arq (2015), **19.2**, 123–132. © Cambridge University Press 2015

Ludwig Mies van der Rohe's idea of a modern courtyard house is explored considering its context stimuli, development, and practical applications.

The Miesian courtyard house

Luciana Fornari Colombo

During the 1930s, the renowned architect Ludwig Mies van der Rohe (Aachen, 1886–Chicago, 1969) developed a series of architectural projects on the courtyard house that were marked by a research through design approach. These projects deliberately tested modern construction techniques and variations in brief, plan configuration, and context in order to modernise a type of house that has existed since prehistory in different places around the world. This house type is characterised by strong introspection. As its exterior facades coincide with peripheral protective walls that have a minimum number of openings, indoor spaces have to search for light, air, and views into private walled gardens that are open only to the sky.[1]

The Miesian version of the modern courtyard house is explored in this article considering three aspects: context stimuli, development, and practical applications. In this manner, this article provides significant contributions to the understanding of such a courtyard house. In fact, so far the stimuli and motivations behind Mies's studies on this theme have been insufficiently explored.[2] This obscurity has facilitated hypotheses such as that some of the courtyard house projects that Mies attributed to himself were not designed by him, but by his students and assistants.[3] This article offers an alternative view of this issue that supports the architect's original claims by clarifying his teaching approach, creative process, and historical context. The present article also clarifies the development of Mies's courtyard house idea through several projects that he designed on this theme, including the Courtyard House with Round Skylight (1934), which has been little explored in previous literature. Ultimately, this article examines the practical applications of Mies's courtyard house idea, both as a motif of student exercise and as an architectural solution for low dwellings, showing that this idea has maintained its relevance throughout the decades.

This article resulted from extensive research that included the consultation of primary sources available in the archives of the Museum of Modern Art in New York (MoMA), the Canadian Centre for Architecture in Montreal, the Art Institute of Chicago, and the Library of Congress in Washington, DC. An example of such sources is provided in the appendix: a manuscript written by Mies in 1962 that has been omitted from the anthologies of his writings, despite containing a key statement on his courtyard house idea.[4]

Context stimuli

Before focusing on the introverted courtyard house, a type of house that was not traditionally built in Germany, Mies had already been exploring the theme of the modern house through the detached house, such as in the Concrete Country House project (1923), and through the apartment block, such as in his project for the Weissenhof Exhibition (Stuttgart, 1926–7). His concern for this theme was not isolated. Various German architects had been investigating the modern house since the 1920s. They explored modern construction techniques as they searched for solutions to the acute housing shortage that had followed war destruction and the growth of urban population. They also tried to solve the discrepancy between the houses being built at that time and the changed cultural and technological circumstances. Mies acknowledged this pursuit when he explained that the creation of a modern house was not only a burning economic necessity, but also a precondition for cultural development.[5]

To achieve such a modern house, Mies studied the architectural use of the glass skin and the skeleton structure as an alternative to the traditional small openings in load-bearing masonry walls. He concluded that only the glass walls secured the architectonic possibilities of the modern skeleton structure such as its greater spatial openness, fluidity, and integration. Mies explained: 'Only now can we articulate space, open it up and connect it to the landscape, thereby satisfying the spatial needs of modern man.'[6] The ancient aspiration for the union of architecture and landscape, of human beings and nature, of indoor and outdoor spaces, was not only facilitated by modern techniques, but also more intensely demanded in the context of a progressively

doi: 10.1017/S1359135515000378

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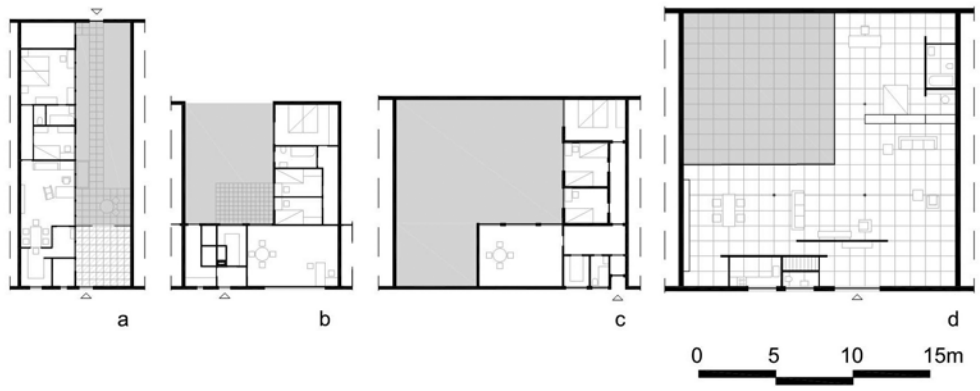
more urban and artificial life. Mies showed concern for this issue when he wrote in his notebook: 'Experienced nearness to nature is being lost', and 'Nature is truly affecting only when it begins to be dwelled in.'[7]

Mies's modern dwelling became visible in the Concrete Country House (1923) and in the Brick Country House (1924), projects that had been especially produced for the lively avant-garde exhibitions and publications of the 1920s.[8] Despite their important contributions, these projects did not exhaust the subject of the modern house. In fact, they opened up an important question: how could the large openings and the maximum spatial integration achieved in these extroverted detached houses for secluded country areas be expanded to the urban context, where space was more limited and less private? Mies would find an answer to this question in the introverted courtyard house. Protected by peripheral masonry walls, the house's interior could be even more transparent without loss of privacy. This reconciliation of seclusion and openness permitted a stronger fusion of the house and its gardens within the city.[9]

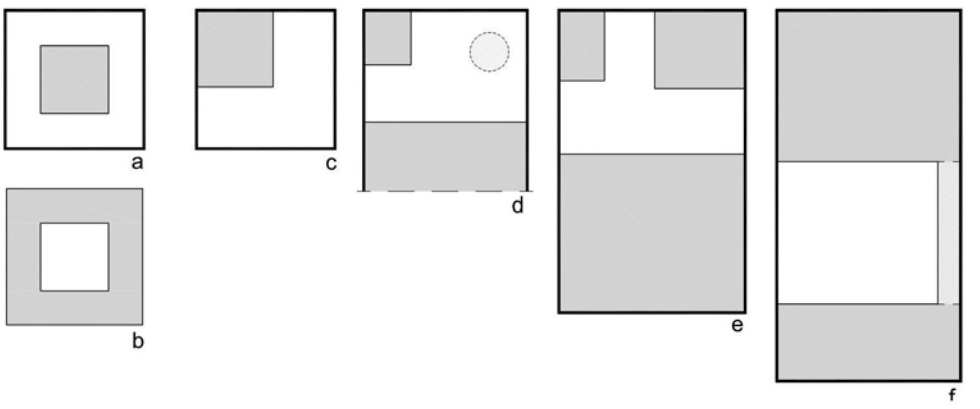
This solution was latent in a number of Mies's projects of the 1910s and 1920s through the presence of enclosed or semi-enclosed courtyards. Among these projects were the above-mentioned Concrete and Brick houses, the Kröller-Müller Villa (1912–13), and the House for the Architect in Werder (1914). Besides houses, these projects also included temporary exhibition pavilions: the Glass Room at the Stuttgart Werkbund Exhibition of 1927, the German Pavilion for the International Exposition of 1929 in Barcelona, and the Model House for the Berlin Building Exposition of 1931.[10]

Mies's attention was more notably directed to the courtyard house with the beginning of his academic career in September 1930, when he joined the Bauhaus school as professor and director. There, he continued the investigations into this type of house that had already been in progress. A few months after his arrival at the school, the journal *Bauhaus Zeitschrift für Gestaltung* of January 1931 featured L-shaped courtyard house plans that had been developed by Mies's colleagues and long-time friends Hugo Häring and Ludwig Hilberseimer *[1a–b]*.[11] These architects worked for the State Research Institute on the economics of the single storey house.[12] Hilberseimer also taught at the Bauhaus from 1929 mainly on the subject of mass housing.[13] Their interest in the courtyard house reflected the search for an equilibrium between green and built areas, as had been championed by the Garden City movement. This type of house could be easily adapted to Germany's colder winter. Large openings could face the sunniest orientation without loss of privacy. Moreover, with larger courtyards and a one-story height limit, the interior of the house would be shaded neither by its own peripheral walls nor by neighbouring units.

Among the several variations of the L-shaped courtyard house that Hilberseimer developed, the type E (1931) became notable for its economy and efficiency *[1c]*. This house is characterised by a corner that shelters the entry and service areas, and connects the private and the social wings. These two wings face the private courtyard and the



1 L-shaped house plans, 1931, by Hugo Häring (a), Ludwig Hilberseimer (b, c), and Ludwig Mies van der Rohe (d).



2 Schematic plan of the traditional courtyard house (a), the detached house (b), and Mies van der Rohe's courtyard houses – Row House, 1931 (c), Courtyard House with Round Skylight, 1934 (d), House with Three Courtyards, 1934 (e), and Courtyard House with Garage, 1934–5 (f).

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3 Model of the Courtyard House with Round Skylight, originally titled 'Project for a Small House 1934'; Art Institute of Chicago exhibition 'Architecture of Mies van der Rohe', 12/15/1938-1/15/1939. Chicago, The Art Institute of Chicago, Ryerson and Burnham Archives, Edward A. Duckett Collection, Digital File # 198602_150504-001.

sunniest orientations: south and west. Moreover, this house is composed of standardised components, and allocates space for anticipated growth. A garage was not included. Access streets would be narrow and limited to pedestrians in order to increase population density and economical viability.[14]

Development

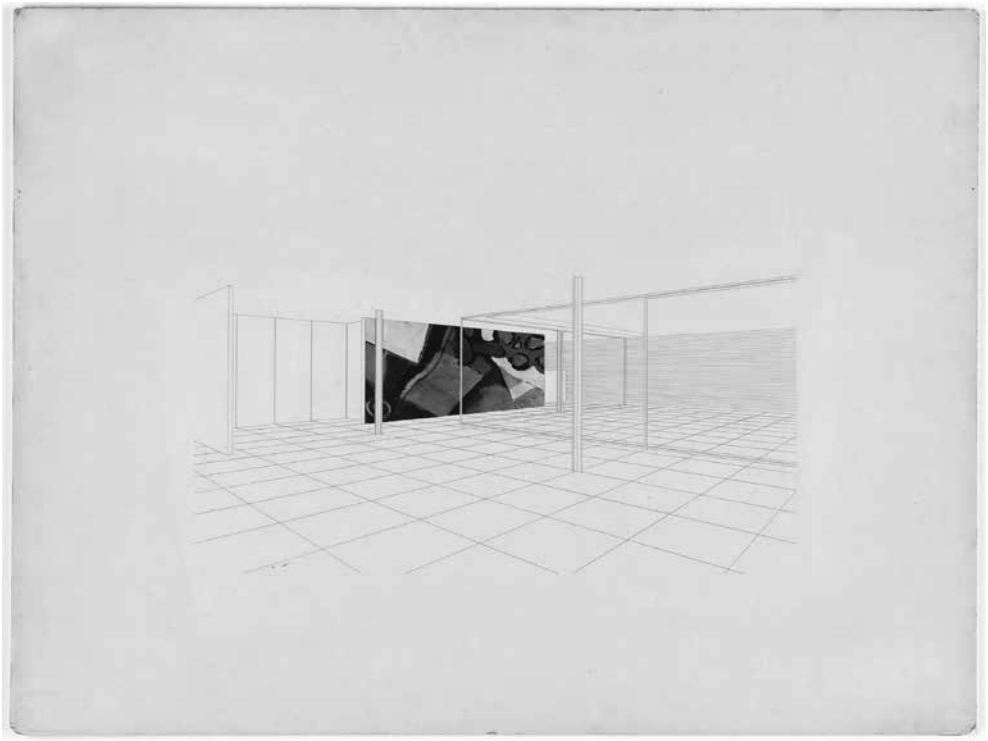
Like Hilberseimer's House Type E, Mies's initial courtyard house study – the Row House – is also dated from 1931 and based on the L-shaped plan *[1c–d]*. Yet, Mies's project introduced some changes that reflected the broader transition from the approach of the previous Bauhaus director, Hannes Meyer, to that of the new director, Mies van der Rohe. Hannes Meyer used to emphasise the economical and functional aspects of architecture. Mies, on the other hand, emphasised the cultural and artistic aspects, while still valuing rationality, discipline, and efficiency.

In fact, in comparison with Hilberseimer's house type E, Mies's Row House has more floor space and fewer bedrooms – one instead of three. With less need of privacy, Mies could reduce the number of interior walls and only subtly arrange interior spaces with furniture, a few low lightweight partitions, and a transparent glass skin. The mullions of this skin were reduced to a minimum number and thickness, reinforcing the visual integration with the gardens and the perception of the interior of the house as being equivalent to the whole space of the land lot contained by the windowless peripheral walls.

Like Hilberseimer, Mies soon assigned to his students experiments with the courtyard houses that he developed from then on. Following the master-apprentice model, teacher and students unified their efforts and creativity to test and refine certain architectural ideas.[15] Among the students that Mies supervised at the Bauhaus were Howard Dearstyne, Eduard Ludwig, Edgar Hed, and Pius Pahl.[16] Dearstyne remembered, 'Mies was to make many ingenious variations of this simple court house, and his students, including me, were all to experiment with it.'[17] Dearstyne added that 'the plans we did for this house were all pretty much alike, varying only in details.'[18] As Mies kept the courtyard house exercise throughout his entire career as educator, numerous student projects similar to Mies's courtyard houses were produced.

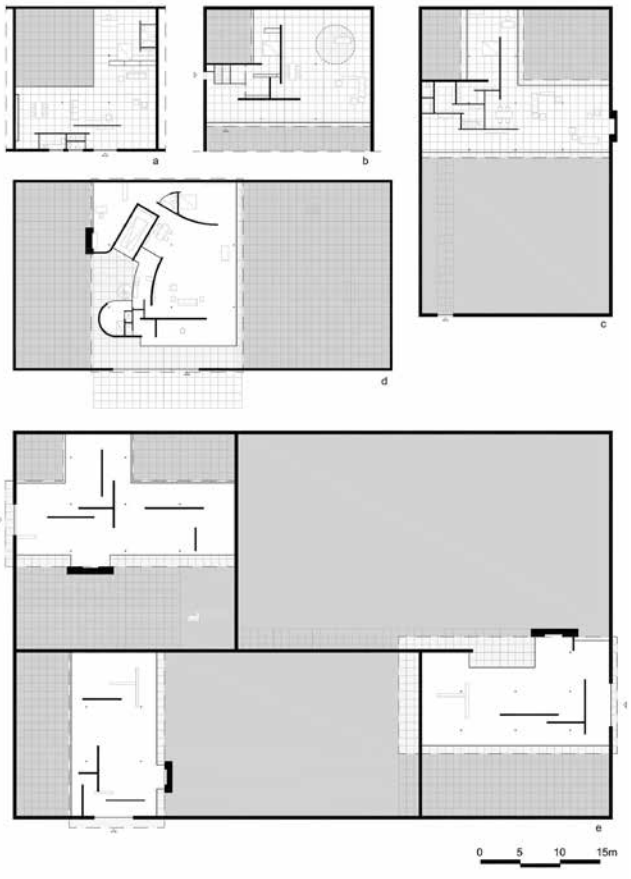
In subsequent variations on his modern courtyard house idea, Mies attempted to reinforce the union of architecture and nature by increasing the number of gardens and by decentralising them in such a way that interior spaces could face two gardens simultaneously. Thus, instead of the traditional O, U, or H-shaped plan, Mies adopted the L, T, or I-shaped plan within the rectangular space defined by the windowless peripheral walls *[2c–f]*. This unconventional plan configuration approximated the introverted courtyard house to its opposite, the extroverted detached house, which is characterised by external gardens *[2a,b]*. Yet, this plan configuration can still be primarily associated with the courtyard house typology because it attaches the roof of the house to windowless peripheral walls in at least two sides. Moreover, Mies's proposal sharpened the contrast between hermetic exterior and open interior, maximising the inherent ability

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4 Ludwig Mies van der Rohe, House with Three Courtyards: interior perspective, after 1938. Pencil, cut-out reproduction (detail from Georges Braque: Fruit Dish, Sheet Music and Pitcher, 1926) on illustration board, 30 x 40' (76.2 x 101.6 cm). New York, The Museum of Modern Art, The Mies van der Rohe Archive. Gift of the architect. Acc. no.: 686.1963.

5 Plan drawings: Row House, 1931 (a), Courtyard House with Round Skylight, 1934 (b), House with Three Courtyards, 1934 (c), Courtyard House with Garage, 1934–5 (d), and Group of Courtyard Houses, 1938 (e).

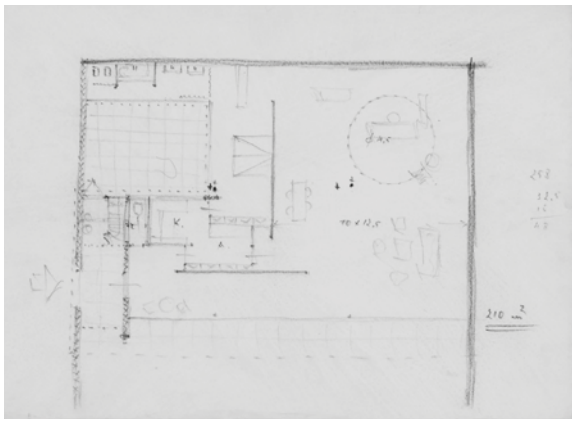


of the courtyard house typology to reconcile privacy and interior openness.

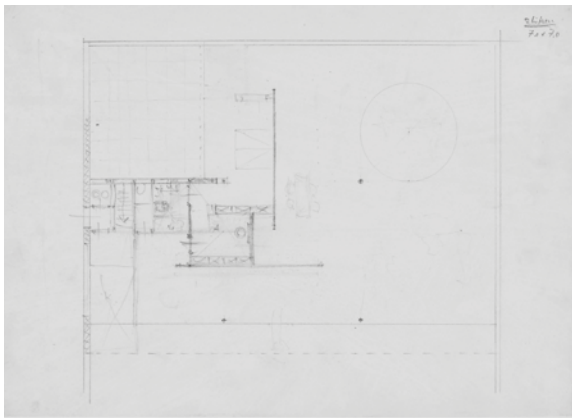
From his profuse courtyard house studies, Mies selected the Courtyard House with Round Skylight (1934) and the Group of Courtyard Houses (1938) for exhibition through models at the Art Institute of Chicago soon after his immigration to America in 1938 *[3]*.[19] Later, in the solo exhibition and monograph produced by the Museum of Modern Art in New York in 1947, Mies presented drawings of the Row House (1931), the House with Three Courtyards (1934), the Courtyard House with Garage (1934–5), and the Mountain House (1934), besides the Group of Courtyard Houses (1938).[20] New presentation drawings were especially prepared for this occasion based on earlier sketches with the help of Mies's assistant and student George Danforth.[21] Among the drawings exhibited were interior perspectives in collage, a modern technique that had emerged from the Cubist and Dada avant-garde and that Mies started using more systematically after 1938.[22] The 'floating' collaged elements introduced in these perspectives represented the elements that were independent from the steel frame structure of the building.[23] These elements were set against a faintly drawn architectural space, reinforcing the idea of architecture as a neutral frame to nature, artworks, and people *[4]*.[24] The drawings prepared for Mies's exhibition of 1947 also included the plan of the House with Three Courtyards. This plan was slightly revised later in Werner Blaser's book *Mies van der Rohe: The Art of Structure* (1965), which was developed in close collaboration with Mies.[25] For example, the bed was moved one module so that a column no longer blocked the garden view from the bed. This revision is consistent with Mies's original sketches of the 1930s.

The above-mentioned series of courtyard house projects shows that Mies's experiments on this theme became progressively more complex and challenging, allowing him to test the limits of his ideas *[5]*. From the Row House (1931) to the Courtyard House with Round Skylight (1934), Mies kept the L-shaped plan and introduced a skylight at the corner and a second courtyard between the house and the property boundary. Such a larger lot with

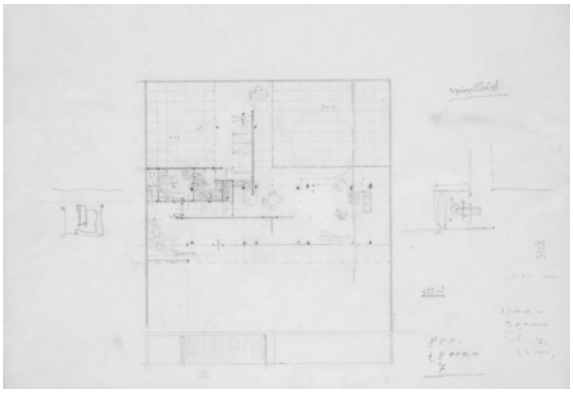
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6 Ludwig Mies van der Rohe, Plan for a Courtyard House with Round Skylight, ca. 1934; graphite on tracing paper, 21.5 x 29.8 cm. Montréal, Collection Canadian Centre for Architecture, DR1987:0259.

7 Ludwig Mies van der Rohe, Plan for a Courtyard House with Round Skylight, ca. 1934; graphite on tracing paper; 21.5 x 29.7 cm. Montréal, Collection Canadian Centre for Architecture, DR1987:0261.

8 Ludwig Mies van der Rohe, Plan and partial sketch plans for a House with Three Courtyards; ca. 1934; graphite, with additions in blue, red and yellow pencil, on tracing paper, 21.5 x 29.8 cm. Montréal, Collection Canadian Centre for Architecture, DR1987:0265.

setback also appears in the subdivision plan that Mies was designing for Margarete Hubbe's property in Magdeburg (1934–5). Yet, the relationship between his courtyard house studies and his subdivision plan for the Hubbe property seems to be limited to generic similarities, as remnant drawings of this subdivision plan show the lots either empty or occupied by detached houses.[26] Moreover, variations among original sketches of the Courtyard House with Round Skylight, and other courtyard houses that Mies designed in 1934, indicate flexible lot dimensions and independence of a specific site. Ultimately, the large suburban lots of the Hubbe commission challenged Mies's courtyard house idea, stimulating further variations on this theme. In fact, Mies continued to explore and to apply this theme to student exercises in private classes after the Nazis closed the Bauhaus in 1933, as the exercises developed by Michel van Beuren and Frank Trudel, among other students show.[27]

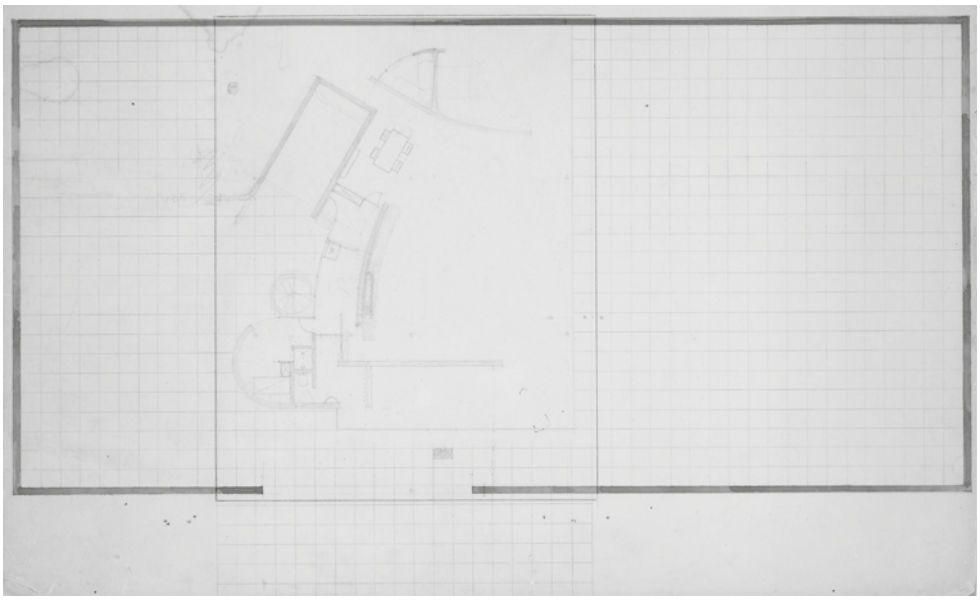
Sketches of the Courtyard House with Skylight (1934) test various plan configurations, including a plan with a more compact service area, which is very similar to the plan of the House with Three Courtyards (1934). To achieve the latter, the architect virtually only needed to change the area covered with the skylight into a third courtyard *[6–8]*. This final change increased outdoor space and advanced the inversion of the position of the courtyards from the centre to the periphery in a way that enhanced the fusion of house and gardens. This change also enhanced spatial diversity. The house acquired small, medium, and large-sized courtyards, which were located next to the service, private, and social areas respectively.

In the following project, the Courtyard House with Garage (1934–5), Mies further modernised the courtyard house by exploring ways to incorporate the recently popularised automobile into the domestic space *[9]*.[28] The presence of the car was highlighted as walls conformed to its trajectory towards the garage, and broke with the orthogonal modulation that had predominated in Mies's courtyard house designs until then.

By integrating various house units into a city block, Mies concluded his studies on a modern courtyard house that especially met the urban context's higher demand for privacy. In the resulting Group of Courtyard Houses (1938), a peripheral brick wall delimited the whole block in the same way it had been used to delimit each house unit. Moreover, the house units were dynamically arranged within the block, as the houses' indoor and outdoor areas had been arranged within the boundaries of each lot. This flexible arrangement overcame the usual monotonous and rigid repetition of a house type, while still conforming to a common rectangular city block. Mies's block of courtyard houses also differed from usual subdivision plans in having larger lots. In fact, this block measured almost one acre but contained only three houses, whose entrances were isolated in different sides. Having no entrance, the fourth side could be attached to another group of houses in order to form a bigger block. Mies considered that the urban impact of the long windowless peripheral walls could be attenuated by setting these walls back from the street and by introducing trees and shrubs. In this manner, Mies further advanced toward his goal of reconciling urban living and nature.

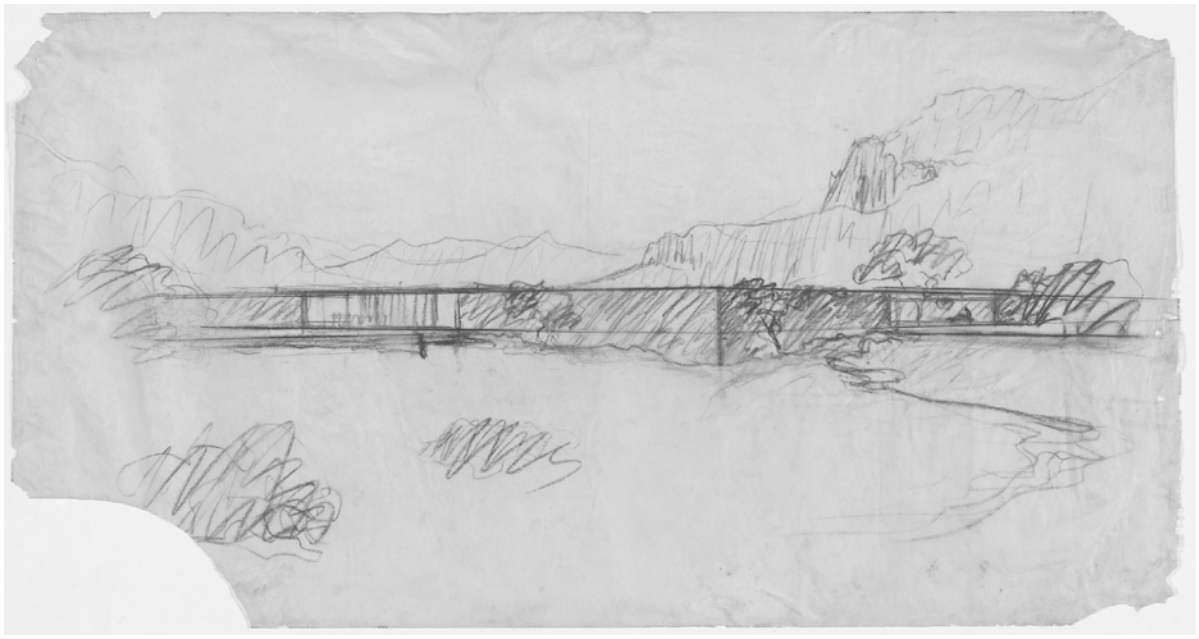
During the 1930s, Mies also tested his courtyard house idea in the country context. There, the walled

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9 Ludwig Mies van der Rohe, Plan for a Courtyard House with Garage, 1934–5; graphite, pen and red ink, and blue coloured pencil on cardboard; 32.7 x 50 cm. Montréal, Collection Canadian Centre for Architecture, DR1994:0005.

10 Ludwig Mies van der Rohe, Mountain House. Perspective view, ca. 1934. Charcoal and graphite on tracing paper, 21 x 39' (53.3 x 99.1 cm). New York, The Museum of Modern Art, The Mies van der Rohe Archive. Gift of the architect. Acc. no.: 706.1963.



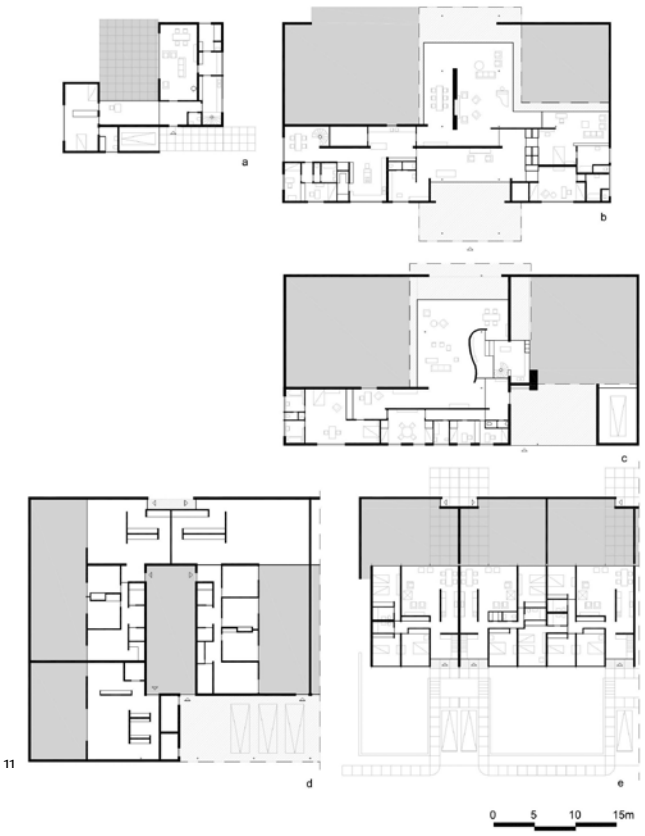
courtyards could provide protection from strong winds, strategic openings towards the surrounding nature, and a rich variety of transitional spaces between intimacy and openness. Mies's country courtyard house, the Mountain House (1934), was inspired by mountainous views that he enjoyed during a trip to the Alps with a group of students eager to continue learning after the closure of the Bauhaus. He designed this house while students also developed house exercises for a site of their choice in that area.[29] In sketches of the Mountain House, Mies tested several configurations, the predominant one being the L-shaped volume embracing a walled court. Each wing of this volume received a large opening to permit cross views through the courtyard, the house, and the landscape.

As nature was no longer restricted to the walled gardens, but spread far and wide, Mies changed the focus of his studies from plans and interior views to elevations and exterior perspectives. The goal of strongly integrating the house into the nature is epitomised by the large charcoal perspective that uses distant vanishing points and foregrounds one corner of the house to emphasise the house's horizontality and to enhance the verticality of the surrounding mountains through contrast *[10]*. This exterior perspective also shows the house in natural stone texture partially covered by vegetation. The base of the house seems to dissolve into the sinuous topography while its lateral limits seem to continue infinitely.[30]

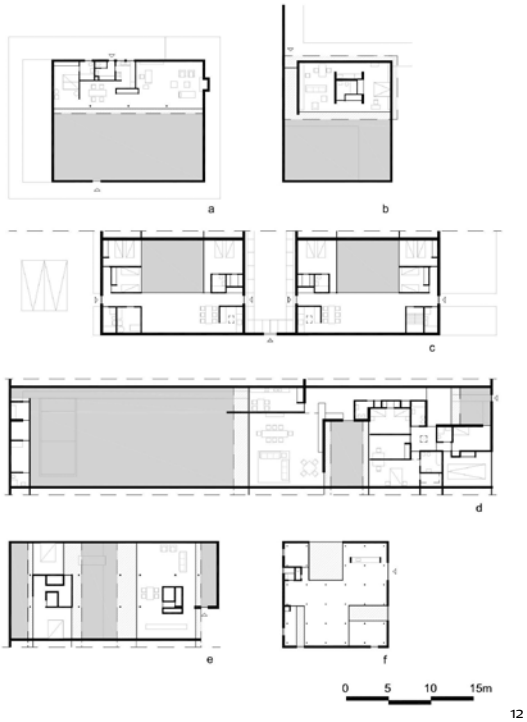
Practical applications

During the 1930s, Mies had the opportunity to apply elements of his courtyard house idea to commissioned projects: the Lemke House (1932–3), the Hubbe House (1934), and the Ulrich Lange House (1935) *[11a–c]*. The Lemke House incorporated the L-shaped plan that Mies had previously envisioned in the Row House. Meanwhile, the Hubbe House incorporated devices that Mies had been developing in the House with Three Courtyards: the decentralised walled courts and a social wing in a

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11 Plan drawings: Lemke House, Berlin, 1932–3 (a), Hubbe House, Magdeburg, 1934 (b), Ulrich Lange House, Krefeld, 1935 (c), Group of Six Courtyard Houses, Lafayette Park, Detroit, 1955–63 (d), Row Houses, Lafayette Park, Detroit, 1955–63 (e).

12 Courtyard house plan by Philip Johnson (a), Eduard Ludwig (b), Yau Chun Wong (c), Eduardo Souto de Moura (d), John Keenen and Terence Riley (e), and Ryue Nishizawa (f).

glass skin with views over two exterior spaces. Besides these devices, the Lange House also included a garage and curved partitions, which Mies explored in the Courtyard House with Garage. However, to satisfy the clients' conventional standards of privacy and need for more bedrooms, the interior spaces of these commissioned projects had to be more enclosed and fragmented. In addition, the peripheral walls had to be more open and extroverted because, being in large suburban or countryside lots, they did not need to be shared with neighbouring units. Mies's courtyard house idea was especially compromised in the Lemke House because of budget and time limitations. Yet, owing to the continuous economical and political crisis in Germany, the Lemke House was the only commissioned project mentioned that was built. Similarly, later proposals that more firmly adhered to Mies's original idea, such as the Group of Six Courtyard Houses for the Lafayette Park Housing Estate in Detroit (1955–63), also failed to materialise *[11d]*.[31] Still, Mies could incorporate elements of his original idea, such as the walled courtyards, into residential and non-residential projects, as exemplified by the Lafayette Park's one story row houses (1955–63) *[11e]*[32] and the New National Gallery in Berlin (1962–8).[33] Mies also incorporated the box-like volume of maximum interior openness into the clear span pavilion concept, a prominent theme of his American work.

Mies's courtyard house idea influenced not only his architectural practice, but also his teaching. This idea became the motif of an introductory exercise that Mies applied to all his students, from the Bauhaus until his retirement at the Illinois Institute of Technology (IIT). Later on, this exercise was maintained at IIT by former students including George Danforth and Arthur Takeuchi.[34] This exercise predefined windowless peripheral walls and a general internal skeleton so that students could focus on principles of spatial distribution without worrying about complicated forms, structures, and relationships with the surroundings. These principles applied to various situations, from the walls of a house to the buildings of a city. In fact, the courtyard house exercise slowly progressed from the house unit to the city block.[35] For example, under Mies's and Hilberseimer's supervision, a group of approximately forty IIT senior students produced a large model showing another possible variation of Mies's Group of Courtyard Houses.[36]

Following its promotion through teaching, exhibitions, and publications, Mies's courtyard house idea has influenced the work of various architects *[12]*. Among pioneer examples are the house that the American architect Philip Johnson built for himself in Cambridge, Massachusetts (1942),[37] and the works of Mies's former students such as Eduard Ludwig's two-room house with patio (Brussels World Fair, 1958) and Yau Chun Wong's group of courtyard houses built in Chicago (1961–7).[38]

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Among later examples of courtyard houses in which Mies's influence was acknowledged are the group of courtyard houses in Matosinhos (1999) that was designed by the Portuguese architect Eduardo Souto de Moura,[39] and the group of courtyard houses in Miami (2006) that was designed by American architects John Keenen and Terence Riley. Similarly, a general Miesian influence was acknowledged by the Japanese architect Ryue Nishizawa, who designed a weekend courtyard house for a country site in Gunma (1998).[40] Like Mies's courtyard house, these houses by Moura, Keenen and Riley, and Nishizawa contain three courtyards, a fluid and generous circulation, minimal partitions, and glass skin facing walled gardens. In addition, Moura's and Nishizawa's courtyards are decentralised and vary in size. Meanwhile, Keenen and Riley's courtyard houses provide space for trees and shrubs on the sidewalk; and interior spaces with views through gardens on both sides.[41] Besides adhering to the Miesian archetype, the above-mentioned projects also introduced features that indicate the continuous openness of the theme of the modern courtyard house for further investigation.

Conclusion

Mies's investigations into the modern dwelling were stimulated by a context of acute housing shortage, technological development, and cultural transformation. From the detached house and apartment block, his attention was directed to the courtyard house as he joined the Bauhaus and continued studies on this house type that were already being developed and promoted at this school. This house type would allow Mies to explore more deeply the potential of modern building techniques to integrate indoor and outdoor spaces, in such a way that was especially suitable for the challenging urban context. In his investigations, Mies modernised the traditional courtyard house typology by introducing the steel skeleton, the glass skin, and a decentralised arrangement of courtyards in order to maximise spatial flexibility and fluidity. This Miesian courtyard house emerged from a series of projects that included the Row House (1931), the Courtyard House with Round Skylight (1934), the House with Three Courtyards (1934), the Courtyard House with Garage (1934–5), the Mountain House (1934), and the Group of Courtyard Houses (1938). Mies consistently applied the essential elements of this courtyard house idea to subsequent works and to student exercises. Through teaching, exhibitions and publications, this idea has continuously influenced the work of various architects, thus promoting a profound equilibrium between openness and privacy, modernity and tradition, technology and nature.

Notes

1. For more information on this house type, please, refer to: Brian Edwards, *Courtyard Housing: Past, Present and Future* (Abingdon; New York: Taylor & Francis, 2006); John S. Reynolds, *Courtyards: Aesthetic, Social, and Thermal Delight* (New York: John Wiley, 2002); Günter Pfeifer and Per Brauneck, *Courtyard Houses: A Housing Typology* (Basel, Boston, Berlin: Birkhäuser, 2008).
2. Sonit Bafna, Associate Professor at Georgia Tech College of Architecture, points out this gap in Miesian scholarship: Sonit Bafna, 'A Morphology of Intentions: the Historical Interpretation of Mies van der Rohe's Residential Designs' (unpublished doctoral thesis, Georgia Institute of Technology, 2001), p. 51.
3. This hypothesis is proposed in: Terence Riley, 'From Bauhaus to Court-house', in: *Mies in Berlin*, Museum of Modern Art, ed. by Barry Bergdoll and Terence Riley (New York; London: Thames & Hudson, 2001), p. 331; Terence Riley, 'Court-House Studies, 1934–35', in: *Mies in Berlin*, pp. 292–5; José Altés Bustelo, 'La casa con patio en Mies van der Rohe', *Forma y construcción en Arquitectura*, 8 (May 2013), pp. 42–57 (p. 56).
4. For anthologies of Mies's writings please refer to: Philip Johnson, *Mies van der Rohe*, 3rd edn (New York: Museum of Modern Art, 1978 [orig. pubs. 1953, 1947]); Fritz Neumeyer, *The Artless Word, Mies van der Rohe on the Building Art* (Cambridge, MA: MIT, 1991). In fact, this manuscript of 1962 seems to have remained unpublished until now.
5. Ludwig Mies van der Rohe, 'Program for the Berlin Building Exposition', in: *The Artless Word, Mies van der Rohe on the Building Art* (1931), p. 310; Ludwig Mies van der Rohe, 'What Would Concrete, What Would Steel Be without Mirror Glass?', in: *The Artless Word, Mies van der Rohe on the Building Art* (1933), p. 314. These writings are also quoted in: Wolf Tegethoff, *Mies van der Rohe: the Villas and Country Houses* (New York; Cambridge, MA: MoMA; MIT, 1985), pp. 66, 111.
6. Ludwig Mies van der Rohe, 'What Would Concrete, What Would Steel Be without Mirror Glass?', p. 314. Also quoted in: Tegethoff, *Mies van der Rohe: the Villas and Country Houses*, p. 66.
7. Ludwig Mies van der Rohe, 'Notebook 1927–8', in: *The Artless Word, Mies van der Rohe on the Building Art*, pp. 281–2. Mies also stated, 'we should attempt to bring nature, houses, and human beings together into a higher unity'; Ludwig Mies van der Rohe, 'Christian Norberg-Schulz: A Talk with Mies van der Rohe', in: *The Artless Word, Mies van der Rohe on the Building Art* (1958), p. 339.
8. Mies also presented these projects in the following lecture: Ludwig Mies van der Rohe, 'Lecture, 19 June 1924', in: *The Artless Word, Mies van der Rohe on the Building Art*, pp. 249–50. Unlike Wolf Tegethoff (1985), who argues that the Concrete and Brick Country Houses were intended for specific clients, possibly Mies himself, this article follows Fritz Neumeyer (1991), Paul Bernard Clark (1996), Sonit Bafna (2001), and other authors who see these works as polemical devices and as avant-garde experiments; see: Paul Bernard Clark, 'A Topical Analysis of Personal hygiene in Ludwig Mies van der Rohe's House Building as a Prolegomena to the Study of Pragmatic Building' (unpublished doctoral thesis, University of Pennsylvania, 1996), p. 56; Bafna, 'A Morphology of Intentions: the Historical Interpretation of Mies van der Rohe's Residential Designs', pp. 30, 83, fn. 10.

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9. Tegethoff, *Mies van der Rohe: the Villas and Country Houses*, pp. 13, 67.
10. Ibid., pp. 67–8, pp. 124–6; Bustelo, 'La casa con patio en Mies van der Rohe', p. 44.
11. Ludwig Hilberseimer, 'Die Kleinstwohnung im Treppenlosen Hause', *Bauhaus Zeitschrift für Gestaltung* (January 1931). For more information on this friendship, please refer to: Franz Schulze and Edward Windhorst, *Mies van der Rohe a Critical Biography, New and Expanded Edition* (Chicago: University of Chicago Press, 2012), pp. 77, 115.
12. Duncan Macintosh, *The Modern Courtyard House* (London: Lund Humphries, 1973 [orig. pub. 1960]), pp. 27–35.
13. Bauhaus Dessau Foundation, 'Ludwig Hilberseimer', available online: <http://bauhaus-online.de/en/atlas/personen/ludwig-hilberseimer> (accessed 2014).
14. Macintosh, *The Modern Courtyard House*, pp. 27–35.
15. Mies's teaching approach is discussed in: Kevin P. Harrington, Rolf Achilles, Charlotte Myhrum et al., *Mies van der Rohe, Architect as Educator* (Chicago : University of Chicago Press, 1986).
16. For examples of Bauhaus student projects supervised by Mies, please refer to: Hans M. Wingler, *The Bauhaus: Weimar, Dessau, Berlin, Chicago* (Cambridge, MA: MIT Press, 1969 [orig. pub. 1962]); Barry Bergdoll, Leah Dickerman et al., *Bauhaus 1919–1933: Workshops for Modernity* (New York: The Museum of Modern Art, 2009); Harrington et al., *Mies van der Rohe, Architect as Educator*; Linda Rayher, 'Hed (Hecht), Edgar', *Institut Kunst- und Baugeschichte/Fachgebiet Kunstgeschichte; karlsruhe institut für Technologie* (2013), available online: <http://kg.ikb.kit.edu/archexil/338.php> (accessed 2015).
17. Howard Dearstyne, *Inside the Bauhaus* (New York: Rizzoli, 1986), p. 226.
18. Howard Dearstyne, 'Howard Dearstyne, Mies van der Rohe's Teaching at the Bauhaus in Dessau', in: *Bauhaus and Bauhaus people*, ed. by Eckhard Neumann (New York: Van Nostrand Reinhold, 1993), pp. 222–9.
19. Models originally exhibited under the title 'Project for a Small House 1934' and 'Residential Group', as shown in photographs of the exhibition available in: Chicago, Art Institute of Chicago, Ryerson & Burnham Libraries, Edward A. Duckett Collection, 1931–78 Accession No. 1986.2, Exhibitions: Architecture of Mies van der Rohe, Box FF 4.1, Box FF 4.31. According to George Danforth, Mies's student and assistant at that time, these models were not prepared by students at IIT but rather brought from Europe; Montreal, Canadian Centre for Architecture Collection, Mies and American Colleagues Oral History Project, George Danforth and Kevin Harrington, Transcript George Danforth interviewed by Kevin Harrington, 1996, p. 83; George Danforth and Pauline Saliga, *Oral History of George Danforth Interviewed by Pauline Saliga*, 1986, Chicago Architects Oral History Project (Chicago: The Art Institute of Chicago, 2003), p. 29; available online: <http://digital-libraries.saic.edu/u?/caohp,2544> (accessed 2014).
20. Johnson, *Mies van der Rohe*. In this pioneer monograph, Johnson introduced these projects as 'court-houses'.
21. As office letters show, Danforth was nominated the 'Chicago Research Associate for the Book and Exhibition' in 1947 in order to prepare presentation drawings of various projects, including the courtyard houses, specially for Mies's solo exhibition at the Museum of Modern Art in New York (MoMA) and for the accompanying book catalogue, which was the first monograph on his work. Washington, DC, Library of Congress, Manuscript Division, Papers of Ludwig Mies van der Rohe, Philip Johnson, Letters to Ludwig Mies van der Rohe, 29 Oct. 1946; 13 Feb, 21 Feb, 16 Apr, 3 Jun 1947, General office file 1923–69, container 35, 40. Danforth was a natural choice because he had already redrawn the Tugendhat House for exhibition at MoMA in 1938–9. Moreover, he was familiar with Mies's work as his student (1938–43, 1946–7), draftsman, and teaching colleague at IIT. Danforth and Saliga, *Oral History of George Danforth Interviewed by Pauline Saliga*, p. 44; Harrington et al., *Mies van der Rohe, Architect as Educator*, p. 157.
22. Ludwig Glaeser, *Ludwig Mies van der Rohe: Drawings in the Collection of the Museum of Modern Art* (New York: The Museum of Modern Art, 1969), commentaries on plates 22–5.
23. Sze Tsung Leong, 'Representing the Almost Nothing: the Drawings of Ludwig Mies van der Rohe', in: *Conventions of Architectural Drawing: Representation and Misrepresentation*, ed. by James S. Ackerman and Wolfgang Jung (Cambridge, MA: Harvard University Graduate School of Design, 2000), pp. 183–200 (p. 189).
24. Mies stated, 'I hope to make my buildings neutral frames in which man and artworks can carry on their own lives [...] Nature, too, shall live its own life.' Ludwig Mies van der Rohe, 'Christian Norberg-Schulz: A Talk with Mies van der Rohe' (1958) in: *The Artless Word, Mies van der Rohe on the Building Art*, p. 339.
25. Werner Blaser stated: 'This book took shape during a number of conversations I was privileged to have with Mies van der Rohe in the impressive atmosphere of his study in Chicago in 1963 and 1964'; Werner Blaser, *Mies van der Rohe: the Art of Structure* (Berlin: Birkhäuser, 1993 [orig. pub. 1965]), p. 220.
26. Ludwig Mies van der Rohe, Arthur Drexler, and Franz Schulze, *The Mies van der Rohe Archive*, 20 vols (New York: Garland, 1986–92), vol. 6 (1986), p. 187.
27. For illustrations of such student projects, please, refer to: Harrington et al., *Mies van der Rohe, Architect as Educator.*
28. The back of the original sketch of this project is signed and dated by Mies; Montreal, Canadian Centre for Architecture (CCA), Mies van der Rohe collection, Ludwig Mies van der Rohe, Courthouse with Curved Elements, Plan, 1934–5, DR1994:0005.
29. Dearstyne, *Inside the Bauhaus*, p. 247.
30. For further details on this project, please refer to: Franz Schulze, 'Mountain House 1934', in: *The Mies van der Rohe Archive*, ed. by Arthur Drexler; Franz Schulze, vol. 4 (1986), p. 16; Glaeser, *Ludwig Mies van der Rohe: Drawings in the Collection of the Museum of Modern Art*, note to plate 11; Cristina Gaston Guirao, *Mies: el proyecto como revelación del lugar* (Barcelona: Fundación Caja de Arquitectos, 2005), p. 205; Tegethoff, *Mies van der Rohe: the Villas and Country Houses*, p. 120.
31. Kent Kleinman, 'Mies's Curve: Technology, Design, and Perfectibility', in: *Hilberseimer/ Mies van der Rohe Lafayette Park Detroit*, ed. by Charles Waldheim (Cambridge, MA: Harvard University Graduate School of Design, 2003), p. 123; Peter Carter, *Mies van der Rohe at Work* (London: Phaidon, 1999 [orig. pub. 1974]), pp. 122–3.
32. Only the backyard of these row houses is walled. Despite being above street level, their front yard is not introspective enough to be associated with the courtyard house typology. For further details on this project, please refer to: George Edson Danforth, 'Pavilion Apartments and Town Houses, 1955–1963, Lafayette Park, Detroit,

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MI', in: *The Mies van der Rohe Archive*, ed. by Franz Schulze, vol. 16 (1992), pp. 412, 454, fig. 5506.3.

33. Other examples of non-residential projects that incorporated courtyards are the unbuilt German Pavilion for the International Exposition in Brussels (1934) and the Museum for a Small City (1940–3).
34. George Danforth, 'IIT Architectural Education', *A + U, Architecture & Urbanism*, 124 (January, 1981), p. 193; Arthur Takeuchi, interview with the author, Chicago, September 2010.
35. Dearstyne, 'Howard Dearstyne, Mies van der Rohe's Teaching at the Bauhaus in Dessau', pp. 226–7; Washington, DC, Library of Congress, Sound Division, John Peter Collection, Transcripts, Ludwig Mies van der Rohe and John Peter, Mies van der Rohe interview by John Peter, 1964, pp. 1–2; Box 5 RPA 00183.
36. New York, The Museum of Modern Art, the Mies van der Rohe Archive, Documents and photo files, Folder 1944_59 IIT.
37. Detlef Mertins, *Mies* (London; New York: Phaidon Press, 2014), p. 242.
38. Danforth and Saliga, *Oral History of George Danforth*, p. 66; available online: <http://digital-libraries.saic.edu/u?/caohp,2544> (accessed 2014); Werner Blaser, *Patios: 5000 años de evolución desde la antigüidad hasta nuestros días* (Barcelona: GG, 1997 [orig. pub. 1985]), p. 172; Werner Blaser, *Mies van der Rohe, Continuing the Chicago School of Architecture*, 2nd edn (Basel; Boston: Birkhäuser Verlag, 1981 [orig. pub. 1977]), pp. 218–23; 'Zweizimmerhaus mit Wohnhof ', in: *Bauen + Wohnen*, 12 (1958), p. 406.
39. David Cohn, 'Holding court', *World Architecture,* 86 (May 2000), pp. 78–81.
40. Ryue Nishizawa, 'SANAA: Kazuyo Sejima and Ryue Nishizawa: Designboom Interview', *Designboom* (October 2005), available online: <http://www.designboom.com/interviews/sanaa-kazuyo-sejima-ryue-nishizawa-designboom-interview/> (accessed 2014). Mies's influence is perceptible, for example, in the Toledo Museum of Art Glass Pavilion (Ohio, 2006) designed by SANAA (Ryue Nishizawa and Kazuyo Sejima). This project relates more closely to Mies's Museum for a Small City (1940–3).
41. Terence Riley and John Keenen, *K/R: Projects/Writings/Buildings* (New York: Ten Thousand One, 2007); Philip Nobel, 'Mies in Miami', *The New York Times* (7 December, 2006), available online: <http://www.nytimes.com/2006/12/07/garden/07miami.html?pagewanted=all&_r=0> (accessed 2014); Robert Landon, 'Bauhaus Heads South', *aïshti magazine*, pp. 198–200, available online: <robert-landon.com/Design-Architecture-Miami.pdf> (accessed 2014).

Appendix

Letter from Ludwig Mies van der Rohe to Mr Stefano Desideri dated 29 January 1962.

Washington, DC, Library of Congress, Manuscript Division, Papers of Ludwig Mies van der Rohe.

January 29, 1962
Mr. Stefano Desideri
Corso Romana 65
Montecatini Terme, Italia

Dear Mr. Desideri:
Thank you for your recent letter regarding the court houses. I made these projects at the Bauhaus and during the years 1931 to 1938, and it was a pity that they were not built at that time. I am sure that the court house is one of the best solutions possible for low dwellings, and I think that it is particularly suitable for town and city living where privacy is a very important requirement.

During the thirties, we made plans for court houses of various sizes, some with one court, others with two or three courts. The use of free standing walls and large glass areas within a peripheral enclosing wall gave these plans a great richness, even when the house was quite small. However, without the large glass areas I think that the essential character of these plans would not have been possible.

If a city block were to be developed with court houses, in either tight or loose arrangements, I am certain that the access spaces between the houses could be developed in a very interesting way. The walls of the houses could be set back from the access roads and paths and the space between planted with trees and shrubs.

Of course, a court house is, also, possible in the country. I proposed such a house in 1935 for Ulrich Lange. This would have been built near the Dutch border where the climate is pleasant but where outside living can be spoiled by strong winds. The Lange house had two courts. The court for the kitchen and garage formed an enclosed space. The court for the living room remained open to permit views of the surrounding country but provided the necessary protection against the wind.

Certainly, these projects developed from the architectural ideas of my earlier buildings. Both the brick house and the Barcelona Pavilion possessed structural and spatial characteristics which may be seen in the court houses.

I think that a really good architectural idea will stand development and variation in this way because a really good idea will always have a general application. I think this attitude is very important in architecture today.

Sincerely yours,
Mies van der Rohe

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Acknowledgements

This article derives from the doctoral thesis 'Theoretical Projects, Nature & Significance through the Case Study of Mies van der Rohe's Work' (2012) that the author completed at the University of Melbourne, Australia, with scholarship support from this University and from the Norman Mcgeorge Bequest. Appendix material is published by courtesy of the heirs of Ludwig Mies van der Rohe.

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https://doi.org/10.1017/S1359135515000378 Published online by Cambridge University Press