



Evaluating Landscape Maintenance Practices and Perception Gaps in Caleb University, Lagos, Nigeria

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Article Info

ISSN (online): 2583-6641

Impact Factor (RSIF): 8.56

Volume: 05

Issue: 02

March-April 2026

Received: 14-02-2026

Accepted: 12-03-2026

Published: 10-04-2026

Page No: 252-258

Abstract

Landscape maintenance is central to the environmental quality, functionality, and visual character of university campuses, yet its effectiveness is often judged through managerial assumptions or general impressions rather than through systematic comparison of user perception and actual site condition. In private universities, where campus appearance contributes to institutional image, student experience, and competitive positioning, ineffective or uneven landscape maintenance can diminish both environmental performance and user satisfaction. This study evaluates landscape maintenance practices at Caleb University, Imota, Lagos State, Nigeria, with particular emphasis on the gap between perceived maintenance effectiveness and observed landscape condition. A mixed-method case study design was adopted. Data were collected through semi-structured interviews with maintenance personnel, direct site observation, photographic documentation, and questionnaire responses from 224 campus users. Qualitative data were analysed thematically, while quantitative data were analysed using descriptive statistics. The study assessed maintenance activities, organizational structure, maintenance coverage, and user satisfaction across different campus zones. Findings show that landscape maintenance at Caleb University is active and institutionally organized, with routine attention given to planting, trimming, weeding, and general environmental upkeep. However, maintenance outcomes are spatially uneven, with high-visibility areas such as the administrative precinct, campus entrance, and cafeteria surroundings receiving more consistent care than less prominent spaces. Questionnaire responses indicate moderate user satisfaction, but they also reveal perceived inconsistencies in maintenance quality across the campus. Observational evidence confirms this unevenness, demonstrating a disconnect between management perception, user experience, and actual physical condition. The study concludes that the landscape maintenance system is functional but insufficiently balanced across the campus. It recommends the adoption of a structured preventive maintenance framework, more equitable distribution of maintenance effort, and improved monitoring and evaluation mechanisms. Given that maintained green infrastructure supports environmental performance and contributes to healthier and potentially restorative campus settings, strengthening maintenance practice is necessary not only for aesthetics but also for sustainability and user wellbeing.

Keywords: Campus aesthetics, Facility management, Landscape maintenance, Maintenance planning, Perception gap, Private universities, Sustainable landscape

1. Introduction

University campuses are complex environments in which buildings, circulation systems, and landscape elements work together to shape environmental quality, academic experience, and user wellbeing. Landscaped spaces such as lawns, trees, ornamental gardens, courtyards, and pedestrian corridors contribute to campus identity, ecological performance, visual order, and

opportunities for relaxation and social interaction. Research in environmental psychology has consistently shown that exposure to natural environments can reduce stress, support attention restoration, and improve user satisfaction in institutional settings.

In higher education environments, landscape infrastructure should not be understood as mere decoration. Vegetation and open-space systems contribute to microclimate regulation, biodiversity enhancement, stormwater control, air-quality improvement, and overall campus environmental performance. Recent Nigerian scholarship further reinforces the environmental value of vegetated systems and sustainable design interventions. For example, research on green roofs in Lagos shows that vegetated systems can contribute to urban air filtration and should be integrated into broader environmental management strategies, while work on sustainable architecture in Nigeria emphasizes the importance of site-responsive and ecologically grounded design within the built environment.

The benefits of campus landscapes, however, depend not only on design quality but also on continuous and effective maintenance. Unlike inert infrastructure, landscapes are living systems that require routine irrigation, mowing, pruning, replacement planting, soil improvement, pest control, waste removal, and hardscape upkeep. In facility management terms, maintenance comprises the technical and administrative actions required to retain an asset in a condition in which it can perform its intended function. This means that good landscape maintenance is not simply a cosmetic exercise; it is a strategic process that sustains functionality, environmental performance, safety, and user satisfaction.

In many developing-country contexts, maintenance culture remains weak, inconsistent, and reactive. Institutional assets are often attended to only when deterioration becomes visible, which leads to inefficient resource use and declining environmental quality. In private universities, this challenge is particularly important because campus appearance influences institutional reputation, student attraction, stakeholder perception, and everyday user experience. Yet maintenance effectiveness may not be uniformly experienced across the campus. In practice, high-visibility areas often receive more attention than secondary or low-visibility zones, creating a situation in which the campus appears well maintained in strategic locations while actual conditions vary considerably elsewhere.

This issue also has implications for user wellbeing. Emerging work on stress-inducing urban environments and biophilic therapeutic design argues that well-designed and well-managed green environments can help counter the sensory and psychological pressures associated with contemporary urban life. Although that study is urban in focus, its implications are relevant to campus settings, where outdoor environments can serve restorative and therapeutic functions if they are attractive, accessible, and properly maintained. A poorly maintained landscape may therefore undermine not only aesthetics and functionality but also the stress-reducing and psychologically supportive potential of campus green spaces.

Despite the recognized importance of campus landscapes, much of the literature has concentrated on landscape design, sustainability, and environmental performance, with less attention given to the operational management of landscape assets. Empirical studies that combine user perception, direct

observation, and management perspectives in assessing landscape maintenance performance, especially within private universities in Nigeria, remain limited. Against this background, this study evaluates landscape maintenance practices at Caleb University, Imota, Lagos State, with the aim of identifying how maintenance is organized, how it is experienced by users, and whether differences exist between perceived effectiveness and actual physical condition.

2. Literature Review

2.1. Maintenance in Facility Management

Maintenance is a fundamental component of facility management because it preserves the functionality, safety, reliability, and value of physical assets over time. The British Standards Institution defines maintenance as the combination of technical and administrative actions intended to retain or restore an asset to a condition in which it can perform its required function. This definition positions maintenance as a management responsibility that extends beyond repair to include planning, scheduling, monitoring, and resource coordination.

Maintenance strategies are commonly classified as corrective or preventive. Corrective maintenance occurs after a failure or visible deterioration, whereas preventive maintenance is scheduled in advance to minimize failure and maintain consistent performance. Preventive systems are generally regarded as more efficient because they reduce lifecycle costs, avoid service disruptions, and prolong asset life. In institutional settings, effective maintenance is usually associated with formal planning, clear responsibilities, regular inspection, adequate staffing, and stable funding.

In many Nigerian institutions, however, maintenance culture remains predominantly reactive. Infrastructure is often managed in response to visible decline rather than through systematic preventive frameworks. Such approaches create uneven performance, accelerate deterioration, and weaken long-term asset value. While this issue has often been discussed in relation to buildings, it is equally relevant to outdoor environmental assets, including campus landscapes.

2.2. Landscape as a Managed Facility Asset

Landscapes are essential institutional assets because they influence environmental quality, visual character, movement patterns, and user comfort. In university settings, lawns, gardens, trees, walkways, and outdoor sitting areas shape the everyday experience of students, staff, and visitors. These elements are functional as well as aesthetic because they contribute to thermal moderation, ecological support, spatial definition, and environmental legibility.

The environmental value of green systems has been well established. Vegetation contributes to air-quality improvement, runoff control, biodiversity support, and microclimatic moderation. Recent work by Daramola *et al.* shows that green roofs and other vegetated systems can improve urban air filtration in Lagos, reinforcing the broader case for vegetated infrastructure as part of sustainable environmental management. In a related way, Ogunnaike *et al.* argue that sustainable architecture in Nigeria requires integrated attention to site optimization, environmental performance, and ecologically responsive design strategies. These studies support the view that landscape systems should be treated as strategic environmental infrastructure rather than as ornamental afterthoughts.

At the same time, the performance of landscape infrastructure

is inseparable from maintenance. Poorly maintained lawns, untrimmed shrubs, broken walkways, blocked drainage channels, and unmanaged planting beds reduce not only visual quality but also ecological and functional performance. When maintenance is inconsistent, the environmental value of green infrastructure can decline significantly.

2.3. Landscape, Wellbeing, and Restorative Environments

Landscape quality is closely connected to user wellbeing. Natural settings have been associated with stress reduction, mental restoration, and improved emotional response. These benefits are particularly relevant in educational environments, where students and staff often experience cognitive demands, time pressure, and social stress.

The article *Architecture in the Age of Anxiety* extends this line of thinking by arguing that poorly designed urban environments can intensify psychological stress, while biophilic and therapeutic design strategies can support emotional balance and wellbeing. Although the study focuses on urban Lagos, its arguments are relevant to campus landscapes because universities are also lived environments in which spatial conditions can either support or undermine psychological comfort. A campus landscape that is clean, green, coherent, and well maintained is more likely to offer a sense of calm, orientation, and restoration than one marked by neglect, overgrowth, and uneven upkeep.

This suggests that maintenance should be understood as part of the therapeutic and experiential performance of landscape spaces. A well-designed green environment may fail to deliver its intended benefits if ongoing maintenance is inadequate. Therefore, landscape maintenance is central not only to appearance and functionality but also to the extent to which outdoor campus spaces remain restorative and user-supportive over time.

2.4. Maintenance Management in University Environments

Universities are complex maintenance environments because they contain multiple asset categories, high occupancy levels, and varied patterns of use. Maintenance operations may be handled through in-house systems, outsourced service arrangements, or hybrid approaches. Effective maintenance in such contexts depends on clearly defined responsibilities, operational coordination, and a monitoring framework that ensures standards are maintained across all parts of the campus.

Studies on university maintenance in Nigeria frequently identify constraints such as inadequate funding, poor planning, limited technical expertise, and weak administrative coordination. Another challenge is prioritization. Highly visible or prestigious spaces often receive better care than peripheral or low-visibility areas, creating spatial imbalance in maintenance outcomes. For private universities, this tendency may be reinforced by the need to sustain institutional image. However, selective maintenance can generate dissatisfaction among users who interact with neglected spaces outside the main showcase areas.

2.5. Assessing Maintenance Effectiveness

Maintenance effectiveness can be assessed through condition surveys, performance indicators, user satisfaction studies, maintenance audits, and direct observation. Each method

reveals a different dimension of performance. User-based approaches capture satisfaction and experience, management-based approaches reveal operational systems and constraints, while observation-based methods document actual site condition. Relying on one approach alone may produce an incomplete picture.

For landscape studies, direct observation is especially useful because it permits assessment of vegetation condition, cleanliness, drainage, edge definition, and hardscape performance. When observation is combined with interview and questionnaire data, researchers can identify not only how landscapes are maintained but also how maintenance is perceived and whether those perceptions correspond with actual conditions. This integrated approach is therefore appropriate for assessing perception gaps in campus landscape management.

3. Methodology

3.1. Research Design

This study adopted a mixed-method case study design in order to generate a comprehensive assessment of landscape maintenance practices at Caleb University. The use of mixed methods made it possible to combine management perspectives, physical site evidence, and user perceptions within a single evaluative framework. The qualitative component consisted of semi-structured interviews, site observation, and photographic documentation, while the quantitative component consisted of a questionnaire survey administered to campus users. This design allowed for triangulation and strengthened the reliability of the findings.

3.2. Study Area

The study was conducted at Caleb University, Imota, Lagos State, Nigeria. The university is a private higher education institution with a campus landscape that includes lawns, ornamental plantings, trees, shrubs, pedestrian walkways, open spaces, and areas surrounding academic, administrative, and residential facilities. These elements require continuous upkeep to preserve visual quality, usability, and environmental performance. The institution therefore provides a suitable context for evaluating how landscape maintenance is organized and experienced within a private university environment.

3.3. Data Collection

Data were collected through four methods.

First, semi-structured interviews were conducted with personnel responsible for landscape maintenance. These interviews focused on maintenance routines, organizational structure, staffing, scheduling, equipment, resource availability, and operational challenges.

Second, direct site observation was carried out across selected areas of the campus. Observations focused on the physical condition of lawns, shrubs, trees, planting beds, walkways, drainage channels, and general environmental cleanliness.

Third, photographic documentation was used to record visual evidence of maintenance outcomes in different parts of the campus.

Fourth, a structured questionnaire was administered to 224 respondents drawn from the university community, primarily students with regular exposure to campus outdoor spaces. The questionnaire examined users' perceptions of maintenance quality, regularity, consistency, spatial

distribution, and overall satisfaction. Responses were measured on a five-point Likert scale ranging from Strongly Agree to Strongly Disagree.

3.4. Sampling and Data Analysis

Respondents for the questionnaire survey were selected through convenience sampling on the basis that they regularly interacted with campus landscape spaces and were therefore capable of providing informed responses. Qualitative interview data were analysed thematically and organized around major issues such as maintenance structure, maintenance frequency, operational priorities, and challenges. Quantitative questionnaire data were analysed using descriptive statistics, including frequencies, percentages, and comparative interpretation of response patterns. The integration of these datasets enabled comparison between official perceptions, user experience, and observed site condition.

3.5. Assessment Criteria

The study evaluated maintenance effectiveness using criteria commonly identified in facility management literature, including the presence of maintenance schedules, use of preventive practices, adequacy of personnel, availability of resources, physical condition of landscape elements, and consistency of maintenance across different campus zones. These criteria provided a structured basis for interpreting the performance of the maintenance system.

4. Results and Discussion

4.1. User Interaction with Campus Landscape Spaces

Table 1: Frequency of Landscape Space Usage

Usage Frequency	Approx. Distribution (%)
Daily	~45–50%
Several times per week	~30–35%
Occasionally	~10–15%
Rarely	<5%

The survey results show that landscape spaces at Caleb University are actively used by a substantial proportion of the campus population. A large share of respondents reported using outdoor spaces daily or several times per week, indicating that landscape areas are important not only as visual features but also as part of everyday circulation, relaxation, and social interaction. The most frequently used spaces include walkways, administrative surroundings, and hostel environments. Because these locations shape routine experience, their maintenance quality strongly influences how the campus is perceived overall.

4.2. Perception of Maintenance Quality

Table 2: Perception of Overall Landscape Maintenance

Perception Level	Approx. Distribution (%)
Positive (Agree)	~40–45%
Neutral	~25–30%
Negative (Disagree)	~25–30%

The findings indicate that user perception of landscape maintenance is moderate rather than strongly positive. Although many respondents agreed that maintenance

activities are visible on campus, a considerable proportion remained neutral or dissatisfied, suggesting that maintenance performance does not produce a uniformly convincing impression. This moderate rating reflects the fact that users recognize ongoing maintenance activity but do not necessarily interpret it as consistent or fully effective.

4.3. Regularity and Consistency of Maintenance

Table 3: Perception of Maintenance Regularity

Response Category	Approx. Distribution (%)
Agree	~50–55%
Neutral	~20–25%
Disagree	~20–25%

A distinction emerged between maintenance regularity and maintenance consistency. Many respondents acknowledged that activities such as cleaning, trimming, and vegetation control are carried out regularly. However, fewer respondents believed that these efforts are evenly distributed across the campus. This indicates that the issue is not the total absence of maintenance but the unevenness of its application. This finding is significant because maintenance effectiveness should not be judged only by whether work is being done, but also by whether outcomes are spatially balanced. A campus can appear active in maintenance terms while still producing unequal user experiences if some areas consistently receive more care than others.

4.4. Spatial Prioritization of Maintenance Effort

Table 4: Perception of Maintenance Consistency

Response Category	Approx. Distribution (%)
Agree	~30–35%
Neutral	~25–30%
Disagree	~35–40%

One of the clearest findings of the study is that maintenance attention is concentrated in high-visibility and high-traffic areas. Respondents strongly agreed that administrative surroundings, campus entrances, and major circulation zones receive more maintenance attention than less visible parts of the campus. Site observations confirmed this perception. These highly visible spaces displayed trimmed vegetation, organized planting, and better overall appearance, while some secondary areas showed overgrowth, weaker visual order, and reduced maintenance attention. This pattern suggests that maintenance is influenced by image management and visibility. Such prioritization is understandable in a private university context, where first impressions and public-facing spaces matter. However, the approach creates uneven landscape quality and contributes directly to the perception gap identified in the study.

4.5. Maintenance Structure and Operational System

Table 5: Perception of Maintenance Focus on High-Visibility Areas

Response Category	Approx. Distribution (%)
Agree	~65–70%
Neutral	~20–25%
Disagree	<10%

Interview findings show that landscape maintenance is managed through a structured Gardening Department with team-based responsibilities for planting, trimming, and weeding. The university primarily relies on an in-house maintenance system, with occasional outsourcing for more intensive clearing activities. This arrangement suggests the existence of basic organizational capacity and institutional commitment to campus upkeep.

Nevertheless, the existence of organizational structure does not automatically produce uniform outcomes. The findings indicate that even where maintenance personnel and basic routines are in place, the absence of a clearly formalized and evenly enforced maintenance framework may lead to selective coverage.

4.6. Maintenance Planning and System Weaknesses

Although maintenance activities are continuous, the study indicates that they are not guided by a clearly documented and preventive schedule. Instead, maintenance appears to be driven by routine practice, immediate need, and visual priority. This explains why high-profile areas remain in better condition while less visible spaces receive irregular attention.



Fig 1: Well-maintained landscape at administrative area showing trimmed vegetation and organized planting



Fig 2: Maintained entrance landscape highlighting visual quality and structured greenery

This gap has wider implications. Where landscapes are selectively maintained, the campus loses the full environmental and experiential value that green infrastructure can provide. Research on sustainable and vegetated systems suggests that green infrastructure performs best when it is treated as active environmental infrastructure rather than as passive scenery. Likewise, the argument

Table 6: User Satisfaction with Landscape Maintenance

Satisfaction Level	Approx. Distribution (%)
Satisfied	~35–40%
Neutral	~30%
Unsatisfied	~30–35%

The lack of a structured preventive system is important because landscapes are dynamic living assets whose condition changes over time. Without planned inspection cycles, documented standards, and area-based performance checks, it becomes difficult to maintain uniform quality across the entire campus.

4.7. Perception Gap and Environmental Implications

The most important contribution of the study is the identification of a three-way disconnect between management perception, user experience, and actual physical condition. Management personnel view the system as active and largely effective, while users report uneven experiences and moderate satisfaction. Observational evidence confirms that maintenance quality varies substantially by location.

advanced in Architecture in the Age of Anxiety implies that the restorative and therapeutic potential of green spaces depends partly on their quality, coherence, and usability. Inconsistently maintained campus landscapes may therefore weaken not only visual appeal but also the capacity of the outdoor environment to support wellbeing, comfort, and stress relief.



Fig 3: Overgrown vegetation in low-visibility area indicating reduced maintenance attention



Fig 4: Poorly maintained landscape section showing uneven maintenance distribution

4.8. Overall Interpretation

Taken together, the findings show that landscape maintenance at Caleb University is active but spatially uneven. Maintenance is visible, users recognize its presence, and the institution has a functioning organizational structure for landscape care. However, maintenance quality is not uniformly experienced across the campus because effort is concentrated in strategic locations. The result is a campus landscape that performs well in showcase areas but less effectively in secondary spaces.

This creates an appearance of general adequacy that is not fully supported by the condition of all landscape zones. The perception gap identified in this study therefore reflects not a total failure of maintenance, but a mismatch between visible effort, actual distribution, and user experience.

5. Conclusion and Recommendations

5.1. Conclusion

This study evaluated landscape maintenance practices at Caleb University through a mixed-method assessment that combined interviews, questionnaire responses from 224 users, direct observation, and photographic documentation. The

findings demonstrate that the university has an active and organized landscape maintenance system, largely coordinated through an in-house Gardening Department. Routine maintenance activities such as planting, trimming, weeding, and environmental cleaning are clearly being undertaken.

However, the effectiveness of these activities is limited by uneven spatial distribution. High-visibility areas such as the administrative precinct, entrance zone, and major public-facing spaces receive more consistent maintenance attention than less prominent areas. As a result, users experience the campus landscape unevenly, and their perceptions of maintenance quality are more moderate than management assumptions might suggest.

The study therefore concludes that landscape maintenance at Caleb University is functional but not fully comprehensive. The major problem is not inactivity, but inconsistency. This inconsistency produces a perception gap between what management believes is being achieved, what users actually experience, and what site conditions reveal.

The implications of this finding extend beyond visual quality alone. Because campus landscapes contribute to

sustainability, environmental quality, and user wellbeing, uneven maintenance weakens the broader value of green infrastructure in the university environment. A more structured, preventive, and equitable approach is therefore necessary if Caleb University is to maximize the functional, environmental, and restorative benefits of its campus landscape.

5.2. Recommendations

Based on the findings of the study, the following recommendations are proposed:

1. **Develop a formal maintenance framework.**
A documented landscape maintenance plan should be established to specify maintenance standards, schedules, frequency of operations, and area-based responsibilities across the campus.
2. **Ensure equitable maintenance coverage.**
Maintenance activities should be distributed more evenly across both high-visibility and low-visibility areas so that all parts of the campus meet acceptable landscape standards.
3. **Adopt a preventive maintenance approach.**
The university should move beyond routine or reactive maintenance and implement preventive scheduling based on inspection cycles, seasonal needs, and landscape condition assessment.
4. **Strengthen monitoring and evaluation.**
A regular inspection and reporting system should be introduced to identify neglected areas early, track performance by zone, and improve accountability within the maintenance unit.
5. **Standardize operating procedures.**
Written guidelines should be developed for planting, mowing, trimming, replacement planting, drainage clearing, and waste management in order to improve consistency in landscape operations.
6. **Integrate sustainability and wellbeing objectives into maintenance practice.**
Landscape maintenance should be aligned with broader campus sustainability goals and with the role of green spaces in supporting user comfort, environmental quality, and potentially restorative campus experiences.

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How to Cite This Article

ADEMAKINWA A, Olusunbo O, ADEYEMI O, AJEH K, UKAH O, Alagbe OA. Evaluating landscape maintenance practices and perception gaps in Caleb University, Lagos, Nigeria. *Int J Manag Organ Res*. 2026;5(2):252-258.

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