# Analyzing Privacy in Frank Lloyd Wright's Prairie Style Homes Through Syntactic Methods using "A Graph" and Depth Map X Softwares

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Frank Lloyd Wright's Prairie Style homes, designed across the United States, showcase his unique architectural approach. This study examines how Wright's designs interact with environmental conditions, focusing on privacy in eight Prairie Style homes. Detailed floor plans and architectural evaluations were analyzed using space syntax tools to assess spatial connections. The results show that Wright prioritized bedroom privacy, with lower integration values indicating seclusion. Public areas like living and dining spaces had higher integration values, promoting connectivity. The study confirms that bedrooms in Wright's Prairie Style homes are intentionally designed as private spaces, with some exceptions. These findings highlight the importance of layout morphology in creating private zones within open-plan layouts. This research sheds light on Wright's innovative approach to balancing privacy and openness in residential architecture.

**Keywords:** Privacy Regulation; Space Syntax; Visibility analysis; Prairie style houses; Frank Lloyd Wright

**Introduction:**

Frank Lloyd Wright's Prairie Style residences, iconic of early 20th-century American architecture, skillfully blend nature and design. These homes showcase horizontal lines, flat or hip roofs, and open interior spaces, which are common characteristics found in homes throughout the United States. While rooted in traditional design principles, the Prairie Style also incorporates elements of contemporary modern architecture, such as open floor plans and seamless integration with the landscape. Wright's vision of harmonizing natural surroundings with the built environment is reflected in these structures [1]. One fascinating aspect of Wright's design is his approach to privacy within these homes, particularly how he adeptly balances private and public spaces through architectural layout, making it a notable feature worth further exploration [2].

Privacy is a crucial element in home design as it directly impacts the comfort and functionality of living spaces. Achieving the optimal level of privacy requires careful consideration of space flow, room placement, and methods to control visibility and sound [3]. This is particularly significant in Frank Lloyd Wright's Prairie Style homes, renowned for their open layouts and seamless indoor-outdoor connections. To delve into how Wright's designs tackle privacy issues, this study analyzes eight Prairie Style residences utilizing space syntax tools like A-graph and Depthmap-X [4]. The research aims to investigate the balance between openness and seclusion in Frank Lloyd Wright's Prairie Style homes. While the open-plan design promotes flow and connectivity, it also presents challenges in creating private spaces [5]. This study seeks to explore how Wright reconciled these opposing ideas to achieve a design that values both personal privacy and social interaction. By examining Wright's privacy-focused design principles, the research will analyze the spatial dynamics and integration of different areas within his architectural works [5].

Previous studies on Wright's architecture have extensively discussed his aesthetic contributions, structural innovations, and design philosophy, emphasizing his commitment to organic architecture, skill in harmoniously blending buildings with their surroundings, and pioneering use of open floor plans. However, there has been limited focus on how Wright addressed privacy issues within these open layouts. While the literature often mentions the fluidity of space in Prairie Style homes, it rarely delves into the spatial hierarchy and the specific methods employed to establish private areas [6].

Recent advancements in architectural analysis, such as the development of space syntax tools like A-graph and Depthmap-X [7]. These tools enable a comprehensive examination of spatial configurations, revealing patterns of movement, accessibility, and seclusion within architectural layouts. They have been used in various studies to analyze both historical and contemporary architectural designs, offering insights that were previously unattainable through traditional analysis methods [8].

**Objectives:**

This article examines the historical and cultural significance of Frank Lloyd Wright's Prairie Style homes, with a specific focus on the design strategy related to bedroom privacy. The study seeks to explore how privacy was incorporated into these architectural gems by analyzing through space syntax tools.

**Novelty statement:**

This study provides a unique examination of the often-overlooked aspect of bedroom privacy in Frank Lloyd Wright's Prairie Style homes. Integrating space syntax theory, sheds new light on Wright's innovative design principles. The research addresses a gap in current literature, offering a fresh perspective on the importance of private spaces in Prairie Style architecture.

**Material and Methods:**

**Investigation site:**

The study examines Prairie Style homes designed by Frank Lloyd Wright in diverse regions of the United States, such as Illinois, New York, and Minnesota. These homes were chosen for their varied climates, including cool winters, pleasant summers, and an average annual precipitation of 30-40 inches. They are well-preserved, showcasing original design elements that epitomize Prairie Style architecture and hold historical significance in Wright's career. These homes are easily accessible for research, come in different sizes to analyze bedroom privacy in various layouts, and are extensively documented with historical and architectural records. The different soil types, ranging from rich loams to clay, provide a unique setting for Wright's architectural concepts, allowing the study to explore how these homes interact with different environmental conditions and support the hypothesis regarding the relationship between privacy and house design [2].

**Methodology:**

The study on Frank Lloyd Wright's Prairie Style homes utilized information from reputable sources such as the Frank Lloyd Wright Foundation, scholarly periodicals, and official websites of conserved Wright residences like the Robie House and Darwin Martin House. Detailed floor plans and architectural assessments were obtained from these sources, along with peer-reviewed studies on the architectural significance and spatial dynamics of these homes accessed through digital repositories like JSTOR and Google Scholar. Background material from books by renowned architectural historians and Wright biographers, such as "Frank Lloyd Wright: A Biography" by Meryle Secrest and "Frank Lloyd Wright: An Autobiography," was also consulted. The data sources were thoroughly cross-checked for accuracy and reliability.

The methodology involved a systematic examination of floor plans using A-graph and Depthmap-X, space syntax analysis tools known for their accuracy in determining spatial connections and integration values in architectural layouts. This approach ensures the research's replicability. Convex maps and justified graphs (j-graphs) were created to visually represent and quantify the spatial integration and segregation of different areas within the homes. The data were then analyzed to explore the relationship between spatial arrangement and privacy, a central theme in Wright's designs [3].

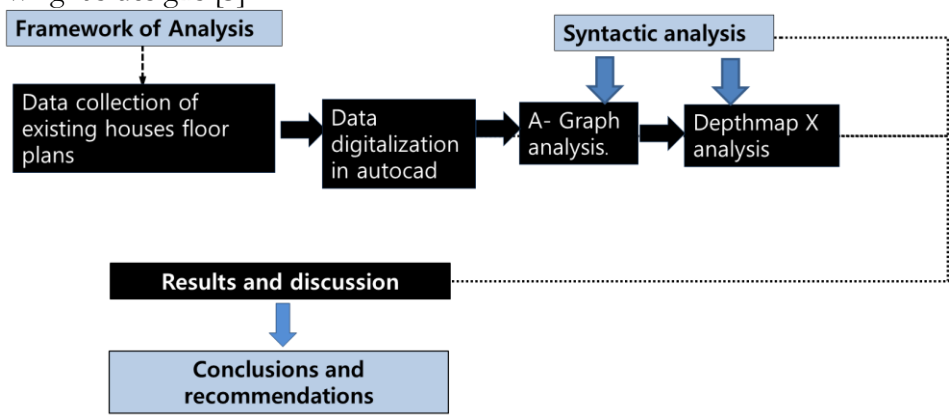



**Figure 1.** Flow diagram of methodology.

**Results and discussion:**

A syntactical examination of Frank Lloyd Wright's Prairie Style homes indicates a strong emphasis on bedroom seclusion. This research looks at the Robie House, Willey House, Darwin Martin House, Winslow House, Loren B. Pope House, Edward E. Boynton House, and Warren Hickox House, eight of Wright's Prairie Style homes. The research reveals a crucial aspect of Wright's architectural approach: he regularly planned these residences to provide isolated, secluded bedrooms.

**Robie house:**

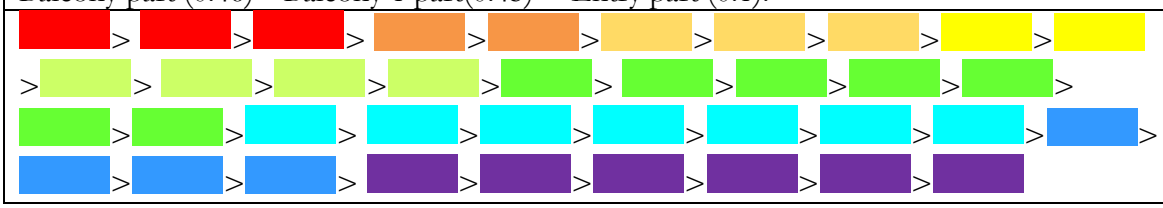
Frank Lloyd Wright's Prairie Style home, like the Robie House, features an open interior that challenges traditional design. The house showcases secluded bedrooms and a cohesive main living area with reduced transition areas and partitions. The interconnected living spaces flow seamlessly, despite the house's shallow depth. The design includes visible connections through stairs and hallways, while private spaces remain separate. The house features multiple entrances and pathways that connect to its surroundings. The servant quarters are isolated, while the living and dining spaces are interconnected around a central fireplace. The design eliminates traditional corridors, emphasizing Wright's horizontal emphasis.

**Results:**

The dining area and living space have high integration values marked red in Table 2 below, respectively, indicating a strong correlation. In contrast, the master bedroom, guest bedroom, and children's room have lower integration values marked blue in Table 2, suggesting more privacy in these areas. Shared spaces like the living room and dining area are more interconnected, while private spaces like bedrooms are less integrated.

This design philosophy aligns with Frank Lloyd Wright's emphasis on open, interconnected public areas and private room privacy.

**Table 1.** Showing integration (HH) values descending order for all spaces for Robie House

| INTEGRATION (HH) - DESCENDING ORDER: |
|---|
| Stairs (1.10) >Stairs (1.05)> Corridor (1.04)>entry (1.00)>Stairs 1 (0.93)> Living area( 0.90)> Corridor part (0.89)>Dinning (0.88)> Billiard(0.83)> Lobby (0.81)> Playroom (0.79)>Balcony 1 (0.77)> Kitchen lobby (0.76)> Living area part( 0.73)= Guest room (0.73)> Dinning part (0.72)> Fireplace (0.7)= HVAC room (0.7)> Master bedroom (0.69)= Road (0.69)> Children room (0.68)= Kitchen (0.68)= Lobby part (0.68)> Play room part (0.67)= Kitchen (0.67)> Fire place part (0.66)= Main porch (0.66)= Porch (0.66)> Kitchen dinning (0.6)= Stairs 3 lobby (0.6)= Deck (0.6)=Porch (0.6)= Laundry (0.6)>Guest bedroom (0. 59)= Bath 1(0.59)= Dress (0.59)= Bath( 0.59)> Driveway (0.55)> Servant's corridor (0.53)> Balcony (0.52)= Stairs 3 (0.52)> Garage (0.49)= Store (0.49)= Driveway path (0.49)> Servant's room 1(0.48)= Servant's room (0.48)> Servant's bath (0.47)> Balcony part (0.46)> Balcony 1 part(0.45) > Entry part (0.1). |
|  |

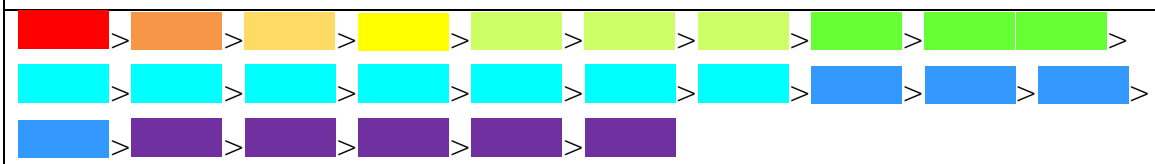
**Winslow house:**

Frank Lloyd Wright's concept of "destroying the box" is exemplified in The Winslow House, showcasing interconnected rooms that flow seamlessly. The main living spaces on the first floor, including the foyer, kitchen, dining room, living room, library, porch, and reception hall, blend together to create an open-concept design. By minimizing hallways and transition spaces, the layout enhances spatial integration and circulation. The fireplace serves as a central focal point, anchoring the living and dining areas and connecting various functional zones.

The bedrooms and other private spaces are situated on the upper floor, ensuring seclusion. The house has four entrances, two of which are service-related, providing separate circulation routes. The design seamlessly integrates internal and outdoor spaces, creating three exterior paths. With fewer hallways and a focus on functional linkages, the Winslow House achieves a balance between open living areas and private quarters.

The analysis of integration levels in the living space and reception hall confirms our theory. The living area exhibits the highest integration score marked red in Table 4 below, indicating a more integrated environment. In contrast, the bedrooms show lower integration values marked blue in Table 4, suggesting a privacy preference. Similarly, the dining room falls into the less integrated category having lower values. These findings support our theory that bedrooms are designed for seclusion while living and reception areas are intended for greater integration.

**Table 2.** Showing integration (HH) values descending order for all spaces for Winslow House

| INTEGRATION (HH) - DESCENDING ORDER: |
|---|
| Lobby 1 (1.01)= stairs 1 (1.01)>Transition space (0.97)> Stairs (0.93), Reception hall (0.87)>Lobby (0.85)= Kitchen (0.85)> Transition space 1 (0.82)> Lobby 2 (0.78)>Hallway (0.74)=living area (0.74)>Exit lobby (0.71)>Podium (0.7)= pantry (0.70)= transition space 2 (0.70)> Bedroom 3 (0.69)> Bath (0.68)= library (0.68)> Car port (0.66)= dinning area (0.66)> Bedroom (0.62)= > Bedroom 2 (0.62)>Patio 1 (0.63)> Sitting room part (0.61) =sitting room part 1 (0.61)> Living room part (0.60)> Patio (0.59) = outdoor seating 1 (0.59)= store (0.59)> Pathway (0.58) =patio stairs (0.58)> Laundry (0.57)> Conservatory (0.55)= fireplace (0.55)= outdoor seating area (0.55)> Sitting room (0.53) = bath 1 (0.53)= bedroom 1 (0.53)> Road (0.49)> Fire place (0.45). |
|  |

**Darwin Martin House:**

Frank Lloyd Wright's design principle of "destroying the box" is evident in the interconnected spaces of the Darwin Martin House. The first floor features a cohesive layout with interconnected living areas, minimizing hallways for spatial unity. The upper floor includes private spaces, and the house has four entrances for distinct circulation paths. The living room serves as the focal point, connecting functional sections with the fireplace as a visual anchor. This design emphasizes functional connectivity and a harmonious blend of private and open living spaces.

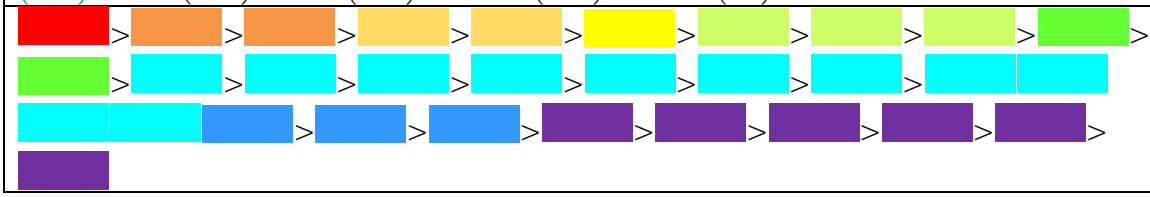
**Results:**

Comparing the integration values, it is evident that the living room, dining area, and verandah are the most integrated spaces in the Darwin Martin House marked red in table 6 below, central to its open-plan design. In contrast, the bedrooms prioritize privacy, i.e bedroom 7, bedroom 8, bedroom 2, bedroom 4, bedroom 5, bedroom 6, and the master bedroom showing lower integration values shown blue in table 6. These findings support the hypothesis that living and dining areas are more integrated, while bedrooms maintain privacy. Notably, bedroom 3 stands out with a higher integration value marked green, suggesting a unique spatial relationship or function within the house.

**Table 3.** Showing integration (HH) values in descending order for all spaces for Darwin Martin House

| INTEGRATION (HH) – DESCENDING ORDER: |
|---|
| Transition space 1 (1.05)> Reception room (0.99)= Stair 1 ground (0.99))> Landing (0.89)= Lobby 6 (0.89)> Hall 1 lobby2 (0.87)= Stair 4(0.87)=Lobby upper (0.87)> Lobby1( 0.85)= Fire place (0.85) = lobby 2 (0.85)> Kitchen (0.83)= Outdoor patio (0.83)> Stair (0.82)> Hall ( 0.80)> Library (0.79)= Stair lobby (0.79)> Hall part ( 0.77)= Living room |

(0.77)> Hall 1 part (0.75)>Hall 1 lobby (0.74)>Hall 1 part2 (0.73)= Open to sky (0.73)= Bedroom 3 (0.73)> Porch outdoor ( 0.71)> Sewing room (0.69)>Lobby (0.68 )= Dinning room (0.68)= Staff dinning room (0.68)> Bath 1(0.66)= Verandah (0.66)> bedroom 7 (0.65) = bedroom8 (0.65)> Bedroom 2 (0.64)= Store (0.64)> Balcony (0.63)= Bedroom 4 (0.63)> Bath 1(0.62)>Outside lobby 1(0.60)> Bedroom5 (0.59)> Bedroom 6 (0. 58) = Bath 2 (0.58)> Patio stairs (0.57)= patio stairs 1 (0.57)> Master bedroom part (0.56)> Bedroom 2 part (0.55)= Office (0.55)> Bedroom 4 part ( 0.54)= Bedroom 4 part 1 ( 0.54)> Drive way (0.51)> Outdoor seating area (0.50) = outdoor seating area 1 (0.50)>Master bedroom (0.49)= bath (0.49)>Road (0.45)> Stair 1 (0.33)> Hall 3 (0.1).



**Edward E. Boynton house:**

Frank Lloyd Wright's concept is evident in the Edward E. Boynton House design, with open and interconnected rooms. The living and dining rooms on the first floor, along with the front porch, serve as focal points, minimizing passageways. The upper floor has bedrooms. The house has four entrances, creating distinct circulation paths. The living room, with a central fireplace, ties the house together. The first level includes functional areas like the study, kitchen, dining, living room, and servant's quarters, while the second level has bedrooms. The design eliminates traditional transition areas for a seamless layout.

**Results:**

If we compare the integration values of the tables dining room and living room are more integrated having high integration values marked red in Table 7 below, on the other hand, bedrooms 3, bedroom 2, bedroom 1, have lower integration values marked blue in table 7 hence the results are in support of ours hypothesis all the bedrooms have almost same integration values and all are less integrated and their privacy is maintained.

**Willey house:**

Willey House is a single-story Frank Lloyd Wright prairie-style house. The central space combines the living and dining rooms, with the kitchen separated by shelves. The bedrooms are located at the back of the house, connected to the living area by a gallery/hallway. The surroundings offer stunning views, with a glass door in the south wall of the living room overlooking nature. The design of the Willey House reflects Frank Lloyd Wright's "destruction of the box" concept, creating flowing spaces with bedrooms as the most private areas at the back. The living area, foyer, and gallery are integrated spaces, while the bedrooms are more secluded.

**Results:**

When comparing the integration values of different areas in the Willey home, we observe that the living room and foyer have higher integration values marked red in Table 10 below. In contrast, the master bedroom and bedroom have comparatively lower values of integration marked blue in Table 10, supporting the idea that bedrooms are less integrated and maintain similar levels of privacy.

**Table 4.** Showing floor plan and its analysis in the form of J- graph and Convex map.

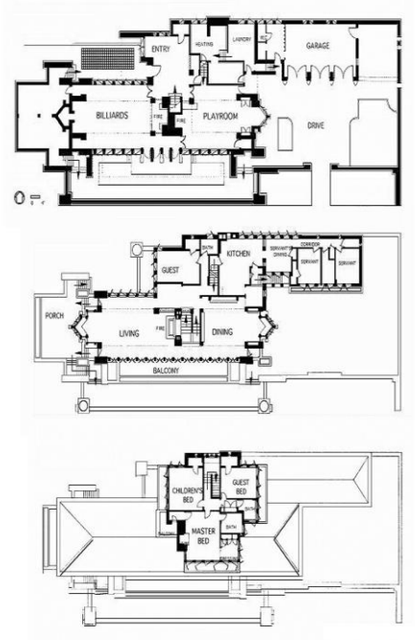
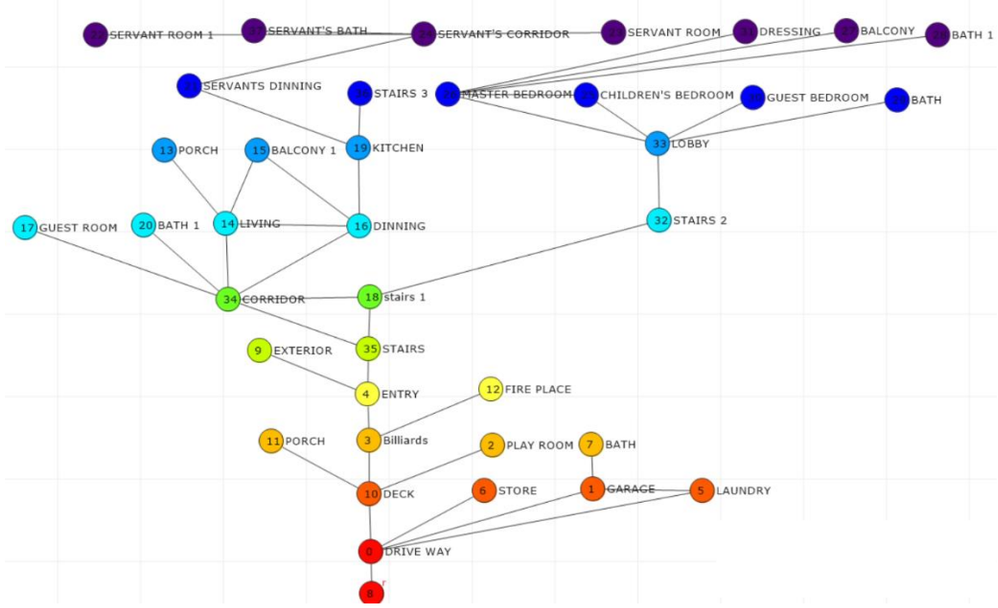
| PLAN | A-GRAPH | DEPTHMAP |
|---|---|---|
|   www.archdaily.com |   |  |

**Table 5.** Showing floor plan and its analysis in the form of J- graph and Convex map

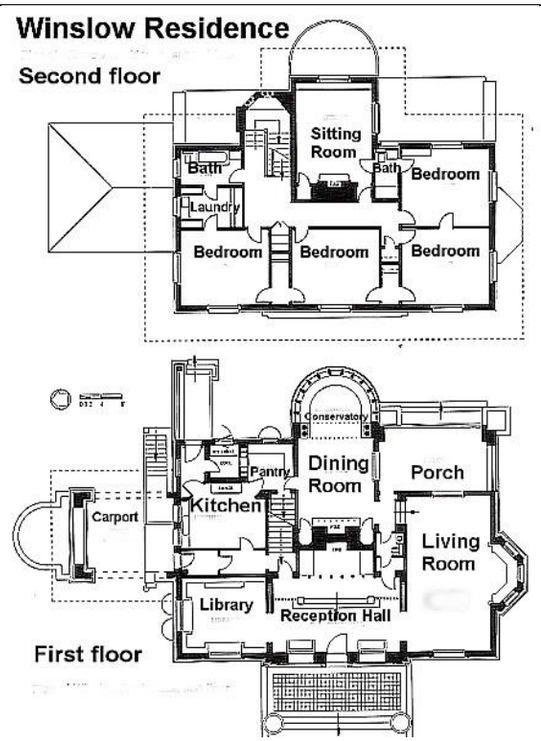
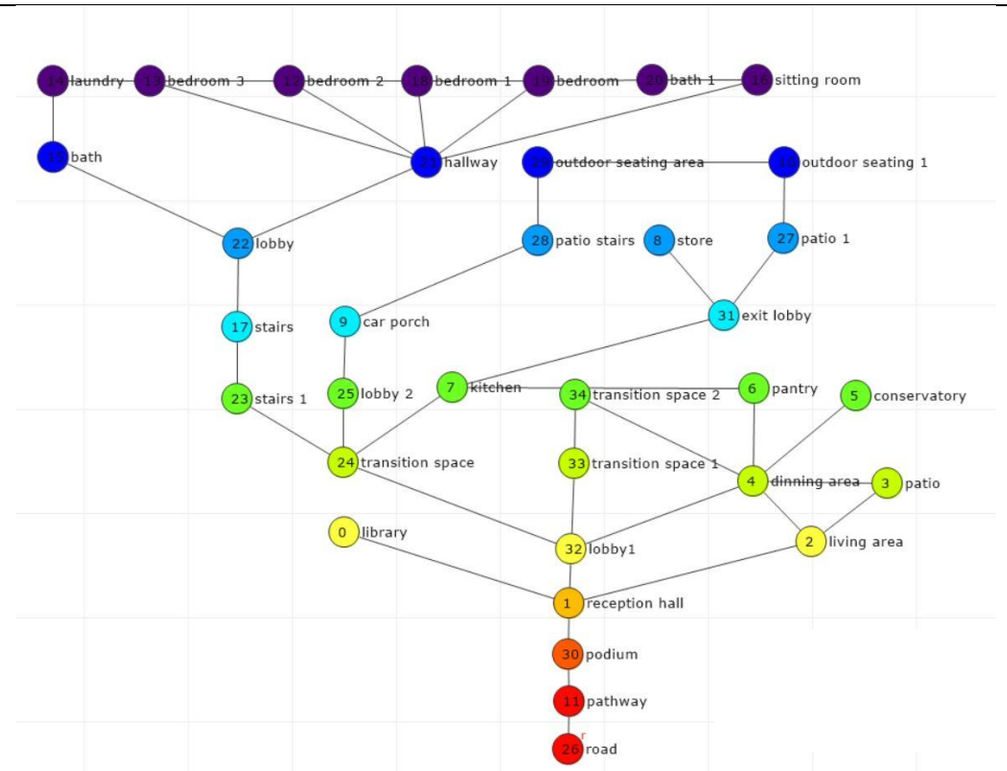
| Plan | A-GRAPH | DEPTHMAP |
|---|---|---|
|   www.archdaily.com |   |   |

**Table 6.** Showing floor plan and its analysis in the form of J- graph and Convex map.

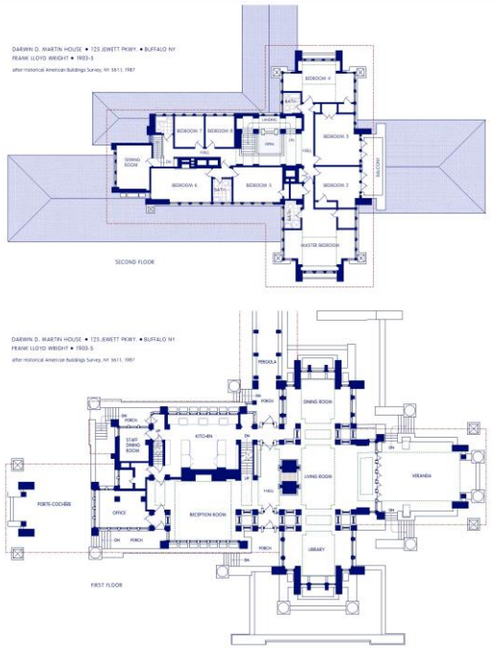
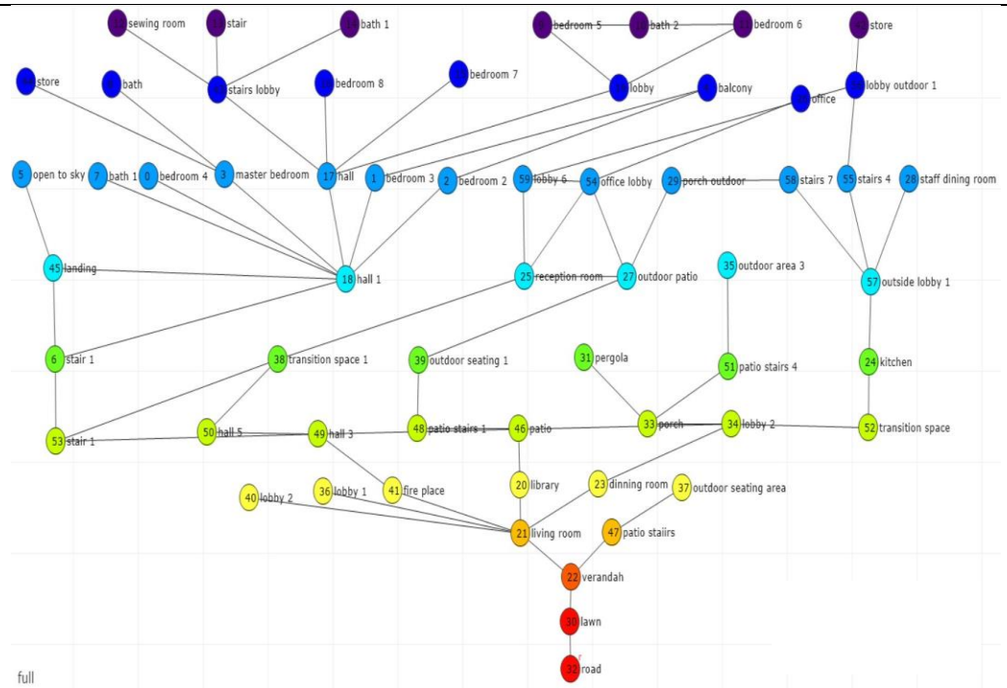
| PLAN | A-GRAPH | DEPTHMAP |
|---|---|---|
|  www.archdaily.com |  |  |

**Table 7.** Showing floor plan and its analysis in the form of J- graph and Convex map.

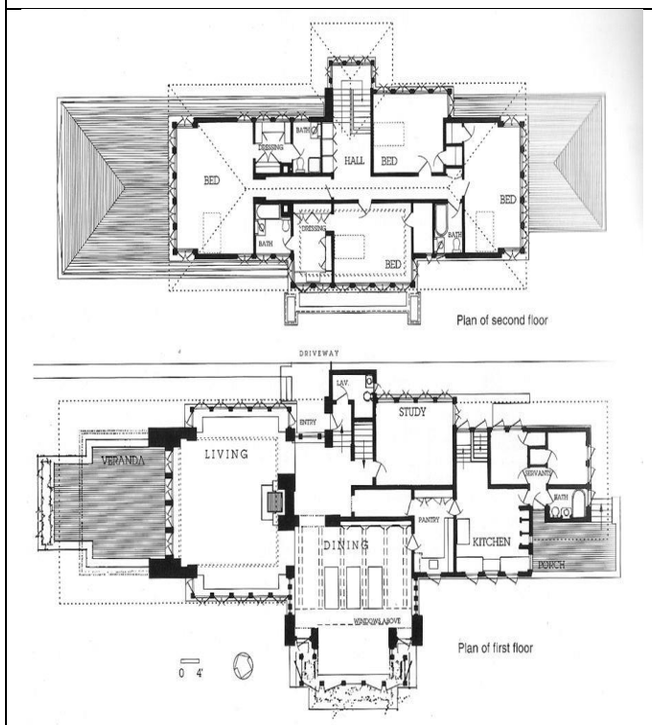
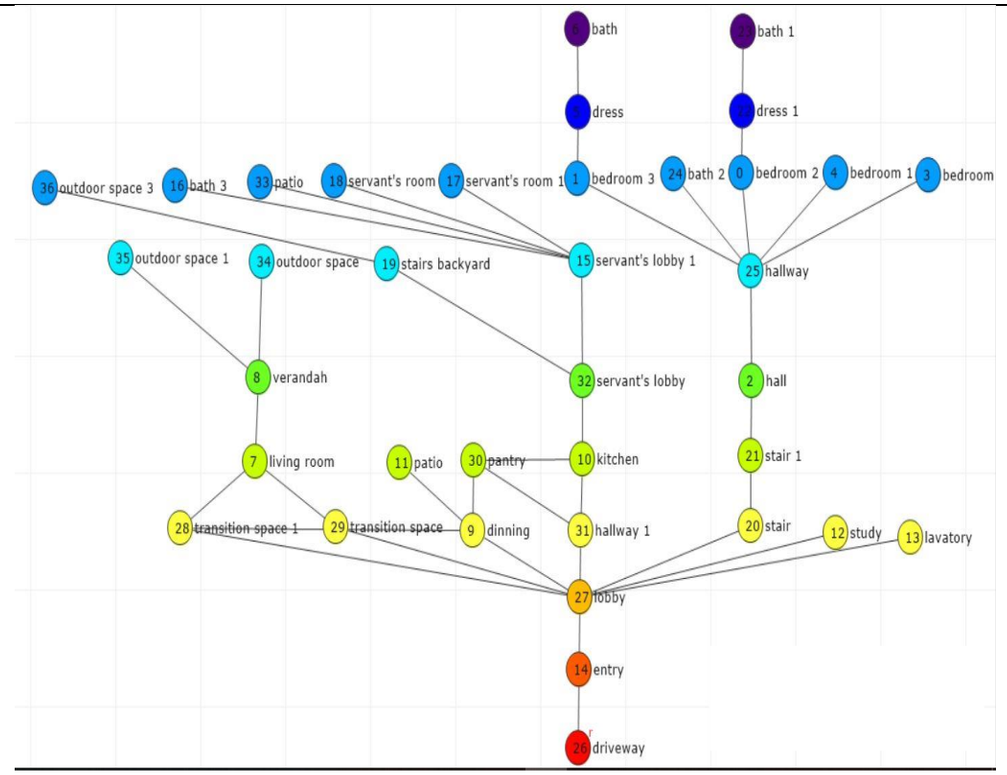
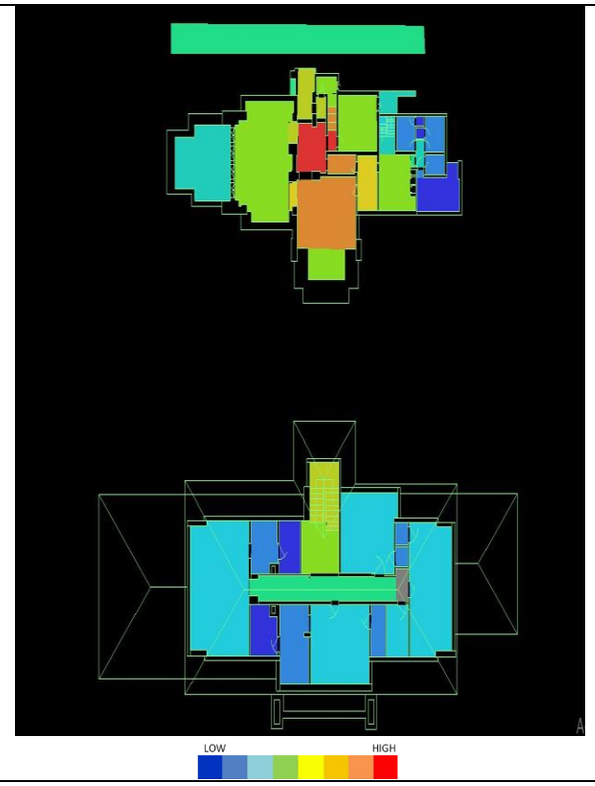
| Plan | A-GRAPH | DEPTHMAP |
|---|---|---|
|  www.archdaily.com |  |  |

**Table 9.** Showing floor plan and its analysis in the form of J- graph and Convex map.

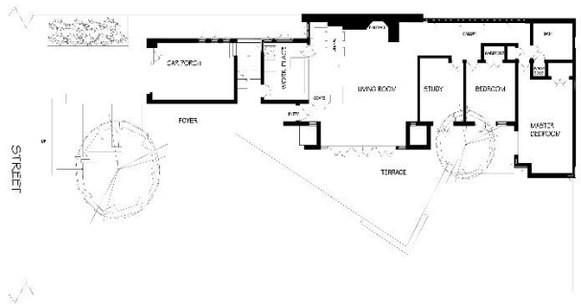
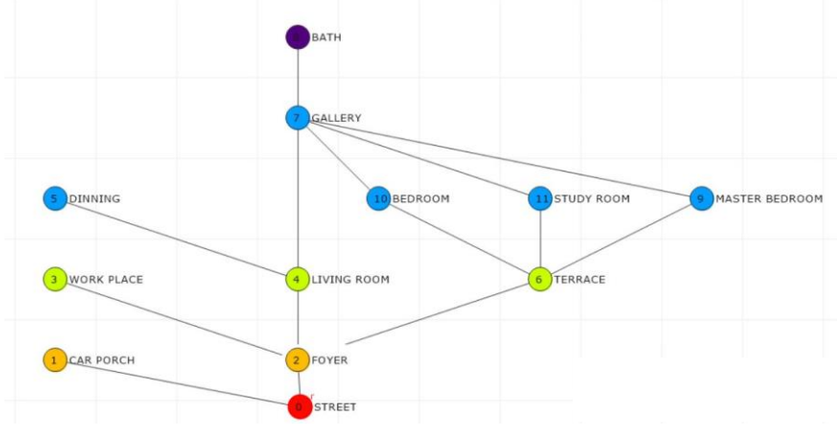
| PLAN | A-GRAPH | DEPTHMAP |
|---|---|---|
|   www.archdaily.com |   |  |

**Table 8.** Showing floor plan and its analysis in the form of J- graph and Convex map.

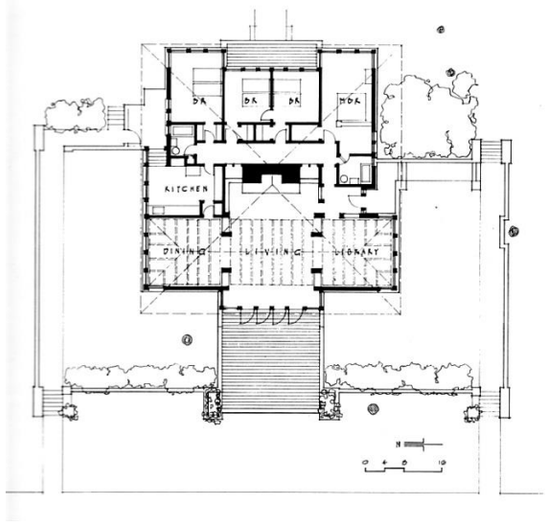
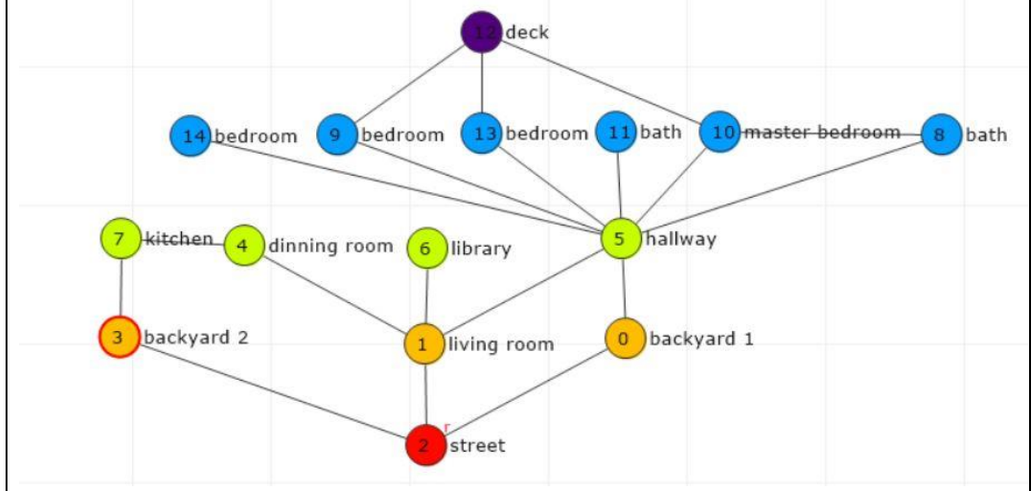
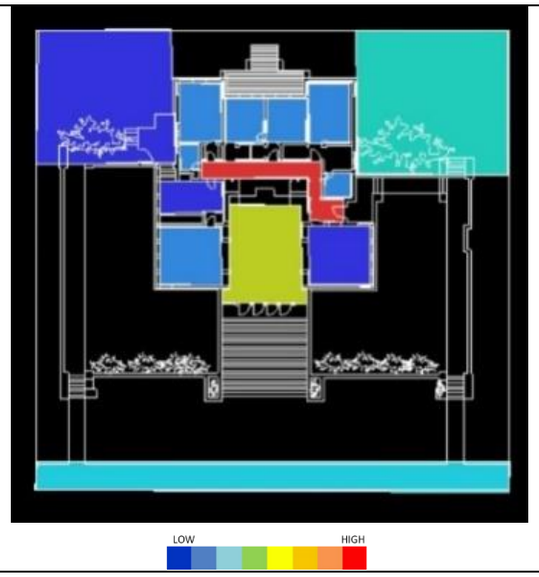
| Plan | A-GRAPH | DEPTHMAP |
|---|---|---|
|   www.archdaily.com |   |   |

**Table 9.** Showing floor plan and its analysis in the form of J- graph and Convex map.

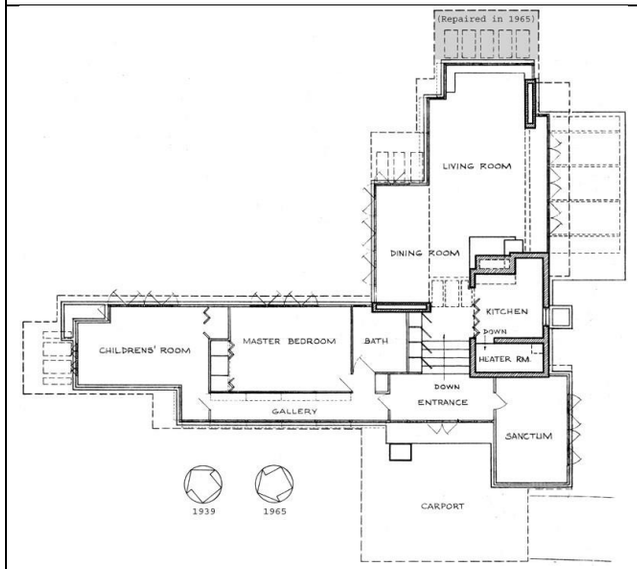
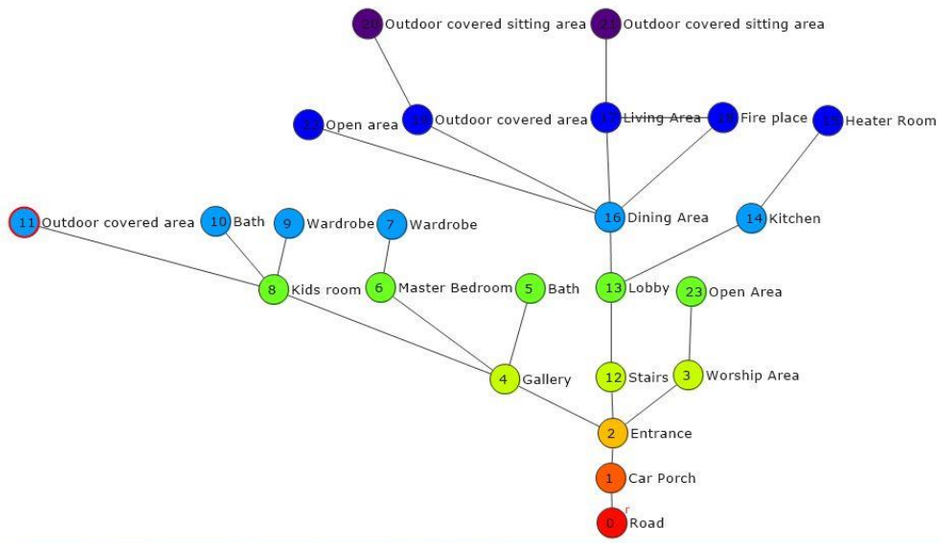
| PLAN | A-GRAPH | DEPTHMAP |
|---|---|---|
|   www.archdaily.com |   |   |

**Table 10.** Showing floor plan and its analysis in the form of J- graph and Convex map.

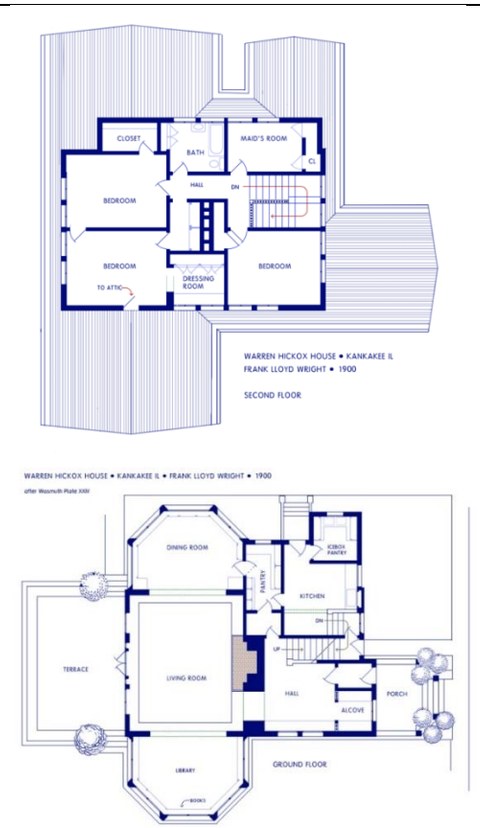
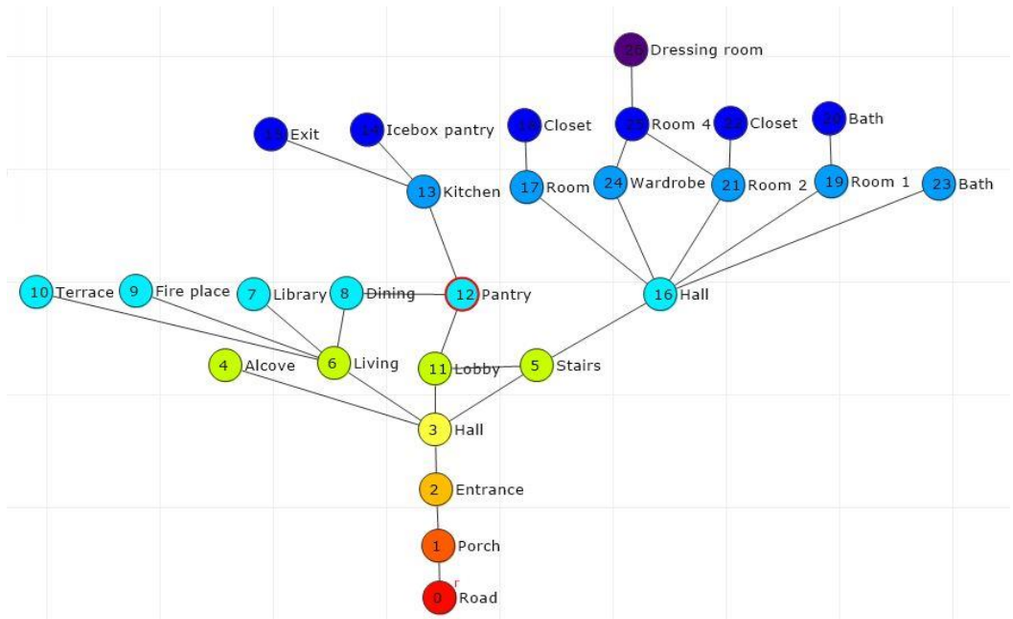
| Plan | A-GRAPH | DEPTHMAP |
|---|---|---|
|   www.archdaily.com |   |   |

**Table 11.** Showing integration (HH) values in descending order for all spaces for Edward E Boynton House

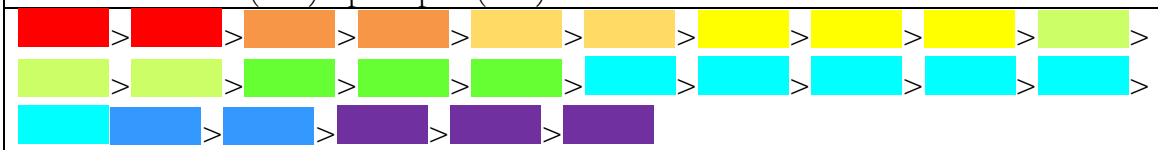
| INTEGRATION (HH) – DESCENDING ORDER: |
|---|
| Lobby (0.94)>lobby part(0.89)> dinning (0.87)> hallway 1 (0.84)= stair (0.84)> transition space 1 (0.80)> pantry (0.79)> stairs 1 (0.76)> entrance (0.75)> transition space (0.74)> lavatory (0.71)= study room (0.71)= kitchen (0.71)> hall (0.69))> living room (0.65)> hallway (0.63)>servant's lobby 1 (0.62)> driveway (0.61)= podium (0.61)> outdoor space 3 (0.58)= servant's lobby ( 0.58)> verandah (0.54)> bedroom 3 (0.53)= bedroom 2 (0.53)> bedroom 1 (0.52)= bedroom (0.52)= bath 2 (0.52)> stairs backyard (0.49)> servant's room (0.47)= servant's room 1 (0.47)= bath 3 (0.47)> dress (0.46)= dress 1 (0.46)> patio (0.41)> bath 0.40= bath 1 (0.40)> patio part (0.37). |
|  |

**Table 12.** Showing integration (HH) values descending order for all spaces for Willey House

| INTEGRATION (HH) – DESCENDING ORDER: |
|---|
| Living room(2.0205) =Foyer (2.0205)>Gallery (1.6531)>Terrace (1.5154)>Master Bedroom (1.1365) =Bedroom (1.1365) =Study Room (1.1365)>Dinning (1.0102) =Workplace (1.0102) =Street (1.0102)>Bath (0.8265)>Car porch (0.6270) |
|  |

**Edwin h. Cheney house:**

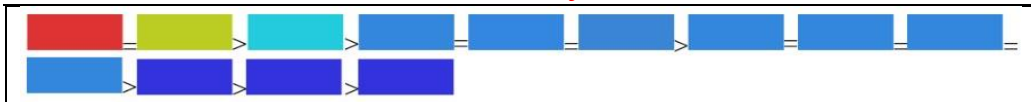
The essence of the Frank Lloyd Wright-Prairie School of Architecture is evident in this one-story home with a hip roof, where the living and sleeping areas are situated on the same level. The spacious living room occupies the front of the house and overlooks a central walled patio. The continuous ceiling, shaped like a hipped roof, unifies the dining room, living room, and library into a single longitudinal space, distinguished by wooden posts and cupboards. The bedrooms, located in a more secluded area, are separated by a corridor for added privacy.

**Results:**

When comparing the integration values of different rooms in Edwin H. Chiney's home, the living room, and hallway have the highest value, indicating greater integration marked red in table 12 below. In contrast, bedrooms 1, bedroom 2, and bedroom 3 have the same high integration values and the master bedroom has lower values of integration marked blue in table 12. These results support our hypothesis i.e. bedrooms have low integration values, indicating greater privacy.

**Table 13.** Showing integration (HH) values in descending order for all spaces for Edwin H Cheney House

| INTEGRATION (HH) – DESCENDING ORDER: |
|---|
| Hallway (2.9729)>Living room (2.3122)>Backyard 1 (1.4864)>Street (1.3006)>Dinning (1.1561) = Master Bedroom (1.1561) =Bath (1.1561)>Bedroom (1.0952) =Bedroom (1.0952) =Bedroom (1.0952) =Bath (1.0952)>Library (0.9909)>Backyard 2 (0.8324)> kitchen (0.8004) |



**Loren B. Pope residence:**

Frank Lloyd Wright's L-shaped design for the Loren B. Pope House highlights the seamless connection between indoor and outdoor spaces. The house is split into two wings, intersecting at the kitchen, study, and entrance. One wing houses the living, dining, and library areas, while the other wing contains the bedrooms and bathroom. Wright's design philosophy breaks away from traditional box-like structures, promoting a more interconnected and dynamic living environment. This innovative approach to space and form showcases Wright's ability to blend artistic vision with functionality.

**Result:**

In contrast, Bedroom 1, and Bedroom 2 have low integration values marked blue in Table 14 below. On the other hand dining room, entrances have comparatively high integration values marked red in Table 14 below. This data confirms our hypothesis that the bedrooms exhibit lower integration with nearly identical values, emphasizing privacy.

**Table 14.** Showing integration (HH) values in descending order for all spaces for Loren B Pope House

| **INTEGRATION (HH)- (DESCENDING ORDER):** |
|---|
| Entrance=1.1756>Stairs=1.1304>Lobby=1.0571 >Gallery=1.0134 >Dining=0.8906>Porch=0.8397>Bedroom 2=0.8100>Worship area=0.7943>Kitchen=0.7536 >Bedroom 1 =0.7514>Bath 1=0.7337 >Living area =0.7082 >Fireplace=0.6835 >Outdoor covered area 1, Open area 2, Outdoor covered area 2=0.6565 >Open area 1=0.6300 >Wardrobe 2, Bath 2=0.6114>Wardrobe 1=0.5775 >Heater room=0.5762>Outdoor covered sitting area 2 =0.5519>Road=0.5197>Outdoor covered sitting area 1 =0.4586 |
|  |

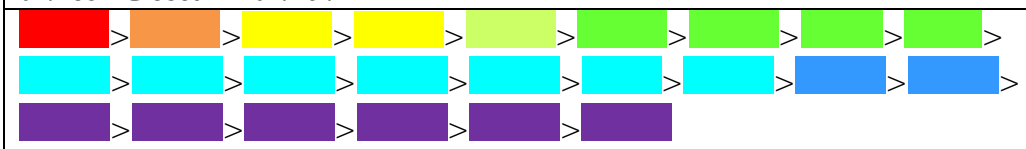
**Warren hickox house (1900):**

The house is a notable example of Frank Lloyd Wright's Prairie School designs, featuring four bedrooms and a chimney. Despite some minor alterations, it has preserved much of its original integrity. Recognized as one of Wright's most important works, it creates a feeling of spaciousness through its modified cruciform plan and innovative use of architectural space. The interior includes a living room that opens onto a terrace, with bayed alcoves serving as a dining room and library. Thin bands of leaded glass seamlessly blend the boundaries between the interior and exterior, integrating the house with its natural surroundings.

**Results:**

The living room, dining room, and foyer have high values marked red in table 16 below and seemed more integrated. However, the integration values of bedroom 1, and bedroom 2, bedroom 3, bedroom 4 have comparatively lower values marked blue in table 16 below. As a result, the data confirm our hypothesis, which states that the bedrooms have lower integration and almost identical values, hence maintaining their privacy.

**Table 15.** Showing integration (HH) values in descending order for all spaces for Warren Hickox House

| INTEGRATION (HH) – (DESCENDING ORDER): |
|---|
| Lobby= 0.9135 > Stairs=0.8850 > Hall 1 =0.8091 >Hall2 = 0.7261 >Pantry 0.7080 >Entrance foyer = 0.6436 >Living= 0.6388 >Alcove, Dining=0.6247 >Room 3 = 0.5983 >Wardrobe=0.5900 >Kitchen0.5859 >Room 2 = 0.5819 >Bath = 0.5740 >Porch 0.5277 >Terrace, Library, Fireplace=0.5180 >Room 4= 0.5027 >Room 1, Closet 2 = 0.4911>Bath 1 = 0.4800 >Road 0.44 >Dressing room=0.4248>Icebox pantry, Exit = 0.4185>Closet 1= 0.4164 |
|  |

**Conclusion:**

Frank Lloyd Wright, a pioneering architect known for his prairie style of architecture, is considered highly influential. While previous studies have focused on the physical geometry of his designs, this paper explores the spatial properties of his prairie plans using graph-based syntactical techniques. The study aims to assess the privacy of inhabitants in prairie style residences and analyze the impact of house layout on user behavior. Parameters influencing privacy through interior space utilization and their effect on space distribution are examined. Space syntax analysis is used to evaluate the level of privacy in different house configurations. Results indicate that bedrooms in prairie style houses are designed for privacy, as they exhibit higher integration values compared to other spaces, suggesting a privacy preference. The study confirms the hypothesis that bedrooms are the most private spaces in these houses, with few exceptions such as the Darwin Martin House. Overall, the study sheds light on the relationship between house layout morphology and inhabitant privacy, highlighting the importance of spatial design in creating private spaces within prairie style residences.

**Discussion:**

The findings of this study closely align with prior research on Frank Lloyd Wright's architectural principles, particularly his emphasis on integrating indoor and outdoor environments and creating harmonious living spaces. Previous studies by Alofsin (1993) and Levine (1996) have highlighted Wright's innovative use of open floor plans to foster a sense of community. Our analysis further expands on this understanding by specifically examining bedroom privacy in Prairie Style homes. For instance, our study demonstrates how Wright strategically positioned bedrooms and utilized alcoves and screens to ensure privacy while maintaining a cohesive design. This supports McCarter's (1997) observations regarding Wright's skill in balancing openness and privacy. Moreover, our focused investigation complements broader studies by Quinan (2013) and Vincent Scully (2016), offering fresh insights into the practical implementation of privacy in Wright's designs.

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**References:**

[1] "D. N. B. Bruno Taut, The 20th-century Architecture of Frank Lloyd Wright, United States of America: preservation@savewright.org, 2019. - Google Search." Accessed: Aug. 12, 2024. [Online]. Available: https://www.google.com/search?q=D.+N.+B.+Bruno+Taut%2C+The+20th-century+Architecture+of+Frank+Lloyd+Wright%2C+United+States+of+America%3

A+preservation%40savewright.org%2C+2019.&oq=D.+N.+B.+Bruno+Taut%2C+The+20th-century+Architecture+of+Frank+Lloyd+Wright%2C+United+States+of+America%3A+preservation%40savewright.org%2C+2019.&gs_lcrp=EgZjaHJvbWUyBggAEEUYOdIBCDU2MTdqMGo3qAIAsAIA&sourceid=chrome&ie=UTF-8

[2] "N. P. Service, 'FRANK LLOYD WRIGHT BUILDINGS AND THE NATIONAL HISTORIC LANDMARKS PROGRAM,' National Historic Landmarks Program, Washington DC, 2022. - Google Search." Accessed: Aug. 12, 2024. [Online]. Available: https://www.google.com/search?q=N.+P.+Service%2C+%22FRANK+LLOYD+WRIGHT+BUILDINGS+AND+THE+NATIONAL+HISTORIC+LANDMARKS+PROGRAM%2C%22+National+Historic+Landmarks+Program%2C+Washington+DC%2C+2022.&oq=N.+P.+Service%2C+%22FRANK+LLOYD+WRIGHT+BUILDINGS+AND+THE+NATIONAL+HISTORIC+LANDMARKS+PROGRAM%2C%22+National+Historic+Landmarks+Program%2C+Washington+DC%2C+2022.&gs_lcrp=EgZjaHJvbWUyBggAEEUYOdIBCDEyMDdqMGo3qAIAsAIA&sourceid=chrome&ie=UTF-8

[3] S. iftikhar, U. Ullah, and M. F. Ammar, "Detecting Gender Discrimination in the Layout of Residential Buildings: A Comparative Analysis," *Ann. Hum. Soc. Sci.*, vol. 5, no. 2, pp. 533–540, May 2024, doi: 10.35484/AHSS.2024(5-II)49.

[4] P. Amini Behbahani, M. J. Ostwald, and N. Gu, "A syntactical comparative analysis of the spatial properties of Prairie style and Victorian domestic architecture," *J. Archit.*, vol. 21, no. 3, pp. 348–374, Apr. 2016, doi: 10.1080/13602365.2016.1179661.

[5] "Frank Lloyd Wright's Prairie Vision: Frederick C. Robie House Conservation Management Plan." Accessed: Aug. 12, 2024. [Online]. Available: https://www.getty.edu/foundation/initiatives/current/keeping_it_modern/report_library/robie_house.html?q=%7B%7D

[6] Z. A. S. Wahbeh, "Exploration of Frank Lloyd Wright's Prairie Houses (2016)." Accessed: Aug. 12, 2024. [Online]. Available: https://www.academia.edu/23442028/Exploration_of_Frank_Lloyd_Wrights_Prairie_Houses_2016_

[7] M. F. Ammar, U. Ullah, and S. Iftikhar, "Development of Predictive Model for the Number of Public Park Visitors: A Case of Rawalpindi, Punjab Pakistan," *Pakistan Lang. Humanit. Rev.*, vol. 8, no. 2, pp. 555–563, May 2024, doi: 10.47205/PLHR.2024(8-II)48.

[8] P. A. Behbahani, "Spatial properties of Frank Lloyd Wright's prairie style: a topological analysis," nova, autralia," 2016.