

# The Knight's Move

Donal Hickey



Berkeley Library  
© Paul Tierney

This concept for this exhibition began with discussions with Dr Ellen Rowley when she asked me to look at some material on the Berkeley Library at the Irish Architectural Archive. There I found a small box containing over 280 black and white photographs which begged to be displayed. The images document the progress of a New Library at Trinity College designed by ABK and constructed by G & T Crampton between 1961 and 1967. From the beginning I discussed this photographic record as a continuous timeline around which a narrative could be constructed to documenting the evolution and progress of the design and construction of the New Library .

The Architectural Gallery is a room I am familiar with from my time working in London. It had a previous existence as the lining of an exhibition room in the Royal Institute of British Architects at Portland Place. A neat symmetry offered itself as I could now revisit my experiences of London architecture while interrogation the origins and influences legible, explicit or implied in the Berkeley library and the archives at the IAF and Trinity College.

The presentation of this exhibition is intended to be open ended for you the audience to imagine other connections beyond those illustrated. Even now as I write I am adding other clues and references which might assist a more complete reading of the design process and its complex influences. It is not hard to imagine the fervour and intensity of ABK's collaboration which is evident in the final building and explicit in the selection of sketches and drawings of various versions of the project. Architecture is their gift a silent legible mechanism a conduit for our experience.

As in the game of chess, where the *knight's move* allows a piece to move in an unorthodox fashion relative to the other pieces on the board, combining the orthogonal and diagonal directions to shift across both plains. The Berkeley tilted the spatial game in Trinity College, introducing a dynamic relationship with the traditional order of the campus.

The story begins from the left and proceeds clockwise on entering the room.

## Vitrine No 1 - Beginning

Paul Koralek while working in the New York office of Marcel Breuer in 1961 completed the competition winning design for the extension to the 'Legal Deposit Library' at Trinity College Dublin. The screen facing the first Vitrine has four of the photographs supplied by Trinity College as part of the competition pack, they illustrating the site for the proposed project. This Vitrine includes a selection of original development drawings, hand drawn sketches, which illustrate the origins of the competition design. Around these drawings are grouped works by international architects which were at the vanguard of architectural culture before and after WW2 and likely influenced both the competition design by Paul Koralek and the development of the final architectural proposition by ABK. Along the bottom of the four vitrines runs a timeline; the photographs taken by the architects ABK at each visit to Dublin to inspect, direct and record the works. These images begin at the breaking ground ceremony with President Eamon de Valera, the provost Albert Joseph McConnell, the Librarian Dr H W Parke and Paul Koralek the architect. The original competition winning drawings are included together with the notification from the college confirming that Paul Koralek's design had secured first place in the competition.

The design was acclaimed by the jury for being modern and cleverly sited relative to its neighbours and its subterranean linkage with the Old Library. It was this connection which allowed for the independent identity of the new building in consort with its neighbours. The spatial arrangement of the building functions and organisation at different levels was also praised and "that the new building will represent the 20th century to posterity as characteristically as the existing library represents the 18th century". Concern was raised by Professor Albibi, who while he did not oppose the award of first place, praised the "careful working out, especially from the functional point of view"..... and the well chosen positioning. His reservations included "the lack of harmony" and "rhythm" relative to the Old Library. The design had failed to "face up to" its architectural context with an architectural solution which could dovetailed into the context without concession to taste. To better visualise the winning entry the building committee for the new Library requested a model which was built by the future architecture critic Kenneth Frampton. It is interesting to note that Frampton would become noteworthy for his writing on *Critical regionalism* and *Lessons in tectonic culture*. These themes of contextualised modernism and the integrity of structure as space would typify the careful exploration and search for truth when Paul Koralek teamed up his college friends, 'the country bumpkins'. Peter Ahrends and Richard Burton joined Paul Koralek as partners in the newly formed practice ABK Architects of London they had traveled together across Europe and through the middle east and Persia in search of a new architectural language.

## Vitrine No 2 - Back to the Drawing Board.

The jury and in particular architectural critics had complained that the building was *too boney* and *insubstantial* particularly where it met the ground and in the context of the Trinity College's building culture. On their first visit to the Dublin the new partnership, ABK, recognised the stereotomic substantial physical presence of the existing buildings and that their project needed to become more muscular to engage in a meaningful way within this context. The precast concrete solution proposed as the primary structure was not feasible within the budget or the constraints of a construction industry in Ireland which lacked any industrial base. Buildings in Ireland were, at that time, hand made using traditional skills which were deployed to deliver a modern aesthetic, exceptions to that rule imported building components and systems from abroad. The second Vitrine traces the maturing of the architectural proposition particularly the external articulation which saw the most dramatic changes. Internally the ordered logic of uniform bays of books and roof lights would move to incorporation more nuanced spatial forms delivering a varied experience for academic readers at every level. This move synthesised function, form and material thinking and borrowed heavily from the new style at Ronchamp, and the plastic freedom at La Tourette.

Other influences like John Utzon National Bank in Tehran and the geometry and decoration of traditional Persian architecture are legible in the transition from structural grid to the planar articulation of concrete roof lights. It is hard to imagine that the last English castle, Drogo, by Edwin Lutyens and the mannerist architecture of Nicolas Hawksmoor were not considered by the architects when searching for a more robust expression for the library. Aspects of the site and its buildings were also influential in defining proportional orders and a material palette which form a kinship between the new building and its elder neighbours. The revised design is at this stage nearly fully resolved internally with all the characteristics of the formal spatial language set out in the plans and sections for the first redesign. The muscular form and material of the elevations is fully evolved with Wicklow granite fields, white concrete board-marked banding and a concrete and granite plinth. The struggle with the window treatment originally plate glass at the base and vertical slits of the closed box above has become neo-gothic with multi-paned vertical mullioned windows more 19th than 20th century. In this Vitrine original drawings are used to illustrate the iterative design thinking in the search for order. The six horizontal drawings represent the culmination of the redesign presented to Trinity College's building committee for consideration at the beginning of 1962. The band of construction photographs show the progress of construction marching on with columns being raised and floors progressing. Photographs of La Tourette, Marcel Breuer's Ski resort at Flaine and John Donat's photographs of the final building contextualise the decisions and influences on the design at this stage of the process.



## Model & Central Screens and glass display table

The model placed at the centre of the space represents the building 'as-built' in 1967. The New Library projected modernism as a promontory before the Arts block was to enclose Fellows Garden and become a quad. At this time the New Library was surrounded by lawns and landscape. Its concrete plinth extruding directly out of the ground was reminiscent of La Tourette's chapel which grew out of and projected into its landscape setting. It is important to consider how the new building was legible as an independent body of architecture despite it being an extension with a subterranean connection to the Long Room [Old Library]. It was approached obliquely from front square but head on from the east and is fully resolved in the round with a symphony of facades.

The model is made of basswood a material which would commonly have been used in the 1960's for architectural models and was used for the competition model illustrated in the first vitrine. Our model has been designed to be cut by laser into sequences of parts which fit together as layered elements. In the Berkeley model burn marks of the laser have been sanded down. At the Museum Building and the Long Room sections of the model the burn marks have been designed into the model and used to accentuate the relief of their moulded surfaces - a memory of the grime of the city which clung to the surfaces not washed by rain.

The photographs mounted on the ebony screens which face the model are by John Donal from 1968 and Paul Tierney from 2017. They span 50 years and document the interior spatial complexity and the exterior articulation of the final design. The building has resisted the attrition of time and the impulse for change which has destroyed many of its contemporaries from the 1960's. Close observation is needed to separate the present images [2017] from those taken when the building opened [1968]. These black and white images are testament to the robustness of the design and attention to the construction of the Berkeley Library lavished by the architects ABK and the master builders G & T Crampton. They speak also of the culture of the institution which nurtures and protects its legacy of modernism.

The glass display table includes a small selection of books some of whom were available to the architects with others which were touchstones for my reading of the building and the archival material.

p 118 & 119.  
**Marcel Breuer - A Memoire**  
Robert F. Gate  
The Monacelli Press

Opened at page on movements in art....  
**Why Abstract**  
Hilaire Hiler, Henry Miller & Wm. Saroyan  
George Wittenborn New York Feb 1962  
[Second expanded edition]

p180 & 181.  
**Towards A New Architecture**  
Le Corbusier  
Editions Cres 1923  
[Reprinted edition 1989 Butterworth Architecture]

p10 & 11.  
**Bunker Archeology**  
Paul Virilio  
First published December 1975  
[Reprinted edition Princeton Architectural Press New York 2014]  
Pictures taken from 1958 - 1965]

p8 & 9.  
**The Architecture of the Well-tempered Environment**  
Reyner Banham  
The Architectural Press 1969  
[Second edition 1984]

p510 & 511.  
**Glass in Architecture and Decoration**  
Raymond Mc Grath, A.C. Frost & H. E. Beckett.  
Architectural Press 1937  
[Revised and expanded edition 1961]

p136 & 137.  
**Zenithal Light**  
Elias Torres  
ACTAR & Col·legi d'Arquitectura de Catalunya 2006

## Vitrine No 3 - A symphony of windows - the marriage of structure with air.

Raymond Mc Grath, a jury member for the competition, was also the state architect at the OPW. He was the author of *Glass in Architecture and Decoration* which was reprinted in 1961. This book had been the bible of glass technology and its deployment in architecture since it was first published in 1937. The development of shop windows, arcades and the technology of reflection and transparency it documented would provide inspiration for the design of windows at the Berkeley Library. ABK's struggle to refine and articulate the fenestration was to source its material language from the London arcades which were so familiar to the architects as students of the Architectural Association in London. Princes, Burlington and Piccadilly arcades were to inspire the materials, language and articulation of the bay windows while Mc Grath's book provided the technical resources.

Beneath a stepped façade, paired windows in bronze frames were deployed to project the life of the library out to the campus. This was an inspired resolution of the window problem. Like a symphony of rhythmic repetitions, the four elevations would draw on the lessons learned from the order of the Old Library and the variations of the Museum Buildings, four unique elevations. Hints of car wind-screens, voyeurism and the search for contrasting themes of solidity and liquidity in the final doubled double curved plate glass windows. These windows were deployed, in the main, at the principal reading and public areas of the building.

Offices and workrooms had bronze framed flat plate glass windows flush with the facade, the distinction between public and private parts of the building was resolved. Side slits windows were used where the facade lapped down over the level below, meurtrières downward firing windows completed the panoply of window types. These last two, in contrast to the windows at other locations provided for more private vantages from secluded pockets within the building. The band of references in this vitrine concentrate on the window wall relationship and include; the Basilica Palladiana, Jaguar E-type Mark 1, La Tourette and images of the London Arcades. They provide and insight into the influences, DNA and themes which resolve the window dilemma to complete the orchestration of four rhythmically ordered facades.

The search for an integrated architectural language, a complete body of architecture, incorporated the buildings concrete fabric with its ventilation and illumination. Ducts both horizontal and vertical were embedded in floors and in vertical shafts to commuting the air evenly throughout the building using voids in the floors to further distribute and recirculate air. The vast majority of apertures which distributed the air were cast in concrete the exception, the duckbill vent cowl, are similar to those used in the brutalist masterpiece at Charles de Gaul Airport in Paris. The photographs of the Berkeley Library and Museum building show the shared language and techniques which deploy ventilation wholly embedded and integral to the buildings fabric. In common with the other vitrines the construction photos continue the progress of the building towards completion.

Photographs by Paul Tierney and John Donat on the ebony screen facing this vitrine record the bay windows and how the ventilation is integrated within the concrete body of the Berkeley Library. They also illustrate the fluid interchange between the observer and the observed, knowledge being advertised consumed and humanised.

## Vitrine No 4 - Articulated light and air.

It is hard to imagine the organisation of the upper floors of the library without the influence the Islamic architecture of Persian which A, B and K explored in 1956 with their friend the photographer John Donat. The *conglomerate ordered* arrangement of book stacks provides a dense mat interrupted by clearings which organise the readers into groupings of different scales. Some of the clearings are surrounded by bookshelves, others touch the enclosing walls and at first floor engage with the rippling bay windows. These are some of the many variables which order and construct the matrix of spaces within the upper three levels. The three levels are; 1st floor reading, second floor reading and the zone of articulated rooflights. The Smithsons conception of *conglomerate ordering* is recognisable and adjusted at each of these levels. Mat planning arrangements were discussed at Team 10 meetings and influenced Jom Utzon, Aldo Van Eyke and a generation of mid-century architects searching for alternative spatial orderings.

The square grid plan of the structure is extruded upwards at the top floor gathering light with planar surfaces angled and truncates at the corners forming faceted surfaces. These forms generously amplify daylight as its geometry and trajectory move relative to the library, a stationary body. They reflect a celestial light as the sun moves. Are these characteristics memories of the '*stalactite vaults*' from Isfahan a geometric transition, from square to circle which Koralek cites as an inspirational synthesis of form and geometry?

Closer to their home, in London, the atmosphere of John Soane's Museum at Lincoln's Inns Fields might also be significant in the intended density of atmosphere. Soane's plan section relationships, his use of voids, roof lights, the wholeness of the its architecture and artefacts seem to rhyme with the spatial sensibilities and atmosphere at the Berkeley. The roof light which runs continuously around the walled perimeter of the upper floor bathes this walled domain with a corona of light. Similar trickery was deployed in Soane's Breakfast room. Voids strategically facilitate pockets of light at first floor to animate reading spaces. Much criticised as expensive 100 watt fixtures the concrete light cannons provide reader perches with concrete armatures while also reflecting and sequestering light to balance the illumination of spaces at the floor below. It was Paul Koralek during a recent discussion with John Toomey who said that light dose not exist until it is materialised - articulating light and air.

Large scale construction sections have been reproduces to show the inventiveness and how a rather ordered plan is translated into a highly complex and diverse collection of spaces. There is an intimacy to the unbreakable reality of concrete spaces, rooflights, structure, desks, fixed furniture and book-stacks which are so integral to the architecture of the Berkeley. The spatial consequence is the antithesis of the universal order of the original competition proposal. It is worth returning to the drawings at Vitrine No 1 to consider the diversity of form and spaces which were wrought of concrete, light and wood. The universal spaces promoted by Functionalism were challenged by the architects as they becoming stubbornly particular they are more humane and accommodating.

The big secret with the Berkeley revolves around its enigmatic white concrete cavernous interior. White cement and the whitest possible Irish sand were utilised in the concrete mix to achieve the board-marked concrete. The roof lantern system is obscured from view on the exterior by a granite parapet and is only apparent when one enters the first floor reading hall. Light cannons, the children of La Tourette, funnel shafts of natural light onto specific reading desks illuminating deeper parts of the plan. The built in furniture brings a human scale to the upper reading stacks transforming them into a realm of the Soanian domesticity conducive to prolonged study and concentration.

The building has a number of dogmas characteristic of the '*other tradition of modern architecture*' wherein the building acts on the occupants in a sensory manner rather than in a purely intellectual way. One is bathed in sunlight while being inside this cave of space, one gets the feeling of participation within a monastic refectory. Opulent walls of curved glass gesture to the rest of Trinity, at once introverted with a wry smile to its elderly neighbours. The concrete frame is expressed in places and draped in granite at other times. Inarticulate, immovable, heavy, delightful Berkeley

## Berkeley Library Contractors and Suppliers

Competition Design:	Paul Koralek
Architects:	Ahrends, Burton and Koralek, London
Structural Engineers:	Felix Samuely and Partners
M & E Engineers:	Steensen Warming Mulcahy and Partners.
Quantity Surveyors:	D. A. Degerdon and Partners
General/Main Contractors:	G&T Crampton Ltd., Dublin

### Sub Contractors and Suppliers:

Asphalt Roofing:	Val de Travers Asphalt Ltd., London
Basement Stacks:	Luxfer Ltd., London
Book Cleaning Machine:	School of Engineering, Trinity College
Book Trolleys:	Thomas Pearsons & Co. Ltd., Dublin
Bronze Windows:	Smith & Pearson Ltd., Dublin Supplied by Henry Hope & Sons Ltd., Birmingham Curved Glass supplied by Gardner & Newton Ltd., St Helen's England
Carpets:	
Librarian's offices:	V'Soske-Joyce handmaid carpet, supplied and laid by Prior Interiors Ltd., Dublin
Reading Room:	Tretford carpet supplied and laid by Messers Clearys, Dublin
Catalogue Cabinets:	B. Serota Ltd., London
Curtains:	Fabric by Kilkenny Design Workshop Ltd. Supplied and fixed by Prior Interiors Ltd., Dublin
Electrical:	Patrick Lynch Ltd., Dublin Special Light fittings by RADA Lighting, London
Fire Detection:	The Pyrene Co. Ltd., Brentford
Furniture	G&T Crampton Ltd., Dublin and Ardee Chair Factory Ltd., Ardee
Granite Ashlar Walls and Paving:	Ballybrew Quarries Ltd., Dublin
Heating and Ventilation:	Brightside Engineering Co. Ltd., Dublin Special Fiberglass diffusers by A. c. Plastic Industries Ltd., Croydon.
Ironmongery:	James Gibbon Ltd., London
Lifts:	Otis Elevator Co. Ltd., London
Metal Handrails:	R.Ferguson Peacocke Ltd. Dublin.
Mosaic:	C.S. Murphy, Dublin
Patent Glazing:	The British Challenge Glazing Co., London Double Glazed units by Plyglass Ltd., Harlow.
Rubber Flooring:	Mc Manus and Ryan, Dublin Supplied by Runnymede Rubber Co. Ltd., London
Sanitary Fittings:	Adams Ltd., Newcastle-on-Tyne Twyfords Ltd., Stoke-on-Trant. Supplied by Brooks, Thomas and Co., Dublin.
Special Bookhoist:	Pickertings Ltd., Stockton-on-Tees.
Telephones:	Standard Telephones and Cables Ltd., London.

## Exhibition Team & Collaborators

### Curation

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with Colum O'Riordan & Simon Lincoln

Donal Hickey Architects  
Irish Architectural Archive

### Research

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### New Library Model:

'The model was made possible by a generous donation from a TCD alumnus'  
Designed by Donal Hickey and made with the assistance of:

Ronan Costelloe  
Kieran Costelloe  
Jason Ladrigan  
David Mc Carthy  
Michael Weir  
Kenneth Mason

Laser Cutting and CNC Machining  
Michael Mohler      SNOW  
Jeff White              The Laser Company

Model Base in Bronzed Brass  
Vincent Byrne      Church Art Metals

### Photography

Berkeley Photo Essay  
Paul Tierney Courtesy of Dublin City Council.  
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### New drawings and drawings for model making

Donal Hickey  
Jason Ladrigan  
David Mc Cathy  
Michael Weir  
Simon Maybury  
Conor McBride  
Rory Mc Donald  
Kenneth Mason  
Cathal Behan

### Archival Material

BBC Archives  
Irish Architectural Archives  
Manuscripts Library Trinity College Dublin  
John Donat Collection RIBA Archives.  
UCD School of Architecture Library  
DIT Library Bolton Street  
Royal Institute of British Architects  
MOMA NY USA  
The Louis I Kahn Archive Pennsylvania USA  
The National Trust UK.  
Bodleian Library Oxford UK  
The Architects Journal  
The Architecture Review

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### Drawings

Mc Cullough Mulvin Architects  
MOB Architects [Moloney O'Byrne]  
Manuscripts Library Trinity College Dublin  
Irish Architectural Archives  
Donal Hickey Architects

### Photographs

Manuscripts Library Trinity College Dublin  
John Donat Collection RIBA Archives.  
Donal Hickey  
Paul O'Brien - The Arcades London  
Gavin Buggy - La Tourette  
Paul Tierney - The Berkeley Library  
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### Poster & Photo Editing

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