

“Evaluating Spatial Hierarchy in University Administrative Buildings: Implications for Institutional Coordination”

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ABSTRACT

Administrative buildings have a significant impact on how governance, communication, and decision-making processes develop in many colleges. However, the architectural organization of these structures frequently lacks a clear hierarchy in a number of institutions, especially growing campuses in developing environments. This results in fragmented workflows, poor departmental coordination, and less readable space for users. With an emphasis on enhancing how spatial arrangement might assist efficient governance, this study investigates the idea of spatial hierarchy in university administration buildings and its implications for institutional coordination.

The study used a qualitative case study design to investigate how administrative space layout affects accessibility, communication, and operational effectiveness. A standardized observation checklist that evaluated spatial hierarchy, functional zoning, circulation efficiency, accessibility, way finding, and interdepartmental interactions was used to collect primary data through systematic field observations. Photographic data, field notes, architectural drawings, campus layout plans, and pertinent academic material were added to these observations. Qualitative content analysis and comparative architectural evaluation were used to analyze the data, and known concepts of spatial hierarchy and space syntax were used to understand the observed spatial characteristics.

According to the findings, they indicate that unclear spatial sequences, inadequate functional zoning, and weak spatial integration contribute to communication delays, inefficient circulation, and fragmented administrative workflows. Conversely, clearly defined spatial hierarchies that distinguish public, semi-public, and restricted administrative zones improve accessibility, facilitate way finding, strengthen institutional identity, and promote more effective coordination among administrative units. The study further demonstrates that integrating spatial hierarchy into the planning and design of university administrative buildings can enhance governance efficiency and create more responsive institutional environment.

The study comes to the conclusion that since spatial hierarchy directly affects institutional efficiency and coordination, it should be a key factor in the design of university administration buildings. In order to improve user experience and organizational effectiveness in the university setting, it suggests that future designs implement a more structured zoning plan that synchronizes physical order with administrative duties.

Keywords: Spatial hierarchy; zoning efficiency; university administrative buildings; institutional coordination; architectural organization; campus planning; institutional identity; functional zoning; higher education facilities; building design ; space syntax; Caleb University.

INTRODUCTION

Background Of Study

University campuses serve as complex systems where space, structure, and human interaction come together to

promote academic progress, administration, and governance. They are more than just physical learning spaces. Administrative buildings, especially Senate buildings, are essential to the system's coordination of institutional operations, decision-making procedures, and policy execution. In order to ensure efficiency and transparency in institutional operations, well-structured administrative settings are becoming more and more crucial as universities continue to grow in size and complexity.

Administrative buildings are frequently planned with little consideration for spatial hierarchy and zoning efficiency at many higher education institutions, particularly in developing environments. This leads to disjointed design with disorganized offices, conference rooms, and executive areas, which hinders communication flow and makes navigating challenging. UNESCO claims that institutional performance is greatly impacted by the quality of educational infrastructure, especially when areas are created to promote cooperation, accessibility, and organizational clarity (UNESCO, 2023). This suggests that, when it comes to administrative buildings, spatial layout should go beyond aesthetics and concentrate on how space can actively promote institutional coordination.

Spatial hierarchy is defined in architectural discourse as the intentional arrangement of spaces based on function, access, and importance levels. Clearly defining the boundaries between a building's public, semi-public, and private areas facilitates user mobility and strengthens organizational structure (Zhang & Li, 2022). When used correctly, spatial hierarchy facilitates effective administrative flow, increases readability, and improves user orientation. However, if done incorrectly, it can lead to spatial confusion and interfere with institutional processes.

Zoning efficiency, on the other hand, concentrates on the logical arrangement of related tasks inside a structure in order to minimize needless mobility and enhance operational performance. This entails putting related offices close to one another in administrative settings, making communication heavy departments easily accessible, and minimizing spatial conflict between administrative workers and public visitors. Institutions frequently encounter workflow disruptions, poor user orientation, and significant time wasting in administrative operations when zoning is ineffective. Ahmed and Bello (2023) also claim that by ensuring that related operations are logically spatially clustered, efficient zoning in institutional architecture greatly increases workflow efficiency and decreases administrative delays. According to the World Bank, productivity and service delivery in higher education settings are greatly enhanced by well-planned institutional architecture, especially when spatial systems are created to assist rather than limit institutional needs (World Bank, 2022).

Many university administration buildings still use antiquated planning methods that put monumentality ahead of functional clarity, especially on newly constructed campuses, despite the acknowledged significance of these concepts. This frequently results in ineffective circulation systems, scattered departments, and poor spatial connectedness, all of which have a detrimental effect on institutional coordination (Ojo & Martins, 2021). For example, in Nigerian university settings, inadequate spatial planning where functional links between departments are not clearly conveyed through architectural layout has often been associated with administrative inefficiencies (Akinwale & Yusuf, 2022).

Chen et al. (2024), states that, because the spatial arrangement of governance buildings frequently reflects the organizational culture and hierarchy of an institution, well-structured administrative settings contribute to both operational efficiency and institutional identity. In this regard, assessing zoning efficiency and spatial hierarchy becomes crucial to comprehending how university administration buildings might enhance institutional coordination. A pertinent case for investigating these concerns is the proposed Senate Building at Caleb University, Imota, especially with regard to how spatial arrangement might be enhanced to promote administrative efficacy, accessibility, and clarity. With the goal of assisting in the creation of more effective and identity driven university administrative environments, this study is situated within the larger discourse of campus planning and institutional architecture.

The increasing administrative demands of Caleb University, Imota, underscore the necessity of a specially constructed Senate facility that satisfies both practical and symbolic needs. Coordination and user experience inefficiencies may result from the current administrative structures' lack of a clearly defined spatial hierarchy.

Therefore, in order to improve institutional performance, it is necessary to critically assess how zoning efficiency and spatial hierarchy might be included into the architecture of a planned Senate building.



Plate 1.2: Aerial View Of Caleb University, Imota, Lagos State

Source: Google Map (2026)

Problem Statement

Despite the increasing complexity of university administration, little attention is still given to how spatial hierarchy and zoning efficiency can be deliberately integrated into the design of administrative buildings to improve performance. As Chen et al. (2024) note, spatial organization is not only a design concern but also a structural framework that influences how effectively institutions function and express their identity. Without this understanding, many university administrative buildings continue to underperform in supporting institutional coordination and user experience.

At Caleb University, Imota, the absence of a purposefully designed Senate Building presents similar challenges, where administrative activities are dispersed and spatial relationships between key functions remain undefined. This situation raises concerns about how effectively the current spatial arrangement supports institutional coordination, decision-making efficiency, and user orientation within the campus.

Therefore, the central problem of this study lies in the inadequate integration of spatial hierarchy and zoning efficiency in the design of university administrative buildings, which results in poor institutional coordination and reduced operational effectiveness. Addressing this gap is essential for developing a more structured and functionally responsive Senate Building that aligns architectural planning with administrative performance requirements.

Aim of Study

The aim of this study is to examine how spatial hierarchy and zoning efficiency can improve institutional coordination in university administrative buildings.

Objectives

The Objectives of the study are to :

- I. Examine the principles of spatial hierarchy and zoning efficiency as they relate to university administrative building design;
- II. Assess how spatial organization influences communication flow and administrative effectiveness within universities;
- III. Identify the spatial and functional challenges associated with poorly structured administrative buildings; and
- IV. Propose design strategies that enhance institutional coordination through improved spatial hierarchy and zoning efficiency.

Research Question

- I. How can the principles of spatial hierarchy and zoning efficiency be applied in the design of university administrative buildings?
- II. In what ways does spatial organization influence communication flow and administrative effectiveness within universities?
- III. What spatial and functional challenges are commonly found in poorly structured university administrative buildings?
- IV. What design strategies can be adopted to improve institutional coordination through effective spatial hierarchy and zoning efficiency?

Justification Of Study

The need for a more deliberate approach to spatial organization in institutional architecture is highlighted by the persistent gap between administrative complexity and spatial design response. Modern universities operate through interconnected systems of governance, but many of their buildings lack a clear spatial hierarchy that reflects this structure. When spatial relationships between offices, departments, and decision-making units are poorly defined, it frequently results in inefficiency, confusion in movement, and reduced coordination among administrative staff (Zhang & Li, 2022).

In addition, zoning inefficiency remains a recurring issue in many academic environments. Functional spaces are often arranged without adequate consideration of compatibility, access control, or workflow logic. According to Chen et al. (2024), poor zoning practices in institutional buildings can significantly reduce operational effectiveness by increasing unnecessary circulation and weakening functional relationships between departments. In university settings, this can directly affect administrative speed, communication clarity, and decision-making efficiency.

In the Nigerian context, research indicates that many university campuses still operate with administrative buildings that do not fully reflect the complexity of modern institutional needs, resulting in coordination gaps and reduced spatial efficiency (Akinwale & Yusuf, 2022). Furthermore, spatial organization has been recognized as a key factor in shaping institutional identity, as well-planned administrative environments reflect clarity, order, and organizational strength (Chen et al., 2024). Therefore, this study is justified as it seeks to address these gaps by exploring how spatial hierarchy and zoning efficiency can be deliberately integrated into the design of university administrative buildings to enhance institutional coordination, improve user experience, and strengthen overall administrative performance

Scope Of Study

This study is limited to the proposed Senate Building at Caleb University, Imota, Lagos State, Nigeria, which serves as the primary case study for evaluating spatial hierarchy and zoning efficiency in administrative buildings within private universities in Nigeria. The study examines how the application of spatial hierarchy and functional zoning influences administrative coordination, circulation patterns, and user experience within the university's administrative environment.

Conceptually, the study focuses on the principles of spatial hierarchy and functional zoning, exploring how administrative spaces can be organized according to levels of accessibility, function, and institutional authority. Particular attention is given to the arrangement of public, semi-public, and restricted spaces, including reception areas, administrative offices, meeting rooms, executive offices, and the Senate Chamber, to promote efficient movement, minimize spatial conflicts, and support effective communication and decision-making.

The study seeks to provide architectural design recommendations that can improve administrative efficiency, strengthen institutional coordination, and reinforce the architectural identity of private universities in Nigeria, using Caleb University as the case study. However, the scope is restricted to architectural planning and spatial design considerations and does not cover structural engineering, building services, cost estimation, construction management, or post-occupancy performance evaluation.

Limitations Of Study

The limitation of this study is restricted to assessing the function of zoning efficiency and spatial hierarchy in university administration buildings, with a focus on the consequences for institutional coordination. The study does not look at other elements that can affect administrative effectiveness, such as institutional policies, organizational culture, financial resources, or human resource management, instead concentrating on architectural and spatial design issues. Furthermore, the conclusions are based on specific case studies and data from university administration buildings, which might not accurately reflect the planning features of all universities. The extent of data collection may also be limited by time constraints, respondent availability for field investigations, and access to comprehensive architectural plans and administrative documents.

LITERATURE REVIEW AND COMPARATIVE INSIGHT

The importance of university administration buildings as spatial systems that affect institutional coordination, decision-making, and governance effectiveness in higher education settings is becoming more widely acknowledged. These structures serve as operational hubs where academic leadership, administrative processes, and institutional communication come together, in addition to their symbolic significance. According to recent research, how well space is arranged, especially in terms of spatial hierarchy and functional zoning, has a significant impact on how effective these environments are (Sule, 2024; Luo et al., 2024).

In architectural design, spatial hierarchy is the organized arrangement of areas based on functional priority, access control, and importance levels. In university contexts, this hierarchy helps distinguish between public-facing sections such as reception zones and more restricted spaces like executive offices and senate chambers. When spatial hierarchy is used correctly, it improves wayfinding, increases movement clarity, and fortifies institutional order. According to Luo et al. (2024), institutional structures in universities are spatial frameworks that directly influence governance capability in addition to administrative systems. Their research shows that how well decisions are made and carried out in universities is greatly influenced by spatial arrangement.

Similarly, zoning efficiency plays a major role in ensuring that related administrative functions are grouped logically to reduce unnecessary movement and improve workflow continuity. In many higher education institutions, poor zoning results in fragmented departments and inefficient circulation patterns, which ultimately slow down administrative processes (Sun & Ouyang, 2025). A recent spatial analysis of university campuses using space syntax revealed that poorly integrated administrative zones often create "spatial

isolation,” where key offices are disconnected from central circulation routes, reducing accessibility and operational efficiency (Sun & Ouyang, 2025).

In Nigeria, weak spatial planning frameworks within university buildings are frequently associated with administrative inefficiencies in the Nigerian context. Sule (2024) notes that many universities suffer from bureaucratic delays, poor interdepartmental coordination, and ineffective communication systems, all of which are reinforced by poorly structured physical environments. The study highlights that administrative performance is a function of both organizational structure and spatial configuration, where layout design either facilitates or hinders coordination.

Essien and Akpan's (2021) discovery that spatial disarray in institutional buildings has a direct impact on user productivity and circulation efficiency lends more credence to this theory. Their study on Nigerian university faculties revealed that when spatial units are poorly integrated, users experience confusion in movement patterns, reduced accessibility, and delays in service delivery. This supports the claim that establishing functional clarity in institutional settings requires spatial hierarchy.

A move toward data-driven spatial optimization is also evident in recent developments in campus planning research. Sun and Ouyang (2025) indicate that new analytical tools such as space syntax and AHP (Analytic Hierarchy Process) are now being utilized to analyze spatial efficiency in university campuses. According to their research, visibility, connection, and path integration all of which have a direct impact on how users perceive and navigate administrative environments are intimately related to spatial performance.

A comparative analysis of the reviewed studies reveals both convergence and contextual differences in how spatial hierarchy and zoning efficiency are understood across global and local contexts. In international studies, particularly Luo et al. (2024), spatial hierarchy is framed as a governance-enhancing tool that directly influences institutional performance at a structural level. Their findings suggest that universities with well-defined spatial systems demonstrate stronger coordination, faster decision-making, and improved institutional resilience. Similarly, Sun and Ouyang (2025) approach spatial organization from a quantitative perspective, emphasizing measurable spatial metrics such as connectivity and integration as predictors of functional efficiency.

Studies conducted in Nigeria and throughout Africa, on the other hand, typically concentrate more on visible inefficiencies than on sophisticated spatial modeling. Sule (2024) and Essien and Akpan (2021) draw attention to problems like inadequate circulation, disjointed departments, and weak functional integration, but they also agree with findings from around the world that spatial organization has a major impact on administrative efficiency.

The use of computational tools like space syntax analysis, digital modeling, and hierarchical spatial weighting systems is becoming more common in international research (Sun & Ouyang, 2025), whereas local studies rely more on descriptive surveys and observational case studies. This methodological disparity indicates that Nigerian university design research needs to use more sophisticated spatial analytics.

Despite these variations, every study consistently concludes that enhancing institutional coordination requires zoning efficiency and spatial hierarchy. The conclusion that poorly structured administrative environments impair institutional performance is the same whether governance theory (Luo et al., 2024), spatial analytics (Sun & Ouyang, 2025), or architectural case studies (Essien & Akpan, 2021) are used.

This study closes this gap by critically analyzing spatial hierarchy and zoning efficiency as design tools for enhancing institutional coordination within university administrative buildings. While previous research has established the significance of spatial organization in institutional buildings, there is still a dearth of research specifically addressing how spatial hierarchy can be strategically applied to university Senate or administrative buildings in emerging campuses like Caleb University, Imota. Most studies either focus on general campus planning or administrative inefficiencies without deeply connecting spatial hierarchy to institutional coordination outcomes in a structured design framework.

RESEARCH METHODOLOGY

Study Area

This study was carried out in the administrative setting of Caleb University, Imota, Lagos State, Nigeria, with a focus on the proposed Senate Building as a strategic administrative facility for the institution. Caleb University is a privately owned university that is constantly expanding both physically and academically, necessitating a well-planned administrative infrastructure that supports effective governance and institutional coordination. Currently, a number of administrative functions are housed in separate facilities across the campus. Because of its continuous campus development and the chance of making the university a suitable setting for assessing how spatial hierarchy can enhance communication, accessibility, and operational efficiency.

This study used a qualitative case study research approach to assess the effects of zoning efficiency and spatial hierarchy on institutional coordination in university administration buildings. Because it allows for a thorough analysis of spatial linkages, circulation patterns, and functional interactions within their actual setting, a qualitative case study was deemed suitable. Qualitative case studies offer opportunities to examine how architectural layouts facilitate or impede administrative processes through direct observation of the built environment, in contrast to quantitative approaches that mainly measure variables statistically (McCrone & Kingsbury, 2023; Lee et al., 2023).

Therefore, Caleb University was chosen as the study area because of its ongoing campus development and the chance to investigate how a purpose-designed Senate Building can address modern administrative and spatial planning needs. Additionally, the university offers an appropriate setting for examining the connection between institutional performance and spatial organization within a developing higher education environment.



Plate 3.1: Aerial View Of Caleb University Administrative Building, Imota, Lagos State

Source: Caleb University, Lagos (n.d)

Data Collection Method

Primary data was gathered by systematic field observation, which was then supplemented by photographic documentation, field notes, sketch mapping, and an examination of existing architectural documents. In order to adequately capture routine patterns of mobility, accessibility, communication, and user engagement within the current administrative environment, the observation exercise was conducted during several site visits during regular administrative working hours.

Secondary data were obtained by peer-reviewed journal papers, conference proceedings, architectural drawings, campus layout plans, institutional planning documents, and academic publications about campus

planning, institutional architecture, spatial hierarchy, and space syntax were the sources of secondary data. Methodological triangulation was made possible by the incorporation of primary and secondary sources, which increased the findings' reliability and credibility (Lee et al., 2023).

Data obtained from field observations were analyzed using qualitative content analysis and comparative architectural evaluation.

Each observed space was assessed according to six predefined evaluation criteria:

- i. spatial hierarchy,
- ii. circulation,
- iii. accessibility,
- iv. functional zoning,
- v. visibility,
- vi. departmental connectivity.

The findings were compared with internationally recognized principles of spatial hierarchy, functional zoning and space syntax proposed by Hillier and Hanson (1984), Mohamed and van der Laag Yamu (2024), and Sun and Ouyang (2025). This comparative evaluation made it possible to identify strengths, weaknesses and opportunities for improving institutional coordination through architectural design.

Rather than relying solely on descriptive observation, the study interpreted the spatial configuration using space syntax concepts such as:

- i. connectivity,
- ii. integration,
- iii. intelligibility,
- iv. visibility.

Although software simulation was outside the scope of this research, these concepts provided a recognized analytical framework for evaluating spatial performance.

Research Instrument

The principal research instrument used in this study was a **structured observation checklist** developed specifically for evaluating the spatial organization of university administrative buildings. The checklist was designed from the study objectives and guided by established architectural planning principles relating to spatial hierarchy, functional zoning, accessibility, circulation, wayfinding, and institutional coordination (Hammadamin et al., 2024; Mohamed & van der Laag Yamu, 2024).

Observation Checklist

The observation checklist evaluated circulation patterns, accessibility, zoning relationships, functional adjacency, privacy levels, way finding, and spatial hierarchy. Observations were conducted during normal administrative working hours, supported by photographs, field notes and available architectural drawings. Data were analyses through thematic comparison with established principles of spatial hierarchy and functional zoning.

Evaluation Variable	Observation Indicators	Purpose of Assessment
Spatial hierarchy	Separation between public, semi-public and private spaces	Assess hierarchy and access control
Functional zoning	Proximity of related departments	Evaluate operational efficiency
Accessibility	Ease of reaching offices and services	Assess user convenience
Circulation efficiency	Horizontal and vertical movement patterns	Examine movement efficiency

Way finding	Signage, floor directories and visual cues	Assess ease of navigation
Functional relationships	Adjacency between administrative units	Evaluate institutional coordination

Table 3.2.1 Observation Checklist Table

Source: Developed by the Author (2026) based on Hammadamin et al. (2024), Lee et al. (2023), and Mohamed and van der Laag Yamu (2024).

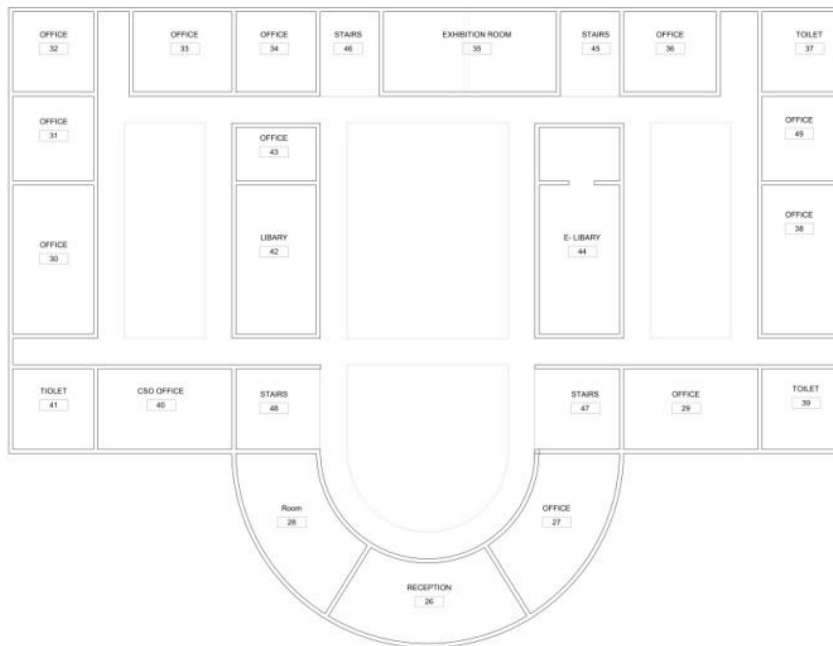


Figure 3.1: Ground Floor Sketch

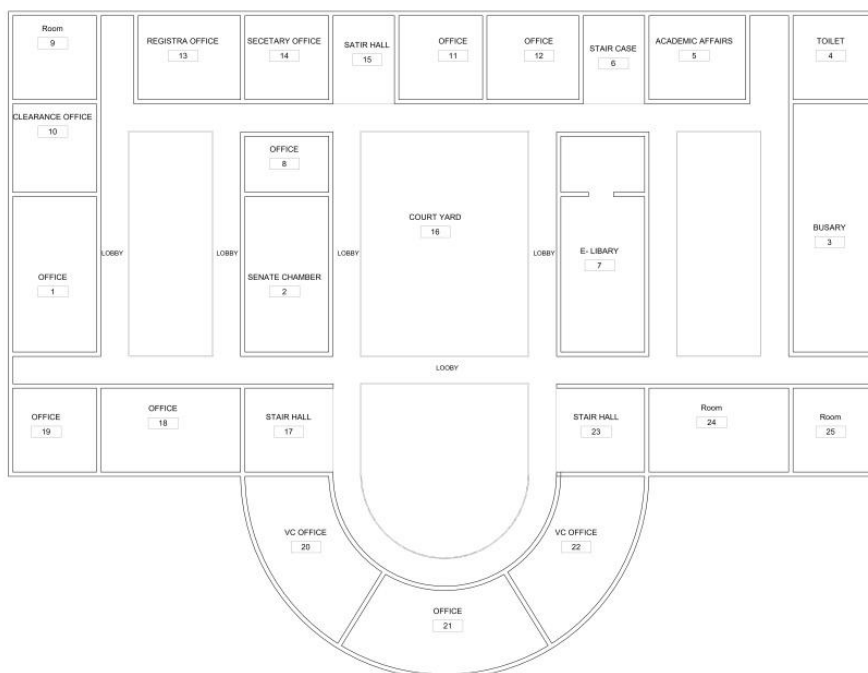


Figure 3.2: First Floor Sketch



Figure 3.3: Senate Chamber



Figure 3.4: Court Yard / E-Library



Figure 3.5 : Court Yard / Vc Office



Figure 3.6 : Offices

Method Of Data Analysis

Descriptive geographical analysis and qualitative content analysis were used to analyze data gathered from field observations and documentary sources. Observation notes, photographs, architectural drawings, and documentary evidence were first organized according to the six evaluation variables contained in the observation checklist. Similar observations were then grouped into common themes relating to accessibility, circulation, spatial hierarchy, functional zoning, wayfinding, and departmental relationships. The observed spatial characteristics were subsequently compared with recognized principles of spatial hierarchy and contemporary space syntax theory. Particular attention was given to concepts such as connectivity, accessibility, visibility, integration, and functional adjacency, which are widely recognized as indicators of spatial performance within institutional buildings (Lee et al., 2023; Mohamed & van der Laag Yamu, 2024).

Comparative spatial evaluation was also applied, whereby the present administrative spatial arrangement was compared with recommended principles of spatial hierarchy and functional zoning reported in modern architectural research. This comparison made it possible to pinpoint the university's strengths, weaknesses, and opportunities for improving the design of the proposed Senate Building.

When necessary, comparative tables, images, architectural drawings, and observation summaries were used to bolster the descriptive narratives used to illustrate the findings. By using this method, the study was able to produce useful design suggestions for university administrative buildings while clearly demonstrating the connections between institutional coordination and spatial hierarchy.

RESEARCH FINDINGS

According to evidence from space syntax-based research, campuses with well-integrated spatial structures exhibit improved accessibility, better circulation flow, and stronger institutional coordination (Sun & Ouyang, 2025). Conversely, spatial fragmentation results in disconnected departments and inefficient movement patterns that negatively affect administrative performance. Recent architectural and campus planning studies consistently demonstrate that spatial hierarchy and functional zoning are critical determinants of efficiency in university administrative buildings.

Significantly, recent research demonstrates that space syntactic indicators like connectedness, integration, and visibility have a substantial correlation with institutional efficiency and user mobility, making spatial hierarchy a quantifiable and trustworthy design tool (Sun & Ouyang, 2025).

Observation	Finding
Administrative offices are dispersed	Communication delay
Poor directional signage	Wayfinding difficulty
Visitors routes overlap with staff circulation	Reduced privacy
Shared circulation routes	Administrative congestion
Limited zoning hierarchy	Poor functional relationship

Table 4.1: Table showing observations made after data collection

Studies shows that Observation the dispersion of administrative offices across multiple buildings increases time travel between departments and delays institutional communication, and inadequate zoning weakens functional relationship. This observation suggests the need for a centralized administrative building with functional adjacency.

Benefits Based On Research

Field observation at Caleb university indicate that administrative functions are currently distributed across different buildings, resulting in fragmented circulation patterns and longer movement routes between key offices. This spatial arrangement reduces communication efficiency and weakens institutional coordination.

There are many important advantages to using zoning efficiency and spatial hierarchy in university administration buildings.

First, it improves institutional coordination because well-defined spatial links between departments facilitate more efficient administrative procedures and lower communication obstacles (Luo et al., 2024). Decision-making procedures become quicker and more organized when areas are designed logically.

Secondly, it enhances accessibility and user orientation. According to studies, buildings with a high degree of spatial integration make it easier for people to find services, which lessens confusion and enhances the general administrative environment experience (Zencirkiran & Suta, 2025).

Third, spatial hierarchy contributes to operational efficiency and productivity, as related administrative duties are clustered together, minimizing needless mobility and duplication of tasks (Sun & Ouyang, 2025). This leads to more effective use of time and space.

Finally, it improves institutional identity, as the physical organization of administrative buildings mirrors the governing structure of the university, promoting order, hierarchy, and organizational clarity (Luo et al., 2024).

Observation Challenges

Despite its benefits, several challenges limit the effective application of spatial hierarchy in university administrative buildings.

One major challenge is **existing building constraints**, where many universities operate within outdated structures that were not originally designed for modern administrative complexity. Retrofitting such buildings to meet current spatial needs is often difficult and costly (Hammadamin et al., 2024).

Lack of integration between administrative planning and design disciplines presents another difficulty, as architectural decisions are occasionally made without sufficient knowledge of institutional operations. As a result, administrative duties are not accurately reflected in spatial layouts (Zencirkiran & Suta, 2025).

Furthermore, in many emerging environments, sophisticated spatial analysis methods like computer modeling and space syntax are rarely used. This makes it more difficult to assess spatial performance scientifically before to construction (Sun & Ouyang, 2025).

Lastly, the implementation of fully optimized spatial designs may be hampered by institutional and financial constraints, particularly in growing universities where academic infrastructure may take precedence over administrative planning.

Design Opportunities

Architects can now simulate and optimize spatial performance prior to construction, which reduces design errors and increases efficiency, thanks to advancements in computational design tools like space syntax, BIM, and AHP-based spatial modeling (Sun & Ouyang, 2025).

Universities like Caleb University have the chance to implement purpose-designed Senate Buildings, which incorporate zoning efficiency and spatial hierarchy from the very beginning to improve institutional identity and coordination.

Additionally, a solid basis for multidisciplinary cooperation between architects, planners, and university administrators is provided by growing understanding of the connection between the built environment and institutional performance (Luo et al., 2024).

Lastly, data-driven campus design techniques have the ability to make administrative buildings more effective, responsive, and flexible systems, according to current research on campus optimization (Hammadamin et al., 2024).

CONCLUSION AND RECOMMENDATIONS

Conclusion

The performance of university administration buildings is significantly influenced by zoning efficiency and spatial hierarchy, according to this study. Administrative settings are not just physical structures but also organizational systems that have a direct impact on institutional coordination, communication flow, and decision-making efficiency, according to evidence from contemporary architectural and space syntax-based studies. Clearly defined spatial hierarchy promotes accessibility, facilitates easier navigation, and facilitates more efficient administrative processes by establishing a structured link between public, semi-public, and private services (Sun & Ouyang, 2025).

The review also reveals that disorganized administrative areas frequently lead to weak functional links, disjointed circulation networks, and decreased operational efficiency. Universities' capacity to operate as coordinated systems where information and decisions move efficiently between departments is hampered by these spatial inefficiencies (Hammadamin et al., 2024). On the other hand, by reflecting order and clarity in the built environment, well-integrated spatial systems enhance user experience and fortify institutional identity (Zencirkiran & Suta, 2025).

Thus, it can be said that spatial hierarchy is a strategic tool for enhancing institutional coordination in university administration buildings rather than just a design guideline. Physical space actively promotes governance structures and improves overall institutional effectiveness when it is incorporated into design decisions (Luo et al., 2024).

Recommendations

The study's conclusions highlight how crucial it is to incorporate spatial hierarchy into university administration building planning and architecture in order to improve institutional coordination and operational effectiveness. The following suggestions are put forth in light of the issues found and the evaluation of recent literature.

First and foremost, from the very beginning of planning, architects and campus planners should embrace spatial hierarchy as a basic design element. Administrative buildings should include controlled access systems that govern mobility based on individuals' roles and levels of authorization, as well as clearly defined public,

semi-public, and restricted zones. While executive offices, Senate chambers, and strategic administrative units should be situated in secure areas that are only accessible by authorized personnel, public service functions like reception areas, admissions, student affairs, and information desks should be situated in easily accessible zones. According to Hammadamin et al. (2024) and Keleş et al. (2024), this hierarchical organization improves operational efficiency, fortifies institutional security, and minimizes needless interaction between sensitive administrative activities and public visitors.

Second, the university's governance structure should be reflected in the spatial arrangement of important administrative departments. To promote communication, reduce travel times, and enhance decision-making procedures, the Senate Chamber ought to be placed in close proximity to the Vice-Chancellor's Office, the Registry, and the Council Secretariat. Similarly, to improve functional links and minimize delays brought on by scattered administrative offices, departments with regular operational exchanges should be situated close to one another. According to research, well-planned departmental adjacencies greatly enhance organizational performance and institutional coordination (Luo et al., 2024).

Thirdly, vertical zoning schemes that arrange functions based on administrative power and privacy levels should be used in future university administration buildings. While upper floors should be set aside for executive management, Senate administration, strategic planning units, and private meeting spaces, ground floors should mainly house public-oriented services like reception areas, student service centers, admissions offices, and waiting lounges. Such vertical organization strengthens the institutional hierarchy ingrained in the administrative structure, increases security, decreases needless circulation, and establishes a logical progression of accessibility (Jamshidi & Pati, 2024).

Furthermore, circulation systems should be built to enable different moving paths for personnel, executive officers, and visitors. Dedicated circulation channels minimize congestion, increase operational efficiency, strengthen security, and reduce disputes between different groups of building users. Clearly differentiated circulation networks also increase user orientation and contribute to a better ordered administrative environment, particularly during periods of high tourist traffic (Keleş et al., 2024).

This study further recommends the integration of **Building Information Modelling (BIM)** and **Space Syntax analysis** during the design process. These digital design technologies enable architects to evaluate spatial connectivity, visibility, accessibility, movement patterns, and functional relationships before construction begins. By simulating user movement and spatial performance during the design stage, potential circulation problems and inefficient spatial configurations can be identified and resolved early, resulting in more efficient and user-centred administrative buildings (Mohamed & van der Laag Yamu, 2024; Sun & Ouyang, 2025).

To ensure long-term functionality, university administrative buildings should also incorporate **flexible planning principles**. Office layouts should be designed using modular spaces and adaptable partitions that can accommodate future organizational changes, technological advancements, and institutional expansion without requiring major structural modifications. Flexible administrative environments improve the building's lifespan while allowing universities to respond effectively to evolving governance needs and changes in administrative operations (Luo et al., 2024).

Equally important is the provision of comprehensive way finding systems throughout administrative buildings. Directional signage, floor directories, digital information kiosks, color-coded circulation paths, and intuitive spatial layouts should be integrated into the architectural design to improve navigation for staff, students, visitors, and external stakeholders. Effective wayfinding reduces confusion, shortens travel time, enhances user satisfaction, and contributes to a more efficient administrative experience (Jamshidi & Pati, 2024).

Finally, future studies should strengthen architectural research on university administrative buildings by combining qualitative observations with quantitative spatial evaluation techniques such as Space Syntax simulations, post-occupancy evaluations, and user satisfaction assessments. Comparative investigations involving multiple public and private universities across Nigeria and other developing countries would provide broader empirical evidence for developing context-specific design guidelines that improve institutional coordination, administrative efficiency, and campus governance. Such multidisciplinary research would also

contribute to evidence-based architectural practice and support the development of more resilient university administrative environments (Lee et al., 2023; Mohamed & van der Laag Yamu, 2024).

Overall, the recommendations presented in this study emphasize that effective university administration depends not only on institutional policies and governance frameworks but also on the quality of the physical environment in which administrative activities occur. Purposefully integrating spatial hierarchy, functional zoning, controlled circulation, digital spatial analysis, and flexible planning into the design of university administrative buildings will strengthen institutional coordination, improve user experience, reinforce organizational identity, and support sustainable campus development.

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