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Reflections on Hunstanton

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(Written out and edited by Peter Carolin)

'This is an extraordinary group of buildings', wrote Philip Johnson (then a Mies van der Rohe follower) when The Architectural Review published Alison and Peter Smithson's School at Hunstanton in September 1954. '... Here we have an unknown team ... being allowed to win and build. Most surprising they are allowed to build not a conventional school, not even a Hertfordshire plan, but something quite the opposite of the prevailing trend ... The plan is not only radical but good Mies van der Rohe, yet the architects have never seen Mies's work ...' In this paper, based upon a talk given at the Architectural Association School and on conversations with the Editor, Peter Smithson recalls the background to the project, its design and construction, his later visits to Chicago and a 1973 revisit to the building.



1

1. Alison and Peter Smithson just after winning the Hunstanton competition in 1950, aged 21 and 26.

In September 1939, I was a 16 year old with School Certificate and good at only English and drawing. My father knew the local architect in Stockton-on-Tees and asked him what I should do. He replied that the system of articulated pupillage was dying and suggested that I should go to the architecture school in Newcastle. Because it was anticipated that many of their applicants and students would be called up for war service, the school dropped the entry age limit and I entered the school at a rather early age. Three years later, in 1942, with my call

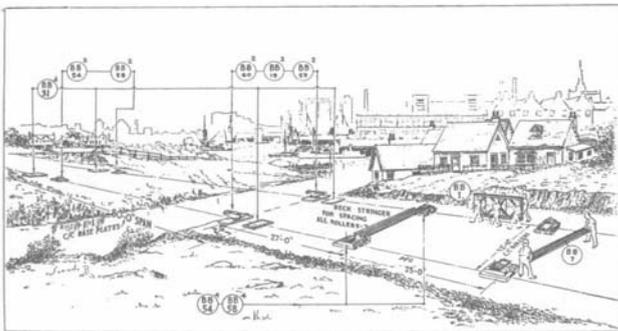
up deferred, I passed the intermediate exam and then joined the army.

I was in the engineers – so I got to know all about carrying and assembling Bailey Bridges' [Fig. 2]. I was in a training division at the D-Day landings in Northern France but, the casualties not being as high as expected, I assume, I was shipped out to India where I joined the Indian Army as a member of Queen Victoria's Own Madras Sappers and Miners. The first foreign town that I ever saw was Bombay. That made a most enormous impression. You have to remember that, before the war, it was only the solicitor class in a town like Stockton who travelled abroad.

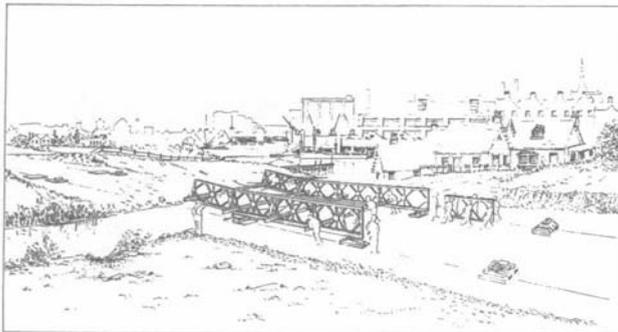
In 1945 I was demobilised and returned to Newcastle to finish the last two years of the Architecture course in 1947. My last project was a crematorium at Gosforth [Figs. 3a and b], strongly influenced by Asplund. Alison must have started her course in 1944. I then did an extra year doing a town planning course and teaching as a studio assistant.

In 1946 I won a school travel scholarship which enabled me to do some drawing in London and

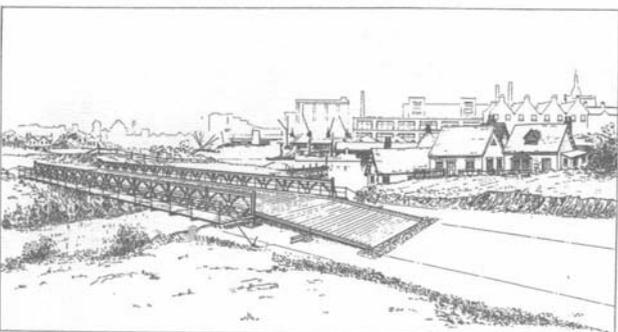
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2a



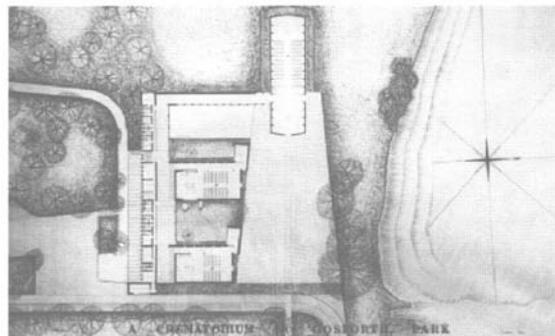
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2. A demountable Bailey Bridge, as encountered by Peter Smithson in the Army.
a. Initial set up.
b. Assembly commences. The bridge is constructed on one bank and then rolled across the river.
c. Completed bridge.
3. Crematorium at Gosforth. Peter Smithson's final Architecture school project, 1947.
a. Plan.
b. Elevation.

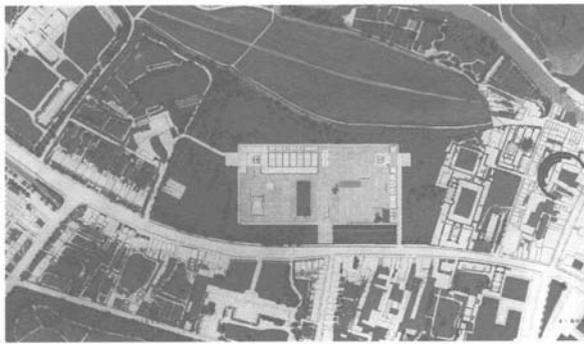
Reflections on
Hunstanton
Peter Smithson



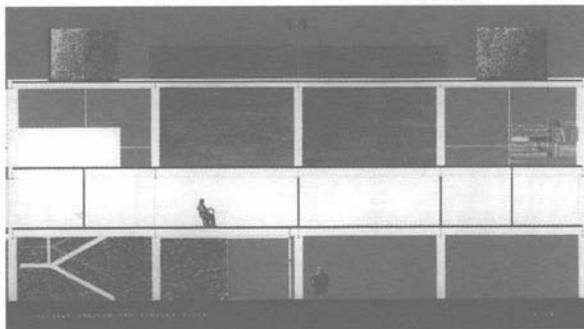
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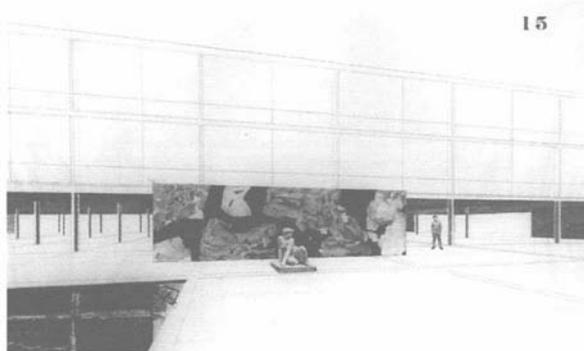
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4a



4b



4c

4. Fitzwilliam Museum, Cambridge. Royal Academy Schools project, 1948, and precursor to

Hunstanton. Peter Smithson's proposal involved the removal of Basevi's Founder's Building, the later extensions,

the eighteenth-century Grove Lodge and an entire terrace of houses.
a. Site plan.
b. Library section

Cambridge. In 1947, I won another and went to Scandinavia. Architecture in Europe had been at a standstill since 1938 – indeed, the very last major modern building was Prouvé's market at Clichy in 1939. Nothing happened during the war except in Scandinavia and South America. The Asplund memorial volume (Holmdahl, Lind and Ödeen, 1943) had been published and there was a teacher in Newcastle, Tom Ellis,² who was very interested in Asplund and Scandinavian draughtsmanship. So I went well prepared with letters of introduction to Steen Eiler Rasmussen,³ Sven Markelius⁴ and others. During the war they had little contact with the outside world and were now very kind to us students. I visited what I could of Asplund. I particularly liked the Gothenburg Law Courts – one of the last buildings where an architect designed everything. It is beautifully maintained today. I also accidentally came across Lewerentz' Chapel of the Resurrection – which was then beyond me. In Denmark we went to see Arne Jacobsen at Klampenborg and there, too, everybody was extremely kind. It's amazing: today, every school has its journal but, then, communication was person to person, within a much smaller community of architects.

The precursor to Hunstanton

I still had my ex-serviceman's grant so, in 1948, I went to London to study at the Royal Academy Schools under Albert Richardson.⁵ I did this full-time for two terms and completed two projects – one of which was a new Fitzwilliam Museum at Cambridge. There were only six of us in the Architecture school but about 30 studying painting and sculpture – including Anthony Caro who had previously studied engineering at Cambridge. The schools were in the vaulted undercroft below the galleries, full of plaster casts and positively mediaeval – there were lead sinks in which to wash one's brushes out.

Marshall Sisson,⁶ who had by then abandoned modernism and become a rabid classicist was

(note Matisse).

c. Courtyard perspective (with PS).
d. Photomontage from the Fen.



4d

Reflections on Hunstanton

Peter Smithson

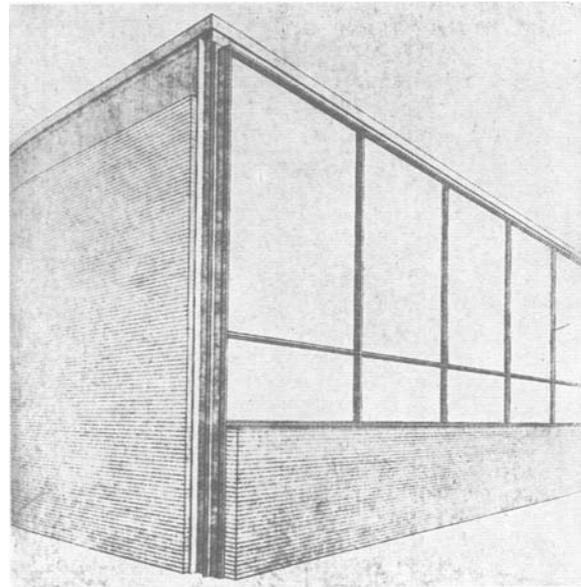
Richardson's studio assistant. Richardson himself was not really a classicist but a high eclectic. Already quite elderly, he was a very entertaining and informative companion. With no children of his own, he was very paternal and used to invite us to his Ampthill home. He didn't think much of my Fitzwilliam design [Figs. 4a-d] and the year prizes went to someone else. But doing nothing other than drawing for eight to 10 hours a day for two terms – with no lectures or classes to attend – was a great opportunity. I also did drawings and water colours of Somerset House and Wren churches.

Alison was then (1948-49) in her final year at Newcastle and also designed a museum that year, for the South Bank in London. This was based on Corbusier's expandable spiral museum for which, as she used to say, she unsuccessfully tried to develop a better section. In my case, my detailing for the Fitzwilliam Museum project followed Mies in a student way. Alison had sent me tear-sheets from *The Architects' Journal* (1946) with the steel details of a small building by Mies van der Rohe at the Illinois Institute of Technology in Chicago [Fig. 5]. That building, the Minerals and Metals Research Building, was from 1942-1943.

Following in Mies' steps

Alison sent me the tear-sheets because, as she has said, they 'meant nothing to me' and she knew I already had the Johnson book on Mies (Johnson, 1947).⁷ This book (the first on Mies?) had been published in September 1947. It, too, had steel details [Fig. 6]. The way it was published was important because, with the internal and external photographs and the typical details, you could follow how the architecture was developed. Subsequently, in the publication of our own work, we followed the same method because sometimes someone else tries to follow in your steps.

As someone who lived in a shipbuilding town, Alison said that she couldn't understand why drawing an r.s.j. in



5

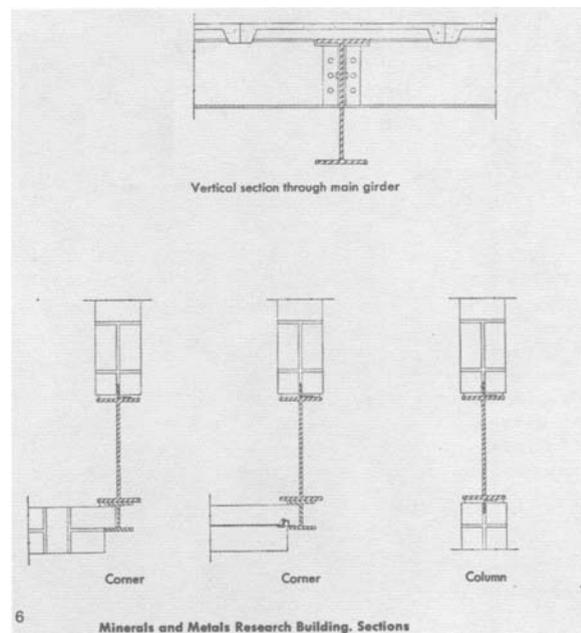
Reflections on
Hunstanton
Peter Smithson

perspective was important. She was living in South Shields and was taken by her father to visit the shipyards. Those *AJ* 'tearsheets' with their plans, sections, elevations and details, started a relation with the *Journal* which has been reciprocal in that they have published our work over many years.

Mies' work interested me because it seemed a pure way of building and was something I could be capable of. But the taste for Mies is not an easily acquired thing and somewhere I appear to have said I found his details formalistic – too studied: far more likely, at this period, was my affection for the simplicity and directness of the Bailey Bridge. And simmering in the background was the rejection of then fashionable modular construction⁸ and the embracing of the contra-ethic of 'everything has its

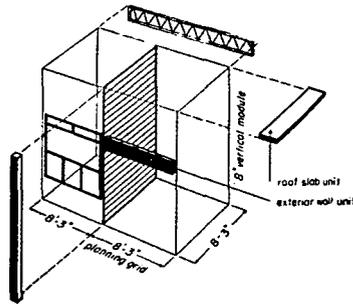
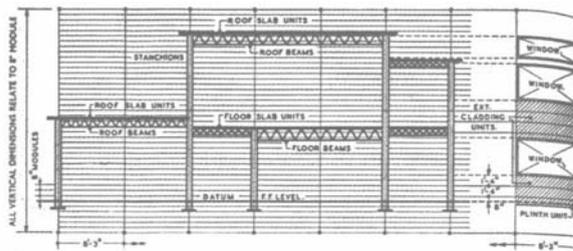
5. Library and Administration Building, IIT; corner perspective. This was on one of the *AJ* tear-sheets sent by Alison to Peter Smithson.

6. Minerals and Metals Research Building, IIT: details as illustrated in Philip Johnson's book (and reproduced in the *AJ*).



6

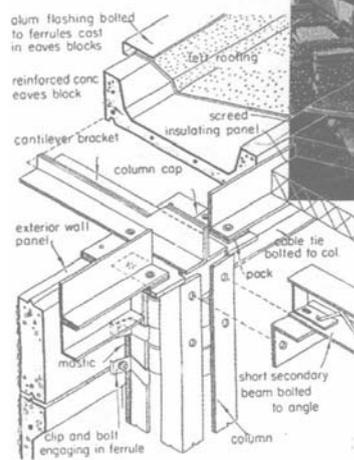
Minerals and Metals Research Building. Sections



Modular cage of standard units (left) forms all Hertfordshire's new schools. Diagram above shows use of built-up columns, light steel beams in one of many possible variations. For long spans, deeper beams in multiples of the 8'3" module are used. Precast concrete panels and windows form walls.

7a

Precast wall panels spanning bays are quickly clipped, grouted in place. Note columns of four angles welded to interior forming straps. Each side being alike makes connection from any direction identical.



Column, column plate and eave detail show how elements are easily bolted together. Eave bracket bolted to column plate takes precast concrete trough which forms gutter and eave. Square, hollow columns can carry heavy flexible rubber-covered cable.

7b

7. The Hills System.
Developed by Hills and the Hertfordshire County Architects, this system was also used by the LCC Schools Division on which Alison Smithson worked.

a. Typical section and modular cage of standard units.

b. Column head/beam/eaves detail and progress photograph.

right size'. This rejection was almost ideological – I have probably only seen one Herts school⁹ – and that was many years later. Alison worked on an adapted Hills system¹⁰ [Figs. 7a and b] at the LCC. It was, in a way, a secondary input into Hunstanton. The intention of the Hills system was to reduce the amount of steel used to a minimum. Being familiar with it gave us the ability to detail Hunstanton in a very slim way.

The one time I heard Alvar Aalto was on that famous occasion in London when someone asked him what module he used and he replied 'A millimetre or less'. Our own concern was about appropriateness – and we believed that a consonance would arrive if things were sized for their function: a relationship of fitness. And I have always related that back to the Bailey Bridges in which all the components had to be sized to be carried by men and the bridge had to be self-launching [Fig. 2] – it was all about operations rather than mechanics. Architecture also is operational.

One doesn't think these things out in words, but – in 1952 – before the Hunstanton competition, one had begun to write, starting with the famous defence of Wittkower.¹¹ But from then on you will find records of the thought processes and, later on, the process of writing opens up doors to the future. That's not retrospective – it's prospective.

Hunstanton was designed in the late '40s – a period of continuing food rationing, shortage of building materials and currency for foreign travel limited to £50 per person. Information on recent architecture abroad was therefore, by necessity, passed largely through books. And there were few books – for us, the *Oeuvres Complètes* of Le Corbusier and Pierre Jeanneret (Boesiger, 1929, 1934 and 1946), Alfred Roth's *New Architecture* (1939) (which had details), and the monograph on Gunnar Asplund (Holmdahl, Lind and Ödeen, 1943).

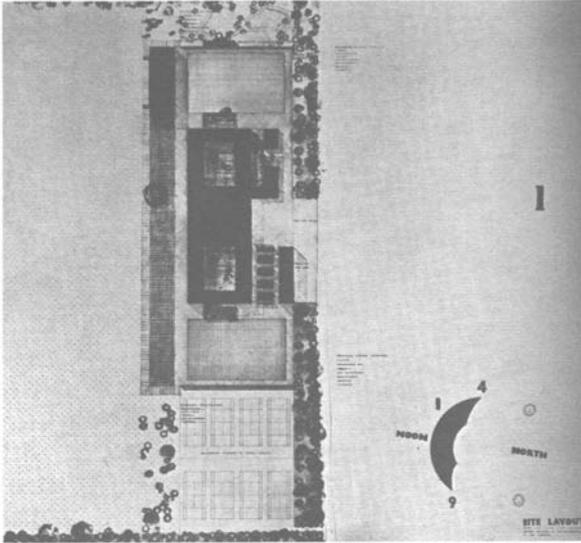
Wittkower demonstrated the relationship of circular planning and so on to 'the cosmology of the period' – something different to the 'empathy' of Geoffrey Scott (1914) which was the book of the David Roberts period.¹²

The competition

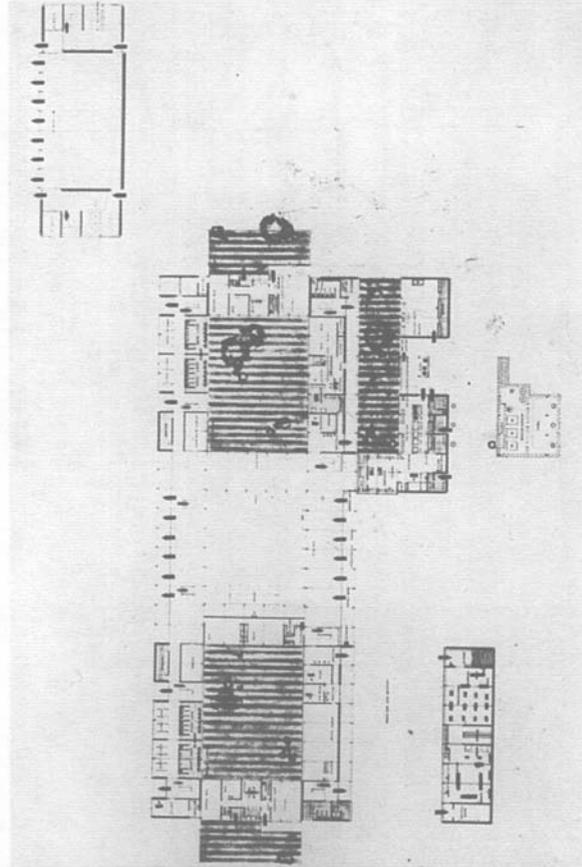
I can't remember how we heard of the competition nor why we decided to enter. We prepared our entry in the evenings and at weekends at our lodgings at 32 Doughty Street, Mecklenburgh Square. There was the question of building on very flat land which, retrospectively, I have always associated with Holkham and Houghton¹³ which we certainly visited after the competition. The site itself was a flat field with a scrappy hedge – it didn't produce much of a visceral response.

The competition drawings [Figs. 8a-d] made in Chinese ink with Graphos pens¹⁴ were very beautiful and the building was built substantially as those drawings. The steelwork was sized by me for the competition entry (we did simple structural calculations at architecture school) and these were justified at the working drawing stage in the calculations made using the then new Plastic Method¹⁵ by Ronald Jenkins¹⁶ in the working drawing phase.

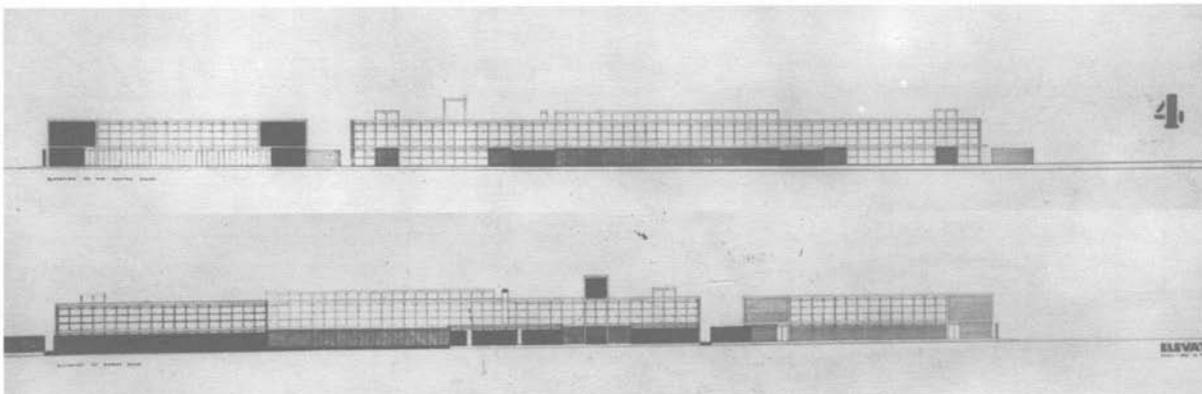
In my head we tried to use all the material as assembled to serve structural purposes whatever other



8a

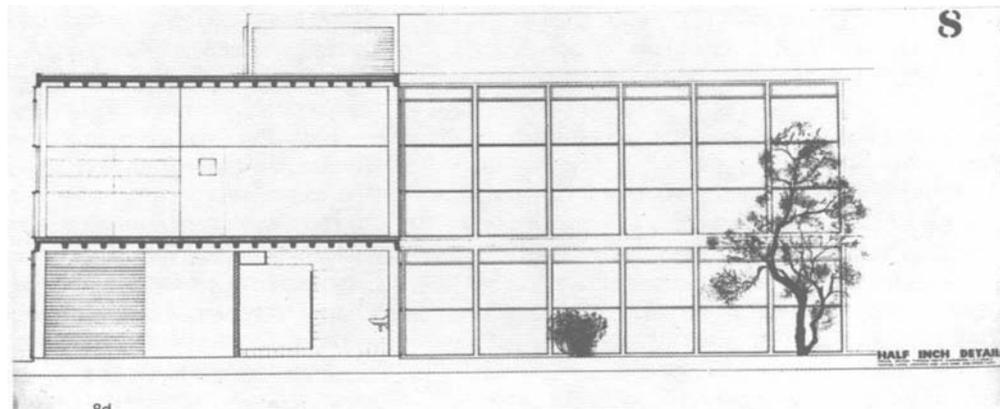


8b



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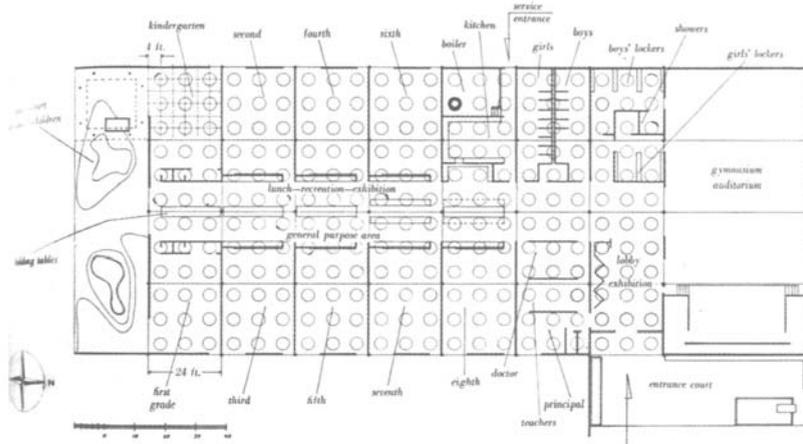
8. Hunstanton School competition drawings.
a. Site plan.
b. Ground floor plan with the double-height hall at centre. The workshop building is bottom right and the gym top left.
c. South (top) and north (bottom) elevations.
d. Part section.



8d

Reflections on
Hunstanton
Peter Smithson

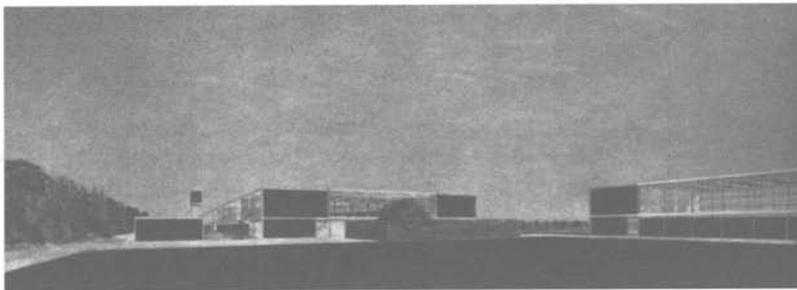
Reflections on
Hunstanton
Peter Smithson



9

9. A possible influence on the Assessor? *Architectural Forum's* 'School for 1950'. Plan.
10. Post-competition perspective. The steelwork was silver coloured and the brickwork dark plum. Compare with 14a.
11. The team. Peter and Alison Smithson with, at right, structural

consultant Ronald Jenkins of Ove Arup and Partners photographed in the school shortly before hand-over.



10



11

purposes they serve – a characteristic of 'conglomerate ordering'. For example, the framing for the windows stiffened the structure – as did the brick infill panels.

A layering of interests

Our interests are clearly indicated by the following passage¹⁷ which we wrote at the time of design and construction: 'This school is an attempt to go beyond the diagrammatic stage into a work of architecture and its form is dictated by a close study of educational needs and purely formal requirements rather than by precedent. The core of the school is the assembly hall which flows freely into the dining areas and entrance areas, carrying into the school the planes of the forecourt, the green courts and the playing fields. This grouping allows the circulations of the hall, the dining areas and the school generally to be superimposed, resulting in a compact and economical plan: on the first floor it is impossible to be more than 25 feet from a stair escape.

'No doors open on to the green courts, only hopper windows for ventilation. The green courts are light areas, quite free from noise.'

During the construction of Hunstanton we saw layering of structure at the naked stage, layering of reflection at the glazed stage. After its three year building period (due to steel rationing at the time of the Korean War), we wrote: 'The idea behind this school was to try

and prove that in every programme there exists an inherent order which once discovered appears static, immutable and entirely lucid. In other words, we were determined that we would, from the requirements of the client and the recommendations of the educationalists, create architecture'.

A footnote to this text stated: 'Only a person familiar with the pathetic figure of English functionalism supported since the war on a crutch of pseudo-science can understand why it was necessary to make such an obvious statement and design such a didactic building'.

And indeed, already by February 1953, referring to the prefabrication in England, we had written: 'Hertfordshire County Council has explored the field of prefabricated large module design with the limited success that one would expect in a system where only approximations are possible and plastic necessity is discounted as a first principle. To counteract this tendency the Hunstanton School tries to re-establish the finite order which is architecture.

'Technically it rejects the inflexible system of large standard elements and instead assembles existing components from families-of-components already available in industry – steel sections, bricks, etc. – into architecturally finite elements, each part being indispensable structurally and architecturally. For example the mullions and transoms of the windows are supporting

and at the same time eliminate the glazing sub-frames. In this way there are established modules and harmonies for this job and this time.'

The steelwork detailing was part of a much more general thrust of ideas.

The workings of chance

We were informed by letter of our success. It was amazing – we hadn't yet had the experience of losing. The win¹⁶ was a working of chance I believe, for whereas its dense plan was for us ideological (remember, Wittkower's book was published in 1949), in opposition to the Impington Village College¹⁹ format fashionable at the time, there was in the months preceding the design, the publication in the American journal *Architectural Forum* (1949) of a 'compact plan' school planned as a rectangle with rooflights provided to illuminate the centre of the plan [Fig. 9].²⁰ Very economical. Until then, schools tended to be like Impington, with a fan-shaped hall and classroom wings extending to each side. The Assessor, Dennis Clark Hall²¹ probably saw that design in *Forum* and thought that this was one way in which school design might develop – with an economy of circulation

12. Assembling the school. Compare with 2a and b.
a. Steel components



12a

stored on site.
b. Man-handling elements of the floor structure.



12b

rather than a scattered format. But I think that he completely missed the Miesian aspect because so little was known of Mies: most people would have responded as Alison did to seeing that perspective with the r.s.j.s. At that stage, many English architects were content to realise what they had been drawing in the 1930s – something which Max Fry²² continued to do to the end of his life.

The second working of chance was that Guy Oddie, an old architecture school friend who worked with the school development group at the Ministry of Education, looked in and saw we had too much floor area. The plan was reworked with a bay missed-out.

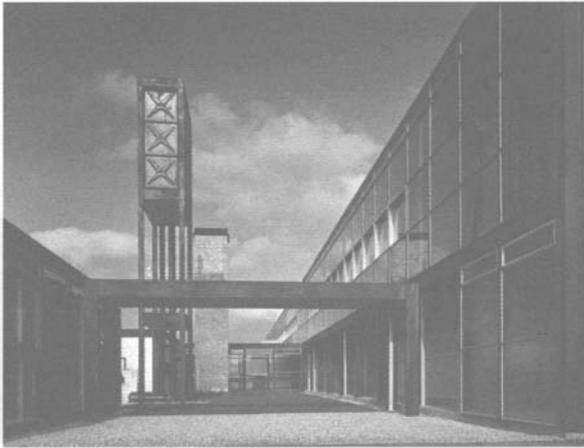
We first visited Hunstanton after the competition. In those days you could travel by train from London Liverpool Street, through Cambridge and Kings Lynn straight to Hunstanton.²³ We used to go on the 8.15 a.m. train on which you could have something like an 85 course breakfast with grapefruit and kippers for four shillings and six pence (about 23 new pence). Our very first meeting probably took place in Norwich with the client, the County Education Officer for Norfolk. We were to have surprisingly little contact with him. He would have written the brief but, in those days, the Ministry of Education's *Building Bulletins* were very specific on provision, sizes and critical dimensions and, as the architects, we would have followed these guidelines.

Hunstanton was won in an open competition. Alison was 21 and I was 26 [Fig. 1]. We were just children, as it were, straight out of school. People forget that when they attack the design. The perspective [Fig. 10] was done for the client after we had won the competition. I don't think they knew what they were getting. Despite our youth, I don't remember any fuss from the client – and, from their viewpoint, they were taking a huge risk – stuck with the 'platoon commander generation' with no building experience.

Realising the building

We did all the working drawings ourselves – including the plumbing and drainage (because we were taught that at school). The mechanical services were designed by the subcontractors. We had no previous connections with Arup's and went to them for the structural consultancy on the strength of Ove Arup's work on Highpoint One. The job partner, Ronald Jenkins [Fig. 11], was the theoretician of the firm.²⁴ Bob Hobbs and Jack Zunz were his assistants.²⁵

The general contractors, Shanks, were a family firm and the largest in Hunstanton. No better contractor for a first job can be imagined. The owner was a 60 year old man with no children and he was determined that the building – the largest the firm had done – would be as good as they could make it. They were very good people to work with. There was no question of someone sitting at the gate recording the extras. It was a different world. The steelwork subcontractors were Boulton and Paul of Norwich and the welding was supervised in shop and on site by their chief



13a

engineer in person. It was just astounding seeing the steelwork in the course of erection [Figs. 12a and b]. The materials, whether the precast slabs, the Braithwaite water tank and the light fittings, were 'as found' [Figs. 13a and b]. We were making a composition out of common existing components rather than designing them. The casting of the concrete decking units took place in open sheds during a very cold winter and permission was given to use high alumina cement (HAC). Later, when there was a scare about HAC, Bob Hobbs and I went up to inspect the building and could find no evidence of cracking. I could remember all the key dimensions, as one does, but what was astonishing was that Bob could remember where all the reinforcement was!

The competition design had intended silver paint for the steel with dark plum-coloured brick infill panels. Within our building budget, no brick of this sort was available, so a Cambridge gault brick²⁶ was chosen instead and the arrangement reversed – dark steelwork (black) light panels (yellowish-white) [Figs. 14a and b].

The headmaster, who was appointed after the building was completed, was the same generation as us and had been at university in Durham (the Architecture School at Newcastle, where we had studied, was then part of the University of Durham). It was his first headship so we had someone who wanted the institution, one of the first of the new 'secondary modern' schools to be set up by the Labour government, to be successful.

America – and Mies

From 1954 to '59 I was teaching at the Architectural Association and managed to get to America in 1957 and 1958. On both occasions I crossed the Atlantic in a converted Liberty ship²⁷ run by the Holland-Amerika Line with a kind of academic crew sponsored by an organisation run by Dutch students which brought European students to the US and American students to Europe. The £50 limit on foreign currency still remained but people in the US were incredibly kind. I stayed with John Johansen²⁸ whose house was next to Philip Johnson's in New Canaan. In 1958

13. A composition of 'as found' components.
a. Braithwaite tank on high level support beyond the housecraft and main building link.
b. Precast concrete decking units and light fittings in a classroom.
14. Hunstanton School as completed with black steelwork and yellow-white brickwork.
a. Exterior, compare

with 10.
b. Assembly hall interior.
15. Carman Hall, IIT. One of the Mies designed apartments in which Peter Smithson stayed.

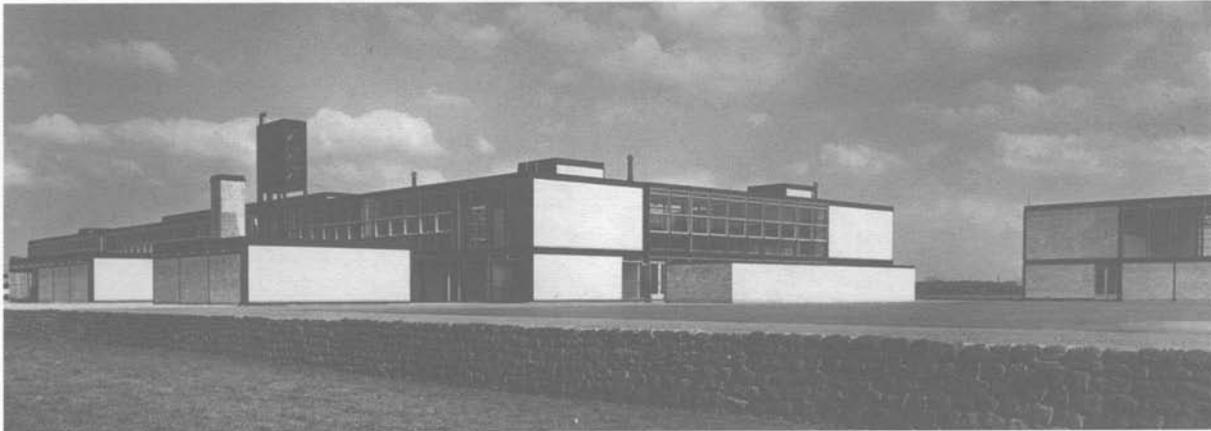


13b

Johnson gave me 100 dollars which took me to Chicago. There, Peter Carter,²⁹ who had earlier worked at the old LCC Architects Department, was my host. Peter Carter was working in Mies' office and that gave me access to working drawings. I slept on the floor of his flat for about a week in Carman Hall, the campus apartment buildings designed in 1953 by Mies – the ones with the stepped concrete frame [Fig. 15]. It was in this way, eight years after designing Hunstanton, that I first saw the buildings by Mies van der Rohe at the Illinois Institute of Technology (IIT). I also had my first direct contact with Mies and with his office and his working drawings. It was during this visit that I discovered that the colour of the gault bricks it was finally decided to use at Hunstanton was remarkably similar to those used by Mies at IIT.

A slight personal relationship developed with Mies when, in the '60s, Alison and I went together to dinner in his house where we had two long conversations. On those first visits, I would have seen Chicago and the development of the skyscraper through Sigfried Giedion's eyes (Giedion, 1941). It was not until the '80s that I began to see the city without that 'filter'.

During the 1958 visit to America, another spontaneous act of friendship came from Charles and Ray Eames,³⁰ who had never met me, but sent



14a

**Reflections on
Hunstanton**
Peter Smithson


14b

a ticket and 50 dollars to go to Santa Monica. I stayed with them in their house. They were friends of Billy Wilder, the film director, then making *Some Like it Hot* – and I've been in love with Marilyn Monroe ever since. I was on the set when they were making that marvellous scene where the two boys are in the sleeper and Jack Lemmon has ice put down his neck. Everyone on the set was in hysterics.

Two apprentices

In the 1973 re-visit with Bob Hobbs, I wasn't looking forward to going back.

But I was really thrilled – despite the 20 per cent alteration, it still stood up ok. The mistakes made were the mistakes of innocence rather than intent. The interiors were painted white throughout and the gym in particular was marvellous – although I am told it is now green! On a later building of ours, at St. Hilda's in Oxford, the oak 'yashmak' screen should have weathered naturally to a light colour against the darker building – but the College clerk of works has stained it black because that is the convention. Another mistake of innocence.

There's no such thing as 'restoration' – you cannot repeat the original technology.

The difference between now and the 1400s is that when Brunelleschi died the only thing that was finished was his dome – the Foundling Hospital was finished, as were his other works, after his death. In his time, architects suffered from not seeing what they had designed built. Now our buildings are wrecked in our life-time.

Some parts of this story are now more than 50 years ago so, for the events as they unfolded, it would be best to follow what was published and commented on at the time. The definitive factual publication of the Hunstanton school was in *The Architects' Journal* (16 September, 1954).

Looking again in 1996 at my Royal Academy project for the Fitzwilliam Museum, its steel detailing explorations certainly allowed those for Hunstanton to be arrived at within the time allowed for the competition and the basic arrangement of the Hunstanton main block – three



15

'courtyards', one covered – with smaller rooms around was established in the Fitzwilliam main block.

What further did we take from Mies ... from that little building at IIT?³¹

... the use of, standard section steel windows, exposed, ribbed, concrete ceilings, vitreous enamelled tungsten light-fittings.

All elements 'as found'.

What did we eventually give to Mies?

Hopefully a sense of gaining two apprentices.



16. Alison and Peter Smithson as photographed for *The Architects' Journal* 'Men of the Year' feature, 21 January 1954.

16

Reflections on
Hunstanton
Peter Smithson

Notes

1. A demountable steel bridge system devised during the Second World War for the Royal Engineers by Sir Donald Bailey.
2. Tom Ellis (1911-88) was later a partner in Lyons, Israel and Ellis. His best known piece of writing was probably 'The Disciplines of the Route' published in *Architectural Design*, October and November 1960.
3. Author of *London, the Unique City*, London, Jonathan Cape, 1934.
4. Sven Markelius (1889-1972) was Professor of Architecture at the Royal Institute of Technology and City Architect of Stockholm.
5. Professor Sir Albert Richardson (1880-1964) had been Professor of Architecture at the Bartlett School of Architecture, University College, London.
6. Marshall Sisson (1897-1978).
7. Alison Smithson's own account of this, taken from *Changing the Art of Inhabitation*, Artemis, 1994, is as follows: 'When I was in fifth year at Newcastle, PS was at the Royal Academy Schools in London. He wrote that he had discovered Mies in Johnson's book. I received *The Architects' Journal* on a student subscription and in this had been the first publication of the Mies work at IIT. I sent the tear-sheets of the two articles as I did not value them. I may not, at first sight, have realised the same man made the Barcelona Pavilion and IIT. The first full-page illustration was a close-up perspective of part of a corner; quite incomprehensible why anyone should draw large, a rolled steel beam and stanchion and some brick-joints. I still cannot face brickwork. On Tyneside I was surrounded with brickwork still being dirtied by industry.'
8. Modular construction was widely used for prefabricated schools systems. The most common modules were 8'3" and 3' 4" (1m).
9. The Hertfordshire County Architects Department were the pioneers of modular school design.
10. Hills of West Bromwich manufactured the steel frame system used by Hertfordshire and many other local education authorities including the LCC (London County Council), Schools Division.
11. This was a letter published in the *RIBA Journal*, February 1952

- (p140) in which the Smithsons reacted to ASG Butler's review of Wittkower's *Architectural Principles in the Age of Humanism* for the 1951 (pp.59-60) issue. Their letter was accompanied by a similar response by John Voelcker (later, with the Smithsons, one of three English members of Team 10). In the March issue (p.187), John Brandon Jones defended Butler.
12. David Wyn Roberts (1911-82) taught at Newcastle after the war before moving to teach and practice in Cambridge.
 13. Holkham Hall was designed by William Kent about 1734. The grounds were laid out by Capability Brown in 1762. Houghton was designed in 1721 by Colin Campbell but the actual execution was under Thomas Ripley. The grounds were laid out by Bridgeman.
 14. Graphos pens represented the intermediate stage between the adjustable ruling pen and the Rapidograph type. The body of the pen was filled before use with Chinese ink and had a special nib from a range of varying line thicknesses fitted to the end. The entire assembly had to be meticulously cleaned after use.
 15. The Plastic Theory for steel design was developed by Sir John Baker, Professor of Engineering at the University of Cambridge.
 16. Ronald Jenkins (1907-85) collaborated with Alison and Peter Smithson on a number of projects including their competition entries for Coventry Cathedral, Golden Lane housing and Sheffield University.
 17. This and the following three quotations and the comments on them are to be published shortly in *The Charged Void: Architecture*.
 18. The competition result was reported in *The Architects' Journal* for 11 May 1950, *The Builder* for 12 May and *The Architect and Building News* for 12 May. The *AJ* also reproduced the Second and Third Prize-winning entries – by John Diamond and G. Whitby. In his report, the Assessor stated that: '... the three awards were the only ones that ... gave any contribution to the problems of planning schools ... Many good sound examples of planning ... were very poor examples of architecture, and many interesting designs showed a complete lack of understanding of the functions of a school ... While on first sight, the winning design might appear as a reactionary step back to the old courtyard planning, a detailed examination will show that the detailed handling of the plan requirements bears no resemblance ... this scheme is an outstanding contribution to school design ... the drawings are very beautifully prepared and presented, but unfortunately the report is extremely scrappy. It was obviously done in

a very great hurry, very late at night ...'

19. Impington Village College, Impington, near Cambridge was designed in 1936 by Walter Gropius and Maxwell Fry.
20. The architect for this design was Matthew Nowicki (1910-1949) who, together with Albert Mayer, produced the first unexecuted plan for Chandigarh.
21. Dennis Clark Hall won the *News Chronicle* Schools Competition (and built the Girls' High School at Richmond, Yorkshire in 1937). Peter Smithson considers that it was strongly influenced by Marcel Breuer's 1936 Exhibition Pavilion at Bristol with its curved rough masonry walls. Richmond was one of the modern buildings within a bicycle ride of Smithson's home town of Stockton-on-Tees (there was also a house in far-away Northumbria designed by Leslie Martin with Jack Napper). He saw the school at Richmond before he went to architecture school.
22. Besides working in partnership with Gropius between 1934-36, Maxwell Fry (1899-1987) and his wife Jane Drew collaborated with Le Corbusier at Chandigarh 1951-54.
23. The railway line now ends at King's Lynn, about 16 miles from Hunstanton, a small holiday town on the north Norfolk coast.
24. An excellent account of a discussion on the design and construction of the school between the Smithsons, Jenkins and the Editors was published in *The Architects' Journal*, 10 September 1953, pp. 323-328.
25. Bob Hobbs and Jack Zunz became the senior partners of Ove Arup and Partners in the 1980s. Zunz was to play a major role on Jørn Utzon's Sydney Opera House and Norman Foster's Hongkong & Shanghai Bank.
26. Gault clay came from Burwell, near Cambridge and gault bricks were widely used in the area in the late eighteenth, nineteenth and early twentieth centuries. The clay pits are now exhausted.
27. Liberty ships were prefabricated cargo vessels built in vast numbers in America during the war.
28. John Johansen, Professor of Architecture at Yale (1955-58), Columbia (1964-66) and Pratt Institute (1976-). Architect of the United States Embassy, Dublin.
29. Peter Carter worked with Mies van der Rohe for many years. He subsequently practised in England and was responsible for the Allied Dunbar Headquarters at Swindon. He is the author of *Mies van der Rohe at Work*, Pall Mall Press, London, 1974.
30. Charles Eames (1907-78) and Ray Eames (1912-88) were the designers and owners of the Eames House, Santa Monica, California, 1949, the eighth and most celebrated of all the *Arts and Architecture* Case Study Houses. In 1950, Billy Wilder commissioned them to design a house for him in Beverly Hills. It was never built and was one of the last architectural commissions undertaken by the Eames.
31. According to Peter Smithson, Crown Hall was not a source as Helena Webster suggests in her recent book, *Modernism without*

Rhetoric: the work of Alison and Peter Smithson, London, Academy Editions, 1997. It was published in *The Architects' Journal* in August 1954 and Peter Smithson regards it as a disappointment – '... tipping over into formalism – with the interior designers dumped in the basement so that the architects enjoy pride of place. That certainly wasn't true of the buildings I admired, like the Minerals and Metals Research building, where conditions were reasonable. Crown Hall has another defect – unlike most Mies buildings and the National Gallery in Berlin in particular – it doesn't effectively create its own territory.'

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Biography

Alison Smithson (1928-1993) and Peter Smithson (b. 1923) were two of the three English architects most closely associated with Team 10. They designed The Economist Building, London.

**Reflections on
Hunstanton**
Peter Smithson