economical interconnections between the character of the site, fire safety requirements, the festive procession of the audience from various points into the halls, and his original intentions to have operable doors that in good weather would open the interiors of the halls to Sydney Harbor. Included is the jury's remark, "whilst this scheme substantially conforms to the conditions laid down, we are aware that it is open to many points of detailed criticism and a number of corrections would have to be made, but we feel that, at this stage, the general breadth of the imaginative concept is an overriding consideration..."

Photos: exterior (8), emphasizing both the variety of images possible when the shell-vaults are viewed from many angles, and their interplay with light. Eight more small photos depict parts of the building requiring repair.

The first part of this article draws on and responds to Robin Boyd's 1973 "A Night at the Opera House." There follows a section titled "Engineers on the Opera House Structure," which gives the results of Wilson's interviews with Henry Cowan, Lev Zetlin, and Harold Roper, all of whom were residents of Sydney during construction. Their comments are interesting and funny, combining factual with anecdotal information. Wilson continues with comments by John Zadaricchio, engineering services manager for the Opera House, and Tamas Bishop, a consultant, on maintenance problems both existing and anticipated as a result of the use of unprecedented construction techniques and materials. In "Summing up: value, price, and profit," Wilson closes with several barbs aimed at critics who have carped about cost overruns. His best shot is "risk taking is the stuff of great architecture.... we know that Phidias, the sculptor of the Parthenon, died in jail. Pericles, its developer, was banished from Athens. The cathedral at Beauvais fell down and was rebuilt three times.... like all great architecture, the [Opera House] was a bargain."

A chronology from 1947 through the Opera House's official opening on October 20 1973, taken from Yeomans, John (1973) trails along the bottom third of most pages.

Photos: exterior, interior (2).
Drawings: keyed plan, elevation, sections (2) including one with the vaulting's dimensioned cylindrical governors.

In this rare criticism of Bagsvaerd Winter makes the following complaints:
1) the plan is overly indebted to Louis Kahn's plan for his First Unitarian Church in
Rochester, New York. 2) Utzon has taken his palette of materials directly from Kahn, and 3) Utzon's use on the exterior of two differently toned concrete panels is a superficial architectural game, suggesting what transpires on the interior by denoting it on the exterior. In order, 1) Kahn at Rochester began with what he called a "form drawing," in plan. Utzon, as usual, began his design in section. The section sketches in turn suggested the direction the structure would take: toad bearing flanking walls, a system Utzon was familiar with from his design for Bank Melli, completed in 1959, well before Kahn would accept the commission for First Unitarian. Since the section, then the structure, then the site led to the plan, any superficial similarities in appearance are precisely that. Also, in the dimensions of the nave, both architects sought and found forces that, as Kahn might have put it "disprove the square." Kahn's nave is elongated away from the altar, Utzon's toward it. An enormous difference. 2) Utzon has expressed in numerous places his esteem for Gunnar Asplund (see, for instance, Utzon, 1978), and has expressed in particular admiration for the Woodland Crematorium (1935-1940). Asplund's palette there included both exposed and painted concrete, unstained wood, and fabric. This must be the lineage of inspiration, if such is truly the case, so it is hardly a matter of imitating Kahn. What is more, Utzon is willing to paint concrete, as he does at Bagsvaerd. Kahn would sooner have leapt from the top of his Yale Center for the British Arts. 3) I concede that Winter may have a point. I do not understand Utzon's choice here.

In Japanese, some captions in English.

This collection consists entirely of abridged translations of previously published material by Giedion, Sigfried (1965), and Utzon (1959, 1962, and 1965).

Photos: pors., models (2), exterior (1), interior (5), under construction (5), Bennelong Point in the early 1900s.
Drawings: keyed plan, keyed sections (2), rendering (not by Utzon).

Yeomans is nothing if not wide-ranging. We get everything from the complete text of Utzon's competition entry (rarely reproduced) to an opinion that part of the main hall's foyer must be "the finest place in the world" to enjoy a preconcert cigarette, to the number of tiles (one million, fifty-five thousand, nine hundred and forty one) used to cover the shells. One of the author's strengths is that he talked to everybody associated with the project. Organized loosely in approximate chronological order, Yeomans' version of the story is told almost entirely in the form of asides. This is not a complaint. His major themes include Utzon's progress with and thoughts on the design, problems encountered and sometimes resolved, and the political infighting prevalent through 1966.

Photos: pors., aerial view of Bennelong Point prior to construction, exterior (9), interior (8).
Drawings: sketch, isometric of roof under construction; competition entry: elevation.

Gerhard "Jack" Zunz was one of Ove Arup's two chief supervising engineers for the Opera House project, and he is not entirely complimentary here, depicting Utzon as brilliant, if flighty, in statements such as: "... it was probably just as well that Utzon's romantic concept flew ignorantly in the face of current engineering dogma.... however, taken as a whole, it functions pretty well."

In his text, prepared originally for a lecture with slides, Zunz provides an interesting focus for the events leading to the construction of the Opera House. Of them, and of the program as initially laid out in the competition brief, he writes "the stage was set for one of the most accidental, random and astonishing acts of architectural patronage of modern times."

On technical matters Zunz describes the advances in prestressed concrete technology and techniques, glass laminating and fixing, and computerized engineering applications generated by the project, but poses at several points the question, was it worth it? He answers, finally, "I don't for one moment believe that anyone can begin to estimate the benefit which Australia and in particular Sydney has derived from the construction of the Opera House. One only has to wander to the peninsula almost any time, day or night, and one finds scores of people - not theatre- or concert- or opera-goers, but ordinary people who just go there because it is such a marvelous place to visit."
CHRONOLOGY OF WORK AND WRITINGS

1944  Bellahøj Development Housing, Copenhagen, with Tobias Faber, competition entry, fourth prize
       Concert Hall, Ålborghallen, with Tobias Faber, competition entry, honorable mention

1945  Crematorium

1945-  WATER TOWER AND SEA MARKER, BORNHOLM  1952

1946  Crystal Palace, London, with Tobias Faber and Mogens Irming, competition entry
       Nissens House, Hellebæk, Denmark
       Housing and Town Planning sponsored by the Architectural Association, competition entry, 1st prize
       Community Center and Theater, Falköping, Sweden, competition entry, 4th prize
       Sports Center, Næstved Idræsarlaeg, Denmark, competition entry, 3rd prize
       Town Plan / Borås Bebyggelsesplan, Sweden, with Tobias Faber competition entry, honorable mention
       Community Center and Restaurant, Jutland, competition entry, 4th prize

1947  Housing, Morocco
       Paper Factory, Morocco
       Sports Center, Århus Idrætsanlag, Denmark, competition entry
       Central Railway Station, Oslo, with Arne Korsmo

       Utzon, Jørn, and Tobias Faber
       Utzon, Jørn, Tobias Faber, and Mogens Irming

1947-  Vestre Vika  Town Planning, Oslo, with Arne Korsmo  1948

1948  Housing Competition, Borås, Sweden
       School of Commerce, Göteborg, Sweden, with Arne Korsmo

1950  CHEMICAL FACTORY, COPENHAGEN
       WATER PUMPING PLANT, FARUM, DENMARK

1950-  OWN HOUSE, HELLEBÆK, DENMARK  1952
1951  Own House, Morocco

1952  Skoyen-Opsal Housing Development, Oslo, with Arne Korsmo, competition entry

          Utzon, Jørn, and PAGON "ciam"
          Utzon, Jørn, "Eget Hus ved Hellebæk

1952-     HOUSE FOR SVEND MIDDELBÆRE, LAKE FURESO, HOLTE, DENMARK
1953     HJALMAR FRANK HOUSE, VEDBÆK, DENMARK

1953  ARNUNG HOUSE, NÆRUM, with Bent Alstrup
      HOUSE, PRÆSTEvangen, HILLERØD
      Skaanske Low-Cost Housing, Skåne, Denmark, with Ib Molgelvang,
      competition entry, 1st prize
      Housing at Lund, Sweden, under the name of his own firm, Arton,
      competition entry
      Langelinie Pavilion, Copenhagen waterfront, competition entry,
          3rd prize

          Ascoli, Miles
          "Maison d'un architect aux Environs d'Helsinor Danemark"

1953-     HERSTAD HOUSE, VEDBÆK, DENMARK
1954

1954  ROTZAU LARSEN HOUSE, VEDBÆK, DENMARK
      HOUSE 1, RUNGSTED, DENMARK
      HOUSE 2, RUNGSTED, DENMARK
      Administration Center and 1000 Apartments, Stockholm,
      competition entry, 1st prize
      Town Planning and One Family Housing,
      competition entry, 1st prize
      Suspended Bridge, Oslo, with Arne Korsmo, competition entry

          Thomsen. Edvard

1954-     Elineberg Housing Estate, Elineberg, Sweden, with E. and H.
1960     Anderssen, competition entry, first prize

1955     LILLESØ HOUSE, LAKE FURESO, DENMARK (destroyed)
      FRANK HOUSE, VEDBÆK, DENMARK

          Dannatt, Trevor
1956  DALS GIRD HOUSE, HOLTE, NORTH ZEELAND
ARNUNG HOUSE

"Jørn Utzon, architekt, Hellebæk, Danemark"
"Vorfabriziertes einfamilienhaus in Middelboe, Danemark"

1956- SYDNEY OPERA HOUSE, AUSTRALIA, COMPETITION ENTRY,
1966  FIRST PRIZE

1957  Holiday Village for children with polio, Mallorca, Spain

"An opera house keeps in keeping"
"Bekroond entwerp operagebouw to Sydney"
"Danish Entry Wins International Competition for Sydney Opera House" 
"Habitation préfabriquée à Middelboe, Danemark"
"Halls of Music"
"Jeunes Architectes dans le Pays Nordiques"
"Jørn Utzon's Visit to Sydney"
"Nationaloperean i Sydney / National Opera House, Sydney"
"Projet pour l'Opéra de Sydney"
"Selearchitettura. Un panfilo per l'Auditorium: Progretto per l'Opera di Sydney"
"Sydney Opera House Competition," Feb 14* 
"Sydney Opera House Competition," Feb 28* 
"Sydney Opera House Competition," Mar 1* 
Utzon, Jørn,
"Why Utzon Won Sydney Competition"

1957- HOUSING ESTATE, KINGO, DENMARK
1960

1958  BANCK HOUSE, HELSINGBORG, SWEDEN
Danish Labor Party Education Center, Copenhagen, competition entry, 1st prize
LO Workers' High School, Hojstrup, Denmark, 3rd prize
High School, near Elsinore, Denmark, competition entry, 1st prize

Giedion, Sigfried
Utzon, Red Book

1958 - HERNERYD HOUSE, HELSINGBORG, SWEDEN
1962

1959  BANK MELLI, TEHERAN, IRAN
Town Plan for Fredriksberg, Denmark, competition entry, 1st prize
Pavilion Complex, World's Fair, Copenhagen, competition entry
Arup, Ove
Drexler, Arthur and Wilder Green
Nervi, Pier Luigi
Skriver, Poul Erik
Utzon, with Keld Helmer-Petersen

1959- 1960 Plan for the New Town of Birkehoj, North Zeeland, Denmark

1960 National Museum, Copenhagen, competition entry
Town Development Plan for Elviria, Denmark, competition entry
Shopping Center, no location given

Utzon, "Court Houses at Elsinore, Denmark"
Keys, Peter and Mowbray, Trevor

1961 Carter, John
Keys, Peter and Mowbray, Trevor
"L'Opera de Sydney"
Monies, Finn
Pevsner, Nikolaus
Skriver, Poul Erik
"The Sydney Opera House"

1962 Project for an Airport, no location given
Project for a Platform-Courtyard House, no location given

Utzon, Jørn, The Yellow Book
Utzon, Jørn, "Platforms and Plateaus"
"Atriumhauseidlung in Kingo"
"Atriumhuizen te Helsingor in Denemarke"n
"Austellung in Bern"
Goddard, Ralph J.
Keys, Peter and Colin Mowbray
Rasmussen, Steen Eiler
Skriver, Poul Erik
Whitbread, R. E. and Miss M. A. Parker

1962- 1963 HOUSING ESTATE FOR FREDENSBOURG, DENMARK
1963 Silkeborg Art Museum, Silkeborg, Denmark

Faber, Tobias
"Fire eenfamiliehuse uden statslan"
Giedion, Sigfried
Mumford, Lewis

1963- Own House, Warringah Shire, Sydney, Australia
1964

1964 State Theater Complex, Zurich, Switzerland, competition entry, 1st prize

"Architektur Heute: Schauspielhaus in Zurich"
Grundfest, P. J.
Hoganas
Skriver, Poul Erik
"Terraserne, Fredensborg"
Utzon, Jørn

1965 Art Museum, Berkeley, California

Arup, Ove
Giedion, Sigfried
Jørn Utzon (exhibition catalog)
Keys, Peter and Colin Brewer
"Opera House Report"
"Scaffolding for the Sydney Opera House"
"Schauspielhaus in Zurich"
Skriver, Poul Erik
"Sydney Opera House"
"Sydney Opera House Taking Shape"
"Utzon i Bern og i Zodiac"
Utzon, Jørn, “Roof Tiles”
Utzon, Jørn “Three Buildings by Jørn Utzon”
Westcott, Pat and Ross Westcott
“The Work of Jørn Utzon”

1966 Theater, Wolfsburg, Germany, competition entry, third prize
Town Center for Farum, Denmark, including Cultural Center, competition entry

Utzon, Jørn
Arup, Ove, and G. J. Zunz
Boyd, Robin, "Breaking Point in Sydney"
"Split in Sydney"
"Utzon: The End"
"Competition for a New Theatre for the City of Wolfsburg"
"Debut Works of Architects"
"Jørn Utzon," Bauen und Wohnen
"Jørn Utzon," Cross-section
"Jørn Utzon und die Partsien"
"Konkurranseutkast til Oslo Sentralbanestasjon"
Lund, Nils-Ole
"Scharoun, Aalto e Utzon in gara"
"Simple Symbol"
"Subject is Danish Architect Jørn Utzon"
"A Sydney"
"Sydney Break Final?"
"Theater-Wettebewerb Wolfsburg: Ein Dritter Platz: Jørn Utzon, Hellebæk"
"Utzon abbandona l'Opera di Sydney"
"Utzon Resigns in Sydney"
"The Utzon Story: Sydney Opera House to be Completed by P. Hall"

High School, Odense, Denmark, competition entry

Arup, Ove
Baume, Michael
"Bank Melli, Teheran"
Carter, John
Curtis, Robert Emerson
Duek-Cohen, Elias
Giedion, Sigfried
Hellard, R. Baden
Hoffmann, Hubert
Illosure, Arvi
Mareli, H.
"opera house, Sydney"
Pevsner, Nikolaus
"Sydney Opera House"
"The Sydney Opera House: What Happened and Why"

1968 AHM HOUSE, HARPENDEN, ENGLAND

Arup, Ove N.
Arup, Ove N., and R. S. Jenkins
Carpenter, J.
Faber, Tobias, A History of Danish Architecture
Faber, Tobias, *New Danish Architecture*
Fogh, Frederik
Gray, Use
Gretton, Robert
Keys, Peter and Colin Brewer (Apr., Jun., Aug., and Oct.)
"Nuovo Design Danese"
Schmidt, Torben
"Sculptured Furniture by Utzon"
"The Sydney Opera House Concourse: Collaboration Between Architect and Engineer"
Szokolay, S. V.

1969  PROTOTYPE FOR ESPANSIVA TIMBER COMPONENT HOUSE SYSTEM, GAMMEL HELLEBÆK, DENMARK
INSPECTOR'S HOUSE, HERNING, DENMARK
Educational Center with Technical College, Herning, Denmark
Landscape Study Museum, competition entry

Arup, Ove and G. J. Zunz
Baker, S. H.
"The Sydney Opera House"
"Teatro dell'opera di Sidney"

1969-  CHURCH AT BAGSVAERD, DENMARK
1976

1970  Utzon, "Additive Architecture"
"Da Sydney"
"Great Builders of the 1960s"
Keys, Peter and Colin Brewer
Takeyama, Minoru

1971  Arup, Ove
Giedion, Sigfried
Loyer, Françoise

1971-  OWN HOUSE, "CAN LIS," PORTO PETRO, MALLORCA, SPAIN
1973

1972  Compagnoni, Peter
Drew, Phillip
Duek-Cohen, Elias
"Heating and Cooling Sydney Opera House"
"Inspector's House by Jørn Utzon"
Keys, Peter and Colin Brewer
Koppers, Co.
Saville, Peter
Sowden, Harry

1972- NATIONAL ASSEMBLY COMPLEX, KUWAIT, COMPETITION ENTRY,
1981 FIRST PRIZE

1973 Utzon, Jørn
Adachi, Kenji
"Almost Ready to Sail on Cultural Seas: Opera House Called Engineering Marvel"
Andrews, George F.
Boyd, Robin
Croft, D. D. and Dr. J. A. Hopper
"A Day at the Opera"
Dryver, F. and J. M. Waldran
Heath, Tom
Hoshijima, Kohei
Isozaki, Arata
Jencks, Charles
Kuhne, Gunther
Rontgen, F. E.
Seike, Kiyoshi
"Shells of Sound"
Stephenson, K.
"Sydney Opera House"
"Sydney Opera House: Cathedral of Culture"
Takeyama, Minoru
Yeomans, John

1974 "Arbasino sull'Opera di Utzon a Sydney: un vittoriano"
"L'intemo e ancora migliore: Teatro dell'opera di Sydney"
Joedicke, Jurgen
Smith, Vincent
Sweatman, K.
"The Sydney Opera House"
van de Velde, C. W. G.
Waldram, J. M.

1975 Sydney Opera House
Thorne, Ross

1976 Giedion, Sigfried
Vinson, R. J.
1977  Utzon, Jørn
      Aldington, Peter
      Bagsvaerd kirke
      Kirschenmann, Jorg C.

1978  Utzon, Jørn
      McLean, Phillip
      Swallow, J.
      "Utzon Gets the Gold"

1978-  Public Swimming Pool and Recreation Center, Copenhagen
      1980

1979  "Kaleidoscope: a Church that Changes with the Quality of Light"
      Spreiregen, Paul D.
      "Utzon, Jørn"
      Winter, John

1979-  Heart Society Health and Recreation Center and Village, Vendsyssel,
      1981  Denmark

1980  Utzon, Jørn
      Breyen, Mogens
      Ellem, Lucy Grace
      Norberg-Schulz, Christian, "Sydney Opera House"
      Norberg-Schulz, Christian, "Towards an Authentic Architecture"

1981  Utzon, Jørn
      Bartholomew, John R,
      Frampton, Kenneth
      Norberg-Schulz, Christian
      Sanderson, Edith

1982  "Bagsvaerd Church"*
      Frampton, Kenneth
      Gardiner, Stephen
      Helmer-Petersen, Keld
      "Jørn Utzon's House, Porto Petro, Mallorca"

1983  Utzon, Jørn
      Frampton, Kenneth
      Myers, Peter and R. LePlastrier
1984
Utzon, Jørn
Doumato, Lamia
Johann W.
Ligo, Larry L.
Prak. Ned L.
Thiis-Eversen, Thomas

1985
Langelinie Hotel and Congress Center, Copenhagen
Arup, Ove N.
"Hotel og kongrescenter på Langelinie"
Lund. Nils-Ole

1985-
PAUSTIANS HUS FURNITURE SHOWROOM, COPENHAGEN,
1987
UTZON ASSOCIATES

1986
Connah, Roger
Curtis, William J. R.
Holgate, Alan
Møller, Henrik Sten
Nutt, John
Skriver, Poul Skriver
"Utzon, Jørn"

1987
"Casa in Porto Petro, Mallorca, Jørn Utzon (1971-72)"
Curtis, William J. R.
Frampton, Kenneth
Nygaard, Erik
"On the phone to Utzon"

1988
Danish Museum of Modern Art, Fredensborg, Denmark, with Jan Utzon
Hotel at Kalundborg, Zeeland, Denmark

Utzon, Jørn
Connah, Roger
"Competitions, Architectural Design International Competition: The Opera
House, Sydney, Australia"
Davidsen, Lene and Susanne S. Kirkfeldt
Haan, Hilde de
Larsen, Esben (Mar., and Oct.)
MacLean, Ross
Montaner, Josep Maria and Josep Mora
Skriver, Poul Erik
"Utzon's Latest"
Zunz, G. J.
1989  Esbjerg Concert Hall, Jutland

"Aeldre-, almennytttge og andelsbdiger j Billund bymidte"
Dirkinck-Holmfeld, Kim
Luundgaard, Boje
"Mobelhaus in Kopenhagen
Norberg-Schultz, Christian
Wilson, Forest

1990  "Una chiesa e une spazio espositiva"
Larsen, Esben
Mark, Robert
Norberg-Schulz, Christian
Rossi, Lamberto
Thurell, Soren

1991  Brandtli, Matteo
Faber, Tobias,
"Jørn Utzon: the vision of nature"
Langelinie: On the Copenhagen Waterfront"
"Mobelhaus in Kopenhagen"
"The Next Generation"
Norberg-Schulz, Christian (2)
Sharp, Dennis
"Silkeborg"
Suhrbier, Hatwig
Utzon’s glass vision"

1991- OWN HOUSE, "CAN FELIZ," MALLORCA, SPAIN
1995  

1992  "Firms form worldwide network"
Frampton, Kenneth
"Pris til Jørn Utzon"
Sandaker, Bjorn Normann and Arne Petter Eggen

1993  Christiansen, Jorgen Hegner (Jul., and Sep.)
Helesinger, Kathryn B. and George H. Marcus
Jackson, Paula Rice and Durston Saylor, "Kuwait Live"
Jackson, Paula Rice and Durston Saylor, "Team Kuwait"
Myers, Peter
Richards, Kristen
Rocca, Alesandro
Vindum, Kjeld (Apr., and Jun. 15)
<table>
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<tr>
<th>Year</th>
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<tr>
<td>1994</td>
<td>Schildt Goran</td>
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<td>Michael, Pi</td>
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<td>1995</td>
<td><em>Drew, Philip</em></td>
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<td>Frampton, Kenneth</td>
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<td>Norberg-Schulz, Christian</td>
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<td>1998</td>
<td>Dellora, Daryl, and Ian Wansbrough</td>
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<td>2000</td>
<td><em>Pople, Nicolas</em></td>
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<td>“Sydney Opera House”</td>
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<td>“Sydney Opera House”</td>
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<td>2001</td>
<td>Kiser, Kirsten</td>
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<td>2002</td>
<td><em>Weston, Richard</em></td>
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Chapter 1. Introduction

As I remark, Utzon's own house is also his first and as such is critically important to his reputation and fledgling practice. Hus Middelboe, largely prefabricated, stands out strongly from Utzon's other work, which at the time employed fairly conventional methods of construction. The Kingohusene was Utzon's first large project, and as such a proving ground for his striking conceptions of space, interrelation, and community. Most architects will also describe their first medium or large-scale projects as critical toward demonstrating to future clients that they are able to handle a significant budget.

It might further be fair to say the compulsive violence of change at Holte was successful enough in what it begot that it left Utzon with nothing else to demonstrate through opposition.

Links otherwise made between Utzon's architecture and that of Mies are only cursory, and typically misleading. Kenneth Frampton is one of the few authors who describe Utzon as at all Miesian, but in spite of the seemingly bold juxtaposition of an elevation of Utzon's unrealized paper factory in Morocco (1947) against an oddly tinted photograph of Mies's Wolf House in Guben (1926) on the cover of his Studies in Tectonic Culture, Frampton never relates these two works in his text, and his discussion of Mies's influence on Utzon is confined entirely to pages 253 and 254, and then only generally in remarks such as, on page 253, "While Wright was to exercise an obvious influence on Utzon [a claim the particulars of which I reject in chapter nine, under "Frampton..."], the impact of Mies was equally decisive, despite the latter's distance from the ideology of organicism. Mies's early I. I. T. work seems to have made an impression on Utzon at a number of fundamental levels...."

Since Frampton offers not one specific in this regard there is nothing to argue. He does make a curious assertion in Studies in Tectonic Culture, page 254, claiming, "the contrapuntal, pinwheeling nature of the plan [of Hus Utzon]... recalls Mies's brick Country House project of 1923." One can only wonder how Frampton discerns a pinwheeling aspect to the cautiously balanced, static outline of Hus Utzon as realized, the plan to which Frampton in fact alludes (figure 2.27) and which manifests rather as an amputation or truncation of Mies's work, as I discuss in chapter two.

Richard Weston is another author who links Utzon to Mies, but perfectly vaguely:

The influence of Mies is just as evident as that of Wright, and Wistisen [Preben Wistisen, the engineer advising on Hus Utzon] recalls that when money was exceptionally tight at the start of the project, Utzon nonetheless could not resist buying some expensive off-white Thai silk for the curtains - similar to the Shantung silk in the Farnsworth house - which, to his delight, he had just discovered in a shop in Copenhagen. The influences may be obvious - openly acknowledged or hinted at by Utzon - but the synthesis is his own, and the house contains, in embryo, several of the
architectural themes that would occupy him throughout his career.

In Weston, *Utzon: Inspiration, Vision, Architecture* (Hellerup, Denmark: Editions Blondal, 2002), page 67. Weston, imitating Frampton's claim (not the only time this happens) for Utzon as emulating Mies's "abstract aesthetic" (and which I also dispute in my second chapter), adds later, "... the doors are full-height in the Miesian manner."

4 Such claims are legion. One of the more recent comes from the otherwise astute Jeffrey Kipnis:

The tectonic expression of the Farnsworth House makes the formal synthesis clear while also frankly and honestly displaying the structure of the house, an effect devoutly desired by modernists on moral grounds.

From Philip Johnson, *The Glass House*, David Whitney and Jeffrey Kipnis, eds. (New York: Pantheon Books, 1993), p. xxvii. As I show in chapter three, the majority of the structure of the Farnsworth House is not frankly and honestly displayed, but rather is painstakingly concealed.


7 in order,


The different arrangements of architecture and poetry also make "readings" of the former largely senseless. Most interesting architecture is not processional, and therefore does not reveal itself to the viewer in a particular order which can be specially arranged by the architect. Nor other than rarely can one element be placed in order to enrich the meaning of another element guaranteed to have been seen previously. Further, the experience of architectural space is not much like the experience of reading a poem. Erroneous conflation of different definitions of the word "space" does seem the peculiar and misleading province of academics.


Chapter 2: Jørn Utzon and Mies van der Rohe: Hus Utzon and the Barcelona Pavilion


It was barely architecture at all; it was like the merest diagram of an idealized reinforced-concrete frame structure, the sort of thing that used to appear in worthy books claiming to instruct lay-people in the fundamental principles of modern architecture, an image as familiar as any of the other older furniture of my mind. But, looking through the open spaces defined by its square members to the closed bulks of the cylinders behind, I seemed to be seeing something else, equally familiar, but not observed in so perfectly abstracted a form before: the very essentials, the “ultimate metaphysic of form” of the high period of the International Style around 1930, as summed up in the “Two Geometries” of Le Corbusier; the “dialectical confrontation between sculptural forms and gridded space” of which Richard Etlin has spoken and which I suggest is a European derivative of the closed forms of American industrial storage containers and of the openly gridded loft space of regular American factories.

Etlin has said to me that while he did not think Le Corbusier’s remarks in this regard had been anywhere formally explained or explored, the idea of the ultimate metaphysic of form and its attribution to Le Corbusier was not uncommon in the architecture studios at Princeton led by Kenneth Frampton in the 1960s. The phrase appears as a trivial aside in Wilhelm Worringer’s *Egyptian Art* (London: G. P. Putnam’s Sons, Ltd., 1928).

17 Given Utzon’s fascination with Mies I cannot rule out as possible sources for the Langelinie competition entry Mies’s Competition project for a Glass Skyscraper, Friedrichstrasse, Berlin, 1921, or his Project for a Glass Skyscraper, Friedrichstrasse, 1922.


The limestone floor beneath the pews for the next of kin, for example, are abstractly decorated within a field corresponding to the carpet. All symbolism has been avoided. [The Crematorium has a predominantly non-denominational character.] The pattern merely provides a steadying, friendly and affectionate response to the gaze in search of something to focus on at a difficult moment. The importance of this detail is widely attested.

Of this episode Utzon never says very much. The following, from his speech to the Royal Institute of British Architects (Utzon, 1978, p. 427) is typical: "I only worked a short time with Aalto. But, again, it is not very necessary to get into an architect's way of dealing with architecture when you like what you see."


The best attempt is made by Fromonot, Françoise in her *Jørn Utzon: the Sydney Opera House*, translated by Christopher Thompson (Corte Madera, CA: Electra / Gingko), pp. 154-5:

In 1962, dissatisfied with the somewhat conventional solutions proposed by [acoustic consultant Vilhelm Lassen] Jordan, [Utzon] engaged the renowned, Berlin-based, acoustic consultants, Lothar Cremer and Werner Gabler who had been responsible for the acoustics of Scharoun's Philharmonie, then under construction. In order for the "stepped cloud" design to more accurately reflect the path of the soundwaves, Gabler suggested replacing the sweeping concave curves with convex arcs of more modest radius. Utzon sketched a modified scheme incorporating this suggestion and introduced the concept of a ceiling formed by the intersection of theoretical cylinders of different radii where the position of the centres would be determined from the acoustic profile established by the consultants. This principle echoed the "visual acoustic" claimed by Le Corbusier for the massive curved walls of his Ronchamp chapel and the similar explanation given by Aalto for the undulating ceilings of his Viipuri library. But Utzon was to advance this principle by making identical the cylinders generating the form of his ceiling. By portraying the ideal acoustic profile with the aid of a single geometry, he was able to integrate into the ideas of his elders his conception of the constructive dimension.

Why this last regarding "the constructive dimension" might be so Fromonot does not indicate. I address the issue of mass-production in both Utzon's and Aalto's ceilings in my fifth chapter.

The outcry against Ronchamp was in places fierce. A particularly strong expression against it can be found in James Stirling's articles for *The Architectural Record* in 1955 and 1956. Stirling wrote,

It may be considered that the Ronchamp chapel being a "pure expression of poetry" and the symbol of an ancient ritual, should not therefore be criticised by the rationale of the modern movement. Remembering, however, that this is a product of Europe's greatest architect, it is important to consider whether this building should influence the course of modern architecture. The sensational impact of the chapel on the visitor is significantly not sustained for any great length of time and when the
emotions subside there is little to appeal to the intellect, and nothing to analyse or stimulate curiosity. This entirely visual appeal and the lack of intellectual participation demanded from the public may partly account for its easy acceptance by the local population.


26 Ibid. Faber continues,

...and his [Mies's] less excitable concept of architecture as something to be found in logical well-analysed buildings with a static quality; looking for simple solutions and for absolute beauty in systems of construction, geometrical forms and rules of proportion, at the same time exploiting the possibilities of industrial production and the precision-work of machines.


30 Utzon, "Eget Hus...", p. 80.

31 Utzon writes, in "Eget Hus...", p. 80,

Full-scale models of canvas and wooden boards gave us a sense of the house's necessary dimensions, given our maximum of 130 meters squared, and let us explore contact with nature and the spaces surrounding us: sun, views, shelter, and so forth. As a result of modeling we arrived at the principle of a house entirely closed to the north and entirely open to the south.

Poul Erik Skriver, without mentioning his source, asserts,

The house, situated in a clearing of small wood, is not designed in the usual way. Its proportions, the shaping of the rooms and other essential features have come about by way of experiments with a full-size model erected with laths and canvas on
the spot.


32 Utzon, "Eget Hus...," p. 80.


35 Utzon, "Eget Hus...," p. 80.

36 David Spaeth, *Mies van der Rohe* (New York: Rizzoli, 1985), p. 63. Arthur Drexler writes, "The Barcelona Pavilion, as it has since been called, was without practical purpose. No functional program determined or even influenced its appearance. No part of its interior was taken up by exhibits: the building itself was the object on view...." In Drexler, *Ludwig Mies van der Rohe* (New York: George Braziller, Inc., 1960), p. 19.

37 Illustrations of these projects would have been readily available to Utzon. The Concrete Country House, for example, made its first appearance in Walter Gropius' *Internationale Architektur*, the first of the Bauhausbücher, published in Munich in 1925 by A. Langen. For this particular reference, and for its value as a comprehensive guide, I am indebted to David Spaeth's excellent *Mies van der Rohe: an Annotated Bibliography and Chronology*, foreword by George Edson Danforth (New York: Garland Publishing, 1979), 280 pp.

38 as in Utzon, "Eget Hus...," p. 79.

39 I am using the plan for the Barcelona Pavilion based on the drawing made by Mies's office for publication in 1929, and which was widely republished through 1964 when Werner Blaser's reconstruction of the plan appeared more credible--but, as Wolf Tegethoff writes, there are obvious errors in Blaser's drawing. These in turn are corrected in plate 10.7 and pp. 70-72 of Tegethoff's *Mies van der Rohe: The Villas and Country Houses*, trans. by Russell M. Stockman (Cambridge, Mass.: The MIT Press, 1985, originally published in German in 1981 by the Kaiser Wilhelm Museum der Stadt Krefeld). The most recent word as of this writing belongs to *Mies van der Rohe: Barcelona Pavilion*, by Ignasi de Solà-Morales, Cristian Cirici, and Fernando Ramos (Barcelona: Editorial Gustavo Gili, S.A., 1993), where the actual reconstruction of the Pavilion between 1981-86 is thoroughly recounted. The plan of the reconstructed Pavilion is given on p. 29, figure 54. The difficulties in establishing the exact plan as realized in 1929 is described particularly on
pp. 9-13 and 26-29. The authors conclude that given the rushed job of design and construction, and the large number of last-minute changes made, that no absolutely definitive reconstruction of drawings or pavilion is possible. In all events I am using the plan that would have been readily available to Utzon around 1950 to 1952.


41 For example the House with Three Courts, which imagined a solid wall three wythes thick. Mies’s brick walls in his one family houses, and in the court house and row house projects of the thirties, are almost invariably solid or intended as solid, not cavity walls.

42 Since I am for the moment emphasizing functional considerations of the most straightforward kind having to do with issues of basic comfort and physical access, I am less than sanguine about Utzon’s decision to sheath the north wall’s interior in wood, essentially eliminating it as heat sink. Also, Faber, in A History of Danish Architecture sees the North wall’s solitary break (made in order to create an entry from the carport) as disadvantageous, and considers the absence of fenestration in the bedrooms awkward (each is top lit through a plastic dome described by Utzon, rather optimistically, as “self-cleaning”). The toplit bedrooms are an experiment Utzon does not repeat and it seems to me it is only with the North wall that the more formal receives attention at significant cost to the more functional.


45 Faber, A History of Danish Architecture, p. 207.

46 That is, if the term "abstract aesthetic" in fact has much meaning. The great majority of interesting things in architecture are abstract or predominantly so rather than figurative, and in that light most architects can be said to work with or within an abstract aesthetic. Further, Utzon does nothing in his treatment of wood in his own house that suggests he is attempting to reduce its presence as a distinct material.


49 I do not want to completely foreclose on the possibility that Utzon may also be turning to Aalto to establish a difference with Mies. Schildt's explanation is useful:

Aalto...starts with the empirical experience of space and objects, that is to say the perceptual phenomena studied by Gestalt psychologists. Here we have a question of space which is neither complete nor coherent, but consists of scattered contrast between separate elements [italics mine].... In my opinion Aalto's most individual contribution to modern architecture is his superb faculty for applying this principle in the interior of the buildings, in 'the inner landscape' which he so often used.

From "Alvar Aalto and the Classical Tradition," pp. 128-129. The problem is that there is little if anything that could pass as less than complete or coherent in the interior of Hus Utzon, nor is there anything which suggests itself as part of a "scattered contrast."

50 To briefly bring in other of Mies's work here, at Haus Tugendhat the major columns, as at the Barcelona Pavilion, are cruciform, and in some cases remain entirely separate from the walls. Haus Tugendhat's living room exemplifies Mies's interior work of this period of his development, and Utzon's decision to render the structure and fenestration of the south wall of Hus Utzon as a unity both decidedly contradicts the arrangement of Haus Tugendhat, and may further belie his statement of indebtedness in "Eget Hus...." Its form, construction, and the space conception it embodies could not be less like Mies's. For Mies, columniation precisely, denotatively, and decoratively marks intersections of lines infinitely long, infinitely straight. His precisely isolated columns stand as exclamations marking intersections, and the diminished presence of the fenestration, now absent its traditional frame, and supported only by the slenderest mullions, dilutes an interpretation of it as an edge, a termination of interior space, and therefore of the construction itself as an hermetic object in the landscape now absent one of its expected frames. For Utzon the integration of wall and fenestration with columns, the presence of which is heightened by blackening them with aniline dye, further deflates this ideal of extensiveness, of an eternal open-endedness and in this deflation embodies, rather than depicts. As Carlos Vallhonrat (citation lost) observes:

Here on earth the unidirectional pull of gravity dictates mathematically quantitative restrictions on the characteristics of materials and the limits of the stresses they can bear. These restrictions, in turn, determine dimensional matrices for materials and, with the notion of limits, comes the notion of edges [italics mine].... We are thus presented with the counterpoint between, on the one hand, equal increments, zero weight, the very notion of infinity [in the idealized grid], and on the other hand, gravity, incremental stresses, and the notion of boundaries. Then it is not contrived
to say that gravity is bound space. Gravity makes us go from here to there. There is nothing open ended about that.

Utzon's emphasis on edges shortly comes into play in my text.

51 The interpretations can deepen and superimpose almost endlessly. The sliding glass door window may itself be a correction against the perceived excess of Mies's sliding glass panel at Tugendhat, which dropped into the basement through a complex set of pulleys and levers, said device an attempt in part to remove any trace of its existence and avoid the heightened sense of barrier, and the myriad, chaotic reflections created by one panel of glass sliding atop another.

Chapter Three. Hus Middelboe and the Farnsworth House


53 Utzon, "Eget Hus...,” p. 83. The final line of the article reads, “Pictures and furnishings on the interior are temporary.”

54 Details of the Glass House on a Hillside seem not to exist. In the MOMA Archive there are only a few unelaborated drawings. This lack of detail suggests that in regard to the Glass House Utzon has next to nothing to oppose, thus he must refer for his oppositions and contrasts to the specifics of the Farnsworth house. Further, there is no suggestion in any of Mies's few drawings of the Glass House or any of his Country Houses of that period that he meant any of them to be built out of concrete.

55 Jean-Louis Cohen, *Mies van der Rohe*, trans. Maggie Rosengarten (London: E & FN SPON, an imprint of Chapman & Hall, 1996), p. 113. Speaking in the vein I opened in the text, in his inaugural address upon appointment in 1938 as director of architecture at the Armour Institute of Technology, Mies said, "Therefore let us guide our students over the road of discipline from materials, through function, to creative work. Let us lead them into the healthy world of primitive building methods, where there was meaning in every stroke of an axe, expression in every bite of a chisel. Where can we find greater structural clarity than in the wooden buildings of old? Where else can we find such unity of material, construction and form?" Cohen, like almost every other author on Mies, treats his statements as though such were actually true of his architecture.

57 The recent appearance of color photographs, and new interior photographs, in Weston, *Utzon*, is a welcome addition to the thin documentation of Hus Middelboe.


59 Faber, *New Danish Architecture*, p. 36

60 While there is a distinct edge to the roof of the Farnsworth house that protrudes from the steel header it is not meant to reflect anything behind it. I have a strong sense it was chosen for that weakest of reasons, that it looked right to Mies.

61 As much space as I have devoted in my text to Utzon's house at Holte could be used to compare Johnson's Glass House to Mies's Farnsworth house. I am of an opinion similar to that held by Mies: Johnson recounts, "Mies thought the workmanship was bad, that the design was bad, that it was a bad copy of his Farnsworth house, which had inspired me,.... He thought I should have understood his work better." In Joseph Giovannini's "Johnson and His Glass House: Reflections," from *Philip Johnson: The Glass House*, edited by David Whitney and Jeffrey Kipnis (New York: Pantheon Books, 1993), p. 160. Reprinted from *The New York Times*, July 16, 1987


Chapter 4. Utzon's Kingohusene and Mies's 1931 Row House, Weissenhofseidlung, and Lafayette Park

62 It might further be fair to say the compulsive violence of change at Holte was successful enough in what it begot that it left Utzon with nothing else to demonstrate through opposition.

63 Various of Mies's court house projects of the 1930s presented in the Museum of Modern Art Archives also employ square grids, and in every case where such are identifiable, the side of each grid square measures within five percent of one meter. Utzon Skåne prototype measures 21 by 21 meters.


66 Tobias Faber writes, "At the time of erection the estate represented one of the least expensive housing schemes in Denmark." Faber, *New Danish Architecture*, p. 65. Of the Weissenhofseidlung, "The architectural exhibition was primarily an attempt to explore the technical developments in construction. The buildings were not prototypes for mass housing--they were to luxurious and expensive for this." *Mies van der Rohe: European Works*, Architectural Monographs 11, series editor Frank Russell (London: Academy Exhibitions, 1986), p. 45. The article also notes that in fact, "... in the interests of uniformity throughout the exhibition it was stipulated that all buildings had to have a smooth finish."

67 The orthogonal "curves" of the site plan at Kingo seem much stronger than the nominal curves of the Weissenhofseidlung.

68 There is also the tantalizing example of the lone dwelling to the southeast. Like the core at Hus Middelboe, I put it in the category of the "willful anomaly."

69 Perfectly conversely, of Mies's apartment building at the Weissenhofseidlung, "It was a steel-frame structure in which freedom of interior planning was seriously intended. By the use of moveable partitions he created twelve apartments.... No partition wall has ever been moved." *Mies van der Rohe: European Works*, Architectural Monographs 11 (London: Academy Editions, St. Martin's Press, 1986), p. 45. I take this more as a reflection on the minimal value of the partitions given the apartments' limited space, than on the perfected virtues of Mies's planning.


72 Tobias Faber reports Utzon's thinking: "One young couple has started building a house with just a single bedroom and kitchen in a walled-off rectangular area. The husband goes off shortly after it is finished, leaving the marital bed behind. The girl has an extra section built on, and opens a small bakery to make her living. She also keeps poultry." Tobias Faber, *Jørn Utzon: Houses in Fredensborg*, photographs by Jens Frederiksen (Ernst & Sohn, 1991), p. 7.

73 An odd version of Utzon's plan appears in Roger Sherwood's *Modern Housing*
Prototypes (Cambridge, Mass.: Harvard University Press, 1978). According to the scale there the plan measures 21.0 by 21.5 meters, not only a different size than that given in Zodiac 5, but the long and short overall dimensions are exchanged. Other than these significant differences no other discrepancies appear between the drawings.

Also, the order in which I present the various plans in the text is for the sake of my narrative and bears no relation to the order in which they appear in Zodiac 5, where the plans seem randomly arranged.

74 Tegethoff, Mies van der Rohe: The Villas and Country Houses, p. 126.

75 It would be poor construction practice, but the impression given by Mies's drawings particularly in the MOMA archives is that the brick walls are monolithic, without joint or break between inside and out, or between interior and exterior facing.

76 Skåne was always meant for families, and in that quite different from Mies's program for his Row Housing, intended for single persons. This is a difference Utzon did not use to advantage at Hellebæk and Holte, in that if anything he suppressed it as a difference-making possibility. With Skåne, one the other hand, he uses it entirely to create difference.

77 From the Barcelona Pavilion in 1929 through the Chicago IBM Building of 1969-70 a significant majority of Mies's work involves the dictates of square grids.

Chapter 5. Utzon's Sydney Opera House and Alvar Aalto's Library at Viipuri

78 Jørn Utzon, "Three Buildings by Jørn Utzon," Zodiac 14, pp. 48-93. The major difficulties remaining were tiling the shells, finishing the interiors and resolving particularly the acoustics of the two main halls (which I discuss at length later in this chapter), and fitting enormous glass walls into the doubly curved shell-vault mouths.

79 Ibid., pp. 48-49.

80 I mean this in terms of the sheer number of buildings inspired by or derived from Mies without reference to the quality of those inspirations or derivations.

81 The best works on these matters include Michael Baume's The Sydney Opera House Affair, and John Yeomans's The Other Taj Mahal: What Happened to the Sydney Opera House.

82 The most detailed descriptions of this process may be found in Utzon, "Three Buildings by Jørn Utzon," and in the ten "Sydney Opera House Progress Reports" by Peter Keys with Trevor Mowbray or Colin Brewer. The fourth report in the series, "The Sydney Opera House," Architecture in Australia, v54, n4 (1965 Dec), pp. 71-91, is particularly good
on this topic.


84 Instead, a chapter in itself, he admires ocean waves, cherry blossoms, and so on. Also, Utzon's solution has no apparent precedent in concert halls of the time or then-current work on acoustics. Françoise Fromonot, in "Un ricordo [dream?] delle Hawaii," Architettura e Progetti, pp. 28 and 30, does juxtapose Bagsvaerd and the Opera House Hall sections while noting their similar derivations from cylindrical segments, but only attributes them to the inspiration of the Ying-tsao fa-shih.


86 Henry-Russell Hitchcock, for one, is so unnerved by the curves at Viipuri he deems the whole of it irrational (citation lost).

87 Utzon originally explored, as did Aalto, hanging his ceiling in the reverse of his final design: concave where in the final design it became convex.


89 At Kingo, as opposed to at Hellebæk and Holte, one space is distinguished from the next through attention to the hypothetical and particular human use of it, a descriptive philosophy of design, rather than through predominantly geometrized material configurations.

90 Utzon's particular and intense interest in this is perfectly and obsessively evident in Utzon, "Additive Architecture," Arkitektur DK, February 1970, the entire issue.

91 Specifics of the library's program are hard to come by, and the movable seats indicate a desire for flexibility. From the photographs there look to be 21 rows of 9 seats each. One section drawing indicates 2 or 3 rows of seats per bay, or (6 x 2.5 x 9 =) 135 seats, while a second section drawing gives 10 rows of seats, or 90 seats total.

92 Françoise Fromonot has done excellent work by rediscovering the fact that Utzon intended laterally alternating colors for the ceiling pieces. This stripe like effect leading toward (and from) the stage would have enhanced his desired effect, that "the spectator's eyes were concentrated on the stage opening."

93 Utzon, "Three Buildings by Jørn Utzon, Zodiac 14, p. 68.
Understood in the sense of how the way their authors or professional interpreters want them to be understood.

Chapter 6. Utzon and the Canon


Architectural Forum 82, January 1946, p. 82.


Ibid. While I am mildly skeptical of Utzon's claim that the building may be erected out of mass-produced components, the extremely circular geometry of the "Gallery floor" plan suggests such a scheme may be possible.


Ibid.

Chapter 7. On Published Work by Utzon

Though this is a balance Utzon struggles with repeatedly and does not deftly reach again until Bagsvaerd and Kuwait, where it steadies from the first work to the second: At Bagsvaerd Utzon separates the main parts--the symbolic vault from the pragmatic structural frame--in order to realize the work, while at Kuwait he integrates them--the concrete structural roof is now also the sheltering "tent."

Jørn Utzon, "The Work of Jørn Utzon: Additive Architecture," *Arkitektur* v14, n1 (February 1970), p. 18. He also writes, p. 21, "[Farum Town Center] is composed of units designed to a geometrical principle so that the components can be prefabricated in a strictly limited number of variants. The units can be combined to form a gently curved bazaar street from which the shops and other premises can be built in stages as required." It is primarily as a structure growing over time that I am considering Farum Town Center, though clearly it shares a principle of fern and coral growth described below.

See Utzon, "Additive Architecture," p. 1: "... when working with the additive principle, one is able to avoid sinning against the right of existence of the individual components. They all manage to find expression."


Ibid., p. 114.


After Utzon submitted his proposals for the completion of the Opera House interiors, particularly the two halls, using an unprecedented form of plywood construction of his own invention and developed through the firm of Ralph Symonds, concerns over the cost and feasibility of this resolution were the provocations taken by Minister Davis Hughes to reduce Utzon's status from project architect to design architect, a position which would have required Utzon to seek approval for all work, including design, from various committees and persons approved by the government. The term "forced recognition" is, I believe, Sigfried Giedion's.


Jørn Utzon, "Three Buildings by Jørn Utzon," p. 89. English is not Utzon's first language, and by "decorative" I believe he means "nonarchitectural." He continues directly, "The different works of art can be exhibited individually or in groups in all possible ways. It will also be possible -- in one of the big caves, to isolate one large painting or a sculpture which needs to be studied alone."

117 Utzon, "Additive Architecture," p. 27. This is also in sorry contrast to Utzon's far different approach eighteen years later, in "Jørn Utzon on Architecture," where he delights in "how beautifully and naturally people move through the landscape.... how beautiful they are when in groups, without being controlled," and takes particular note of this movement in terms of a metaphor: "Imagine a leaf that falls into a brook with small rapids. It rushes off, stops, hesitates at an obstacle only to be ripped away again by the water. This is quite different than what would happen if it had fallen into a sewer where things move straight and directly onward. This [the former example] is also true of living architecture." Pages 124 and 123, respectively.

118 Utzon, "Additive Architecture," p. 27.


120 Ibid.

121 Ibid.


Chapter 8. Critics on Utzon


126 I am thinking particularly of Utzon’s refusal to use a steel frame to realize the shapes of the Opera House shell-vaults.


130 There is a certain naiveté to Ellem’s approach in that she fully expects the forms suggested in the necessarily gestural competition drawings to be directly realized (competition drawings are almost invariably expository rather than declarative). On the other hand Ellem nonetheless does an excellent job of highlighting the differences between Utzon’s competition scheme and the Opera House as designed in order to be constructed, and she does well by juxtaposing illustrations of the place where the shells intersect the platform: an extremely delicate appearance in the case of the competition drawing, and very heavy as actually built.
