

# Leslie Martin and the formal order

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1. 'En toda esta confusión me parece que vale la pena destacar algo mucho más relevante de las actividades de un arquitecto, que es la forma de pensar, componer y construir edificios y crear entre todos los diversos elementos dispares y condiciones un cierto sentido de la armonía y orden formal.' Sir Leslie Martin.

2. Doctorado por la Universidad de Manchester con la tesis titulada 'The position of José de Chumiguera in the development of Spanish baroque architecture'.

3. 'La base de la arquitectura moderna... no son los nuevos materiales, ni siquiera la nueva forma, pero sí una nueva mentalidad' Marcel Breuer, Architecture and Material en Circle: International Survey of Constructive Art, Londres: Faber and Faber, 1971, 194.

4. MARTIN, LESLIE Y SPEIGHT, SADIE, The Flat Book. Londres: William Heinemann, 1939.

5. Jørn Utzon se refiere a la relación con Sir Leslie Martin en estos términos: 'And then it turned out that one of the judges was Leslie Martin, who among other things had designed the splendid Festival Hall and was the London City Council architect, and Leslie Martin had also been one of the judges in Sydney. So the fact that just Leslie Martin entrusted me with this job after the scandal in Sydney made the satisfaction all the greater' Jørn Utzon: What is tradition and renewal? en Kuwait National Assembly. Jørn Utzon Logbook Vol. IV. Hellerup: Bløndal, 2008, 4.

6. Leslie Martin y Lionel March (Eds.): Urban Space and Structures. Cambridge: Cambridge University Press, 1972. Traducción castellana L. Martin, L. March, M. Echenique (et al): La estructura del espacio urbano. Barcelona: Gustavo Gili, 1975.

7. 'El conocimiento será dirigido y desarrollado por principios, es decir, por la teoría. La investigación es la herramienta mediante la cual se hace avanzar la teoría. Sin ella, la enseñanza no puede tener sentido y no se desarrolla un pensamiento vanguardista' Leslie Martin, 'Conference on Architectural Education', RIBA Journal 65 (1958): 280.

8. 'La perspectiva axonométrica describe la planta y el volumen total, con todas las compartimentaciones del espacio, y se representa en un único dibujo. Constituye un medio directo para visualizar las relaciones [...]'. Leslie Martin, 'An architects' drawing' (1982) en Leslie Martin, Buildings and Ideas 1933-83. From the studio of Leslie Martin and his associates. Cambridge: Cambridge University Press, 1983. 222.

9. 'El trabajo que ahora quiero describir puede considerarse simplemente como una serie de estudios. No tiene la intención de mostrar únicamente lo logrado, sino más bien los medios de desarrollo'. Leslie Martin en Dean Hawkes, 'Only connect...', Arq: Architectural Research Quarterly 4, 4 (2000): 303.

10. 'deas generan formas y desarrollándolas crean una tradición' Leslie Martin, Trevor Dannatt, 'Early Years. Towards a new order' en Peter Carolin y Trevor Dannatt: Architecture, Education and research. The work of Leslie Martin: papers and selected articles. Londres: Academy Editors, 1996. 24.

11. 'No hay una forma arquitectónica a priori, o forma predefinida, sino más bien un proceso de análisis de un problema arquitectónico cuya solución depende de las posibilidades tecnológicas y las mejores respuestas funcionales y estructurales y debe ser sublimado a través de la arquitectura'. Leslie Martin en Maddalena Libertini, 'An egg in a box: la costruzione della Royal Festival Hall. The building of the Royal Festival Hall', Architettura 51. 592 (2005): 119.

12. 'Sin precedentes en este país y con muy pocos precedentes en otras partes: un edificio moderno y monumental -moderno en el sentido que pertenece a su tiempo y no a otros tiempos'. J. M. Richards, 'The public Office, The Royal Festival Hall', The Architectural Review (1951).

13. Leslie Martin and Colin St John Wilson, 'St Pancras, London', Architectural Design (1959): 279-281.

14. En este proyecto intervienen Colin St John Wilson y Patrick Hodgkinson. Patrick Hodgkinson, 'on Leslie Martin', Arq: Architectural Research Quarterly, vol. 5, 4, (2001): 297.

15. Ray, Nicholas, 'Cambridge composition', Arq: Architectural Research Quarterly 6. 1 (2001): 32-48.

16. Para Peter Eisenman 'the new Caius College Hostel by Sir Leslie Martin and Colin St. J. Wilson is an example of a mass building. Here the courtyard and the perimeter arcades seem as if they have been hollowed out from a solid brick mass'. Peter Eisenman: The formal basis of modern architecture. Baden: Lars Müller, 2006, 79

17. Alan Colquhoun describe el Harvey Court como 'a brick structure is used

in such a way as to exaggerate the massiveness of this... construction and to create a feeling of enclosure and protection reminiscent of a walled town or Roman amphitheatre'. Citado en Dean Hawkes, The Cambridge School.

Tradition, Research, Development and the Martin Centre en Peter Carolin y Trevor Dannatt, Architecture, Education and research. The work of Leslie Martin: papers and selected articles. Londres: Academy Editors, 1996, 124.

18. Para Kenneth Frampton, 'Leslie's new-found affinity for the architecture of Alvar Aalto and his consistent attempt to develop the work of this Finnish model as far as he was able to carry it, is patently evident from the many large public complexes that issued from his office throughout the next four decades'. Kenneth Frampton, On Leslie Martin, Arq: Architectural Research Quarterly 5, 1 (2001). 11.

19. 'Una agrupación de piezas materiales sujetos a ciertas leyes elementales'. Geoffrey Scott, The architecture of humanism, Edinburgo, 1914, 118.

20. 'La disposición general de los edificios autónomos pero relacionados entre sí se refleja en la apariencia externa del conjunto'. Leslie Martin, Buildings and Ideas 1933-83. From the studio of Leslie Martin and his associates. Cambridge: Cambridge University Press, 1983. 42.

21. Leslie Martin se refiere al arquetipo de biblioteca de Alvar Aalto y cómo retoma proyectos anteriores estableciendo unos arquetipos que se van decantando con la experiencia. 'Aalto built a number of libraries in which he seems to make continuing use and development of the central ideas that originated at Viipuri'. Leslie Martin, Buildings and Ideas 1933-83. From the studio of Leslie Martin and his associates. Cambridge: Cambridge University Press, 1983. 41.

22. Leslie Martin se refiere a la unidad material del edificio y al uso intensivo de ladrillo del edificio al afirmar que 'the brick used externally has been chosen to match that of the older buildings and to assist the overall unification which was one of the objects of the general layout'. Leslie Martin, Buildings and Ideas 1933-83. From the studio of Leslie Martin and his associates. Cambridge: Cambridge University Press, 1983. 55

23. Leslie Martin recurre a la experiencia construida en la Escuela de música de la Universidad de Cambridge (1974-1980) donde la estructura de muros de carga de ladrillo proporciona el necesario aislamiento acústico entre las distintas salas de ensayos y clases

24. Leslie Martin y Franco Albini fueron designados consultores internacionales del conjunto de la Fundación Calouste Gulbenkian que se construye en el parque de Santa Gertrudes en Lisboa cuyos edificios principales, la sede y el museo, fueron proyectados por Alberto Pessoa, Pedro Cid y Ruy Athoughuia y se inauguran en 1969

25. Joan Busquets. La apuesta por la gran escala, UR, Urbanismo 11 (1987): 11

26. 'Los edificios se entienden como una unidad de crecimiento y desarrollo. [...] Cada etapa se desarrolla sobre estos principios. El modelo permite el progresivo desarrollo sin perder el principio generador ni el sentido general de la unidad'. Leslie Martin en Ian Rice, 'Ziggurats for Bureaucrats: Sir Leslie Martin's Whitehall Plan', Arq: Architectural Research Quarterly 8, 3/4 (2004): 318

27. Leslie Martin, Buildings and Ideas 1933-83. From the studio of Leslie Martin and his associates. Cambridge: Cambridge University Press, 1983. 133

28. Ibidem. 135

29. 'Los edificios son de seis a doce pisos de altura y mediante el escalonamiento se abren amplias terrazas colectivas frente a las habitaciones de los pacientes'. Leslie Martin, Naum Gabo, Ben Nicholson, Circle: International Survey of Constructive Art. Londres: Faber and Faber, 1971. 201

30. 'Un sistema de 'mat building' y jardines'. Leslie Martin, Buildings and Ideas 1933-83. From the studio of Leslie Martin and his associates. Cambridge: Cambridge University Press, 1983. 157

31. 'El sistema estructural está concebido en relación con la simplicidad y uso repetitivo' Ibidem. 152

32. Alison Smithson, 'How to recognise and read mat-building: mainstream architecture as it has developed towards the mat-building', Architectural Design 9, (1974): 573-590

33. Ivon Richards. 'Helping forward. A place to work and a place to live. The King's Mill Studio and House' en Peter Carolin y Trevor Dannatt, Architecture, Education and research. The work of Leslie Martin: papers and selected articles. Londres, Academy Editors, 1996, 129-138

*'In all this confusion it seems to me to be worth recording something far more relevant to an architect's activities, that is how to think about, compose and construct buildings and then to create out of all the disparate and conditioning elements some sense of harmony and formal order'. Sir Leslie Martin*

## Leslie Martin: Career and method

Graduated as an architect from the University of Manchester in 1932 and Ph.D. in 1936, Sir John Leslie Martin (1908-2000) began his professional career, recognized in 1973 with the RIBA Gold Medal, combining professional practice and teaching; first at the Architecture School of Manchester University and later on at the Architecture School of the Hull College of Art, where he was appointed director between 1934 and 1939<sup>1</sup>. One must emphasize among his early works the linguistic simplicity of the Nursery School 1 in Northwich, Cheshire (1937-1938) which combines the structural coherence framework with functional pragmatism, unfolding the teaching programme around a core of services, or the Alastair Morton Brampton house (1938) which brings together the architect's emerging formal inquiries in the form of a brick volume with articulated masonry walls projecting as autonomous planes, enhancing the modern conception of the construction plans and assuming Marcel Breuer's claim that appeared in the pages of the Circle journal edited by Leslie Martin together with the painter Ben Nicholson and the sculptor Naum Gabo in 1937: *'the basis of modern architecture... is not the new material, nor even the new form, but the new mentality'*.<sup>2</sup> This new space conception, which demanded a new way of living, was illustrated in the book *The Flat Book* that Leslie Martin together with his wife Sadie Speight published in 1939 as a means of dissemination of modern ideas.<sup>3</sup>

Using traditional materials and autonomous modern planes he designed, as the architect responsible for the London Midland Railway Company and the Scottish Railway, the LMS new stations and the rearrangements of the railroad infrastructure in the post-war from 1939 to 1948 and extended his technical contribution, after World War II, as an architect of the Architecture Department of the London County Council (1948-1953) where he designed along with Peter Moro the Royal Festival Hall (1948-1951) and later on, as chief architect of the London County Council from 1953 to 1956, he developed the project for the Crystal Palace in London (1956) among others. Modern commitment and international recognition of the Royal Festival Hall in London led him to participate as part of the jury along with Eero Saarinen and Harry Ashworth in the international competition of the Sydney Opera House in 1957 and later on as a consultant of the city of Kuwait in the competition for the construction of the National Assembly of Kuwait together with Franco Albini and Omar Azzan in 1971, in both cases giving the first prize to Danish Jørn Utzon.<sup>4</sup>

In 1956 he was appointed professor and chairman of the Architecture Department at Cambridge University where he founded the Department Centre for Land Use and Built Form Studies (LUBFS) in 1967, which was called Martin Centre in 1973 and dedicated to the scientific substantiation of architectural form and to the interrelationship between *'built form'* (architecture) and *'land use'* (urbanism) establishing a theory of urban form published in a reference book entitled *Urban space and structures* edited by Leslie Martin and Lionel March in 1972.<sup>5</sup> For Leslie Martin, *'Knowledge will be guided and developed by principles: that is, by theory. Research is the tool by which theory is advanced.*

*Without it, teaching can have no direction and thought no cutting edge'*.<sup>6</sup> Architects such as Colin Rowe, Colin St John Wilson and Peter Eisenman were forged by him, and the American whom he directed the doctoral thesis entitled *The Formal Basis of Modern Architecture*

presented at the University of Cambridge in 1963, which establishes the formal analysis of eight works of the first half of the twentieth century and the foundations of an analytical method performed by graphic analysis and the recurrent use of axonometric perspective. Methodologically, the British master will resort to the axonometric perspective in his extensive career: *'The axonometric projection allows the plan and total volume, with all its subdivisions of space, to be considered in one single drawing. It formed a direct means of visualising relationships [...]'*.<sup>7</sup> After moving to Cambridge, he restarted his professional activity in 1957 by placing his studio in Great 7 Shelford where he designed until 1986, a great amount of work, in collaboration with partners such as Trevor Dannatt, Colin St John Wilson, Patrick Hodgkinson, Douglas Lanham, David Owers or Ivor Richards, that illustrate his consistent interpretation of modern principles and reflect different scales of an intense career, which he combined with theoretical research and teaching obtaining numerous awards and recognitions. The selected drawings demonstrate, by means of axonometric perspectives accompanying the analysis of his works, the relationship between formal structure and spatial expression and illustrate the links that give coherence to the architectural work.

Combining the theoretical framework with the appeal to the works, his projects contribute to a greater understanding of the diversity of modernity, going through the relentless pursuit of formal order throughout his works. Grouped into six thematic sections, that cover his built work and their compositional fundamentals, these works and projects reveal the lessons of the British master. As noted by Leslie Martin, *'The work that I now want to describe may be regarded simply as a series of studies. It is not intended to show successful ends but rather a developing means'*.<sup>8</sup> From Cambridge, his persistent research drive and his studies on built form nourished teaching and the professional practice, forging their contribution to the common patrimony of knowledge. Leslie Martin wrote that *'Ideas generate forms and by extending them we create a tradition'*.<sup>9</sup> The Royal Festival Hall. *'An egg in the box'* As an architect of the Architecture Department of the London County Council and commissioned by the director architect Robert Matthew, Leslie Martin designed in collaboration with Edwin Williams and Peter Moro the Royal Festival Hall in London (1948-1951), the building was inaugurated during the Festival of Britain, on the centenary of the Great Exhibition of 1851 at Crystal Palace and would become the emblem of post-war British architecture. The reduced execution time and the scarce technological means available illustrate the prowess and technological challenge of the project.

Located on a small plot in the south bank of the Thames, between Westminster Bridge and Waterloo, next to the festival temporary buildings, the project was intended to resolve the complex functional programme which main auditorium had to accommodate an audience of 3000 spectators and it initially had to have a smaller room with capacity for 500 and a large restaurant.

For Leslie Martin, *'there is no architectural a priori or predefined form but rather a process of analyzing an architectural problem, the solution to which depends on technological possibilities and the best functional and structural responses and must be sublimated through architecture'*.<sup>10</sup> The reduced dimension of the plot obliged increasing the programme of the auditorium, which occupied the entire land surface, on a tiered large foyer which, facing the Thames, favours a progressive and gradual approach. Leslie Martin condensed the idea in a series of sketches where he posed the idea of an *'egg in the box'* emphasizing both the acoustic form of the auditorium that flows onto the lobby as the necessary acoustic insulation of the built volume by means of a double reinforced concrete wall.

Suspended over the space assigned for the foyer, the solid volume of the auditorium, a body of 61 x 61 m. and 24 m. high, floats on the large tiered foyer that also houses the large restaurant which is open to the main views and is connected by a system of suspended stairs that ascend to the auditorium, which slope structure characterizes the foyer supported by thin pillars. Renouncing to the frontal monumentality, Leslie Martin and Peter Moro proposed two separate side accesses from different levels, providing a measured threshold that flowed towards the tiered main foyer and propitiated a progressive approach to the auditorium through a promenade orientated towards the Thames, which contained the cloakroom, bars and services and meeting places.

Designed and executed in a short period of time, the Royal Festival Hall is the result of the intense cooperation between the team of architects and engineers of the London County Council, Scott & Wilson and the constructor Holland Hannen & Cubitts, a building that according to J. M. Richards *'without precedent in this country and with very little precedent elsewhere: a modern building -modern in the sense of owing allegiance to no other age but ours- which is also monumental'*.<sup>11</sup> Compositional constants. The cloister system After his experience as Deputy Architect of the architecture department of the County Council, Leslie Martin combined teaching and research at the University of Cambridge and went back to his to his professional practice in his studio in Great Shelford. One can recognize in the architectural production of Leslie Martin, by means of his works and projects, the basic mechanisms of composition, returning to the structure of the British college and the cloister system, analyzing the resources in order to accomplish the unity of the project and the relationships established with the site. This interest goes back to the Master's thesis entitled *'Juan de Herrera 1530-1597'* developed at the University of Manchester in 1932 where Leslie Martin analyzed the courtyard system of the El Escorial Monastery.

In Knighton Hall College at Leicester University (1956-1960) the specialized system of wings, which open onto the east and west with a double bay of rooms and with a single bay of rooms onto the south, defines two courtyards related to a large block housing the collective programme and open towards the landscape. The articulation of the spread out wings favours the creation of reunion and meeting spaces. Both of the interconnected courtyards are characterized by the facades of the rooms, which are open towards the south by means of a gallery and through a long continues window in the other orientations providing an interesting effect on the patios by showing a variation in the composition of the facades although maintaining the formal unity of the complex.

In the College Hall at Knighton, Leslie Martin anticipates the patio archetype consolidated in the Harvey Court at Cambridge (1958-1962), the Student's Residence of Gonville and Caius College, located on West Road, Cambridge. Leslie Martin assumed the traditional resource by arranging the residence for a hundred students around a courtyard, a traditional layout of British colleges. In his preliminary design he developed the tradition of terraced housing, the row of terraced houses that he applied in the residential complex of St Pancras in London looking for, an alternative model of high-rise housing, high density residential alternatives by means of courtyard systems, combining the stepping block with the use of the middle floors which provide a typological diversity of rooms around a central staircase and porch that concentrates all the accesses.<sup>12</sup> Nevertheless, this initial design was abandoned due to the number of staircases and the double orientation of the rooms. Conceived on a rigorous modulation, which is expressed

in the pilasters' order that characterizes the north facade, Leslie Martin manages to integrate the geometric rotundity of his proposal, a concentric arrangement around a courtyard and inscribed in a square, with the naturalness of the scheme that adapts to the characteristics of the environment. For this purpose, he nuances the rotundity of his approach by treating the south face of the complex, by isolating and turning the south wing in order to orientate it to the specific conditions of the climate, orientation and landscape, opening the large courtyard to the environment.

Thus, the plan is powerfully organized and adapts to the circumstances of the place.

Loyal to modern tradition, the work of Leslie Martin also incorporated the influences of Alvar Aalto in Säynätsalo Town Hall (1949-1952) through his collaborator Patrick Hodgkinson, who had worked in the Aalto's studio.<sup>13</sup>

The project, which consisted of four wings in the shape of a 'U' defining a raised patio, is developed around a glazed gallery which opens onto the courtyard. While the linear volume of the library has two openings between both parts, it opens its glass gallery outward to the exterior.<sup>14</sup> The layout of the building reinforces the character and its community presence in the context of the colleges in Cambridge. The student rooms are stepped in height and are oriented to the main courtyard which, as a place of community, acts as a mediation space with the surrounding nature. As a counterpoint, the south wing is subjected to geometric order and opens up towards the exterior, to the correct orientation, generating two openings that communicate the patio with nature by means of a processional staircase and a secondary access outlined by a roof with a single concrete support. These accesses provide partial and indirect paths that emphasize the progressive and gradual approach to building, reinterpreting the typology of Cambridge colleges with an overlay of influences, from Wright's Unity Temple, Le Corbusier's La Tourette and Alvar Aalto fundamentally, Säynätsalo or the stairs to the Baker House at MIT.

The building presents two faces. A stepped front opening up to spacious collective terraces overlooking the main courtyard, in continuity with the land; and a rear face elevated off the ground by large pillars, where circulation takes place and the staircases overlap giving place to the traditional gallery setting of a cloister developed on the facade and open to the environment, turning the traditional cloister type around, where the galleries that surrounded the courtyard arranged the circulations of the building.

The elevated patio contains the service programme in the platform and gives the courtyard a sense of community and a representative character. The courtyard is defined by the wings of the building, the prominent presence of the dining room's skylight that emerges on the patio and the attractive expressiveness of the stepped block of rooms which without giving up the views reach out to the exterior through their openings.

Formal consistency is also indicated by the intensive use of brick, woodwork and wooden blinds. The structure of brick 15 bearing walls adapts to the climate, context and programme. Leslie Martin built a coherent and great architectural building, which was properly implemented and which was of a highly formal consistency resorting to the use of traditional materials and to the composition of the reverse cloistered order.<sup>16</sup> The project proposed permitted the extension of the system in another interconnected precinct, thus, developing the precedent of Knighton Hall College of Leicester University (1956-1960). In the context of the campus, college spaces promote the gathering of academic life.

During his visit to the studio of Leslie Martin in Cambridge, Alvar Aalto drew a sketch of Harvey Court and wrote: '*Erittäin Hyvä*' [Very Good] with amore.<sup>17</sup>

## The arrangement of complexity

To Geoffrey Scott, architecture is '*a grouping of material bodies subject to certain elementary laws*'.<sup>18</sup> This section analyses the resources used in order to achieve the unity of the complex adopted by Sir Leslie Martin. The methodological ambition of the architect accomplishes to arrange complexity by means of a composition that undergoes the idea of totality which structures and articulates the architectural compound of the Manor Road Library at Oxford University (1959-1965), allowing for both the individuality and diversity of the parts as for the intensity and consistency of their relationships. Leslie Martin made possible for the programme of the three libraries to withdraw and get organized, which would tend at the beginning to unfold in three parts, arranging the complexity around a stepped platform and a monumental staircase.

This juxtaposed condition forms a unitary and a plastically active complex which keeps relation and consistency between themselves, trying to solve a complex programme into a compound volume with the same interest in the whole as in the units that form it. For Sir Leslie Martin, '*the general arrangement of interlinked but self-contained buildings is reflected in the external appearance of the group*'.<sup>19</sup> This architecturally articulated order houses the libraries of law, philology and statistics on different levels, these libraries share common services which are contained on a common platform and are characterized by their architectural compactness and overhead lighting. The three libraries have a square floor plan and share generating principles: a double height reading room illuminated from above and flanked by storage areas that are laid out in an 'L' on two levels. The three units have different sizes, the statistics unit has three structural modules, philology has four and law has seven without changing shape or their arrangement only in size, adapting to the functional requirements, demonstrating the validity of the scheme at different scales, thus establishing a formal archetype that he will use in subsequent projects.<sup>20</sup>

The stepwise volume that the complex establishes, together with the logic of the library's design approach and the material unity of the brick façade, converge in the common nexus which is the platform and the itinerary of the processional staircase that provides an independent access to each library. The illumination of the compact form is expressed in the activation of the roof by a skylight that emphasizes the unitarian and compact volume and therefore expresses both the individuality of the library as the unity of the whole. Compactness and structural frame In the Middleton Hall auditorium of the University of Hull (1962-1965) Leslie Martin increases the compactness and accentuates the closed condition of the volume that emerges on a stereotomic and massive platform in which he manages to arrange the volume that houses the main auditorium, with a capacity for 500 spectators, a few exhibition spaces and a small chapel and it establishes a strong and effective connection to the seven main classes of the linear block of the Faculty of Arts' building (1958). When he was developing the podium mechanism of Harvey Court in Cambridge (1958-1962),

Leslie Martin hid part of the auditorium's volume in the base of the platform, adjusting the scale of the building in its environment and presenting a silent language by means of its hermetic and abstract condition that favours the proper relationship with the context, materializing through the intensive use of brick.

The great density of its building materials and the massiveness of the brick enclosure, only highlighted by the metal crowning of the main auditorium's roof structure, are replaced by the continuity and openness of the space in its interior. The programme, inscribed in a massive square base, effectively arranged around the main auditorium, and illuminated from above by

skylights and deep holes in the walls, seems to be excavated in the mass of the square platform and monolithic appearance.

Through the compositional expressiveness of the compact form, Leslie Martin once more organizes the programme of the Music School of the University of Cambridge (1974-1980) around the rectangular prism housing the auditorium characterized by the roof planes' metal coating, which integrates the rhythm of the structure, in contrast with the surrounding lower brick volume. The need to implement the project in different phases provided clarity to the whole. The auditorium is separated and isolated from the smaller facility rooms which were built in posterior phases by means of a number of courtyards that improved sound insulation and preserved some of the site's existing trees. Based on the generating principles which were tested in the libraries he built, in the last phase, the volume of the library attached to the complex. With this modest and respectful response to the site he left compact forms aside in order to approach the idea of a structural grid that would act as a geometric, dimensional and structural support of the project.

The skewed geometry and compactness characterize the project of the social building of the University of Cambridge (1979) which houses an auditorium with seating for 250 spectators and which stage opens up towards the outside amphitheatre carved into the ground. In this project which was not built, its irregular perimeter and oblique sides generate a faceted geometry, taking up again the theme of theatres and stages, frames and classic proscenium auditoriums; he also referred to the fan-shaped auditoriums of the work by Alvar Aalto. Adjusting the scale of the building into its context, the compactness and rotundity of the abstract brick enclosure contrasts with the zinc coating intended for the stage area.

In the project for the University of Bristol competition (1979) Leslie Martin explored the structural grid as an ordering system and provided it with a central spine that strongly arranged the complex. The competition required the construction of the campus in stages and the reuse of a number of buildings that had a domestic character and which would house a few departmental and campus administrative units, while the new buildings would contain the faculties' classrooms which were characterized by their compactness and hermetic nature in contrast to the open and flexible structure of the backbone.

The project adopted the modular frame, as an instrument of additive growth and formal rigour, and presented a spine that acted as a meeting and relationship place between the different university areas, leading on towards the important buildings of the complex housing the auditorium which spread out in a fan-shape echoing Aalto by means of an amphitheatre fitted in the ground, solving the topographic slope.

The building for the Royal Academy of Music and Drama in Glasgow (1979-1980) condenses his architectural experience. Giving continuity to a closed urban form, he constructed a compact and geometric shape that integrated the three main hall rooms in a single block. The three main hall's stage boxes emerged from a lower volume. On a large plot of land located in an important urban site, he recessed the alignment of the street in order to extend the access space and he situated the three main areas dedicated to different types of representation on a central strip. The three main areas being an auditorium with two grandstands, a theatre with a proscenium and an adaptable room for experimental dramas. The three main areas are isolated from all of the rehearsal classrooms by means of corridors, contributing to the necessary sound insulation and also providing direct communication between stage and backstage. The section reveals the idea of stratification

of the complex and segregation of the drama school's programme on the ground floor, placing the music school on the main floor along with the public access to the lobbies of the music and theatre hall rooms. Additionally, the administration block is displaced allowing widening the foyer which is open to the public space by means of a double gallery of pilasters where all the accesses are concentrated.

The compact volume with rooms on the central strip, geometric although not exempt of an exercised plasticity in the brick enclosure, executed with great expressiveness, and which harmonizes with the existing residential building on the site, resorts to the accentuation of its public character with the usual resources: a gallery of large pillars expresses the order of the modular frame that as an instrument of formal rigour governs the building and is revealed in the exterior.<sup>21</sup>

## Structure and landscape

At the Contemporary Art Gallery for the Calouste Gulbenkian Foundation in Lisbon (1979-1983), Leslie Martin conceived a large stretched out roof to be integrated into the terrain, favouring the visual continuity of the landscape and combining a gallery with large structural spans with a strip that, by combining half levels, housed specialized rooms and audiovisual areas. It was reflected on a small lake in order to emphasize the spatial continuity of the large structure on the landscape and the complex was completed with an outdoor amphitheatre that taking advantage of the topographic variation was modelled in the terrain. Emphasizing the integration between nature and construction, the vast structure of double reinforced concrete porticoes is completed with a stepped roof that has greenery on it, allowing visual and physical continuity of the landscape and overhead lighting on the exhibition area.<sup>22</sup> The porch and the access gallery extended the geometric regularity of the spatial structure, regulated by the modular grid as an instrument of economic and formal rigour.

The stepped section would be the generating principle for the unbuilt project of the government complex at Whitehall (1964-1965) in central London. It reordered the area of the British Parliament and Westminster, eliminating traffic according to the research conducted by Colin Buchanan and generating a great civic area flanked by all the new governmental buildings that combined a system of platforms and courtyards, applying the principles that he subsequently published as the '*Grid as Generator*', where unique stepped buildings emerged.<sup>23</sup>

This proposal referred to the stepped building and the structure of Patrick Hodgkinson's Brunswik Centre in Bloomsbury, London (1960-1972), who initially worked in Leslie Martin's studio and where he resorted to the principles of Harvey Court in Cambridge (1958-1962) with low-rise and stepped section buildings developed in different phases around courtyards. In the project of the Whitehall buildings, the construction stages of the complex were foreseen on the basis of the unity of the whole and the diversity of the elements. For Leslie Martin '*the buildings are seen as a developing and growing unit. [...] Each stage would be self regulating. The total pattern would lend itself to development without loss of a generating principle and a general sense of unity*'.<sup>24</sup>

This principle of additive growth would be developed in the building of Zoology, University of Oxford (1963-1964). It raised the issues of standardization and serialization in construction, seeking the unity of the whole without falling into uniformity. Martin Leslie states that '*the size of the grid was selected primarily because of its capacity to meet the needs of both teaching and research with the same structural system*'.<sup>25</sup> The modular coordination of the structure facilitates the

interior space to take on different configurations and adapt to the changes in the university structure. To Leslie Martin, this is '*a system rather than an individual building*'.<sup>26</sup> Under the modular principle, this repetitive but variable layout is organized around a central axis where the circulations and the common elements are concentrated, and where the volume has recessed stages in section in order to give each floor an outer space.

The recessed stages of the section referred to the work of Denys Lasdun, both the Student's Residence at the University of East Anglia, Norwich (1962-1970), as the extension of the Christ's College in Cambridge (1966), a seven-floor-building that adapted in section by using recessed stages and the fragmentation of the units on the site, and has its origin in Marcel Breuer's project for a hospital in Elberfeld (1928) published by Leslie Martin at Circle in 1937, where he explained that '*buildings are from six to twelve storeys high buildings in recessed stages so that wide terraces for the patients are formed in front of the sick-rooms*'.<sup>27</sup> Through these mechanisms of juxtaposition, overlapping and sliding each module gets closer to an outdoor space. This formal mechanism of step section, with which he built the Harvey Court building in Cambridge (1958-1962), would be applied by taking advantage of the topographic slope in the architect's house in Quinta das Torres, Azeitão, Portugal (1964). The domestic programme was adapted to the terrain by using recessed stages in the section and it opened on to different terraces contained in the main volume, which were emphasized by their roofs that extended out in continuity with the land.

## Formal structure and Mat Building

The modular repetition mechanisms tested in the building of Zoology, University of Oxford (1963-1964) raised the notion of system and were developed in the modular grid layout that he built in the Governmental centre in Taif, Saudi Arabia (1970-1977) establishing an '*interrelated mat of buildings and gardens*'.<sup>28</sup> The new complex was located within a walled enclosure besides the monarch's palace and the bazaar of the city, and is characterized by the four access porticoes to the complex which are located at the midpoints of the four sides. The first project showed an extensive form based on a mat building structure formed by the repetition of a structural element in the shape of an inverted pyramid with a single central support. The modular element is organized on a grid and provides a linear system of skylights that solves the connection between the support modules. Each element shows the individual expression but belongs to the same unit of the complex. The interior perspectives of the double height governmental departments and the images of the model show the unity achieved by the modular system, where structure built order. For Leslie Martin '*the structural system is designed in relation to simplicity and repetitive use*'.<sup>29</sup>

The second project, which was finally built, had two floors. The complexity of the programme required a more diversified and stratified complex in two levels by placing the administrative programme on the ground floor and ministerial offices on the first floor, organizing its circulation by means of a system of streets and posing a monumental ramp for the Monarch and other secondary ramps for the ministers which were located at both ends. For Leslie Martin, the system as a method established a capable order, a formal structure with potential for adaptation and change. The extensive, modular and polycentric system established a network of primary and secondary elements of circulation. All of the departments of the complex, offices, meeting rooms, reception rooms and ministerial offices are arranged along a street network. The departments consisted on modules, connected to the two central streets by other transversal ones that open on to long and narrow courtyards that favour the ventilation of the complex and are illuminated by skylights that graduate and filter the natural light. The resulting complex organization of uses and circulations formed a dense fabric of activities

that recalled the architecture of the Islamic world, ordered by an additive modular frame system in the form of mat-building, as an organization system in extension. This mat which was associated with the idea of growth, diminution and change was first posed by the Smithsons in relation to projects developed in Kuwait and it was published by Alison Smithson in 1974 in her article '*How to Recognize and read mat-building*' where she analyzes a set of buildings that share both formal attributes as an organizational system in extension.<sup>30</sup> The system forms a compact volume perforated by small courtyards and characterized by the presence of the skylights and the structure of the mosque. The compound was built on a modular network of reinforced concrete which established an isotropic structure that arranged, in a Unitarian manner, the complexity of the programme. Exploring the tradition of the Islamic city and architecture, Leslie Martin planned an urban area in Saudi Arabia (1975), which provided housing and facilities to a large industrial complex. The plan established an urban centre where he located the mosque, the bazaar and the administration and he conceived, around the community centre, a residential grid formed by low density blocks of buildings in which he designed different typologies of groups, combining the spatial optimization of the main cell with its adaptation to environmental conditions. Leslie Martin examined the typological diversity of the traditional Islamic house, with rooms that opened up to courtyards, and he condensed compositional mechanisms and tested articulations. The displacement mechanism in section, in order to produce a stepped unit, tried to approximate each module to an exterior space ensuring the privacy of its units, as well as increasing the density of the complex. These interconnected and overlapped cells which opened up onto courtyards maintain their spatial qualities and privacy in this manner, the repetition and variation of the basic dwelling unit formed the residential compositional pattern.

## Transformation

Taking up compactness and overhead lighting resources again, in Kettle's Yard art gallery in Cambridge (1969), Leslie Martin provided an effective connection to the existing building, the house of Jim and Helen Ede, a collector and curator of the Tate Gallery in London who befriended many artists and had formed a prominent art collection which was at his home in Cambridge. In this privileged location, next to the church of St. Peter, Leslie Martin adjusted the scale of the building to its environment through an abstract and hermetic volume with a silent language that promoted a proper relationship with its context, materializing it by means of a brick base in continuity with what already existed, on which a lightweight volume emerges, its wooden cladding crowns the main facade and seems to suggest that it floats on the diaphanous rooms of the gallery. The gallery adopts a highly introspective character and all of the diaphanous spaces, which exhibit the richness and diversity of the art collection, share the same deep skylight that provides continuous strips of overhead lighting reflected on the walls. The extension which was built later on in 1981 extended these same principles.

Resorting to the formal archetype of the library designed by the architect and adapted to the circumstances of a place, the Mc Gowan library of the Pembroke College in Oxford (1972) is laid out around a central void lit from above and flanked by storage and reading areas which are on three levels. The volume seeks a certain idea of continuity in the traits of the whole and in its materials to preserve the character of the environment. The renovation of an old mill on a small stream in Shelford, Cambridge (1956) allowed him to explore the transformation capacity of the factory compound; its flexible structure would house his home and studio for decades as well as the

dependencies of his employees.<sup>31</sup> By recuperating the clarity of the formal structure, without interfering with the original building, he accommodated the domestic housing programme around a new space of a double height which linked the main areas of the dwelling and located the architect's workspaces downstairs. Subsequently he refurbished an old barn in Shelford (1977) to house the architect's dwelling by qualifying the original structure, recovering original features and consolidating the structure through minimal interventions to its wooden posts and trusses, opening skylights up on the roof and organizing the programme of the dwelling on the linear block in a sequence of large rooms. The intervention strategies in these buildings located on unique sites seek to respect the environmental pre-existences without renouncing modern language, analyzing the formal and typological configuration of the transformed buildings in order to achieve a harmonious and coherent relationship with the existing buildings, rejecting the contrast position of modernity.

## Conclusion

As Leslie Martin stated, *'I do not propose to speak about forms and images. Form is the end product of a process. I prefer to discuss what seems to me far more important to the architect: some of the intentions and the processes that cause forms to exist and give them their significance and meaning'*.<sup>32</sup> A chronological journey through his works, structured in thematic nodes, his work combines theoretical research, technique and historical consciousness. From his studio in Shelford, *'the father of British Rationalism'* for Reyner Banham, combined teaching at the University of Cambridge with research and the promotion of the discipline forging a distinctive architectural language, through academic and institutional assignments, coordinating the formal discipline of Fine Arts, represented by the English Free Style School of Lutyens, Lethaby and Voysey with the modern principles of Le Corbusier.<sup>33</sup> For Leslie Martin, *'The architectural ideas of my generation drew on these two streams (romanticism and rationalism) and, by merging them, developed a new code'*.<sup>34</sup> A new code characterized by the patient search for a formal order.



LESLIE MARTIN  
MODERNITY  
COMPOSITION  
ORDER  
CONSTRUCTION