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Resilient Futures:
Innovating Sustainable Built Environments for a Changing World

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BOOK OF ABSTRACTS

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THE NEXUS OF URBAN PLANNING AND THE CIRCULAR ECONOMY

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Abstract
The swift increase in urban population has resulted in notable environmental, social, and economic problems, emphasizing the importance of implementing sustainable and regenerative strategies in the built environment. The concept of the circular economy, which focuses on minimizing waste and maximizing resource reuse and recycling, provides a valuable framework for advancing sustainable urban development. The purpose of this paper is to examine the relationship between urban planning and the circular economy, as well as the opportunities and challenges associated with mainstreaming the circular economy into urban planning. This paper examines key intersections, including the design for circularity, the reduction and management of waste, the sharing of knowledge, and the planning for inclusive and participatory urban development. The paper shows how urban planning can implement closed-loop systems, decrease waste and pollution, and encourage resource efficiency by examining previous research and real-world case studies. The paper also highlights the importance of inclusive and participatory planning in ensuring that the needs and priorities of all stakeholder are addressed. The research suggests that the integration of circular economy principles into urban planning has the potential to create sustainable, resilient, and regenerative cities. The paper recommended the adoption of circular economy principles in the design of cities of the future.

Keywords: Urban, Planning, Circular, Economy, Relationship

ASSESSMENT OF THE PERCEPTION OF GREEN INFRASTRUCTURE RELEVANCE TO THE BUILT ENVIRONMENT IN METROPOLITAN LAGOS, NIGERIA

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Abstract
This study assessed the relevance of green infrastructure to the built environment in Metropolitan Lagos, Nigeria. Data were collected using a descriptive cross-sectional survey approach, which included a well-structured questionnaire and observations. GPS and laser measurement equipment were employed in various residential density areas: low-density residential area (LDRA), with a count of 281; medium-density residential area (MDRA), with a count of 563; and high-density residential area (HDRA), with a count of 656. The analysis involved the use of descriptive and inferential statistics. The results showed that external greenery, external/internal planters, housing with trees/grass, and open-space greenery were the principal perceived components of green infrastructure in the area. Across the residential density areas, the study found that green spaces occupied 10 to 25 square meters, with more land area allotted for greeneries in the low-density residential area, while 85.3% of the housing units occupied land areas of 100 to 700 square meters in the medium-density residential area. Flood/erosion control, aesthetic improvement in well-being, contribution to urban ecology, provision of conducive habitation, and wind speed control were the main perceived relevance of green infrastructure on housing quality. Residents' perceptions of the relevance of green infrastructure varied significantly across residential density types. The findings revealed that the most prominent green infrastructure in the vicinity not only contributes to the enhancement of visual quality in the housing area but also provides recreational and social interaction opportunities for the residents. This study implies that the availability and accessibility of green areas within urban neighbourhoods enhances a better understanding of the built, green, and social environments, which, to a large extent, have a strong positive impact on the quality of life of citizens and promote favourable environmental behaviours within residential areas.

Keywords: Green Urbanism, Infrastructural relevance, Visual quality attributes, Built Environment

AN APPRAISAL OF FACTORS AFFECTING CONSTRUCTION PROJECT HANDOVER IN THE CONSTRUCTION INDUSTRY

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Abstract
Handing over is the last stage of construction, and could be said to be the transfer of constructed project and necessary information from design team to the project owner, users or facility manager. With the ever-increasing demand for quality service from project teams by clients, it therefore follows that poor handover can have a huge impact on clients 'satisfaction. It is based on this aim that this research was carried out with objectives to investigate the activities involved in handover stage of construction project, to investigate the factors affecting construction project handover and to assess how project successful completion can be achieved in the construction industry with the view of providing overall effective project and client satisfaction. A questionnaire survey was used and professionals in the construction industry in Ekiti state were sampled. Data collected were analysed using descriptive statistics: mean and percentile. Findings revealed that handover is not new to construction professionals but most times some vital process and documents are left out. Also, factors affecting effective handover and feedback amongst others are: project failure/abandonment (a failed project cannot be handed over); project variation; inability of the client to pay the contractor and; insolvency in the course of the construction. This study therefore recommends that handover should be taken as a crucial stage with all necessary information properly communicated and measures taken to guide against the limiting factors in order to achieve a successful project.

Keywords: Handover, Construction project, Project success, Project commissioning, Construction industry

DEVELOPERS' SOURCES OF AWARENESS AND INDICATION OF COMPLIANCE WITH PHYSICAL PLANNING REGULATIONS IN SOUTHWESTERN NIGERIA

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Abstract
This study examined the developers' sources of awareness and indication of compliance with physical planning regulations in Southwestern Nigeria. Two types of data were obtained for the study. These are primary and secondary data. The primary data used for the study were generated from field survey through quantitative and qualitative techniques. Lagos and Osun States will be randomly selected from the two planning administration systems in South Western States. This research work therefore utilized 0.5% of the household size in the selected local governments which translates to a sample size of 2,682 persons. Both descriptive statistics and inferential tools were utilised for the study. The findings revealed that 64.3% were aware when seeking building approval while 35.7% stated otherwise; 32.3% were aware through contravention and stop work notices while 67.7% stated otherwise; 41.7% were aware through mass media while 58.3% stated otherwise; 23.8% were aware through building collapse while 76.2% stated otherwise; 47.5% were through outdoor billboard while 52.5% stated otherwise; 41.4% were aware through enlightenment campaign while 58.6% stated otherwise; 40.7% were aware through friends and neighbour while 59.3% stated otherwise; 37.6% were aware through demolition notices while 62.4% stated otherwise; 26.5% were aware through demolition exercise while 73.5% stated otherwise; and 23.2% were aware through conflict resolution while 76.2% stated otherwise. Based on the findings, it can be concluded that stakeholders in physical planning administration were distributed across the offices of the MDAs in Lagos State, Ondo State and Osun State.

Keywords: Physical planning, Compliance, Regulations, Administration

THE ROLE OF NEIGHBOURHOOD SHOPS IN CRIME PREVENTION THROUGH ENVIRONMENTAL DESIGN: EVIDENCE FROM A NIGERIA TRADITIONAL CITY

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Abstract
This article examines the role of neighbourhood shops and residents` experience with property crime within neighbourhoods of Ile-Ife, Nigeria. Neighbourhood shops also known as corner shops, are an integral design feature within any residential area. They are incorporated into the neighbourhood design to allow convenient and walking distance access to groceries and other basic needs (Hua, Otsuji & Pennycook, 2017)). The study area was stratified into three homogenous residential zones. Houses at a distance of ≤ 800 metres from a neighbourhood shop were identified. Subsequently, systematic sampling was used to select every tenth house within this category. The locational distribution of the neighbourhood reveals that 37.5%, 12.5% and 6.5% of residents in the core, transition and suburban zones had neighbourhood shops on their dwelling units. Residents` experience with property crime revealed that burglary is a prevalent property crime with 16.1% and 34.8% of residents in the transition and suburban zones reporting its incidence. Property crime was not a prevalent menace in the core areas, and the significant relationship between the location of neighbourhood shops and the occurrence of this crime was evident with results showing a significant relationship between the proximity of neighbourhood shops to residential units and the frequency of burglary, shoplifting and the feeling of safety among residents. Policymakers and city planners should look towards a proportionate use of neighbourhood shops as a sustainable measure of crime prevention within neighbourhoods.

Keywords: Neighbourhood shops; Property crime; Design features, Crime prevention, Sustainability

CLIMATE CHANGE SCENARIOS LINKING ENVIRONMENTAL POLICY: PATHWAY FOR INTEGRATED ASSESSMENT MODELS FOR NEAR- AND LONG-TERM FUTURE PERSPECTIVES: A SYSTEMATIC REVIEW

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Abstract
This research explores reviewed studies on climate change scenarios that connect environmental policies and establish routes for integrated assessment models. The study employs a qualitative synthesis methodology, utilizing case studies, archival research, and discourse analysis to evaluate climate change and environmental policy via IAMs. This study methodology uses intervention theory as a conceptual framework to devise a planning process and enhance the incorporation of development priorities into climate change planning. Findings significantly reveal that fostering a city's resilience to climate change necessitates integrative strategies that consider various objectives, including adaptation, mitigation, and integrated assessment models, while effectively managing trade-offs and preventing conflicts among initiatives. Subsequent empirical findings also indicate that the integration of mitigation and adaptation projects is intricate; however, pursuing opportunities for collaborative actions will yield enduring effects and guarantee that the goals of climate change strategies for both mitigation and adaptation are mutually reinforcing. Findings from this study demonstrate that comprehensive, holistic analysis and proactive planning can enhance synergies, increase cost-effectiveness, prevent conflicts, and facilitate the management of trade-offs. Integrating climate-economic model paradigms and enhancing models necessitates ongoing, collaborative assemblies of scholars involved in all facets of the issue. Consequently, other forthcoming research and applications ought to emphasize strengthening the interconnections and shared mechanisms between mitigation and adaptation strategies, enhancing monitoring and evaluation frameworks, advocating for departmental and regional investigations and implementations, and instituting policy and security systems. This would furnish a framework for policymakers to evaluate connections and utilize them for enhanced advantages in formulating integrated climate change response programs.

Keywords: Climate change, Adaptation, Mitigation, Environmental Policies, Integrated assessment models

LEVEL OF AWARENESS AND PRACTICE OF SUSTAINABLE PROJECT MANAGEMENT AMONG QUANTITY SURVEYORS IN IBADAN, OYO STATE, NIGERIA

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Abstract
The construction industry has a substantial influence on environmental sustainability, social well-being, and economic development. With the rapid urbanisation of cities like Ibadan, the capital of Oyo State, Nigeria, there is a growing urgency for the implementation of sustainable construction practices. Sustainable project management entails the incorporation of environmental, social, and economic factors throughout all stages of construction projects in order to mitigate adverse effects and maximise long-term advantages. Therefore, the purpose of this paper is to explore the level of Awareness and Practice of Sustainable Project Management among Quantity Surveyors in Ibadan, Oyo State. The study adopted a quantitative approach by distributing questionnaire to 171 professional quantity surveyors in the state. However, a total number of 62 were retrieved, equating 36% of the total administered questionnaire. The study adopted descriptive statistics using Mean Item Score (MIS) to rank the variables. It was recommended that public awareness campaigns be conducted to emphasise the enduring advantages of sustainable construction and sustainable project management, including its financial and environmental benefits.

Keywords: Awareness, Practice, Sustainability, Project management, Construction

MANAGING STRESS IN CONSTRUCTION: BUILDING RESILIENCE, ADAPTABILITY, AND SUSTAINABILITY FOR WORKERS ON SITE

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Abstract
Stress is constant among construction workers as a result of the physical nature of the construction activities. The pressure to meet strict deadlines and adhere to safety regulations can also contribute to high stress levels on construction sites. Additionally, the unpredictable weather conditions and long hours can take a toll on the mental and physical well-being of construction workers. Despite these challenges, many construction workers are unable to find ways to cope with stress through support from co-workers and supervisors, as well as utilizing stress-reducing techniques such as exercise and mindfulness practices. This could be as a result of the lack of understanding of the nature and types of stress encountered by construction workers. This suggests that further research is needed to better understand the specific sources of stress in the construction industry so as to develop more effective strategies for managing it. Therefore, this study investigates the various types of site-related stress encountered by construction workers with a view to understanding and building a resilient, adaptable, and sustainable workforce. Through surveys of construction workers and stakeholders, this study aims to identify specific triggers of stress on construction sites, such as tight deadlines, physical demands, lack of control, inadequate resources, poor communication, conflict, role ambiguity, and safety concerns. The study found out that there are six distinct types of site-related stress that workers encounter on construction sites. The study concludes that construction workers can implement targeted interventions to reduce their impact on workers' mental health and increase productivity and job satisfaction in the construction industry by understanding these specific stressors. The findings of this study provide insight into the unique stressors faced by construction workers that could inform targeted interventions to improve mental health and overall well-being on construction sites. The findings of this study have implications for fostering a culture of well-being and resilience in the construction industry which will not only benefit individual workers but also contribute to the overall success and longevity of construction projects.

THE ROLE OF VERNACULAR ARCHITECTURE IN MODERN SUSTAINABLE DESIGN

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Abstract
Vernacular architecture, or traditional building designs that incorporate local materials and building practices that have been used through the centuries, provides strong evidence concerning sustainable design principles. As they progressed through their centuries-long history of development, these architectural forms reflect a natural practice of social, economic, and environmental sustainability. Traditional structures have demonstrated that design can both be sustainable and useful by accommodating the unique needs, resources, and climate of where they are situated. The research purpose is to investigate how the traditional construction practices might influence green design in the present and provide solutions to some of the pressing environmental issues. The purpose of this journal is to bridge the knowledge gap between the traditional wisdom and contemporary technologies. Because vernacular architecture makes use of local materials, there is little need for energy-hungry transport and the material procurement has less environmental impact. Additionally, energy-efficient features like passive heating and cooling, ventilation through nature, and other elements are commonly emphasized in traditional construction practices. These have a great potential to alleviate the dependency on fossil fuels and mechanical systems. Through a review of recent studies and some case studies, the report points out these strategies as effective means of increasing the sustainability of contemporary buildings. Vernacular architecture is not just environmentally sustainable but also socially and economically sustainable.

SUSTAINABLE GROUNDWATER MANAGEMENT USING GEORESISTIVITY DATA IN MANI AREA, KATSINA STATE, NIGERIA

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Abstract
The escalating concern regarding groundwater contamination has spurred researchers to explore robust approaches and techniques to safeguard this precious resource. Vulnerability assessment techniques have been developed to evaluate the risk of groundwater contamination, Geo-electrical survey involving vertical electrical sounding (VES) was carried out using Schlumberger electrode configuration. The study aimed at evaluating aquifer vulnerability to contamination for sustainable groundwater management in parts of Mani area, Katsina state Nigeria. Twenty-one (21) VES were carried out. The interpreted and analyzed results reveal three to five geo-electric layers. The aquifer resistivity varied from 34.08 to 331Ωm, aquifer thickness from 4.37 m to 19.5 m. The transverse resistance ranges between 274.07 to 5343 Ωm^2, longitudinal conductance varied from 0.018 to 0.245 mhos. The hydraulic conductivity ranged from 1.724 – 14.371 m/day. The aquifer protective capacity (APC) rating falls largely from poor (61.9%) to weak (33.3%) and is thus prone to contamination from infiltration. Aquifer vulnerability index (AVI) revealed extremely high vulnerable to contamination. Based on the results, the assessment indicates that the majority of the study area is highly vulnerable to contamination. Therefore, prospective wells and boreholes in the area should be adequately protected against infiltrating contaminants for potable groundwater supply and management.

Keywords: Aquifer properties, Vulnerability assessment, Geo-resistivity data, Mani area

IMPROVING ENERGY EFFICIENCY WITHIN BUILDING SPACES: A CONCISE STUDY ON PROMOTING COMFORT FOR BUILDING OCCUPANTS

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Abstract
Comfort of building occupants is a very strategic deliverable in the design and construction of building spaces due to their attendant functional requirements. Comfort on the other hand within the confines of building spaces can be referred to as that feeling of well-being which an occupant experiences in a given building space. Energy efficiency in buildings on the other hand refers to using less energy in buildings in performing the same functions such as heating, cooling and running appliances within a buildings space which in the long run has both positive and negative impacts regarding environmental and economic advantages to the environment and users of the respective spaces designed. Various studies on building occupant comfort levels have evolved in review articles but few have reviewed the comfort levels within different building spaces. This state of the art study used papers published in five scientific and reliable databases by conducting an extensive study on articles revised in Web of Science, Scopus data base, Google Scholar, ProQuest with Science direct from (2014-2024) from 160 articles out of which 54 were found relevant for the study on the imperatives that account for Energy Efficiency within building spaces because enhancing a buildings energy consumption is a very vital component and concept in the construction industry the world over. As a result, this study aims at identifying comfort and well-being levels of building occupants in different building spaces between indoor and outdoor temperatures, thereby clarifying what makes for an ideal comfort level of building occupants within a designed space while also improving the consumption of energy and enhance energy efficiency within the spaces designed. Findings from the study will be beneficial to policy makers, designers, architects, environmental groups and facility managers.

Keywords: Buildings, Comfort, Occupants, Efficiency, Energy, Environmental spaces

ASSESSING WAYS OF REDUCING UNETHICAL PRACTICES IN TENDERING OF PUBLIC BUILDING PROCUREMENT: A CASE STUDY OF BAUCHI STATE

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Abstract
Public construction procurement is used as tool for developing economic, social and environmental wellbeing of a nation, as well as a strategic means for reducing unethical practices in the use of public funds. Nonetheless, Unethical professional practices negate the main objective of professional ethics; by implication unethical professional practice is a way that professionals disrespect the interest of their clients which translate to the wider public interest not recognized and respected. Hence, this study assesses ways of reducing unethical professional practices in public building procurement in Nigeria. Questionnaire survey was used to elicit data from public building professionals in Bauchi metropolis, Nigeria, through a disproportionate stratified random sampling technique. The finding shows credible leadership, enforcing punitive measures, and parity in tendering, introducing ethics as a course in academic institutions, organizing seminars on ethics, adherence to professional ethics and procurement requirements, sufficient time for tender preparation, and understanding ethical and professional values were ranked as effective measures for curbing unethical professional practices in tendering.

Keywords: Professional practices, Public building, Procurement, Unethical, Tendering

SYSTEMATIC LITERATURE REVIEW (SLR) ON THE EFFECT OF INNOVATION STRATEGIES AND FIRMS' PERFORMANCE

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Abstract
This paper examined the effect of innovation strategies on firms' performance using the systematic literature review (SLR) method. The analysis was based on 35 (thirty-five) extracted research publications in Journals published between the years 2014 and 2024. In order to select the relevant publications, consideration was given to peer-reviewed Journals written in English Language, and that also adopted mixed-method studies. The Journals publications that fulfilled these conditions were used in the inclusion and exclusion selection criteria for the study. The 118 research publications generated for this study were downloaded from the databases of the Google Scholar and Scopus. Consequently, this study adopted Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) in its review. The Theoretical foundation for the study includes; the Resource-Based Theory, Theory of Innovation Diffusion, and the Theory of Planned Behaviour. The findings from the reviewed publications revealed that the perceived performance as a result of innovation strategies was not uniform in all the sectors reviewed by the study. It was noted that most studies perceived innovation strategies as being positively significant to productivity and firms' performance. Innovation and efficiency strategies were found to improve the performance of construction companies and particularly the real estate business. Finally, manufacturing firms also perceived innovation strategies as relevant tool to the performance of the firms in the service and manufacturing sectors.

Keywords: Innovation, Innovation strategies, Performance, Innovation theories, Real estate firms

ENVIRONMENTAL IMPACT ASSESSMENTS IN HIGHER EDUCATION: A CASE STUDY OF THE 500-SEAT LECTURE THEATRE PROJECT AT BELLS UNIVERSITY OF TECHNOLOGY, NIGERIA

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Abstract
The relentless expansion of physical developments significantly contributes to global environmental degradation, underscoring the need for robust environmental management strategies. Environmental Impact Assessments (EIAs) are crucial tools that provide anticipatory insights into the potential ecological repercussions of proposed projects, guiding decision-makers toward sustainable practices. This study focuses on the construction of a state-of-the-art 500-seat lecture theatre at Bells University of Technology, initiated by the Bells University Parent Forum during their Annual General Meeting in December 2021. The project aims to enhance educational quality by fostering a conducive learning environment for students. The objective of this research is to systematically assess and predict both positive and negative environmental impacts associated with the proposed lecture hall. This assessment includes identifying effective mitigation strategies for any adverse effects that may arise during and after construction. Employing a comprehensive methodological framework, this study utilizes six established techniques for impact evaluation: matrices, networks, overlays, project appraisal for development control, models, and quantitative methods. These methodologies were selected for their effectiveness and applicability in environmental assessments. Key findings indicated that the site layout adheres to planning regulations, ensuring adequate setbacks from roads and neighbouring developments to promote air quality. The relatively flat terrain of the site facilitates unobstructed visibility, enhancing safety for vehicular access. Compliance with physical planning standards confirms the project's suitability within its local context. In conclusion, this study revealed that the selected location is appropriate, and its operational features are likely to enhance students' academic experiences while positively impacting local businesses. The findings underscore the importance of integrating EIAs in higher education infrastructure projects to promote sustainable development.

Keywords: Environmental assessment, Environmental impact assessment, Matrices, Networks, Project appraisal; Development control

INVESTIGATION OF THE RELATIONSHIP BETWEEN CONTRACTORS ATTITUDE TOWARDS RISK AND THEIR CONSTRUCTION PROJECT DELIVERY

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Abstract
Despite heavy infrastructural development Gombe state is witnessing by the successive administrations, the indigenous construction project contractors in the state are yet to seize this opportunity as indicated by the list of active contractors by the state's ministry of works and transport. Extant literature embodies several propositions relating to this phenomenon—some organizations sees opportunity as threat; the downside of risk is what many contractors forecast, etc. Consequently, this study investigated the attitude of the construction contractors in Gombe town. The research was conducted using questionnaire survey, where 84 construction contractors participated in the study. These contractors were selected using simple random sampling technique, and the responses obtained were analysed using SPSS packaged 21. The study found that the attitude of the contractors towards risk in project delivery is 'avoiding risk' attitude. And with this attitude, only 22.3% of the subjects' project performance were enhanced. Furthermore, there is large negative correlation (r= -.556) between this attitude of 'avoiding risk' by the Gombe-town construction contractors and their project performance. Considering these findings, it is recommended that attitudinal change must be shown by the contractors from just 'avoiding risk' to at least 'exploiting' and 'sharing' attitudes. Similarly, more effort is needed by the contractors to invest in project management knowledge area to enable them to devise 'strategic approach' to each project as this will enhance their attitude.

Keywords: Attitude, Contractors, Risk, Construction, Project delivery

THE IMPACT OF ACADEMIC STRESS, BURNOUT, LEARNING ENVIRONMENT, AND PERCEIVED SOCIAL SUPPORT ON THE WELL-BEING OF ARCHITECTURE STUDENTS IN NIGERIAN UNIVERSITIES

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Abstract
Architecture students face intense academic demands, including heavy workloads, long study hours, and complex design projects that can significantly affect their well-being. This study investigates how academic stress, burnout, workload perception, fatigue, and perceived social support influence the well-being of architecture students in selected Nigerian universities. Using a quantitative approach, data was collected through surveys from 331 students across (14) fourteen universities. The study explores how architectural learning environments such as studio spaces, lighting, ventilation, noise levels, and spatial layout contribute to or alleviate psychological challenges. Findings identified nervousness, continuous workload, physical exhaustion, and difficulty managing studio assignments as major stressors. The results revealed that female students reported significantly higher levels of emotional distress compared to their male counterparts, especially in areas such as sadness, loss of interest, and fatigue. Additionally, age was found to influence anxiety symptoms, with younger students more affected by academic and social anxieties, while older students were more prone to sleep disturbances related to worry. The study offers practical recommendations for educators, administrators, and architects to foster healthier academic experiences for architecture students.

Keywords: Burnout, Depression, Fatigue, perceived social support, Stress

SCIENCE MAPPING THE SCOPUS-INDEXED PUBLICATIONS ON MATERIAL PASSPORT

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Abstract
Material passports (MPs) have emerged as a significant concept in the transition towards a circular economy, facilitating material traceability, reuse, and sustainability in the built environment. Despite the increasing research interest in MPs, there is a lack of comprehensive studies that map its intellectual landscape, temporal evolution, and global knowledge contributions. This study employs bibliometric and science mapping techniques to analyse Scopus-indexed publications on MPs, providing insights into its developmental trajectory, key research themes, and scholarly networks. A Dataset of 606 MP-related publications from Scopus was extracted, of which 595 articles were analysed using VOSviewer and Bibliometric technique. The study examines publication trends, influential authors, institutions, and countries contributing to MP research. Co-citation, keyword co-occurrence, and thematic evolution analyses were conducted to identify foundational works, emerging topics, and shifting research priorities over time. Findings reveal a significant increase in MP-related studies since 2015, driven by the growing adoption of circular economy principles in construction and manufacturing. The most influential contributions stem from European research institutions, with a focus on digitalization, life cycle assessment, and regulatory frameworks. Key research clusters include, advancing circular economy strategies, carbon emissions reduction, revolutionizing construction and building practices, policy-driven implementation strategies and optimizing waste management and recycling. Additionally, emerging themes highlight the integration of MPs with Building Information Modelling (BIM) for enhanced material circularity. This study provides a comprehensive mapping of the MP research landscape, offering valuable insights for academics, policymakers, and industry stakeholders. By identifying research gaps and future directions, it contributes to the strategic advancement of MP implementation in the built environment. The findings underscore the need for interdisciplinary collaboration and standardized frameworks to maximize the effectiveness of MPs in promoting a sustainable, circular economy.

Keywords: Material passport, Bibliometric analysis, Circular economy, Science mapping, Building information modelling

DECLINING GREEN: SATELLITE-BASED ANALYSIS OF URBAN AGRICULTURE LOSS IN IBADAN, NIGERIA

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Abstract
This study investigates the spatial patterns of urban agriculture in Ibadan, Nigeria, and its integration into land use planning, leveraging geospatial technology. Using Landsat 8 OLI satellite imagery for the years 2000, 2018, and 2023, land cover classifications were conducted to assess the extent and transformation of urban agricultural spaces over time. The analysis revealed a marked decline in agricultural land use (from 13.96% in 2000 to just 4% in 2023) amid a steady increase in built-up areas. These findings underscore the mounting pressure of urbanization on agricultural land and highlight the urgent need for policies that safeguard urban agriculture as a critical component of food security, environmental sustainability, and economic resilience in rapidly growing cities. The study emphasizes the importance of integrating urban agriculture into formal land use planning to ensure its viability in the face of competing spatial demands.

Keywords: Urban agriculture, Spatial pattern, Land use planning, Satellite imagery, Urbanization

CURTAILING URBAN SPRAWL IN IBADAN WITH URBAN NATURE CONSERVATION: LESSONS FROM INTERNATIONAL CASE STUDIES

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Abstract
Urban areas especially sprawl developments are characterized by the prevalence of extensive built structures and impervious surfaces, which alter the natural landscape and hydrology, reduce vegetation cover and diversity, and worsens habitat loss, fragmentation and degradation. Urban sprawl poses significant threats to sustainable development in Ibadan as the city has been growing exponentially in spatial extent and footprint since the turn of the century. This unprecedent urban development occurs mainly along transportation routes linking Ibadan with adjoining cities such as Lagos, Abeokuta, Ijebu-Ode, Ile-Ife, Iwo, Oyo, Iseyin and Eruwa. These development corridors proliferated with extensive linear spatial patterns inhibits access and coverage of critical infrastructure and services. This study, through a case study research approach examined strategies to mitigate urban sprawl focusing on urban nature conservation interventions and mechanisms. Findings revealed the need for a multi-faceted approach to mitigating urban sprawl through the combination of policy, strategic planning, zoning regulations, development control, and community engagement to foster urban nature conservation. The integration of green infrastructure, habitat preservation, and ecosystem rehabilitation were pivotal to the mitigation of urban sprawl. Strategies to foster urban nature conservation should be hinged upon development strategies that prioritize the delimitation of urban sprawl and the protection of ecosystems and biodiversity as well as the ecological function of natural landscapes.

Keywords: Biodiversity, Conservation, Ecosystem, Nature, Sprawl

EFFECT OF POWER DISTRIBUTION AND POWER DISTANCE ON LINK BETWEEN POWERPLAY AND ORGANIZATIONAL PERFORMANCE

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Abstract
It has been established that power play in organizations negatively affects organizational performance. This is often due to the toxic work environment created by power struggles and unethical behaviour. Employees may feel demotivated and disengaged, leading to decreased productivity and innovation. However, the power forms involved, the degree of power distribution, and the power distance all affect organizational performance. The impacts of these power dynamics on the effects of power play on organizational performance have not been explored. It is clear that addressing power dynamics is crucial for fostering a healthy work environment where employees feel respected and valued. This, in turn, can lead to higher levels of employee satisfaction, increased productivity, and ultimately, greater organizational success. Therefore, this study investigated the moderating effect of power distribution and power distance on the link between power play and organizational performance in construction organizations in Lagos State, Nigeria. The study found that in construction organizations in Lagos State, Nigeria, power play had a significant negative impact on organizational performance. However, this impact was found to be moderated by power distribution and power distance. Organizations with more equitable power distribution and lower power distance were less affected by power play, leading to better overall performance. These findings highlight the importance of considering power dynamics within organizations and how they can influence outcomes.

Keywords: Power, Powerplay in organizations, Power distance, Power distribution, Organizational performance

URBANIZATION AND SACK FARMING PRACTICES ACROSS RESIDENTIAL DENSITIES IN IBADAN METROPOLIS

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Abstract
Ibadan, a developing city in Nigeria with high population density, is experiencing environmental disturbances and management issues, resulting in food insecurity and a precarious position for the country. Urban agriculture and sack farming have proven to be effective methods for improving food security in the face of urbanization, economic policies, and rising unemployment. To investigate the distribution of sack farming across residential densities, statistical tools such as ANOVA, Welch Test, and Tukey HSD Post-Hoc were employed to assess significant differences. This study reports the mean scores of spatial distribution of sack farming, which were highest in low-density areas (Mean = 3.40, SD = 0.919) and medium-density areas (Mean = 3.40, SD = 0.912), followed by high-density areas with the lowest engagement levels (Mean = 3.14, SD = 0.865). The findings suggest that engagement is similar in low- and medium-density areas but significantly lower in high-density settings, potentially due to space constraints and reduced accessibility to farming inputs. The standard deviations across densities (0.919, 0.912, and 0.865, respectively) indicate moderate variability. The highest engagement distribution score was recorded in areas with more space availability and potentially fewer infrastructural constraints. The ANOVA test revealed a statistically significant difference in the spatial distribution of sack farming engagement across densities ($F = 6.567$, $p = 0.001$), which was corroborated by the robust Welch Test ($F = 7.100$, $p = 0.001$). This confirms that these variations persist even when accounting for heterogeneity of variance in the study areas. The Post-Hoc Analysis using Tukey HSD identified significant differences between high-density areas and both low-density (Mean Difference = 0.262, $p = 0.004$) and medium-density areas (Mean Difference = 0.264, $p = 0.001$). No significant difference was observed between low- and medium-density areas (Mean Difference = -0.002, $p = 1.000$). These findings indicate that high-density areas face unique constraints limiting sack farming engagement, such as reduced access to open spaces and greater competition for available resources. Conversely, low- and medium-density areas provide better conditions for engagement due to more available land, reduced infrastructural congestion, and potentially higher awareness levels.

Keywords: Urban agriculture, Sack farming practices, Residential densities, Food insecurity, Spatial distribution

BIOPHILIC DESIGN IN ARCHITECTURE EDUCATION

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Abstract
There is a growing demand for the built environment to incorporate sustainability into design pedagogy. The conversation of sustainable design has become more pronounced within learning spaces. Biophilic design has been recognised for its potential in enhancing creativity and the built environment as a whole, yet its application in architecture school, where the future of design lies, remains understudied. The study reports findings from 171 architecture students across three schools in Lagos, Nigeria, assessing the prevalence of biophilic elements in their learning environments and their influence on design outcomes. Key results reveal a high percentage of respondents actively integrated nature into their designs, with 79% receiving commendations for such designs. The study advocates for intentional biophilic interventions in architectural education to foster sustainable design thinking.

Keywords: Biophilic architecture, Biophilic design, Biophilic architecture, Architecture school, Sustainability

UNDERSTANDING NEIGHBOURHOOD CHARACTER

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Abstract
Neighbourhood character is a multidimensional concept that encapsulates the distinct qualities shaping the identity of a neighbourhood. It emerges from the interplay of physical, social, and economic elements, including architectural styles, building densities, community interactions, and economic activities. Understanding neighbourhood character is crucial for urban planning and housing development, particularly in peripheral settlements, where rapid urban expansion often disrupts established spatial and social patterns. This literature review examines the concept of neighbourhood character, its defining attributes, key influences, and implications for sustainable urban development. Using a desktop research approach, this study synthesizes existing scholarship and policy documents to provide a comprehensive understanding of how neighbourhood character is formed and transformed over time. Secondary data sources, including journal articles, books, urban planning reports, and case studies, were systematically reviewed to identify relevant perspectives on neighbourhood character. The study employed an inclusion and exclusion criterion to ensure the selection of literature that directly addresses the relationship between housing development and neighbourhood character while excluding sources that do not sufficiently engage with this relationship. This approach enables a focused analysis of how housing design, density, and typology contribute to shaping the lived experiences within neighbourhoods. The findings underscore the importance of incorporating neighbourhood character considerations into planning and policy frameworks to foster socially cohesive, aesthetically appealing, and economically viable communities. As urbanization accelerates, particularly in peripheral settlements, it becomes imperative to balance growth with the preservation of neighbourhood identity. A deeper understanding of these dynamics is essential for planners, architects, and policymakers striving to create sustainable and inclusive urban environments. By situating neighbourhood character within the broader discourse on urbanization and housing development, this study contributes to ongoing discussions on how to maintain the distinctiveness and functionality of neighbourhoods amid rapid urban transformation.

Keyword: Neighbourhood character, Urban development, Peripheral settlements, Housing development, Urban planning policies

LEVERAGING BIM FOR CLIMATE-RESPONSIVE BUILDING DESIGN IN SOUTH-WEST NIGERIA

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Abstract
Building Information Modelling (BIM) is increasingly recognised as a transformative tool in architectural design, particularly for enhancing sustainability and climate responsiveness. However, its adoption in Nigeria, especially in South-West Nigeria, remains underexplored. This study assesses the current level of BIM adoption among architecture and other construction professionals in the region, with a focus on its application in climate-responsive building design. A mixed-methods approach was employed, including a literature review, surveys, and expert interviews, to evaluate awareness, usage patterns, challenges, and potential benefits of BIM in sustainable architecture. Findings reveal that while BIM is gaining recognition, its integration into climate-adaptive design remains limited due to factors such as high implementation costs, lack of technical expertise, and inadequate policy support. The study highlights the need for targeted training programmes, policy interventions, and industry collaboration to enhance BIM adoption for sustainable architecture in South-West Nigeria. The findings contribute to the discourse on digital innovation in climate-responsive design and provide recommendations for increasing BIM utilization in the Nigerian built environment.

Keywords: Architectural sustainability, BIM adoption, Climate-responsive design, Digital innovation, South-West Nigeria

PROVIDING ADEQUATE SECURITY FOR SUSTAINABLE DEVELOPMENT OF RESIDENTIAL NEIGHBOURHOODS IN OYO TOWN

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Abstract
Security is a fundamental prerequisite for sustainable development in residential neighbourhoods, as it directly influences economic growth, social cohesion and overall quality of life. In Oyo town, rapid urbanization has led to increased security concerns, including burglary, armed robbery, kidnapping and property vandalism. These challenges hinder external investment, disrupt community harmony, reduce residents' confidence in law enforcement and lower property value. The study examines the security landscape of residential neighbourhoods in Oyo town, identifying the key challenges and assessing the effectiveness of existing security measures in fostering sustainable development. Different security architectures of the residential neighbourhoods in the three local governments in the town was examined to establish the surveillance strategies being employed by the residents and their effectiveness in the safety of lives and property. It was found that areas with improved security infrastructure such as street lighting, neighbourhood watch programs and community policing, experienced lower crime rates and enhanced economic productivity. The study revealed that there is an urgent need for comprehensive security measures that integrate community-based policing, smart surveillance technology, improved urban infrastructure and active citizens' participation in security provision efforts in the neighbourhoods in particular and the town in general. Utilizing the data from the study provides a comprehensive analysis of the current security landscape and offers recommendations for enhancing safety in these neighbourhoods.

Keywords: Residential neighbourhood, Sustainable development, Urbanization, Security architecture, Security landscape, Security surveillance

COMPARATIVE ANALYSIS ON THE PERFORMANCE OF DESIGN AND BUILD WITH INTEGRATED PROJECT DELIVERY SYSTEM ON ENGINEERING PROJECTS

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Abstract
Integrated project delivery (IPD) is a new construction project delivery system that collaboratively involves key participants very early in the project timeline often before the design is started. Because IPD is becoming increasingly popular, various organisations are showing interest in its benefits to the construction industry. However, no research study has so far compared the performance of Projects Delivered using IPD with Design and Build (DB) delivery system on road projects. This study filled that gap by comparing the performance of IPD projects with projects delivered using design and build systems. Relevant literature was analysed to identify key performance metrics used in road construction projects, and a data collection instrument was developed to gather quantitative performance data from recently completed projects across the two delivery systems (DB and IPD). A sample data set of 50 completed projects were used and an independent sample T test was performed to compare cost and schedule under the two delivery systems. Although the results revealed no statistically significant improvements for IPD in cost and schedule metrics. It indicates that DB is 8 and 7% greater than IPD system in total cost growth and total schedule growth metrics with p-value of 0.204 and 0.183 and a mean difference 0.083 and 0.067 at 95% confidence level. These results would be extremely important in providing necessary information that will assist construction project stakeholders in selecting better project delivery system for their projects. Authors recommends further researches on the factors responsible for the variation in the performance of DB and IPD.

Keywords: Collaboration, Integrated Project Delivery (IPD), Project Delivery System, Performance Metrics, Project participant

BRIDGING THE GAP: FAITH-BASED RESPONSES TO URBAN ENVIRONMENTAL INJUSTICE IN OSOGBO, OSUN STATE, SOUTH-WEST NIGERIA

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Abstract
This article examines the lacuna of faith-based responses to urban environmental injustice in south-west Nigeria. Despite potentially transforming rich religious traditions offering robust ethical imperatives for caring for creation and protecting the vulnerable, local faith communities have largely remained on the fringe of environmental advocacy. This study explores how rapid urbanization has exacerbated issues such as pollution, inadequate waste management and poor sanitation. Such urban environmental challenges disproportionately affect the poor and marginalized populations. Through examining theological frameworks alongside the socio-environmental challenges facing Osogbo, the state capital of Osun State, this research identifies key barriers that hinder faith-driven interventions. It also deploys the quantitative approach to research by distributing questionnaire to relevant stakeholders in the city in order to obtain data useful for this research. It then goes on to propose strategic recommendations, including interfaith/ interreligious collaborations, enhanced policy advocacy and community-based initiatives to harness yet-to-be-explored potentials of religious organizations for sustainable community development. This article is aimed at inspiring both scholarly inquiry and pragmatic actions that engender social justice for sustainable urban development.

Keywords: Sanitation, Waste management, Justice, Environment, Population

ARTIFICIAL INTELLIGENCE-BASED PREDICTIVE MODELLING OF MECHANICAL PROPERTIES OF SUSTAINABLE CONSTRUCTION MATERIALS

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Abstract
Scholars have worked to identify and recommend sustainable building materials in order to ensure sustainable development in both the construction industry and the global community. There has been the need to determine the mechanical properties of the proposed sustainable construction materials to ascertain their durability and usefulness as construction materials. This involves conducting thorough testing to ensure that these materials meet the required standards for strength, durability, and stability. Understanding the mechanical properties of sustainable building materials is crucial in advancing the use of sustainable materials in the construction industry and moving towards a more environmentally conscious approach to building that will not only benefit the environment but also lead to more durable and resilient structures that meet the needs of future generations. However, the experimental procedures for determining the mechanical properties of the proposed sustainable construction materials are expensive, uncertain, unreliable, and time-wasting. As a result of the predictive capability of AI models, scholars have advocated for a cheaper way to determine the mechanical properties of the proposed sustainable construction materials by utilizing artificial intelligence-based predictive modelling. This approach can significantly reduce the time and cost required for testing and evaluating new materials. This research, therefore, seeks to understand the nature and practicability of artificial intelligence – based predictive modelling of mechanical properties of sustainable construction materials using a systematic literature review approach. Through a thorough review of existing literature, this study aims to shed light on the potential benefits and challenges of incorporating AI-based predictive modelling into the construction industry. This research will pave the way for a more sustainable and environmentally friendly approach to construction material selection and contribute to the advancement of sustainable construction practices.

Keywords: Artificial Intelligence for Sustainable Construction, Artificial intelligence, Prediction, Sustainable materials, AI and sustainability

PUBLIC AND GREEN SPACES DEGRADATION: A CASE STUDY OF AKURE, NIGERIA

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Abstract
Public and green spaces are critical components of urban environments, offering social, environmental, and economic benefits. However, rapid urbanization, poor planning, and socio-economic pressures have led to significant degradation of these spaces, particularly in developing countries such as Nigeria. This study investigates the extent, causes and implications of green space degradation in Akure, Nigeria, a rapidly growing city facing increasing land-use conflicts. Using a mixed-methods approach, including spatial analysis and field surveys, this research identifies key factors contributing to the loss of public and green spaces. Findings reveal that urban expansion, weak policy enforcement, and inadequate public awareness are primary drivers of degradation. The study also examines the socio-environmental consequences, such as increased urban heat, reduced biodiversity, and declining public health. Based on these insights, this paper recommends policy interventions, community participation, and sustainable urban planning strategies to mitigate further degradation. The research contributes to the discourse on sustainable urban development in Nigeria and highlights the urgency of preserving urban green spaces for future generations.

Keywords: Public spaces, Green spaces, Urban degradation, Sustainable urban development, Environmental policy

ASSESSMENT OF CIRCULAR ECONOMY EDUCATION IN TERTIARY INSTITUTION IN NIGERIA – A CASE STUDY OF SELECTED HIGHER INSTITUTIONS IN SOUTHWEST, NIGERIA

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Abstract
This study aims to evaluate the extent of the knowledge of circular economy education amongst teachers and students of tertiary institutions in Nigeria using schools at and near Lagos state, Nigeria's commercial nerve centre, as case studies. It complements existing literature on circular economy. Tertiary institutions provide education to the third degree through teaching and learning which aims at contributing to national development via high-level manpower training, providing accessible and quality learning opportunities for all. This study used a mixed method approach to analyse data, descriptive and inferential analytic methods were used. Focus group comprising of staff and students were drawn from three institutions at and near Lagos; Yaba College of Technology at the city centre, Caleb University situated near the commerce town of Ikorodu, and The Bells University bordering Lagos from Ota. The findings of this study will help policy makers know areas where better stratagem is needed. It will also point researchers to further questions needing answers. The limitation of this study is the data sample. If more institutions in Nigeria had been sampled, it would have provided larger data set which would have further confirm the study's hypothesis.

Keywords: Circular economy, Commerce, Education, National development, Teaching and learning, Tertiary institution

A COMPARATIVE STUDY OF NATURE-BASED SOLUTIONS FOR FLOOD AND EROSION CONTROL IN SELECTED COUNTRIES

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Abstract
Flooding and erosion are becoming increasingly severe global challenges, driven by climate change, rapid urbanization, and unsustainable land-use practices. Traditional engineering solutions, such as dams, concrete drainage systems, and levees, have long been the primary approach to flood and erosion control. However, these methods often fail to provide long-term resilience, can be costly to maintain, and sometimes even exacerbate environmental degradation. In contrast, nature-based solutions (NBS) offer a more sustainable, adaptable, and cost-effective alternative that works with, rather than against, natural ecosystems. This study conducts a comparative case study analysis of globally recognized NBS strategies by examining three diverse contexts: wetland restoration in the Netherlands, urban green infrastructure in Singapore, and mangrove rehabilitation in coastal Nigeria. Case studies were selected based on their geographic diversity, the maturity of NBS implementation, and the availability of measurable outcomes in flood mitigation and erosion control. The research is guided by key questions on how these NBS strategies perform in different environmental and urban settings and what factors contribute to their success. By evaluating their effectiveness in mitigating floods, controlling erosion, and restoring ecosystems, the research identifies critical success factors and explores the adaptability of these approaches to various urban and ecological contexts. Findings reveal that integrating NBS into existing urban planning frameworks not only enhances climate resilience but also reduces disaster risks and promotes long-term environmental sustainability. However, challenges persist in policy adoption, funding mechanisms, and large-scale implementation. Addressing these barriers requires stronger collaboration between governments, urban planners, and environmental stakeholders. This study emphasizes the urgent need for a global shift toward nature-driven resilience planning, ensuring that cities facing climate-induced disasters prioritize solutions that are both ecologically sound and economically viable.

Keywords: Nature-based solutions, Flood resilience, Erosion control, Climate adaptation, Urban sustainability

THE IMPACT OF HIGH COST OF MATERIALS ON PROJECT DELIVERY IN NIGERIA

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Abstract
Housing is one of humanity's most fundamental needs and the most significant physical survival factor after food. The construction industry provides the inhabitants with physical and moral health, which promotes social stability, work efficiency, and progress. This, in turn, affects the nation's overall economic growth. The Nigerian construction industry is facing a substantial challenge in project delivery due to the exorbitant cost of materials. This paper looks at the reasons behind changes in material prices as well as their impacts and ways to mitigate them. Using case studies and research methodology, the study evaluates how cost variations impact timelines, budgeting, and overall project success. The research highlights the importance of effective cost management strategies and policy recommendations to enhance project sustainability despite economic challenges.

Keywords: Construction industry, Economic growth, Project delivery, Cost of materials, Cost variations, Budgeting, Management strategies, Economic challenges

EXPLORING TRADITIONAL NIGERIAN ARCHITECTURE FOR SUSTAINABLE PASSIVE COOLING IN TROPICAL CLIMATES BY EXAMINING INDIGENOUS TECHNIQUES AND THEIR CONTEMPORARY APPLICATIONS

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Abstract
As climate change and rapid urbanization increase energy demands in tropical regions, there is a growing need for sustainable, low-energy cooling solutions. Traditional Nigerian architecture, shaped by centuries of adaptation to hot climates, offers valuable insights into passive cooling strategies. Techniques such as the thick earthen walls of Hausa mud houses, the shaded courtyards of Yoruba compounds, and the ventilated designs of Igbo structures demonstrate efficient methods for maintaining indoor thermal comfort without mechanical cooling. However, the widespread adoption of modern construction materials and Western architectural styles has led to the decline of these time-tested approaches, contributing to increased reliance on energy-intensive cooling systems. This study employs a qualitative exploratory approach, utilizing a systematic literature review and content analysis to examine the passive cooling principles embedded in traditional Nigerian architecture. It evaluates how these indigenous techniques align with modern sustainable design principles and explores their potential applications in contemporary building practices. Findings indicate that integrating traditional cooling strategies into modern construction can significantly reduce energy consumption, enhance thermal comfort, support climate resilience and align with global sustainability efforts by lowering carbon footprints. However, challenges such as material availability, policy gaps, and adaptation to urban settings must be addressed to facilitate wider adoption. This research highlights the importance of revisiting indigenous architectural knowledge as a viable solution for sustainable development, offering practical insights for architects, urban planners, and policymakers seeking to design energy-efficient buildings suited to tropical climates.

Keywords: Sustainable passive cooling, Traditional Nigerian architecture, Climate-responsive design, Indigenous construction techniques, Contemporary applications

AN APPRAISAL OF THE EFFECTIVENESS OF THE BUILDING INFORMATION MODELLING ECOSYSTEM IN ENHANCING PROJECT DELIVERY AND BUILT ASSET MANAGEMENT IN NIGERIA

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Abstract
The inefficient project delivery and mismanagement of built assets are some of the numerous challenges that plague the Nigerian built environment industry. Building Information Modelling (BIM) improves collaboration, reduces errors and leads to better project outcomes emerges as a designer's tool with the potential to address these issues. The study aims to evaluate the effectiveness of BIM ecosystems in project delivery and analytically examine their efficiency in managing built assets in the Nigerian context. The objectives are to comprehensively assess the impact of BIM on project efficiency, cost management and asset lifecycle; it will also identify major barriers to BIM adoption and propose effective strategies for successful implementation. The research methodology reviews the literature between 2020 – 2025 to illustrate the practical benefits and challenges of BIM implementation. The research is expected to yield a thorough comprehension of BIM's effect on the Nigerian construction industry, a precise identification of several best practices for BIM implementation and key recommendations for policymakers and industry stakeholders. The findings of the study can expand BIM research, offer practical guidance to improve project delivery and asset management and influence construction policies and decisions.

Keywords: Building Information Modelling (BIM), Built asset management, Construction industry, Nigeria, Project delivery

A GLOBAL REVIEW ON BUILDING SMARTER CITIES THROUGH ARTIFICIAL INTELLIGENCE FOR A SUSTAINABLE AND RESILIENT FUTURE

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Abstract
As urbanization accelerates, cities worldwide face escalating environmental challenges, including increasing energy consumption, rising carbon emissions, and the urban heat island effect. These issues threaten the sustainability and liveability of urban spaces, making the demand for smarter, more sustainable solutions more urgent than ever. In response, AI-driven technologies are revolutionizing various aspects of urban planning, design, and management. For instance, AI is optimizing energy use in buildings by analysing consumption patterns and automating heating, cooling, and lighting systems. In infrastructure maintenance, predictive analytics powered by AI can anticipate failures in bridges, roads, and public transportation networks before they occur, reducing downtime and increasing safety. Additionally, AI enhances data-driven urban planning by analysing vast datasets to improve traffic flow, public transportation efficiency, and resource allocation. This paper examines AI's role in sustainable urban development, emphasizing its applications in smart cities, resilient infrastructure, and data-driven decision-making. This research employs a mixed-method of research Real-world case studies demonstrate AI's transformative impact: Barcelona's AI-powered smart grids have cut energy consumption by 20%, while Nairobi's AI-driven waste management system has boosted recycling rates by 30%. These examples highlight how AI can address critical urban issues effectively. To ensure ethical and inclusive AI adoption, this paper proposes a framework prioritizing security, transparency, and sustainability. By balancing technological innovation with responsible policymaking and community engagement, AI can help build smarter, greener, and more resilient cities that benefit all urban residents.

Keywords: Artificial Intelligence, Resilience, Smart cities, Sustainability, Urban development

POST OCCUPANCY EVALUATION OF THERMAL COMFORT IN NATURALLY-VENTILATED UNIVERSITY ARCHITECTURE STUDIOS IN THE TROPICS

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Abstract
Understanding the thermal comfort conditions of students in classrooms and studios is vital for their academic performance and well-being, particularly in tropical climates where high temperatures and humidity significantly influence indoor environments. The study of thermal comfort took place in architecture studios at Alex Ekwueme Federal University, Ndufu-Alike. The survey was conducted during the morning and afternoon hours in January, February, and March 2025, where 213 students participated. A mixed methods research approach that involved simultaneous subjective surveys and objective measurements of indoor and outdoor thermal variables was employed. Adopting ASHRAE Standard 55 for analysis, a regression equation, Y=0.31Top-8.3, with R^2=0.57 indicating the student's comfort range of 24.1ºC - 29.5ºC, with a mean thermal sensation vote of +0.85 was produced. Furthermore, during the morning hour surveys, a mean thermal sensation was +0.58, indicating a comfortable indoor environment. The afternoon surveys produced a mean thermal sensation of +1.3, indicating that the students found the indoor climate of their studios uncomfortable. These findings highlight the dynamic nature of thermal comfort in naturally ventilated spaces, given different times of day, thus, providing valuable insights for optimizing studio designs and operational strategies to enhance student well-being and learning outcomes.

Keywords: Classrooms, Indoor environment, Studios, Students, Thermal sensation

AWARENESS AND ADOPTION OF PREFABRICATION CONSTRUCTION AMONG THE BUILT ENVIRONMENT PROFESSIONALS IN OYO STATE, NIGERIA

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Abstract
The construction industry worldwide has been plagued by issues like time overrun, cost overrun, waste generation, and low quality during traditional building procurement methods. Thus, it is imperative to raise awareness and adopt industrial approaches to construction technology, such as prefabricated/modular construction (premade buildings), as some scholars have hypothesized, to resolve environmental issues and satisfy the enormous demand for housing that middle-class and lower-class earners are now experiencing. Several research works have explored different prefabrication and modular construction facets in diverse climates. However, the literature research severely lacks studies on the awareness and acceptance of prefabrication construction technologies in South-west Nigeria. This study used a survey research approach with a pragmatic focus to create a structured questionnaire, and it examined the Built Environment Professionals' understanding and adoption of prefabrication and modular construction toward resource conservation of the environment. A questionnaire survey was conducted among the professionals in Oyo state. Architects, builders, engineers, and quantity surveyors made up the total number of 123 participants. Out of the 136 questionnaires, 92 were completed and returned (68% of the total responses). For the analysis, IBM SPSS Statistics was employed. The outcome demonstrates that the vast majority of respondents (100%) are aware of the use of prefabrication /modular construction as a construction approach, while the adoption is low. Therefore, this paper postulates that professional bodies periodically host workshops and seminars to help educate stakeholders about the needs and advantages that come with the government, corporations, and individuals on the adoption of modular/prefabrication construction. Additionally, bids for any government-sponsored project should be able to use the modular/prefabrication construction approach as a matter of policy.

Keywords; Adoption, Awareness, Construction, Housing delivery, Prefabrication

EVALUATION OF BUILDING PROFESSIONALS AWARENESS ON THE ADOPTION OF CONTAINER ARCHITECTURE FOR PUBLIC BUILDINGS IN NIGERIA

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Abstract
The adoption of container architecture for public buildings in Nigeria presents an innovative approach to addressing infrastructure needs, offering potential benefits such as cost-efficiency, modularity, and environmental sustainability; however, its implementation remains limited despite its advantages. This paper explores the perspectives of building professionals on the adoption of container-based construction for public projects in Nigeria to understand the factors hindering further adoption and to recommend solutions to the problems identified. Employing a qualitative research approach, purposive and snowball sampling techniques were used to identify professionals with direct experience in container architecture. Data was collected through semi-structured interviews with six industry experts, and thematic analysis was applied to extract key insights. Findings reveal critical factors influencing adoption, including climatic factors, cost concerns, technical know-how, and general perception. The study also highlights the need for success stories, improved technical knowledge through experimentation, and increased public awareness to facilitate wider acceptance. The research contributes to the discourse on alternative building technologies by offering practical recommendations for integrating container architecture into Nigeria's public infrastructure sector.

Keywords: Container architecture, Public buildings, Building professionals, Adoption, Sustainability

APPRAISAL OF THE IMPLEMENTATION OF SYMBOLISM IN SELECTED PENTECOSTAL CHURCHES

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Abstract
Symbolism plays a crucial role in Pentecostal worship, serving as a medium for expressing theological beliefs, reinforcing spiritual identity, and enhancing the worship experience. This study examines the implementation of symbolism in selected Pentecostal churches with a view to analyse the application in liturgical practices, and highlight the theological significance in Pentecostal worship. To uncover the depth of symbolism in Pentecostal worship, this study adopts a qualitative research design, allowing for an in-depth examination of symbolic expressions within selected Pentecostal churches. Rather than relying on numerical data, this approach prioritizes descriptive analysis, capturing the meanings and significance behind religious symbols in churches. Central to this research is the literature review method, which provides a foundation for understanding the historical, theological, and doctrinal contexts of Pentecostal symbolism. By analysing existing scholarly work and theological texts, the research situates itself within the broader academic discourse, and in so doing has identified key patterns, interpretations, and evolving perspectives, providing a robust framework for analysing how symbols function within Pentecostal worship. The findings from the study will contribute to further insights into how symbolism functions in Pentecostal liturgy in the current day, its impact on congregational engagement, and its role in shaping religious and national identity in the future. Key insights gained from this study will be valuable for theologians, church leaders, and scholars of religious studies in understanding the dynamics of religious symbolism within Pentecostalism. The allied professionals in the built environment would not be left out, as the study would inform church architecture design practices.

Keywords: Symbolism, Nigerian Pentecostalism, Church architecture, Sustainable practices

ADEQUACY OF BUILDING REGULATION PROVISIONS FOR DEVELOPING HIGH FIRE SAFETY RATING ENVIRONMENTS IN OGUN STATE, NIGERIA

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Abstract
Fire outbreaks in public buildings pose severe risks to lives, properties, and cultural heritage. In Ogun State, Nigeria, inadequate fire safety measures and weak enforcement of building regulations contribute to frequent fire incidents. Ensuring buildings comply with fire safety provisions is essential for protecting occupants and minimizing damage. This study examined the adequacy of operational fire safety provisions of building regulations in Ogun State, Nigeria, with a view to determine areas that require improvements, towards promoting the development of public buildings with high fire safety ratings. The research is a review paper that adopted qualitative approaches to gather, analyse, and present data. Textual analysis was used to sieve data from the National Building Code (2006) and the Ogun State Building Regulations (2010). The data were analysed by content analysis and presented descriptively in themes. The study found that the regulatory frameworks exhibited various levels of inadequacies that limit the implementation of adequate fire safety strategies to achieve the development of public environments with high fire safety ratings. The study emphasized the need for holistic revisions that incorporate adequate fire safety standards in regulatory guidelines, towards enhancing high fire safety standards in the development of public buildings. This study aligns with the third, ninth, and eleventh sustainable development goals of the United Nations that promote: good health and well-being; industry, innovation and infrastructure; and developing sustainable cities and communities that are resilient, safe and inclusive, respectively.

Keywords: Fire safety, Building regulations, Public buildings, Risk assessment, Nigeria

ADEQUACY OF BUILDING REGULATIONS PROVISIONS FOR PROMOTING THE IMPLEMENTATION OF AFROCENTRIC ARCHITECTURAL ELEMENTS IN OYO STATE, NIGERIA

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Abstract
Afrocentric architecture reflects the cultural identity, heritage, and traditions of African societies through the use of distinctive motifs, materials, and construction techniques. In Oyo State, Nigeria, public buildings serve as vital spaces for cultural expression. It is however observed that Afrocentric architectural elements are rarely incorporated in public buildings. To encourage the implementation of Afrocentric design elements in public environments entails that regulatory frameworks are embedded with culturally responsive principles that encourage Afrocentric architectural practice. This study examined the adequacy of building regulations in promoting the integration of Afrocentric architectural elements in Oyo State, Nigeria, with a view to identify areas for improvement, towards finding ways of preserving cultural heritage in the development of the built environment. Using qualitative research approaches, the study conducted a textual analysis of regulatory documents to determine their strengths and limitations towards promoting Afrocentric architectural practice. The findings were content analysed and presented descriptively in themes. The results revealed that while existing regulations emphasized structural integrity and sustainability, they lack explicit adequate provisions for the practice of culturally responsive architecture. This scenario has the potential to limit the promotion of Afrocentric architectural elements in the development of the built environment, leading to a gradual erosion of indigenous design identity of a community. The study highlights the need for policy revisions that incorporate cultural sustainability within regulatory frameworks. By advocating for the integration of Afrocentric elements in public buildings, the research contributes to the discourse on culturally responsive architecture and underscores the importance of regulatory support in preserving cultural heritage.

Keywords: Afrocentric architectural elements, Building regulations, Cultural preservation, Public buildings, Oyo State

INNOVATIVE HOUSING FOR HEALTH AND WELLBEING IN A CHANGING WORLD: A CASE STUDY OF IBADAN, OYO STATE, NIGERIA

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Abstract
The built environment plays a critical role in shaping public health and overall well-being, especially in rapidly urbanizing regions. This study explores innovative housing solutions in Ibadan, Oyo State, Nigeria, focusing on their impact on health and well-being in the face of climate change and socioeconomic challenges. Ibadan, one of Nigeria's oldest and fastest-growing cities, faces significant housing deficits, poor infrastructure, and inadequate access to basic amenities, all of which contribute to health risks such as respiratory diseases, waterborne infections, and mental stress. This paper examines sustainable housing innovations, including the use of eco-friendly materials, improved ventilation, water management systems, and community-driven urban planning. It assesses how these interventions enhance quality of life by reducing environmental hazards, promoting social inclusion, and fostering economic resilience. The study employs a mixed-methods approach, combining field surveys, stakeholder interviews, and policy analysis to evaluate existing housing models and propose scalable solutions. Findings indicate that integrating sustainable housing practices can significantly improve residents' health and well-being while mitigating climate-related risks. The study highlights the importance of policy support, financial accessibility, and community engagement in ensuring widespread adoption of resilient housing strategies. Lessons from Ibadan offer valuable insights for other rapidly urbanizing regions facing similar challenges.

Keywords: Sustainable housing, Health, Well-being, Urban resilience, Climate adaptation

BIOPHILIC DESIGN STRATEGIES FOR PRESERVING CULTURAL HERITAGE IN THE BUILT ENVIRONMENT: A LITERATURE REVIEW

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Abstract
As the impact of climate change, urbanization, and resource depletion intensify, cultural centres in Nigeria face unprecedented challenges in maintaining their relevance while addressing sustainability concerns. The study adopted a literature review approach to examine the potentials of biophilic design strategies in transforming cultural centres into resilient, adaptive, and sustainable spaces that preserve cultural heritage while meeting contemporary environmental demands. The research synthesizes empirical evidence demonstrating biophilic design's multifaceted benefits: enhanced user well-being through stress reduction and improved mental clarity; increased social interaction and community engagement; strengthened cultural expression and identity preservation; and innovative sustainability solutions tailored to cultural spaces. The findings reveal that integrating natural elements such as vegetation, water features, maximizing natural light, most importantly using local materials, creating outdoor spaces, and mimicking natural environments can significantly improve the sustainability profile of cultural identity in the development of the built environment. This research contributes to the growing discourse on resilient architecture by proposing a culturally sensitive approach to sustainability that respects local traditions while addressing global environmental challenges. By implementing biophilic design strategies, cultural centres can become models of sustainable development, serving as environmental landmarks that foster community well-being, preserve cultural identity, and demonstrate ecological responsibility in the face of climate change.

Keywords: Biophilic design strategies, Sustainability, Cultural heritage, Built environment

ADAPTIVE REUSE FOR CULTURAL HERITAGE AND SOCIAL INTERACTION

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Abstract
Adaptive reuse has come-forth as a critical approach to heritage conservation, sustainability, and urban regeneration, providing a way to repurpose buildings and spaces while retaining their cultural and historical significance. This paper explores adaptive reuse as an architectural and social practice, emphasizing its role in preserving and celebrating cultural heritage while fostering community engagement. The study examines key theoretical perspectives, including the works of Viollet-le-Duc (1875) and Ruskin (1884), alongside modern interpretations that position adaptive reuse as a sustainable conservation strategy (Plevoets & Van Cleempoel, 2019). Through a review of global and Nigerian case studies, including Tate Modern (UK), The High Line (USA), Freedom Park (Lagos), and the J.K. Randle Centre for Yoruba Culture (Lagos), this research evaluates the impact of adaptive reuse on place identity, memory, and social interaction. It highlights the challenges associated with the practice, including gentrification, heritage erasure, and the absence of strong policies in Nigeria to aid reuse efforts. While adaptive reuse presents an opportunity to integrate the past with contemporary needs and sustainability, its effectiveness depends on balancing modernization with historical authenticity and ensuring community participation. The study concludes that adaptive reuse, when approached thoughtfully, can serve as a tool for sustainable urban development and cultural preservation. However, in the Nigerian context, the lack of legal frameworks and public engagement hinders its potential. The paper calls for stronger policy interventions, increased awareness, and community-driven strategies to promote adaptive reuse as a viable alternative to demolition. By bridging theoretical insights with real-world applications, this research contributes to a broader understanding of how adaptive reuse can be leveraged to maintain cultural identity while addressing modern urban challenges especially in the Nigerian environment.

Keywords: Adaptive reuse, Cultural heritage, Social interaction, Sustainable urban regeneration, Place identity

EVALUATING THE THERMAL ADAPTATION OF CHILDREN IN A HOT SEMIARID ENVIRONMENT

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Abstract
Environmental adaptation is the bodily acclimatisation to the environment beyond what is generally established. Several studies have concluded that people have, over time, developed a certain level of tolerance, having adapted to the environmental conditions deemed intolerable. Studies in similar climatic conditions in Afghanistan and Pakistan also discovered that people thermally accept conditions beyond what standards stipulated as the highest level of comfort acceptance. This is due to the long-term adaptation with the environments they had inhabited for long periods of time. The research employed Kestrel 5500 indoor climate tracker to measure the environmental conditions while concurrently asking pupils for their thermal comfort and preference votes at that time. Five scale graphic questionnaires were administered to the pupils for their thermal votes from row to row while they are seated writing or reading. The results of the comfort votes for the month of April shows that 31.64 % of the pupils voted for neutral/acceptance signifying a tolerance and having adapted to the environmental conditions for a high operative temperature 37.7 ^{0}C. One of the schools, indeed, had a neutral vote of 48 % depicting an almost half of class adaptation. The mean school environmental parameters air temperature recorded was 37.4 ^{0}C, radiant temperature of 38.0 ^{0}C, air velocity of 0.5 m/s and a relative humidity of 27 %. It is instructive to note that despite the mean operative temperature of 37.7 ^{0}C, 31.64 % of pupils voted for neutral adaptive thermal comfort tolerance. A one-way ANOVA hypothesis test result shows that there is a statistically significant difference in the five comfort and three preference votes in the zone respectively. The same one-way ANOVA carried out for the preference votes indicated an equally high statistical difference in the preference votes of pupils. The study recommends and to professionals Knowledge of the temperatures people are experiencing in their area and the limits which residents can tolerate is a first step to proffer passive solutions to reduce discomfort. Applying passive design strategies can enhance indoor comfort conditions, while decreasing the energy consumption, by allowing the occupants to lengthen the non-heating and cooling periods. This study has provided Architects and education policy makers with information to aid in design decisions towards enhancing adaptive thermal comfort.

Keywords: Adaptive, Operative temperature, Children, Hot Semiarid

STRENGTH COMPARISON OF BIO-BASED HIGH-PERFORMANCE CONCRETE: MILLET HUSK ASH VS. RICE HUSK ASH INTERNALLY CURED WITH PRE-SOAKED PUMICE

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Abstract
The sustainability of high-performance concrete (HPC) is increasingly gaining attention, particularly through the incorporation of bio-based supplementary cementitious materials (SCMs) and internal curing techniques. The research investigates the compressive strength of MHA- and RHA-based HPC mixes at 28, 56 and 90 days of age with 5% of pre-soaked pumice, aiming to establish their comparative efficacy as sustainable alternatives to conventional silica fume. Experimental results reveal that both MHA and RHA enhance the compressive strength of HPC, though their performance varies based on pozzolanic reactivity, particle fineness, and chemical composition. Internal curing with pre-soaked pumice improves hydration, reduces shrinkage, and enhances long-term strength development. The study provides insights into optimizing agricultural waste-based SCMs for sustainable concrete production, contributing to environmental conservation and advancing the development of durable, eco-friendly HPC.

Keywords: High-performance concrete, Millet husk ash, Rice husk ash, Internal curing, Pre-soaked pumice

INCLUSIVE ARCHITECTURAL RETROFITTING: BRIDGING DESIGN GAPS IN NIGERIAN PUBLIC HOUSING

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Abstract
The architectural design of public housing in Nigeria frequently fails to meet the evolving needs of its residents, particularly as they age. This oversight creates housing conditions that are neither inclusive nor sustainable, leaving many residents no option but to undertake costly and inefficient retrofitting measures later in life. A key gap lies in the exclusion of residents from the design process, resulting in structures that inadequately address the lifecycle requirements of occupants. This study addresses this issue by proposing an informed retrofitting model designed to ensure public housing remains adaptable, inclusive, and resilient over time. Through a comprehensive literature review, the research identifies shortcomings in existing public housing systems and explores global best practices in sustainable retrofitting and universal design. The proposed model prioritizes inclusivity by integrating residents' needs from the time of initial occupancy through various life stages, fostering housing solutions that adapt to changing demographic and social dynamics. It further emphasizes energy efficiency, accessibility, and resource optimization in alignment with sustainability objectives. The findings underline the potential of adaptable and informed retrofitting strategies to enhance the quality of life for residents while advancing sustainable urbanization. By addressing deficiencies in current public housing design and contributing a scalable retrofitting framework, this study supports the realization of SDG 11 by promoting inclusivity, accessibility, and resilience in Nigeria's public housing sector. In doing so, it offers a roadmap for creating housing that serves as a foundation for sustainable and equitable urban development.

Keywords: Inclusive-retrofitting designs, Lifecycle housing adaptability, Public housing in Nigeria, Resident-centred public housing, Sustainable urban development

AN EVALUATION OF THE IMPACT OF INTERNET OF THINGS (IoT) ON CONSTRUCTION PROJECT DELIVERY – A SMART CITY'S PERSPECTIVE

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Abstract
The study specifically sought to evaluate the impact of the IoT drivers on construction project delivery from a perspective of a smart city**.** The study was guided by the innovation diffusion theory. The study used a survey and exploratory research design methods of investigation, while snowballing and purposive sampling technique was used to select a sample size of 288 from a population of 817 practitioners using the Taro Yamane formula for sample size determination from the sampled practitioners in Lagos state. The data collection and survey instrument included a well-structured questionnaire, discussion and personal observations and visits to elicit information from respondents. The collected data was presented in the form of frequency distribution, figures, and charts using descriptive statistical tools using IBM SPSS Statistics version 26.0 and LISREL software. While structural equation modelling (SEM) was used to analyse the study's main objective. The study's findings indicate that the IoT drivers impacting on construction project delivery from a perspective of a smart city includes technology awareness, government policy and technology infrastructure. This study recommends that, there should be a focus on addressing interoperability issues within systems to enable seamless linking of IoT components for successful construction projects in smart cities. To successfully deploy and deliver smart city construction projects, practitioners and stakeholders must be aware of and familiar with IoT technology. That change is inevitable in the 21st century, hence IT competence and knowledge of developing technologies are needed to realize this dream**.**

Keywords: Construction projects, Internet of Things (IoT), Lagos State, Smart city, Structural equation modelling

INFLUENCE OF IMPLEMENTATION OF SALUTOGENIC PRINCIPLES IN BEVERAGE FACTORY BUILDINGS ON THE COMPREHENCIBILITY OF WORKERS

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Abstract
In today's industrial landscape, the design of work environments plays a crucial role in shaping employee well-being, productivity, and job satisfaction. One of the most significant yet often overlooked aspects of workplace design is comprehensibility, the extent to which workers perceive their environment as structured and easy to understand. When factory spaces are cluttered or poorly organized, workers experience higher stress levels, reduced efficiency, and difficulty adapting to their tasks. This issue is prevalent in beverage factories, where high noise levels, poor ventilation, and complex layouts can negatively impact workers' Sense of Coherence (SOC). This study explores how the implementation of salutogenic design principles influences the comprehensibility of workers in beverage factories, aligning with United Nations Sustainable Development Goals (SDGs) 3 (Good Health and Well-being), 8 (Decent Work and Economic Growth), and 11 (Sustainable Cities and Communities). The study employs qualitative and quantitative methods to evaluate how factory layouts, environmental features, and operational structures affect workers' ability to navigate and understand their workplace. Observations and structured questionnaires were conducted in selected beverage factories in Benue, Lagos, and Ogun states in Nigeria, analysing two key variables: (1) whether the factory environment is predictable and easy to understand and (2) whether the physical and operational conditions are predictable. Findings reveal that natural light, the presence of outdoor green spaces, an easy-to-navigate workspace due to layout, and clear signage have the most significant influence on workers' SOC and wind orientation (South-West, North-East) and single-floor layouts emerged as the most impactful factors, respectively. These results emphasize the importance of integrating salutogenic design principles into factory planning to create workplaces that promote clarity, reduce stress, and improve overall worker well-being. The study concludes that factories designed with a focus on comprehensibility enhance workers' Sense of Coherence, leading to reduced occupational stress and increased productivity.

Keywords: Salutogenic principles, Comprehensibility, Beverage factory, Sense of coherence, Worker's well-being

ENVIRONMENTAL VULNERABILITY THROUGH GOOD GOVERNANCE

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Abstract
The effects of environmental change which include increasing temperatures, sea-level rises, changing patterns of precipitation, and more severe extreme weather events are expected to influence key determinants of human health, including access to clean water, sufficient food, and adequate shelter. The aim is to explores how good governance can mitigate environmental vulnerability by fostering sustainable development, enhancing resilience, and ensuring equitable distribution of resources. It delves into the principles of good governance—transparency, accountability, participation, and rule of law and examines their application in environmental policy-making and implementation. Vulnerability of people to natural hazards depends on where they reside, what types of natural resource they use and above all with which resources they have to cope. It is evident that supportive governance guarantees society's coping capacity to prepare for and respond to disasters. It has an impact on how public servants, civil society, parliamentarians, private sector, and media coordinate their actions to address long-term vulnerabilities to disasters. Countries with an effective legal framework, comprehensive risk reduction policies, operational structure, multihazard early warning system, adequate budgeting, risk communication, public awareness, focused research and an effective civil protection system are considered as resilient to disasters.

Keywords: Vulnerability, Good governance, Resilient, Disaster, Sustainable development

INTEGRATING RENEWABLE ENERGY SYSTEMS INTO UNIVERSITY BUILDING DESIGNS IN NIGERIA

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Abstract
In recent years, there has been a global concern for the growing energy demands and environmental issues. Nigeria is not left out as it grapples with energy security challenges and a rapidly growing student population. The integration of solar, wind, and biogas technologies into university building designs presents a viable pathway toward enhancing energy efficiency and minimizing carbon footprints. This study explores the integration of renewable energy systems into university building designs in the Southwest of Nigeria, addressing both environmental and economic imperatives. Mixed method approach through questionnaire administration, case studies as well as literature review was used to collect data. The findings indicate that the integration of such systems not only reduces the carbon footprint of university buildings but also lower operational costs, and enhanced energy efficiency. Also, through the case studies of universities across the globe that have successfully integrated these technologies, the paper identifies best practices and offers strategies for effective implementation. Furthermore, the study identifies key barriers to implementation of renewable energy in the design and construction of university buildings, including financial constraints, lack of technical expertise, and insufficient policy support and proposes strategies to overcome these obstacles. The study underscores the need for policies which fosters a culture of innovation and sustainability to be integrated into the curricula of architecture and engineering programs and also advocates for a transformative approach to university buildings and infrastructure that not only meets educational needs but also champions environmental stewardship and community resilience.

Keywords: Building design, Energy efficiency, Renewable energy, Resilience, Sustainability

MULTI-LEVEL GOVERNANCE AND THE ADOPTION OF DIGITAL TECHNOLOGY TO ACHIEVING SUSTAINABLE DEVELOPMENT GOALS IN LAGOS STATE, NIGERIA.

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Abstract
As a rapidly urbanizing region, Lagos presents unique challenges and opportunities in the context of sustainable development. This paper explores the intersection of multi-level governance and digital technology adoption in achieving the Sustainable Development Goals (SDGs) in Lagos State, Nigeria. The concept of multilevel governance provided the framework for the study systemic review of the literature was adopted as methodology. Secondary desk data on multilevel governance, digital technology and Sustainable Development Goals (SDGs) were used as the basis for explanations. The study revealed different levels of government interaction and collaborative structures in achieving Sustainable Development Goals (SDG) and how digital technologies can be leveraged to enhance this. It also highlights case studies and best practices from Lagos and other comparable regions, proposing strategies for effective integration of digital tools to meet the SDGs.

Keywords: Multilevel governance, Digital technology, Artificial intelligence, Sustainable development goal, Lagos State

DIFFERENCES IN FIRE DISASTER PREPAREDNESS AMONG BUILDING OCCUPANTS IN THE URBAN COMMUNITIES OF IBADAN, NIGERIA

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Abstract
This study investigates the disparities in fire disaster preparedness among building occupants in urban communities of Ibadan, Nigeria. Using a mixed-methods approach that combined surveys, focus group discussions, and observational checklists, the research examined individual and community-level readiness to prevent and respond to fire emergencies. Data were collected from 1,803 building occupants across eleven Local Government Areas (LGAs), encompassing both inner and outer city communities, traditional and non-traditional settlements, and diverse housing densities. Findings reveal widespread inadequacies in fire preparedness, with a dominant portion of respondents expressing scepticism about their capacity to manage fire risks. Only 7% of respondents had received any form of fire-related training in the past decade, and participation in fire drills or knowledge of emergency exits was extremely low across all LGAs. The availability of fire emergency plans was limited to just 11.5% of buildings, and only 20.9% had installed at least one basic fire-safety item such as extinguishers or alarms. Furthermore, 78.9% of respondents had no fire insurance, a reflection of financial constraints, low risk perception, and inadequate awareness. Perceived preparedness was generally low, with the majority of building occupants classifying themselves as only "just prepared." Statistically significant variations were observed across building types, housing densities, and community typologies. Occupants of non-traditional communities and non-residential buildings were marginally better prepared than their counterparts. However, no significant preparedness differences existed between inner and outer city communities. The study highlights the need for strategic interventions, including community-targeted fire safety education, capacity building by emergency agencies, improved access to fire insurance, and enforcement of safety regulations. The findings contribute to the discourse on disaster risk reduction in sub-Saharan African cities and offer a foundation for inclusive and context-sensitive fire safety planning in urban Nigeria.

Keywords: Disaster risk, Urban fire, Fire disaster preparedness, Urban residents, Fire safety infrastructure

DRIVERS OF SECURITY SERVICE DELIVERY IN OYO, NIGERIA

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Abstract
Globally, security service delivery is driven by various factors. Hence, this study investigates factors influencing security service delivery in Oyo and other contiguous towns, including Awe, Ilora, Jobele and Akinmorin. Data for the study were obtained purposively from the heads of 14 security outfits through questionnaire administered. Likert scale was used to rate the response of the security outfit heads. The variables identified in the study were grouped into five categories: operational, administrative, welfare, relationship and development, and environmental factors. The respective means for the group were 4.3, 3.6, 3.2, 2.6 and 2.1. The dominant factor influencing security service delivery was the operational factor, while the least influencing group was the environmental. Findings established that NPF, Amotekun, Aso Guard and Sheriff Deputy have 6, 4, 1 and 1 patrol vehicles, respectively. The study established that vehicles belonging to state security outfits were inadequate and sometimes not fit for operation. Likewise, the available motorcycles were insufficient. Findings showed that security outfits operate in substandard office accommodations (3.9). The state security actors indicated that they experience stringent promotion (3.8), which sometimes affects their level of commitment. The first four variables with indices above the group mean for the welfare factor were poor health insurance (3.4), diversities of residents' language (3.3), poor urban morphology (3.3) and poor stationeries provision (3.3). The study showed that inadequacy of operational, administrative and welfare factors could have led to a low security service delivery of security outfits in the study area.

Keywords: Security, Service delivery, Factors, Non-state security and State security outfits

A REVIEW OF THE CONCEPT OF FLOATING CITIES AND INNOVATIVE LAND SURVEYING FOR RESILIENCE URBAN DEVELOPMENT

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Abstract
The rapid pace of urbanization, coupled with climate change impacts, necessitates innovative approaches to sustainable living. This paper presents a comprehensive review of the concept of floating cities, which represent a forward-thinking solution to the dual challenges of land scarcity and rising sea levels. Floating cities are designed to function as self-sustaining habitats that float on water, combining advanced engineering with eco-friendly practices. Central to the development of floating cities is the role of land surveying, an essential component that informs foundational designs and spatial planning in marine settings. Employing modern technologies such as Geographic Information Systems (GIS), 3D modelling, drone surveying and land surveying enhances mapping accuracy and risk assessment. This technological integration allows for a comprehensive understanding of aquatic environments, ensuring that floating city projects address the complex legal, social, and environmental variables associated with maritime development. Concept of floating cities provided the basis for the review in relation to land surveying while systemic review of literature was adopted as methodology. Secondary desk data on concept of floating cities, land surveying in design, implementation and maintenance of floating city projects were used as the basis for explanations. The paper highlights successful floating city initiatives from around the world, illustrating how innovative land surveying practices contribute to their resilience and viability. Furthermore, we discuss the challenges in integrating floating cities into existing urban frameworks and propose strategies for overcoming these obstacles. By examining the intersection of floating city design and land surveying, this review contributes to the broader discourse on sustainable built environments. This exploration calls for increased interdisciplinary collaboration among urban planners, engineers, architects, and land surveyors to leverage their collective expertise. By embracing innovative practices, we can develop resilient, adaptive urban solutions that cater to the evolving needs of our global population. The review suggests that the needed surveying techniques extends beyond the traditional methods requiring the integration of hydrographic surveys, real time monitoring technologies bathymetric surveys, remote sensing and geographic information system for spatial modelling. Unique methods are to be adapted in aquatic environments to ensure spatial accuracy and structural stability of floating structures.

Keywords: Floating cities, Urban planning, Land surveying, Sustainability, Technological integration

WASTE MANAGEMENT AND CIRCULAR ECONOMY: A SUSTAINABLE APPROACH FOR ENVIRONMENTAL PROTECTION

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Abstract
The continuous increase in waste generation poses significant environmental, economic, and social challenges. Traditional waste management practices focus on disposal, which is unsustainable and contributes to environmental degradation. A circular economy approach offers a sustainable solution by promoting waste reduction, reuse, and recycling. This paper discusses the concept of circular economy, its benefits, and strategies for implementing waste management practices that support a circular economy. The paper highlights the need for a shift from the traditional linear economy model to a circular economy model that promotes sustainability and environmental protection. The paper also discusses the challenges and opportunities for implementing circular economy practices in Nigeria, with a focus on waste recycling, composting, and waste-to-energy. The paper concludes that a circular economy approach to waste management offers a sustainable solution for environmental protection and recommends the development of a national waste management policy, investment in waste management infrastructure, and promotion of public awareness and education on circular economy practices.

Keywords: Waste management, Circular economy, Sustainability, Environmental protection, Public awareness

ARTIFICIAL INTELLIGENCE BLOCK CHAIN CONSOLIDATION FOR CRIME PREDICTION AND PREVENTION: A GLOBAL, DECENTRALIZED, AND SECURED ENVIRONMENT

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Abstract
The consolidation of artificial intelligence (AI) and block chain technology has the potential to revolutionize crime prediction and prevention in meeting the obtainable reality of the global security challenges and reduce stress of incessant occurrence of environmental siege in our society. This paper emphasis on the greater opportunities and potential socio-economic benefits arising from the convergence while it proposes a novel, global, decentralized, and secured environment for crime prediction and prevention, leveraging the strengths of both Artificial intelligence and block- chain. Our proposed system utilizes machine learning algorithms for spatial analysis and crime forecasting, while block chain technology ensures the integrity, transparency, and security of the data. The decentralized nature of the block - chain enables real-time data sharing and collaboration among law enforcement agencies, researchers, and policymakers worldwide. The propositions also incorporate advanced data analytics and visualization tools to facilitate insights-driven decision-making. It highlights the effectiveness of the findings through a case study, showcasing possible potential to reduce crime rates, improve public safety, and enhance the efficiency of law enforcement agencies. The research methodology was generated through secondary data to ensure that this paper contributes to the development of a secure, transparent, and decentralized global crime prediction and prevention framework, paving the way for a safer and more just society.

Keywords: Artificial Intelligence, Block-chain, Crime prediction, Spatial analysis, Machine learning, Data analytics

INTEGRATED FLOOD RISK MANAGEMENT STRATEGIES FOR STRENGTHENING URBAN RESILIENCE IN ONA-ARA LOCAL GOVERNMENT AREA, OYO STATE, NIGERIA

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Abstract
Flooding is a recurring environmental issue in many Nigeria urban regions. In fact, the menace of flood incidences continues to threaten the existence, survival and liveability residents and communities in many Local Government Areas in Nigeria, particularly in the Ona-Ara Local Government Area (LGA) of Oyo State, hence, this study evaluates integrated flood risk management strategies to enhance urban resilience in Ona-Ara LGA against reoccurring flood incidences and its accompany destructions with a view to improve the resilience of the communities. The study is anchored on the concept of Integrated Flood Risk Management (IFRM) framework which includes structural measures, such as drainage improvements, and non-structural measures, such as policy enforcement and early warning systems. Therefore, the objectives pursued by this study are to identify the quantity and spatial distribution of buildings within the 30-meter flood-prone zone; evaluate the socio-economic and structural vulnerabilities of affected buildings and residents; analyse existing flood mitigation policies and their effectiveness in the LGA, and to examine urban resilience capability of the LGA. A mixed-methods approach was used integrating quantitative and qualitative methods. Also, geospatial analysis using GIS and remote sensing are deployed to identify buildings at risk of flooding, while field surveys and structured questionnaires were conducted with property owners and residents to collect socio-economic data. A total of 548 buildings have been identified within the 30-meter flood-risk zone, with a sample size of 250 buildings were selected through systematic random sampling. The findings identify deficiencies in current flood management policies, practices, and emphasize community-based solutions. It however, recommends among others, policy interventions and enhancements to resilient infrastructure to mitigate the impacts of flooding.

Keywords: Flood risk management, Urban resilience, Geospatial analysis, Strengthening

RESILIENT FUTURES: INNOVATING SUSTAINABLE BUILT ENVIRONMENT THROUGH CONSTRUCTION PROJECT AUDIT AND MANAGEMENT

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Abstract
The practitioners in the construction industry face an increasing demand for **resilient and sustainable** built environments. This requires rigorous project audit and management to ensure efficiency, accountability, and long-term viability. Effective construction project audits provide a structured approach to evaluating performance, resource allocation, and compliance with sustainability standards. The proposed solutions in this paper can help in supporting management decisions regarding the resilience of construction projects in terms of climate change, economic changes as well as regulatory framework changes. With the advent of Building Information Modelling (BIM), blockchain technology, and real-time data analytics has revolutionized project audits by enhancing transparency, curbing financial mismanagement, and maximizing resource efficiency. Furthermore, sustainable project management frameworks like life-cycle assessments (LCA) and circular economy principles are becoming indispensable for achieving eco-friendly construction results. These methods not only help meet green building standards but also aid in cutting costs and minimizing risks. Moreover, governance and policy frameworks play a critical role in ensuring compliance with sustainability benchmarks and financial accountability. Effective stakeholder collaboration, including engagement with regulatory bodies, investors, and communities, is essential in achieving resilient infrastructure development. Green financing tools, such as sustainability-linked bonds and public-private partnerships, further support the successful implementation of eco-friendly construction initiatives. This study emphasizes that a resilient built environment is within reach through a holistic approach that merges technological advancements, sustainability-focused policies, and strong project auditing practices. As the built environment adapts to a changing world, a robust approach to construction project audit and management will be essential for driving innovation, minimizing waste, and ensuring the long-term durability of infrastructure. By integrating cutting-edge auditing tools and sustainable management practices, the construction sector can create future-ready, efficient, and environmentally responsible urban spaces.

Keywords: Construction audit, Project management, Sustainability, Resilience, Digital technologies

A STUDY OF BIM CAPABILITIES FOR QUANTITY SURVEYING PRACTICE IN NIGERIA

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Abstract
Building SMART International has existed for about 20 years. It has managed to produce transformation in the building industry through BIM technology that has wide acceptance worldwide. However, BIM is yet to be as advanced in most developing countries as it is in most parts of Europe and America. This study aims to investigate the impact of BIM-based cost-estimating software on quantity surveying service delivery in Nigeria. The study evaluated companies that are incorporating BIM technology into cost planning and cost estimation. In Nigeria, the private sector has been the driving force behind BIM development. There has been gradually slow progress in implementing BIM systems in the country, with the implementation levels of BIM technology falling thus suggesting the need for a solution. This study will help inform policy and change of standard practices Nigerian QS firms should adopt. The study used a questionnaire survey to obtain information on cost control activities from respondents that are familiar BIM based cost estimating software. Hence, quantitative methods of data collection and analysis were adopted for this paper. The findings of this study will help practitioners in Nigeria understand pertinent issues that require adopting BIM technology in the construction sector. Study will also show how elements of BIM have helped quantity surveyors in Nigeria tackle different tasks, enhance their knowledge and how to understand how the project operates, and also provide accurate cost estimates in their practices.

Keywords: BIM, Software capabilities, Quantity surveying practices, Cost estimation, Nigeria

RESPONSIVE FACADES: INTEGRATING RESPONSIVE MATERIALS FOR ENERGY EFFICIENCY IN NIGERIA

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Abstract
The ability to successfully integrate local climatic variables to provide thermal and visual comfort for occupants while relying little to no on non-renewable energy sources is what defines climate-responsive architecture. In order to identify different climate-responsive facades in mixed-use high-rise projects in Lagos, Nigeria, the study used architectural qualitative approaches. This paper reviews the design history of the facade, salient materials constituting Responsive facades, and how they shape energy efficiency. Especially interesting is Nigeria's urban context, where the adoption of adaptive shading, dynamic glazing, and bio responsive facades can decrease cooling loads and improve thermal comfort. Case studies of real buildings, including The Heritage Place in Lagos, The Nigerian Stock Exchange (NSE) Building, Al Bahr Towers in Abu Dhabi, and The Edge in Amsterdam, illustrate the effectiveness and problems of the systems. The study concludes by proposing recommendations on how to advance Responsive facade technologies through interdisciplinary research, policy support, cost-effective solutions, and adoption of local materials to enable broader application in international and regional areas.

Keywords: Thermal comfort, Responsive facades, Energy efficiency, Climate responsive architecture

TIME DIMENSIONAL ANALYSIS OF BUILDING COLLAPSE IN LAGOS STATE, NIGERIA (2012-2022)

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Abstracts
Buildings are vital components of global landscapes, serving as shelters and venues for diverse social functions. In modern society, life without buildings is inconceivable. As such, most countries have policies to provide buildings for housing, offices, education, healthcare, and more. However, building collapse poses serious physical, social, economic, and psychological consequences for users, and diminishes national pride. This study examined the spatio-temporal patterns of building collapse in Lagos State, Nigeria, between 2012 and 2022.v Employing a cross-sectional survey design, the study collected primary data via 340 questionnaires (with a 100% response rate) and secondary data from literature, journals, newspapers, annual reports, and government publications. Data were analysed using descriptive and inferential statistics, including frequency counts, percentages, means, and standard deviations, with a significance level set at 0.05. The findings identified key causes of building collapse in Lagos as structural failure or defects, unauthorized conversion of buildings, non-compliance with regulatory authority warnings, and the use of substandard materials. Additional causes included heavy rainfall combined with foundation failure, aging buildings, and lack of maintenance. Specifically, 16 buildings collapsed due to structural failure, five due to non-compliance with regulations, and three due to poor maintenance. Two collapses were attributed to heavy rainfall and foundation failure, two to old age, one to unauthorized conversion, and one to the use of inferior materials. The study recommends enhanced supervision of building construction by qualified professionals, strict adherence to approved building plans, and prevention of unauthorized conversion—especially for commercial uses. These measures aim to mitigate the risks and frequency of building collapse in Lagos, ensuring safer, more resilient built environments.

Keyword: Building Collapse, Regulatory compliance, Lagos State, Structural Integrity, Structural failure

ESTIMATION OF HIGH-RESOLUTION DIGITAL ELEVATION MODEL (DEM) FROM SAR DATA OVER THE CONFLUENCE REGION OF NIGERIA

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Abstract
Estimating a wide area high resolution digital elevation model (DEM) over the confluence region of Nigeria from sentinel1synthetic aperture radar (SAR) data is crucial. This study leveraged geospatial technology to gain critical insights into the region's hydrology, terrain information and characteristics. These components play a crucial role in estimating the surface roughness of terrains for flood control and mitigation efforts, enabling the identification of areas vulnerable to erosion, rapid runoff, potential floodplains and possible drainage basins. The implications of this research are significant because it provides precise data for flood modelling, early warning systems, urban planning, watershed management and different types of possibly agriculturally influenced activities that are viable in the Confluence region. The research captured elevation values ranging from 79.59 meters to 529.27 meters. These detailed digital elevation model data allowed for precise terrain analysis, facilitating the identification of flood-prone areas, elevation extremes, and drainage patterns. A contour map was also generated from the DEM data, featuring contour intervals of 100 meters, which provides a clear visualization of the region's topography. Furthermore, the study delved into the analysis of key hydrological components, including slope, aspect and flow direction. As floods become increasingly severe and exacerbated by climate variables, these findings provide a foundation for building resilient communities and sustainable flood mitigation measures. The results underscore the major role of geospatial technology in addressing hydrological challenges and emphasize the importance of data-driven decision-making for a more secure and sustainable future in the face of evolving climate patterns.

Keywords: Sentinel-1 SAR, Confluence region, Dem, Contour, Elevation extremes and Flow direction

CLIMATE CHANGE RESILIENCE POLICIES AND LEGISLATION IN NIGERIA

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Abstract
Resilience emerged as a vital construct to strengthen the adaptive capacity of communities to the worsening negative impacts of climate change. For communities to bounce back and bounce forward in the face of the shocks, stresses, and disasters as a result of climate change, they must be in a word – resilient. The enhancement of resilience to climate change at the community level requires the interplay of institutional and infrastructural resilience mechanisms. It is difficult for individuals to singlehandedly enhance the resilience of institutions and infrastructure as this is within the scope of the statutory responsibility of decision-makers. Implementation and intervention tools for decision-makers are pivoted upon policy and legislation. This study examined the extant policy and legislation on climate change resilience in Nigeria adopting a three-pronged methodological approach based on systematic review. The evolutionary synopsis of the existing policies and legislation in Nigeria with import upon climate change resilience was conducted which highlighted a number of country-specific climate change resilience policy and legislation spanning through the colonial period and the post-independence period. A comparative analysis of the policy instruments and legal frameworks outlined in the synopsis in line with international best practices revealed critical gaps in climate change resilience policy formulation, legislation and enforcement in Nigeria. The evaluation of the responsiveness of extant climate change resilience policies and legislation to the peculiarities of the Nigerian environment and the challenges facing the local environment reinforced the need to domesticate and formulate policies that directly address the specific climate realities facing local communities in Nigeria rather than borrowing or lifting foreign policies and legislation. In order to address the identified impediments to climate change resilience policy and legislation in Nigeria, decision-makers have to be forward thinking and proactive.

Keywords: Climate change, Legislation, Laws, Policy, and Resilience

EVALUATION OF CROWD MANAGEMENT STRATEGIES IN HOSPITALITY BUILDINGS IN SOUTHWEST NIGERIA

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Abstract
Effective crowd management is crucial in hospitality buildings to ensure safety, user experience, and optimize operational efficiency. However, many hospitality buildings are struggle with overcrowding, inefficient circulation, and inadequate emergency response measures, posing risks to both guests and staff. This study evaluates crowd management strategies in hospitality buildings across Southwest Nigeria, with a view to proposing design guidelines, which incorporates architectural planning techniques for seamless crowd circulation pattern. Both primary and secondary data were used for the study. Information were obtained from hospitality facility users, staff, and professionals, including architects, facility managers, and security personnel. A total of 403 respondents were administered with questionnaire using a systematic sampling technique. Descriptive statistical tools, including frequency counts, percentages, and Likert-scale were used to analyse. The study assessed causes of crowd incidences, existing crowd management strategies, and their effectiveness in hospitality buildings. The result shows that 68.4% of respondents attributing congestion to poor spatial planning, while 54.2% cited inadequate emergency exits as a major concern, 47.9% of respondents noted that a lack of designated waiting areas contributed to bottlenecks in high-traffic zones. Crowd management measures indicated that 71.6% of hospitality buildings relied on basic wayfinding signage, while only 43.8% had real-time monitoring systems in place. The result shows that 38.5% of the facilities had designated emergency assembly points, posing a significant risk during evacuations. The result on the rating of current crowd control measures show that 59.3% of respondents rate current crowd control measures as "Moderately Effective," while 22.5% considered them "Ineffective." Regarding improvements on the current state of facilities, 74.1% of respondents emphasized the need for wider circulation paths, while 65.8% advocated for increased signage and digital navigation tools to improve crowd flow. The study revealed that limited integration of advanced crowd management strategies, reliance on conventional spatial layouts, and inadequate use of technology were key factors hindering efficiency, safety, and seamless movement within hospitality buildings. Study concludes that effective crowd management is essential in hospitality buildings to enhance safety, optimize movement, and improve user experience. However, existing strategies in Southwest Nigeria are often inadequate due to poor spatial planning, insufficient emergency exits, and limited technological integration. It is recommended that hospitality buildings adopt passive design strategies such as wider circulation paths and clearly marked exit routes to improve crowd flow.

Keywords: Crowd Management, Hospitality Buildings, Management Strategies, Southwest Nigeria

ENHANCING BIODIVERSITY AND ECOSYSTEM RESILIENCE THROUGH LANDSCAPE ARCHITECTURE

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Abstract
As urbanization and industrialization increasingly impact natural habitats, the loss of biodiversity and the degradation of ecosystems have emerged as urgent global challenges. This paper explores how landscape architecture can serve as a strategic tool in creating sustainable and biodiverse landscapes that not only mitigate environmental impacts but also promote ecological health. It provides an overview of the current state of biodiversity loss and ecosystem degradation, underscoring the role of human activities in exacerbating these issues. The paper investigates various approaches in which landscape architecture can enhance biodiversity and resilience in both urban and rural contexts via a case study approach. The research reaffirms the critical importance of landscape architecture in combating biodiversity loss and ecosystem degradation, outlines potential limitations, and proposes directions for future inquiry. By advocating for sustainable landscape practices, this document aims to inspire landscape architects, urban planners, and policymakers to prioritize biodiversity and resilience in their designs, ultimately contributing to healthier ecosystems and an improved quality of life for all.

Keywords: Biodiversity, Ecosystems, Habitats, Landscape, Resilience

ASSESSMENT OF PRE-PLANNING PRACTICES FOR SUSTAINABLE CONSTRUCTION PROJECTS AMONG CONTRACTORS IN KADUNA STATES

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Abstract
Effective pre-planning is widely recognized as a crucial factor in the successful execution of construction projects. However, Nigeria Indigenous contractors are known to have less focus on pre-planning activities, this leads to inefficiency, rework, low productivity and growing rate of delay. The aim of this research work is to assess pre-planning practices among contractors in Kaduna State. The study opted for quantitative approach, with the help of a questionnaire survey. A total of 120 questionnaires were issued to construction professionals working in construction firm. Ninety-Seven (97) of the questionnaires were returned completed and used in the analysis. The data collected were analysed using Relative Importance Index. The findings from this study revealed that the extent of pre-planning practices by construction firms in Kaduna state was high. However, the conduct of cost-benefit analyses and project risks assessment were moderate. This implied that there is need for improvement in pre-planning practices by construction firms in Kaduna State. This study recommended that adequate attention should be given to feasibility studies, Concept design and detail scope definition in pre-planning of construction projects. The study can assist project managers and construction professionals to have clear understanding of pre-planning activities that should be considered during the planning of construction projects.

Keywords: Construction project, Contractors, Kaduna State pre-planning, Questionnaires survey

ANALYSIS AND AWARENESS OF ARTIFICIAL INTELLIGENCE TOOLS FOR PROJECT MANAGEMENT PROFESSIONALS IN THE BUILT ENVIRONMENT

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Abstract
The growing role of Artificial Intelligence (AI) in the built environment is remarkable. This article seeks to investigate the available artificial intelligence (AI) tools and assesses awareness about their hypothetical benefits and adoption levels among project management professionals within the built environment. AI integration has gained significant global attention for its ability to enhance project outcomes, optimize processes, and improve decision-making. Through an exhaustive literature review and quantitative (survey/questionnaires) research methods, the paper analyses professional demographic information and the awareness and adoption of these technologies in project management among built environment professionals. It identifies barriers to broader implementation, such as resistance to change, insufficient technical expertise, and concerns regarding data security. It offers a detailed examination of AI applications across various project management phases, including planning, design, execution, and monitoring among the built environment professionals, including Architects (Interior and landscape designers), Urban and regional planners, urban design, Construction Managers, Builders, quantity surveyors, Estate Managers, Project managers, Land surveyors and geoinformatics, Engineers (Structural, Mechanical and electrical engineers). It also evaluates current AI-driven tools such as predictive analytics, machine learning algorithms, and autonomous project scheduling, assessing their effectiveness in boosting project efficiency, controlling costs, managing risks, and allocating resources effectively among professionals. The study also highlights the challenges related to the application of AI in the built environment and provides recommendations for stakeholders to facilitate a smoother integration of AI. Ultimately, the findings underscore AI's potential to transform project management practices, with significant implications for the future of construction and infrastructure development.

Keywords: Analysis, Awareness, Artificial Intelligence, Project management, Built environment

ROAD AND OCCUPATIONAL SAFETY AMONG STREET SWEEPERS IN DAR ES SALAM

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Abstract
Dues to unplanned urbanization and city population influx, waste management challenge is now a common planning problem in African cities. Solid waste management persists across developing nations. Many countries have to devise ways to managing littering that characterizes road side. In Africa cities, street sweeping is now becoming a common remedy to managing environmental and land pollution. In Dar Es Salam, street sweeping remains a viable pathway to managing urban waste. Thus, making street sweepers an importance aspect of urban economy. However, dues to the distinctive location of their occupation, street sweepers are being exposed to occupational hazard and health risk such as respiratory disease, near misses and accidents. Road users, pedestrians and harmful traffic behaviour further exposes street sweepers to road accidents. In Dar Es Salam, informal transport operators and most importantly motorcyclist negative traffic behaviour expose street sweepers to road accidents and near misses. This is further compounded by the lack of personal protective equipment amongst sweeper. Based on the sample of thirty road sweepers that were conveniently selected along major highways, this study examined occupational safety amongst street sweepers in Dar Es Salam. The study is targeted at contributing to the discuss on environmental sustainability and crises of urban actors in ensuring a sustainable built environment.

Keywords: Dar Es Salam, Street sweeper, Near misses, Occupational hazards, Road accident

HOUSEHOLDS' EXPOSURE AND VULNERABILITY TO CLIMATE CHANGE IMPACTS IN IBADAN, NIGERIA

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Abstract
Households' exposure to climate change impacts is a function of the exploration of their environment whereas, their vulnerability increased with inabilities to mitigate the consequences of their ingeniousness. This study evaluated households' exposure and vulnerability to impacts of climate change in Ibadan, Nigeria. It draws information from 1285 randomly selected households from 42 communities using perceived indices of exposure (HEI), sensitivity (HSI), adaptive capacity (ACI) and vulnerability (PVI). Households' exposure and vulnerability were Likert scale rated and correlated with attributes of age, education, length of stay in locality and total monthly income on one hand, and subjected to Kruskal-Wallis One Way Analysis of Variance (KWANOVA) on the other hand to evaluate variations among socioeconomic attributes and residential densities. Results show that nearly all households (99.8%) were vulnerable to observed impacts of climate change. Their vulnerability increases with age ($r = 0.320$) and education ($r = 0.062$) but reduces with total monthly income ($r = -0.056$) and length of stay in locality ($r = -0.019$). With mean = 2.38; $X^2 = 0.028$ and 7.596, and $p > 0.05$ in both cases, the vulnerability of households was not statistically significant given residential density and local government area delineations. The study concludes that climate change impacts critically undermine households' resilience and recommends opportunity advocacy, empowerment facilitation and stakeholders participation in decision making among others.

Keywords: Climate change, Households' vulnerability, Adaptive capacity, Public participation, Ibadan

AN EXPLORATORY ASSESSMENT OF USERS' SATISFACTION WITH LOW-INCOME MULTI-TENANTED PUBLIC ESTATES IN LAGOS, NIGERIA

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Abstract
This paper assesses the residents' housing satisfaction in multi-tenanted public estates in Lagos State, with a view to determine the level of satisfaction with the housing and neighbourhood facilities in the study areas. The research instruments include questionnaire administration and interviews. The study adopted a multi-stage random sampling technique to select 170 and 169 residents from 4220 and 4272 households in the low-income estates of Festac Town community and Abesan respectively, culminating in a total of three hundred and thirty-nine (339) residents. Descriptive and inferential statistics such as frequency, percentage, mean value techniques, and spearman rank correlation were used to analyse the data collected. The result indicated that the respondents were only satisfied with the size of the living rooms and the number of bedrooms, with overall MIS of 3.65 and 3.52 respectively in the two estates. On the contrary, their overall assessment of the number of toilets and bathrooms, the outdoor spaces' conditions and the kitchen facilities was fair, being 3.19, 3.05 and 3.00 respectively. With regards to the neighbourhood facilities in the study areas, the overall ranking showed that telecommunication and road networks ranked highest in their perception of the level of satisfaction with MIS of 3.95 and 3.57 respectively while waste disposal, pipe borne water and electricity supply were perceived to be fair with MIS of 3.10, 2.82 and 2.50 respectively. Among others, the research recommends that the intended occupants' needs and peculiarities should be integrated into the design and development of housing estates.

Keywords: Residential satisfaction, Public estates, Multi-tenanted, Low-income

THE FUTURE OF CONSTRUCTION AUDITING: ADAPTING TO TECHNOLOGICAL ADVANCEMENTS AND EVOLVING INDUSTRY STANDARDS

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Abstract
This systematic review examines the evolving landscape of construction auditing in the context of digital transformation between 2015 and 2025. Through analysis of 16 high-quality journal articles, the review identifies how technologies such as Building Information Modelling (BIM), Blockchain, Artificial Intelligence, Internet of Things (IoT), and Digital Twins are fundamentally reshaping construction auditing practices. The findings reveal a fundamental change from periodic, paper-based inspections to continuous, data-driven monitoring enabled by integrated technological ecosystems. BIM serves as a foundation platform upon which other innovations are built, while Blockchain enhances documentation integrity and supply chain transparency. AI and Machine Learning improve predictive capabilities and anomaly detection, transforming auditing from a reactive to a proactive process. Digital twins and IoT sensors enable real-time verification against design specifications, altering the temporal dynamics of construction auditing. Despite these advancements, implementation remains uneven across regions and project types, with significant challenges related to technological infrastructure, skills gaps, cultural resistance, and regulatory uncertainties. The review provides recommendations for practitioners and identifies future research directions to address these challenges. By embracing digital technologies and developing appropriate skills, standards, and implementation strategies, the construction industry can address long-standing challenges related to documentation reliability, verification accuracy, and process efficiency while enhancing project performance and built environment outcomes.

Keywords: Construction auditing, Technology, Standards, Accuracy, Efficiency

WATER SECURITY AND SANITATION IN STUDENTS' HOSTELS OF FEDERAL UNIVERSITIES IN SOUTHWESTERN NIGERIA: TOWARDS ATTAINING THE SUSTAINABLE DEVELOPMENT GOAL SIX

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Abstract
Water availability and sanitation have become a mirage in most federal universities in Nigeria making it difficult to achieve the Sustainable Development Goal (SDG). The shortfall in provision has fueled student protests on many occasions without a permanent solution. Therefore, this study examines water availability and its impact on sanitation in the hostels of some federal universities in southwestern Nigeria. The study used four common categories of hostels in federal universities: Private Homes, Organised Private, Formal Bed-Space, and Public-Private Partnership student hostels. Three federal universities in southwestern Nigeria that offer these four categories of hostels were randomly selected: The University of Ibadan (UI), Obafemi Awolowo University (OAU), and the University of Lagos (UNILAG), with sample sizes of 257, 495, and 455 respondents, respectively. Cross-sectional and observational research methods were adopted. A pre-tested questionnaire was administered to final-year students to elicit information on socioeconomic characteristics, water availability, and its impact on sanitation. Data collected were analysed descriptively and through content analysis. The findings revealed that the University of Ibadan is the least water secure (13.9%), followed by OAU (34.2%), while UNILAG had the highest water security at 51.8%. Similarly, respondents' satisfaction with the sanitation situation at each university showed that UI had a score of 20.3%, OAU had a score of 21.2%, and UNILAG had the highest score of 58.5%. In addition to these revelations, respondents' perception of water quality showed that UI scored the least, 10%, followed by UNILAG, 38.3%, while OAU scored 51.7%. This indicates that water availability is directly proportional to effective sanitation in the sampled universities. The study suggests that adequate attention should be given to the construction of water facilities, rehabilitation of existing water infrastructure and improvement on sachet water production, which is the most affordable option for most students in federal universities in Nigeria.

Keywords: Water security, Sanitation, SDG-6, Student hostels, Federal University, Southwestern Nigeria

IMPLEMENTING SUSTAINABLE PRINCIPLES IN SMART MIXED-USE BUILDINGS

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Abstract
Smart Mixed-use buildings have several interconnected technology systems that work together and adjust to needs, with integrated resource management, which provides benefits to the User the Owner, and the Environment, in terms of comfort, health, security, and well-being, while contributing to sustainable built environments. Sustainable development is a key concept brought to the forefront through action plans for its set goals to guide humanity in addressing its needs, especially now and in a responsible manner. The implementation of Sustainable Principles in the design of buildings is one of the ways towards achieving the SDGs, while acknowledging and incorporating environmental, economic and social issues. This research aims to explore how the sustainable principles has been implemented in Smart Mixed-Use Buildings. The principles have been derived from previous research where criteria were outlined based on the three areas of sustainable development, through sustainable architecture. Case study approach was adopted in this research by evaluating selected mixed-use buildings, based on sustainable principles as identified from the literature review. These case studies assessed were smart buildings, using ten established criteria for evaluating sustainable principles in buildings. Descriptive analysis was carried out on the data collected, and the findings were presented in tables. The research revealed that the evaluated buildings implemented sustainable principles to varying degrees, hence the need to take into considerations these principles when designing mixed-use, smart buildings. This study will serve as a valuable resource for policymakers, architects and researchers, while offering a roadmap towards a more resilient and sustainable city.

Keywords: Sustainable principles, Mixed-use buildings, Sustainable architecture, Smart buildings, Technology

THE INFLUENCE OF CULTURE ON ARCHITECTURAL FACADE

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Abstract
The facade is a basic interface between culture and built form, and it has functional as well as symbolic roles to play. This paper elaborates on the intricate relationship between architectural facade and culture, and how architectural aesthetics and materiality are shaped by cultural heritage, traditions, and regional characteristics. Borrowing from phenomenological, semiotic, and critical regionalist theories, this study examines how facades serve cultural expression and identity mediums in both historical and contemporary contexts. The research highlights architectural facade development through the comparison of traditional, colonial, and modern architectural styles. One of the critical aspects of this study is the way in which globalization impacts the design of elements of the facade, leading to the danger of homogenization that threatens the survival of architectural identity. That said, current architectural practices make use of local materials, traditional techniques as well as digital fabrication technology to meld the modern with the tradition. This paper uses a qualitative research method that involves comparative case studies, historical analysis and theoretical discussion. The discussion on architectural facade in different cultural contexts relies upon primary and secondary sources, in particular architectural journals and books. The comparative analysis of case studies looks at the meaning of architectural facades in relation to cultural narratives, drawing from traditions like those found in Yoruba, middle eastern, Japanese, European and contemporary architecture. This research deals with a theoretical perspective that combines phenomelogical, semiotic and critical regionalism elements in the facade as the manifestation of a certain cultural feature. Finally, this paper looks into the modern difficulties of the facade as biographised in sustainability reports and architectural criticism, studying the transition of the relationship of culture and modern architecture. This paper, supports the idea that the facades' designs should be more situational which means that modernization and cultural preservation should be blended together. While urban areas are expanding and technology is radically changing architecture, the incorporation of cultural stories into the designing of facades is crucial to the preservation of architectural diversity and identity in this constantly globalizing world.

Keywords: Architecture, Sustainability, Facade, Cultural identity, Globalization

HUMAN SETTLEMENTS DEVELOPMENT AND SUSTAINABILITY PARADIGM

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Abstract
A human settlement is a community, that is, a group of people living in one place. Human settlement development encompasses the evolution and development of communities such as villages, towns, cities and megacities and their impact on physical, social and economic well-being. In the contemporary times, the number and sizes of human settlements have continued to increase. Although, settlements occupy a relatively small percentage of the total land surface but their impact on the earth's surface is significant. Human settlements development involves transformation of the natural environment into a built environment to meet the needs of the community for work, recreation and other aspects of life. Until recently, the consequences of the built environment have been seen as inevitable and acceptable. Sustainability paradigm moves away from a purely economic growth-oriented model towards a more holistic and responsible approach to development. Sustainability is often described as having three pillars: economic, social and environment. Sustainability paradigm is a shift in thinking and action that recognises the interconnectedness of the social, economic and environmental systems and encompasses the need for long-term well-being and equitable development. It is, therefore, a paradigm shift with a vision for the future. Against this backdrop, this paper discusses human settlements development within the framework of sustainability.

Keywords: Human settlements, Sustainability, Urbanization, Built environment, Sustainable development

CLIMATE CHANGE IMPACTS AND ADAPTIVE INFRASTRUCTURES STRATEGIES ON LAGOS ISLAND, NIGERIA

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Abstract
Lagos Island, Nigeria, is highly vulnerable to climate change impacts such as sea-level rise, flooding, and coastal erosion, which threaten urban infrastructure in Victoria Island, Ikoyi, and Marina environs. This study examines climate change impacts on infrastructures, assesses the adaptive strategies to enhance resilience in these high-density, economically viable coastal neighbourhoods, evaluates the impacts of climate change on infrastructure, assesses the effectiveness of current adaptive measures, and identifies deficiencies in urban planning for future resilience. By employing a mixed-methods approach, surveys of 346 residents with qualitative data from focus groups and interviews were collected. It evaluated climate change impacts on infrastructure, assessed the effectiveness of existing adaptive measures, and identified urban planning deficiencies. This study reveals that infrastructure is significantly threatened by frequent flooding and coastal erosion. Findings reveal that flood and coastal erosion pose the most dreadful threats to infrastructure's sustainability in these regions, with residents and businesses experiencing frequent disruptions. Although adaptive measures like enhanced drainage systems and coastal protection efforts have been implemented, their effectiveness is limited by the escalating severity of further climate change impacts. The study advocates for prioritizing green infrastructure, improving flood management systems, mainstreaming urban planning principles and policies to enhance sustainable, resilient communities in the identified zone, and increasing community engagement in future urban planning initiatives. The study highlights the necessity for sustainable, climate-resilient infrastructure on Lagos Island. Addressing these challenges necessitates coordinated efforts from all stakeholders, including government, urban planners, and local communities.

Keywords: Climate change, Infrastructure, Adaptation, Lagos Island, Resilience

URBAN HOUSING IN NIGERIA: THE NEED FOR SUSTAINABILITY

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Abstract
Urban housing in Nigeria has been in a state of menace, with rapid population growth, urbanization, and limited access to affordable housing creating a strained housing system. The demand for sustainable urban housing has grown significantly due to the environmental, economic, and social challenges posed by traditional construction methods and the increasing pressure on urban areas resulting from rural-urban migration. This paper discusses the need for sustainability in urban housing development in Nigeria, giving proper reference to the importance of eco-friendly building materials, energy efficiency and conservation, water management and community involvement. It examines the current urban housing practices in Nigeria, identifying the gaps that prevent the implementation of sustainable solutions and further proffer the necessary solutions to the constraints. Additionally, the paper explores strategies, and innovations that can promote sustainability in Nigeria's urban housing sector, including the adoption of efficient waste management practices, the use of locally sourced materials, the use of renewable energy, and the adoption of green building practices. Through the adoption of a structured survey and a review of relevant literature and case studies, the paper underscores the importance of integrating sustainability into urban housing to address Nigeria's housing deficit, improve living conditions, and contribute to the country's long-term environmental goals.

Keywords: Urban housing, Nigeria, Renewable energy, Sustainability, Green buildings

DISASTER-PROOF CAMPUS PLANNING: INSIGHTS FROM THE UNIVERSITY OF IBADAN

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Abstract
This study draws on fifteen years of professional experience in managing the spatial development of the University of Ibadan (UI) to propose a disaster-resilient approach to campus planning. Anchored on the global principles of land use efficiency, green space enhancement, and organic disaster mitigation, the university's original master plan was meticulously designed to reduce disaster risks through regulated traffic flow, zoning distinctions, and environmentally sensitive layouts. However, over time, the campus has experienced spatial distortions due to weak enforcement mechanisms, prolonged absence of a dedicated Physical Planning Unit, political interference, and professional lapses. Using Geographic Information System (GIS) tools, the study examined the extent of deviation from the original master plan by analysing land use changes across administrative, religious, academic, residential, commercial, and green zones. Findings reveal that while the administrative and religious zones have largely retained their intended functions, substantial deviations occurred in residential and green areas. Notably, parts of the staff quarters and designated green spaces have been repurposed for commercial or academic use. Encroachment, unauthorised constructions, and infrastructural mismatches were identified in key locations, with deviations accounting for approximately 25% of the original plan. The study distinguishes between pre- and post-Physical Planning Unit discrepancies, attributing early-stage challenges to allocation errors and poor delivery, and recent issues to institutional ignorance and bureaucratic tensions. Despite these challenges, UI maintains over 75% compliance with its master plan. The paper concludes with recommendations for stricter development control, stakeholder collaboration, regular plan reviews, and increased funding to safeguard against environmental hazards and reinforce spatial order.

Keywords: Spatial planning, Master plan deviation, Disaster risk mitigation, Development control, Campus infrastructure

HOUSING, HEALTH AND WELLNESS

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Abstract
The relationship between housing, health, and wellness has become a central focus of recent research. This study explores how these three key elements of human life are interconnected, emphasizing the significant impact that housing conditions have on both health outcomes and overall quality of life. A thorough review of existing studies shows a clear connection between poor housing quality and various negative health outcomes, such as respiratory and cardiovascular conditions, as well as mental health challenges. Substandard housing is also linked to higher levels of stress, cognitive decline, and an increased risk of accidents and injuries. On the other hand, the study underscores the positive effects of secure, affordable, and appropriate housing on individual health and wellness. These benefits include better physical health, improved mental wellness, and stronger community ties. Additionally, stable housing contributes to increased resilience, supports healthier lifestyles, and enables better access to necessary healthcare services. The findings of this work hold significant implications for policy development and planning, urging stakeholders to prioritize the availability of quality housing to mitigate the negative health impacts of poor living conditions. By addressing the housing-health relationship, it is possible to promote equitable, sustainable, and thriving communities. This study enhances our understanding of the housing-health dynamic, advocating for a multidisciplinary approach to improving housing, health, and wellness.

Keywords: Housing, Health, Wellness, Housing quality, Health effects, Affordable housing, Healthcare access

SPATIAL CONFLICTS, BLURRING OF BOUNDARIES AND URBAN VULNERABILITY: LESSONS FROM PERI-URBAN AREA IN IBADAN, NIGERIA

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Abstract
The re-interpretation of the spatial character of the city is continuously re-making the appearance of the urban centres in the contemporary milieu. This paper argues that urban transformations are born out of conflicts resulting in spatial urban boundaries becoming blurred and creations of vulnerable urban spaces. Such spaces are continuously being renegotiated through the activities and reactions in the built environment due to the actions of different stakeholders and powerful actants. Using methodological approaches that include interviews, participant observation, and topographical analysis, it further examines the conflict and tension as change takes place from the inner city to the peri-urban area of the Ibadan metropolis. By identifying various negotiations amongst the urban users with different interests and choices and ways they have appropriated urban space in recent times. Findings revealed that powerful actants have problematized, mobilized, and deployed resources in order to achieve their vision of what form the built environment should take, and not necessarily what is sustainable. The paper concludes by underscoring the preservation of the essential parts of the urban character and cultural life of the city.

Keywords: Boundaries, Spatial conflict, Negotiation, Sustainable development, Urbanisation, Urban vulnerabilities

IDENTITIES, POLITICS OF PLACE AND TRADITIONAL URBAN SPACE: CASE STUDY OF THE ARCHITECTURE OF FOODMARKETS IN AKURE, NIGERIA

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Abstract
This paper investigates the conflicts, tensions and negotiations that take place between those city dwellers embedded in the context of traditional urban space and those pursuing a modernisation agenda. It examines the inter-dependency or relationship between the traditional urban space and the city which is constantly being challenged, adapted and simultaneously undermined by the city's rapid growth and modernisation. It considered various negotiations amongst the urban dwellers with different interests and choices and ways the built environment has been appropriated in recent times in Southwest Nigeria and to what extent to which conflict and crisis disrupted and changed urban dweller's knowledge of the city. The reason and motivation for this focus is in order to understand the reasons why the conflict between tradition and modernity is a particular problem and its impact on the sustainability of the city. This study is informed by a combination of theory based upon Actor Network Theory (ANT) and Interpretivist Anthropology. From this perspective, it examines how the various actors or 'actants' involved in struggles over the redevelopment of the city's urban core, constructed meaning themselves in representing what the city should be and justifying their actions in practice. It further investigates how knowledge is constructed and contested between and within these interest groups. The paper offers evidence as to the way the powerful segment of the population, (in this case the political elite and the emerging middle class), whose lifestyles are becoming increasingly westernised through the influence of globalisation and modernisation, thereby marginalising the poor working class folks whose lives are more embedded in tradition. The paper concludes that the relationship between the city and knowledge and the urban dwellers' attitude to urban change is based on their lifeworld, world view and outlook.

Keywords: Actor network theory, Culture, Resilience, Sustainability, Tradition and Urban conflict

THE TRIPARTITE NATURE OF COMMUTING STRESS: COGNITIVE, PHYSICAL, AND EMOTIONAL DIMENSIONS

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Abstract
Commuting stress significantly impacts mental and physical health, yet existing measurement approaches are often fragmented. This study aimed to develop and validate a Multimodal Commuting Stress Scale (MCSS) integrating cognitive, physical, and emotional dimensions of commuting stress specifically for the Nigerian context. Items were adapted from established scales (Perceived Stress Scale, Cohen-Hoberman Inventory Physical Symptoms subscale - adapted, and DASS-21 Stress subscale) to be commuting-specific. The study involved 122 undergraduate students from Obafemi Awolowo University. Exploratory Factor Analysis (EFA) on preliminary data suggested a three-factor structure (Perceived Stress, Emotional/Psychological Stress, Physical Symptoms), explaining 51.4% of the variance after removing three items. Confirmatory Factor Analysis (CFA) indicated an acceptable model fit (CFI = .942, TLI = .922, RMSEA = .071, SRMR = .062). The resulting 11-item scale demonstrated acceptable internal consistency for its subscales (Cronbach's α: .757 - .786) and generally strong factor loadings, supporting its validity. The MCSS addresses a critical gap by providing a validated, contextually relevant tool to measure commuting stress comprehensively. Findings can inform targeted interventions and policies to improve student well-being at the university. Further validation in diverse populations is warranted.

LIFE-CYCLE COSTING AND HEALTH: INTEGRATING LONG-TERM WELL-BEING INTO HOUSING PROJECT BUDGETS

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Abstract
Housing plays a critical role in influencing public health, yet health considerations remain largely absent from traditional life-cycle costing (LCC) models. This systematic review synthesizes evidence from 17 peer-reviewed studies to explore how health outcomes—both physical and mental—can be quantified, monetized, and embedded into LCC frameworks used in housing project evaluation. The review identifies a range of methodologies for capturing health impacts, including cost-of-illness calculations, disability-adjusted life years (DALYs), and proxy indicators such as indoor air quality, thermal comfort, and moisture control. It finds that when health benefits are included, interventions such as enhanced ventilation, low-VOC materials, and daylight optimization often demonstrate shortened payback periods and stronger economic returns, particularly in vulnerable population. Barriers to implementation are also analysed, including fragmented data systems, stakeholder misalignment, and technical complexity. Actionable strategies are proposed, including the development of health-LCC integration tool-kits, compatible with industry-standard software such as CostX, BCIS etc., and the creation of national housing-health datasets to improve evidence-based estimation and valuation. The paper further outlines the policy implications of health-integrated LCC and calls for targeted demonstration projects to validate models with empirical health data. The findings argue for a paradigm shift in cost modelling, urging quantity surveyors, project managers, and policymakers to adopt a more holistic and health-centred approach to project budgeting—one that aligns financial efficiency with long-term well-being and environmental sustainability. This review offers both a theoretical foundation and a practical roadmap for embedding public health into the economics of housing delivery.

Keywords: Life-cycle costing, Housing health, Project budgeting, Payback period, Environmental sustainability.

ADVANCING CIRCULAR ECONOMY IN WASTE MANAGEMENT: STRATEGIES FOR SUSTAINABLE RESOURCE RECOVERY: A BIBLIOMETRIC ANALYSIS USING VOSVIEWER

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Abstract
This report examines the international research environment regarding the circular economy and waste management, highlighting essential solutions for sustainable resource recovery and identifying significant trends from 2000 to 2024. A bibliometric analysis of 349 academic publications obtained from the Scopus database was conducted. The VOSviewer software was used to delineate collaborative networks, co-citation patterns, significant publications, and nascent subject domains. The analysis reveals that China and the United States lead global research in this domain, with institutions like the Chinese Academy of Sciences and researchers such as Chai Qiang and Sahajwalla Veena making substantial contributions. Recent research has increasingly concentrated on subjects such as bioplastics, sustainable development, and polyester recycling. The results underscore the necessity of augmenting international cooperation to proficiently tackle plastic pollution and promote circular resource utilisation. This study is one of the few to employ a bibliometric methodology to examine two decades of research on circular economy and waste management. It offers essential insights into emerging themes, existing research deficiencies, and collaborative opportunities especially beneficial for guiding policy and research initiatives in developing regions like Nigeria.

Keywords: Circular economy, Waste management, Sustainable resource recovery, Bibliometric analysis

APPLICATION OF NATURAL LIGHTING AT THE FACULTY OF BASIC MEDICAL SCIENCE, UNIVERSITY OF IBADAN, NIGERIA

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Abstract
The integration of natural lighting in architectural design has become a paramount consideration in the quest for sustainable and energy-efficient buildings. With the goal to enhance the functional utilization of educational buildings, natural lighting significantly reduces reliance on artificial lighting, lowers energy consumption, and improves indoor environmental quality. This study appraised the application of natural lighting in the Faculty of Basic Medical Science Building at the University of Ibadan. By reviewing existing literature and extensively analysing case studies, the study identified key parameters for optimizing natural lighting, such as building orientation, window placement, and the use of reflective materials. With these established parameters, the study revealed that while the use of large windows is commendable, the absence of shading systems results in glare and heat gain during peak sunlight hours. It was also observed that the spatial layout of the building is effective for daylight penetration but lacks optimization for deeper spaces necessitating artificial lighting. In addition, the basic materials of the building envelope perform moderately well, but the lack of specialized thermal effective materials limits energy efficiency and thermal comfort improvements. A practical guideline for architects and planners was proposed, which emphasizes the use of daylighting systems, such as skylights, light shelves, and adaptive technologies that respond to changing daylight conditions, alongside actionable insights for designing healthier, more conducive educational buildings. The study highlights the critical role of natural lighting in shaping effective and inspiring educational spaces, advocating for a holistic approach to building design that harmonizes its potentials.

Keywords: Building orientation, Educational buildings, Energy efficiency, Natural lighting, Sustainability

CLIMATE VARIABILITY AND RESOURCE CONFLICTS IN NIGERIA

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Abstract
This paper which was derived from a research study examines the connection between climate variability and resource conflicts in Nigeria. It focuses on how changing weather patterns affect access to farmland and water with the resulting impact on livelihoods. As climate conditions shift, competition for natural resources has continue to grow more intense, particularly between farmers and herders. The study explores the spatial distribution of climate-related conflicts across the country, their effects on agrarian communities, and the response of people to these challenges. Its purpose is to deepen understanding of the role of climate in shaping resource conflict, building strategies that promote resilience and sustainable development. A mixed-method approach was used in the study, combining quantitative analysis of climatic trends, conflict data with qualitative insights from interviews, and focus group discussions conducted with GPS mapping of selected communities in Benue, Nasarawa and Plateau States. Findings from the Logistic regression analysis indicate agriculture (odds ratio 1:37), indigene status (Odds 2:30), and income levels (Odds: 0.89) as key factors influencing vulnerability to livelihood disruptions. Thematic analysis of in-depth interviews and focus group discussion of affected communities showed that droughts, floods, and irregular rainfall patterns directly impacted on food security by 14.8%, income 11.5%, and access to critical services, forcing migration and creating further tensions. Recommendations include: urgent need for integrated solutions that address both environmental pressures and social vulnerabilities; proactive strategies are essential to reduce tensions and protect livelihoods, adoption of sustainable resource management strategies should be encouraged, community-driven conflict resolution mechanisms, and climate adaptation efforts should be intensified.

Keywords: Climate, Variability, Resources conflicts, Livelihood, Strategies

DESIGN STRATEGIES TO ACHIEVE GREEN ARCHITECTURE IN HIGH RISE BUILDINGS IN IKOYI, LAGOS

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Abstract
Green architecture, otherwise known as green design or sustainable architecture, is an approach to building that prioritizes reducing negative impacts on the environment and promoting the health of individuals. Architects in the modern world are increasingly seeking solutions that not only provide a desirable living environment for humans, but also minimize harm to the planet. By utilizing the harmonious order present in nature as a design model, architects implement strategies and technologies that support sustainable architecture. Thus, this study aims to explore and assess design strategies to achieve green architecture in high rise buildings within Nigeria. Employing a case study approach, four cases were examined, consisting of three local building and one international. These case studies were evaluated based on design strategies identified from empirical studies in the literature review, which includes; energy efficiency in building design, sustainable materials, biodiversity and green spaces and indoor environmental quality. By incorporating these design strategies to achieve green architecture in high rise buildings mitigate the environmental impact. Making use of these guidelines by construction stakeholders like architects, engineers, and others involved in designing and constructing mixed use tower buildings in Nigeria can effectively conserve energy resources, reduce carbon footprint, and enormously contribute to the goal of green architecture.

Keywords: Green spaces, Energy efficiency, Environmental sustainability, Green architecture, Sustainable materials

TRANSFORMATION OF THE MONARCHIAL PALACE SYSTEM IN IBADAN: A CULTURAL HERITAGE SHIFT ASSESSMENT

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Abstract
The ascendancy system of the *Olubadan* title represents one of the distinctive cultural institutions that uniquely separates Ibadan from other Yoruba cities in Nigeria. Traditionally, this orderly line of succession ensured equitable distribution of government funded infrastructural development across each *Agbole* (Compound), as every successive Monarch's administrative seat was situated within their family compound. Drawing from the UN-SDG 9, 10 and 11, the recent shift from this transitional palace traditional heritage to a centralized palace system marks a significant change requiring critical examination. This study aims to investigate the socio-cultural and infrastructural implications of this transformation for Urban heritage preservation and monarchial relevance. Using qualitative research design, data was collected through systematic observations of historical palace compounds, semi-structured interviews with key stakeholders composed of royal family members, community leaders, government officials and experts from the academia. Content and thematic analyses will be used to process the collected data. Findings are expected to provide insight into the current state of abandonment that the previously rural-urban core is experiencing. It is believed also that this study will perhaps provide a framework for the re-theorizing of the palace centralization shift, a move that contradicts the fundamental monarchial heritage in Ibadan. Furthermore, from the cultural heritage standpoint, this study shall contribute to the emerging roles of *Olubadan* as the centralization as further excluded the office from the community participation involvement. This research has implications for urban planning policies regarding heritage sites, monarchial relevance in contemporary governance and cultural continuity. Future research should examine the strategies for revitalization of the abandoned royal compounds, and comparative analyses of similar transitions in other traditional governance systems.

Keywords: Ibadan, Palaces, Monarchs, Heritage preservation, Agboole

FOOD GOVERNANCE IN NIGERIAN CITIES: MITIGATING THE IMPACTS OF FOOD INFLATION

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Abstract
Hunger and food insecurity continue to plague Nigeria, exacerbated by factors such as food inflation, limited access to nutritious food, and unpredictable food supply chains. These issues continue to afflict millions of people in Nigeria, causing immense suffering and perpetuating a cycle of poverty and despair. Food governance has been a crucial aspect of ensuring food availability at affordable prices for the populace. However, in Nigeria, very little is known about how food governance influences food inflation. This paper explores and examines the role, the contribution and challenges of food governance actors in the food systems and their contribution in addressing food inflation in Nigeria. The study employed secondary data using quantitative techniques in Nigeria and it is underpinned by the concept of governance and food security. The study emphasizes the need for a comprehensive approach to food governance in Nigeria to combat food inflation and ensure food security for all citizens. To achieve this, insights were drawn from key informants and participant interviews. Findings reveal crucial areas of focus to include enhancing market information systems, strengthening regulatory enforcement to stabilize food prices, promoting sustainable agriculture practices, and improving farmers' access to resources. The paper concludes by discussing strategies to mitigate continuous food inflation and its effect on food security in the food system.

Keywords: Food, Governance, Price inflation, Food security, Food systems

SUCCESS FACTORS IN ESTATE MANAGEMENT EDUCATION: A STUDENT-CENTRED PERSPECTIVES

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Abstract
This study investigates the factors influencing the academic success of Estate Management students, with a focus on personal, familial, and institutional elements. Using a 4.0 mean score benchmark, data from a survey of 124 graduating Estate Management students were analysed to identify the most significant contributors to academic achievement. The results revealed that 27 out of 35 factors were perceived as significant, with the top five being students' personal interest in their field of study, family background, the reflection of preparation efforts in grades, fairness in assessments, and lecturers' teaching methods. These factors recorded mean values of 5.98, 5.97, 5.87, 5.78, and 5.68, respectively. Additionally, the findings found that assessment methods and lecturers' teaching styles play critical roles in shaping student engagement and learning outcomes. The study highlights the need for educational reforms that focus on aligning students' academic pursuits with their interests, improving assessment transparency, and fostering positive lecturer-student relationships. To enhance academic success, it is recommended that higher education institutions invest in professional development programs aimed at refining teaching and assessment strategies. This comprehensive approach is essential to creating an educational environment that supports student motivation, engagement, and performance.

Keywords: Academic environment, Assessment methods, Family background, Polytechnic education, Teaching methods

AWARENESS AND IMPLEMENTATION OF ADAPTIVE HOUSING STRATEGIES FOR URBAN OVERHEATING: THE CARLTON GATE ESTATE CASE, AKOBO, IBADAN, NIGERIA

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Abstract
Aging building stock, natural landscape degradation, and building overpopulation are some of the consequences of the desire for current architectural styles and socioeconomic benefits. These factors contribute to low indoor air quality and greenhouse gas emissions. A multi-stage sampling technique was used in the quantitative study where buildings were stratified into typologies. Simple random sampling was employed to choose 148 sample households while selected respondents were interviewed. Structures are primarily on rental basis accommodating four to six members in a family. Majority of the households are educated, making above N200, 000 ($208.21) each year from self- employment. Awareness of housing adaptive techniques is majorly through building experts, using measures like air conditioning units, fan, and provision of balconies. Occupants have been able to maintain a continuous power supply, mostly through the installation of solar panels and generators as backup. To optimize comfort levels, this study suggests that policies be formulated on overheating within buildings, and seminars held to provide stakeholders in the built environment with a thorough understanding of the overheating issue. Cost-effective regulations should also be created to enable the application of adaptive techniques in the building sector.

Keywords: Urbanisation, Urban growth, Urban heat island, Overheating, Adaptation, Adaptive strategies

SPATIAL ANALYSES OF TRADITIONAL HOUSING AND IMPLICATION FOR SECURITY IN ABEOKUTA SOUTH AND ABEOKUTA NORTH LOCAL GOVERNMENT AREAS IN OGUN STATE

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Abstract
The linkage between traditional housing and the security of lives and properties of the people has generated an issue of debate over time. Therefore, criminality, social menace and other vices become frequent in traditional areas, particularly in developing nations. Many studies on security have focused on the planned settlements of the cities, while the traditional areas have gained little attention in the literature. This study, therefore, analyses the spatial pattern of traditional architecture and its implications on the security of lives and properties of the residents of Abeokuta South and Abeokuta North Local Government Areas, Ogun State, Nigeria. A combination of location and allocation model and broken window theories was adopted. A cross-sectional survey research design was used, while both primary and secondary data were sourced. Using Geographical Information System (GIS) Arcgis-10, the coordinates of all the houses in the traditional area of Itoko (82), Ijemo (81), Ago-oko (109) in Abeokuta South, and Ajitadidun (43), Mokola (81), Iberekodo (53), in the Abeokuta North were taken and used to generate the locational attributes of the settlements. The quantitative data were analysed using Nearest Neighbours Analysis (NNA). The results revealed that the spatial distribution pattern of all sampled buildings at Itoko, Ijemo, Ago-oko and Ajitadun, Mokola, and Iberekodo is clustered (R_n=0.013340 and R_n = 0.049828) respectively. The security of the residents in the study area is negatively affected. Therefore, blending modern and traditional concepts to improve security in the study area is recommended.

Keywords: Traditional housing pattern, Spatial analyses, Security architecture, Crime, Abeokuta

SUSTAINING AND CONSERVING THE MODERN ARCHITECTURE HERITAGE OF UNIVERSITY OF IBADAN, NIGERIA

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Abstract
The premier university in Nigeria is a repository of modern architecture termed tropical architecture by theorists and commentators in architecture discourse. Predating Nigerian independence in 1960, Maxwell Fry and Jane Drew who were the colonial architects for University of Ibadan designed the master plan and many buildings on the campus from 1948 when the University was established. Many of the campus buildings have featured in earlier studies by researchers from diverse fields including history, archaeology, anthropology, science and technology, planning and architecture amongst many others. The place of the university in the history of tertiary education in Nigeria and the location in the seat of government of the trail blazing defunct Western Region in education is perhaps now more prominent in general studies. However, the potential of the University as a modern architecture heritage needs to be explored and the necessary steps to be taken to develop this potential and action points to sustain this architectural heritage has rarely being discussed. Presently, pressure on existing facilities due to increasing student and staff population, desire to mitigate indoor environmental quality due to variations in environmental conditions and climate change has resulted in additions to and renovation of these modern architecture buildings and amendments to the campus landscape. In the light of the aforementioned, this paper therefore highlights the modern architecture of the university of Ibadan campus through review of mentions in literature, presents the action points necessary to retain the value associated with the campus buildings and protect these buildings as local and global heritage to derive full benefits of modern architecture heritage and remain relevant in global discourse in a changing world.

Keywords: Modern architecture, Tropical modern, Heritage, Conservation, Climate change, University campus

INVESTIGATING AFFORDABILITY AND ACCESSIBILITY OF ALTERNATIVE BUILDING MATERIALS FOR SUSTAINABLE HOUSING SOLUTION IN LAGOS, NIGERIA

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Abstract
Housing deficit is one of the obstacles to economic stability in most developing nations, Nigeria inclusive. Construction cost of houses has continued to raise housing cost and tenancy fee. The cost of conventional building materials has been attributed as one of the reasons. This is also seen in the face of the increased urban growth and population explosion being experienced in Nigeria cities, which would be continuous, as specified by the United Nation (UN) population prediction of year 2030/2050. There is a need to review the statuesque of the present building materials being used in building to reduce cost and building accessibility. This study investigates the affordability and accessibility of identified walling materials being used in Lagos housing environment, exploring their potential to help solve the problem of housing in Lagos, Nigeria. Primary data was gotten through questionnaire administered to residents of selected housing areas in Lagos and observation of selected case studies. Four different walling materials were identified from the research used in housing construction, comparative study was conducted on them. Findings showed that there is affordability and accessibility with such walling materials of Compressed Stabilized Laterite Bricks (CSLBs) in terms of cost and other parameters, with Timber and Shipping Containers. But less affordability and accessibility with the materials of the Royal Building system (RBS). It is recommended that government should advocate policies for the use of building material sourced locally in Nigeria to reduce building cost, thereby solving the country's housing deficits,

Keywords: Housing deficit, Affordability and accessibility, Building material, Construction cost

THE EFFECT OF LAND TITLE REGISTRATION ON HOUSING DEVELOPMENT IN IBADAN SOUTH WEST LOCAL GOVERNMENT AREA

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Abstract
This study examined the effect of land title registration on housing development in Ibadan South West Local Government Area in which the benefits and challenges of land title registration on housing development in Zartech Transformer and Progressive Estate, Ibadan were the scope of the study. The study adopted a case study research approach using primary and secondary data sources. Primary data were sourced through structured interview with two members of staff of the Oyo State Ministry of Lands, Housing and Urban Development and semi-structured closed and open-ended questionnaires were administered to 150 respondents who were randomly selected from the study area. The findings indicated that land title registration accounts for 12% effect on housing development, meaning about 88% other factors (apart from land title registration) affects housing development. The benefits enjoyed by the respondents are better access to credit, reduction of land disputes, reduction of poverty and security of tenure and the challenges includes high cost of registration, delay in processing the document, bribery and ignorance. This paper advocates for more awareness programmes using different mediums to reach out to the masses, reduce the cost of registration, automate the process whereby delay would be reduced to the barest minimum and bribery should be a punishable offence so as to generate enough revenue for the state and also help improve the Nigerian economy and bridge the gaps of housing shortages.

Keywords: Land title, Housing development, Land tenure security, Certificate of Occupancy (C of O), Deed of Assignment

ASSESSING PUBLIC PRIVATE PARTNERSHIP (PPP) AS A TOOL FOR ENHANCING HOUSING PROVISION – A CASE STUDY OF LEGACY ESTATES, KOLAPO ISHOLA GRA, IBADAN

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Abstract
Decent housing is important to every individual, but housing provision and affordability is beyond the reach of many Nigerians. It has also been observed that government alone is unable to meet the growing housing demand. As housing remains vital to urban development, its provision models range from state-led to market-driven and hybrid approaches, with Public-Private Partnerships (PPPs) integrating public policy goals with market efficiency. Rooted in collaborative governance theories, PPPs enhance resource optimization, risk sharing, and value creation for sustainable housing delivery. This study examines the collaboration of Public and Private Investors in housing provision delivery in Oyo State using Legacy Estates Kolapo Ishola GRA, Ibadan as a case study, a paradigm shifts towards effective and efficient housing delivery. It adopts a descriptive review methodology, analysing secondary materials and observational insights on emerging trends in the Oyo State government's PPP collaboration with for Legacy Estates. It also critically examines the challenges in housing delivery and evaluates strategies for addressing them. The study revealed the challenges faced by the developer in executing the project to include postponement of MOU signing, bureaucracy in government administration, difficulties in meeting PPP requirements, problem of development finance among others. Resolutions include dialogue between both parties, frequent follow up on applications, modification of the terms and conditions of the PPP requirements, financing housing projects as buyers pay. The study recommends that signing of the MOU should be prompt, Investors should discuss with the buyer on the convenient means or method to raise capital for development before construction starts while both parties make the fulfilment of the PPP requirements a priority in their dealings.

Keywords: Public-private partnership, Housing provision, Legacy estates, Case study, Nigeria

COMMUNITY APPROACHES TO REDUCING FEAR OF CRIME IN IBADAN, NIGERIA: AN URBAN GRASSROOTS PERSPECTIVE

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Abstract
Fear of crime remains a significant concern in urban Nigeria, influencing residents' quality of life, mobility, and community participation. This study explores community-based approaches to managing and reducing the fear of crime in Ibadan, one of Nigeria's largest and most demographically diverse cities. Drawing on both quantitative and qualitative methods, the research examines how residents in low-, medium-, and high-density neighbourhoods perceive crime and the effectiveness of local strategies aimed at enhancing safety. Data were collected through surveys, key informant interviews, and observations across selected communities, with responses analysed using descriptive statistics and ANOVA to assess variations in fear levels and community interventions. Findings reveal that while fear of crime is pervasive across all neighbourhood types, its intensity and the nature of responses vary significantly. Informal approaches such as vigilante groups, neighbourhood watch schemes, and community meetings are widely employed, particularly in high-density areas. Conversely, medium- and low-density neighbourhoods often rely on gated communities, private security, and collaborative efforts with law enforcement. The study also highlights gaps in trust, funding, and government support that affect the sustainability of community safety initiatives. This paper underscores the importance of localized, participatory strategies in addressing urban insecurity and recommends a hybrid model that integrates traditional systems with institutional support. The insights contribute to broader discussions on urban governance, safety, and grassroots resilience in cities.

Keywords: Fear of crime, Community-based strategies, Urban safety, Ibadan, Nigeria, Neighbourhood density, Crime prevention

THE FUTURE OF URBAN DESIGN IN IBADAN CITYSCAPE: AN APPROACH TO SUSTAINABLE URBANISM

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Abstract
Sustainable Urbanism may be an answer to many questions referring to how places should grow, how people should get from one place to another and how people could live more sustainable. This movement in urban design and planning covers a diverse context with how urbanism can be integrated with high-performance buildings and infrastructure while also giving consideration to the natural environment, that is, the ecological sustainability. In order to strengthen human interdependence with natural systems, sustainable urbanism believes that human settlements need to be designed to make resource flows visible and experiential. For example, a waste-water system that extracts nutrients to grow food in one's neighbourhood creates an incentive not to dump chemicals down the drain. This article explores the practical form of sustainable environment principles. In line with these, this article aims to establish an environmentally sound and human friendly framework for sustainable urbanism. The study firstly provides a conceptual understanding of sustainable urbanism; secondly, it assesses contemporary approaches to sustainable urbanism; and finally, the paper analyses how sustainable urbanism can be used to improve the urban design of the ancient city of Ibadan with its unique socio-cultural heritage. The methodology used in this article is predominantly based on an extensive literature review. The article concludes with proposed approaches on sustainable urbanism that can be implemented in future considerations in Ibadan urban design. It also proposes a holistic framework for sustainable urbanism that integrates environmental sustainability with social sustainability.

Keywords: Sustainable urbanism, Urban design, Ecological sustainability, Human socio-cultural sustainability, Future considerations

ASSESSING ENVIRONMENTAL SUSTAINABILITY PERFORMANCE PATTERNS AMONG RESIDENTIAL AND INDUSTRIAL PROPERTIES IN IBADAN METROPOLIS

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Abstract
The Sustainable Development Goals (SDGs) represent a collection of objectives designed to foster sustainable urban development. The aim of this investigation is to scrutinize the performance patterns of SDGs 6, 7, and 11 within both residential and industrial properties located in the Ibadan Metropolis. The study consisted of 372 respondents who were administered questionnaires, with 323 questionnaires being retrieved. A descriptive approach was utilized for analysing socio-demographic characteristics, while the T-test was employed for inferential statistics. The findings revealed significant differences in sustainability performance between residential and industrial properties, with residential properties generally performing better across all three SDG areas. The study also highlights infrastructural challenges, including limited access to public water supply, overreliance on generators, and inadequacies in waste management systems. Based on these findings, the study recommends that local authorities in Ibadan prioritize improvements in public water distribution, energy diversification through solar investments, and enhanced waste management practices. Industrial zones, in particular, require targeted sustainability interventions to address existing disparities. Furthermore, the study emphasizes the importance of revising building codes and providing policy incentives that promote sustainable design and development across Nigeria's built environment.

Keywords: Sustainable Development Goals (SDG), Metropolis, Urban development, Performance, Properties

ASSESSING FACILITY MANAGEMENT PERFORMANCE IN TERTIARY INSTITUTIONS IN OYO STATE, NIGERIA: INSIGHTS FOR SUSTAINABLE PUBLIC INFRASTRUCTURE MANAGEMENT

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Abstract
Facility Management (FM) has evolved from a narrow focus on the maintenance of buildings and equipment to a multidimensional discipline encompassing space planning, sustainability, energy efficiency, and the integration of technology in support of institutional goals. In the context of tertiary institutions, effective FM is essential for providing a safe, functional, and conducive learning environment that supports teaching, research, and student well-being. This study assesses FM performance in selected tertiary institutions in Oyo State, Nigeria, specifically the University of Ibadan, Lead City University, The Polytechnic Ibadan, and Ibadan City Polytechnic. Using a descriptive survey research design, primary data were collected from 517 students and 280 FM personnel through structured questionnaires. The study investigated the influence of institutional affiliation and educational qualification on satisfaction levels and strategic preferences related to facility management (FM) across selected tertiary institutions in Oyo State, Nigeria. Using survey data from 480 students and 250 FM personnel, the research employed cross-tabulation and chi-square tests to assess relationships among variables. The findings revealed a statistically significant association between the student's institution and their level of satisfaction with FM services ($\chi^2(3, N = 480) = 320.369$, $p < .001$). Notably, 93% of students at the University of Ibadan reported low satisfaction, while The Polytechnic Ibadan and Ibadan City Polytechnic recorded satisfaction rates of 89% and 98%, respectively. Similarly, a significant relationship was observed between educational qualification and preferred FM strategy ($\chi^2(10, N = 250) = 53.340$, $p < .001$; Cramér's $V = 0.327$). In-house FM was the dominant strategy, but respondents with bachelor's degrees preferred a hybrid model. The study concludes that institutional type and stakeholder competence significantly shape FM outcomes. It recommends standardized FM frameworks, targeted capacity building, and strategic reform, especially in public universities, to improve infrastructure performance and user satisfaction sustainably.

EVALUATING THE ENVIRONMENTAL IMPACT OF CIRCULAR ECONOMY PRACTICES IN WASTE MANAGEMENT

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Abstract
Waste management remains a critical challenge, particularly in urban area. Nigeria faces a significant challenge in managing its escalating plastic and iron scrap waste, with over 2.5 million tonnes of plastic waste generated annually, much of which ends up in landfills or the environment. Informal waste scavengers play a crucial role in collecting and recycling these materials, yet their contributions are often unrecognized and unsupported. This challenge could be resolved by examine the environmental impact of scavenger-led recycling efforts. A mixed-methods approach was employed, combining quantitative surveys and qualitative interviews. Data were collected from a sample of 400 respondents including waste scavengers, recycling facility operators, and residents, was selected across urban centres in Nigeria. Purposive sampling technique was employed to administered questionnaire to the respective respondents. Findings indicate that waste scavengers significantly contribute to the collection and recycling of plastic and iron scrap waste, thereby reducing environmental pollution and supporting livelihoods. It was also revealed that factors such as age, income, and education levels significantly influence attitudes toward waste management practices. It was concluded that, recognizing and supporting the role of waste scavengers is vital for improving waste management and advancing circular economy objectives in Nigeria. Therefore, it was recommended that policy interventions that formalize scavenger activities, provide access to resources, and promote public awareness are essential for sustainable waste management.

Keywords: Waste management, Circular economy, Waste scavengers, Plastic recycling, Paper recycling, Sustainability

SUSTAINING NIGERIA'S GREEN BUILDING CERTIFICATION AMBITION: PERSPECTIVES OF GREEN BUILDING PRACTITIONERS

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Abstract
Since Nigeria's first LEED certified building in 2016, the pursuit of green building certification has increased significantly, signifying a remarkable rise in general awareness of environmental responsibilities of actors within the construction industry. However, institutional thrust is still weak and incipient, and investors' commitment to green building aspirations is voluntary. This means the economic ecosystem of green projects remains complex and challenging for stakeholders. This study aims to explore patterns of complexity between pre-certification and certification stages of building buildings. Data was obtained through purposive snowball sampling, using a questionnaire that was administered to a community of professionals who have administered certification processes over 131 green buildings. Findings show green building investments are driven by brand reputation, reduced ongoing cost of operation, and propensity for increase in property value, rather than an intention to address concerns expressed in climate emergency campaigns. This suggests sustainability decisions are now transforming into a significant commercial reality that investors can no longer ignore. Thus, stakeholders need to pay conscious attention to economic catalysts in green projects' selection processes, including massifying economic opportunities in sustainability actions for empowerment through government actions that help in incentivizing, integrating and transitioning the industry.

Keyword: Building certification, Complexity, Green ambition, Green building practitioners, Sustainability

SANITARY SURVEYING AND WATER QUALITY ASSESSMENT IN SOUTH-WESTERN NIGERIA

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Abstract
Sanitary risk factors are every unsanitary condition that could increase the risk of illness. The level of the risk may not be equal in magnitude as some may be higher than the other. However, inadequate water supply which often result to poor personal and environmental hygiene remains a major problem in the South-Western Nigeria. This study aims examining the use of sanitary surveying technique as an index for assessing water quality in South-Western Nigeria. In order to actualize the aim of the study, the objectives pursued are to: identify the purpose of sanitary surveying; undertake a comparison of samples taken using water quality analyzer and sanitary surveying; identify the major sanitary risk factors; explain the basic data required for sanitary surveying as well as highlight the relative significance of sanitary surveying to environmental planning and management as well as to elucidate how the sanitary surveying result can be used for planning purposes and policy formulation. The study focused on and limit its attention to the six (6) states that constitute the South-West Geopolitical zone of the country. These states are Ekiti, Lagos, Ogun, Ondo, Osun and Oyo. These States have very high population density that could be at the risk of water supply contamination if not properly addressed. Hand-dug wells were used as sample sources of water. The rationale behind the choice of hand-dug wells is that they form the major source of water supply in South Western States as over 2/3 of the buildings in the study area use well water as their main source of water or a viable alternative to tap water. It is therefore assured that if contamination from hand-dug well source of water supply can be curbed, then water borne diseases resulting from water pollution must have been adequately controlled.

Keywords: Pathology, Physico-chemical, Hand-dug wells, Water quality, Sanitary surveying

THE EFFECT OF SUSTAINABLE LANDSCAPE IN SCHOOLS OF ARCHITECTURE ON THE COMFORT AND WELL-BEING OF ARCHITECTURE STUDENTS: A CASE STUDY OF THE UNIVERSITY OF IBADAN

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Abstract
Sustainable landscape design has a great contribution towards enhancing the health, comfort, and ability of children to learn within schools. Although this contribution notwithstanding, there has been, and continues to be, limited or ill-located green space planning within schools, particularly the Nigerian schools. The present research dwells upon the contribution of sustainable landscapes to the School of Architecture within the University of Ibadan campus, measuring how far the outward space influences student comfort and their well-being. Mixed-method research design was applied, combining site observation, survey of students, and comparison of case studies to measure the quality, availability, and effect of landscape elements. Hypothesis testing using regression analysis for this study from the survey among students in this department depicts that statistically, the landscape of the school of architecture doesn't affect the comfort and well-being of students in this department. Other key findings are listed as the availability of green spaces, but their efficacy is undermined by a lack of shaded seats, a lack of maintenance, and a lack of interactive space. Student survey responses indicate that 62% of them believe that outdoor views enhance concentration in class, and 47% believe that it reduces stress. However, 63% complained about a lack of shaded seating, which limits their use. The study underscores that well-designed landscapes increase relaxation, facilitate social interaction, and establish an improved learning environment. Shortfalls in maintenance and accessibility limit their full potential, though. Based on these results, the study recommends expanding shaded seating, landscape maintenance, climate responsive design strategies, and social interaction through deliberate outdoor design. In addition, making landscape sensitivity part of architectural education may encourage future architects to appreciate the sustainable outdoors. By prioritising the interdependence between value in the landscape and well-being in students, this research adds to the broader debate of sustainable school environments. Implementing these recommendations can transform architecture schools into healthier, more interactive environments that enable student success.

Keywords: Sustainable landscapes, architecture students, student well-being, outdoor spaces, environmental design.

THE ADOPTION OF BIOPHILIC DESIGN STRATEGIES IN HIGH-RISE OFFICE BUILDINGS: A SYSTEMATIC REVIEW

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Abstract
Biophilic design, which integrates natural elements into built environments, has gained significant attention for its potential to enhance occupant well-being and promote sustainability in high-rise office buildings. This systematic review synthesizes existing research on biophilic design principles and their application in high-rise office buildings, focusing on their implications for sustainability and workplace well-being. The review identifies key biophilic design elements, evaluates their effectiveness, and discusses barriers to implementation. Findings indicate that biophilic design can significantly improve indoor environmental quality, reduce energy consumption, and enhance occupant satisfaction. However, challenges such as high initial costs, regulatory constraints, and lack of awareness limit its widespread adoption. This review provides valuable insights for architects, policymakers, and developers, advocating for increased integration of biophilic design in high-rise office buildings to achieve sustainable and healthy workspaces.

Keywords: Biophilic design, High-rise buildings, Office spaces, Sustainability, Well-being

ADAPTIVE URBAN DESIGN FOR FLOOD RESILIENCE: ARCHITECTURAL SOLUTION FOR FLOOD-PRONE COMMUNITIES IN IBADAN: A CASE STUDY OF APETE

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Abstract
Flooding is no longer a seasonal inconvenience in Apete, Ibadan — it is an escalating crisis that lays bare the vulnerability of low-income communities, the limits of conventional planning, and the urgent need for architectural responses that are rooted in context. This study explores how adaptive urban design and architecture can contribute to flood resilience in Apete, not through generic templates, but through strategies that acknowledge the area's topography, housing patterns, infrastructure deficits, and socio-economic realities. Adaptive design, as framed by UN-Habitat (2020) and Awuor et al. (2008), refers to spatial and architectural approaches that respond dynamically to environmental risks, particularly in flood-prone, informal contexts. Literature reviewed reveals that cities like Ibadan—marked by rapid expansion and weak enforcement of planning policies—struggle to integrate such approaches in high-risk zones like Apete (Douglas et al., 2008; Adelekan, 2010). Grounded in this discourse, the research combines semi-structured interviews with key local actors and secondary data from institutional reports to interrogate the causes and effects of flooding in Apete. The findings highlight design gaps, fragmented responses, and informal resilience efforts. They also surface opportunities for place-based interventions that centre both community knowledge and ecological sensitivity. By situating the research within the lived realities of a fast-growing, under-served urban settlement, this study contributes to the ongoing conversation on climate adaptation in African cities. Ultimately, it positions Apete not as a peripheral space, but as a testing ground for inclusive, adaptive, and climate-conscious urban design.

Keywords: Flood resilience, Adaptive design, Apete Ibadan, Community resilience, Context-specific design

ASSESSMENT OF INFLATION AND EXCHANGE RATE HEDGE ATTRIBUTES OF LISTED PROPERTY ASSETS IN AFRICA

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Abstract
Inflation and exchange rates are key macroeconomic indicators that affect the economic growth and development of every country. The importance of these indicators cannot be overemphasised in determining the Gross Domestic Product (GDP) of all sectors in a country. This study analyses the inflation and exchange rate hedge attributes of Africa-listed real estate properties which include, Nigeria, South Africa, and Egypt. The paper aimed to examine the risk-return characteristics of listed indirect real estate assets to determine the effects of macroeconomic factors such as inflation and exchange rates on the assets. Secondary data was used between the period of year 2008 to 2023. The study utilized quantitative data analysis such as holding period returns, trend lines, percentage changes, unit root tests, and cointegration tests. The F-bound cointegration results indicate that Nigeria-listed property assets provide a hedge against exchange rate risk in the long run but not against inflation rate risk. Furthermore, it shows that Egypt's listed property assets have a statistically significant long-run hedge against exchange rate and inflation rate movements. Also, it indicates that South Africa-listed property assets display a long-term hedge against exchange rate movements but not against inflation. The study concluded that Nigeria and South Africa-listed property assets offer long-run hedging benefits against exchange rate risk. However, Egypt-listed property assets provide statistically significant long-term hedges both against exchange and inflation rate risk. The study therefore recommends that investors should consider Egypt-listed property assets for long-run hedging against both exchange and inflation rates risk.

Keywords: Listed property asset, Real estate investment trust, Inflation rate, Exchange rate, Investment decision

A PHENOMENOLOGICAL INQUIRY TO EVALUATE THE UPTAKE AND OPERATIONAL REALITIES OF COMPRESSED NATURAL GAS (CNG) VEHICLES USAGE IN IBADAN

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Abstract
In recent years there have been rapid increase in air pollution from vehicles, this have far reaching effects on the human and environment health. This scenario called for sustainable energy to fuel vehicles in Ibadan, Nigeria. The compressed natural gas (CNG) energy source stand out to be one of the viable options to addressing and reducing air pollution from vehicles. This phenomenological study investigates the uptake and operational realities of Compressed Natural Gas (CNG) vehicle usage in Ibadan, Nigeria, with a focus on intercity transportation. The research evaluates the recent deployment of CNG-powered buses by Pacesetter Transport Services (PTS), popularly known as Omititun Buses, operating primarily along the Ibadan–Lagos and Ibadan–Abuja routes. Using a phenomenological approach, the study draws on the lived experiences of key stakeholders (managers, drivers, and passengers) to understand the perceptions, and operational dynamics and challenges surrounding the adoption of CNG buses in this urban context. Data was analysed using content analyses with themes such as (Parking arrangements, Boarding, ticketing, customer service and vehicle management. The study on CNG buses in Ibadan reveals both strengths and areas for improvement. Passengers appreciate the low fares, convenience, and time schedules offered by the CNG buses. However, several challenges detract from the overall experience. Inadequate parking arrangements and the absence of designated overnight parking facilities compromise vehicle security and logistical efficiency. Additionally, bus boarding issues, such as disorganized environments and lack of passenger information flowcharts, hinder service reliability and customer satisfaction. The ticketing and payment platforms are also rudimentary, lacking digital integration and transparency. Inconsistent customer service, unstandardized refreshments, and insufficient boarding infrastructure further compromise passenger comfort. From an operational perspective, the deployment of different drivers on the same bus affects consistency in driving experience and vehicle maintenance. To enhance service delivery, it is recommended that digital ticketing systems be implemented, customer service standardized, and infrastructure improved. Addressing parking and boarding issues, expanding the fleet size, and assigning consistent drivers to buses would also improve operational efficiency and passenger satisfaction. By tackling these challenges, stakeholders can support a sustainable transition to CNG mobility in Ibadan.

Keywords: Compressed Natural Gas, Phenomenology, Sustainable energy, Vehicles, Ibadan

TRANSPORTATION FOR SPECIAL NEEDS AND SAFETY IN IBADAN, OYO STATE, NIGERIA

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Abstract
Transportation is a critical component of urban life, playing a central role in access to education, healthcare, employment, and social integration. In Ibadan, Nigeria's third most populous city, people with special needs often face significant mobility challenges due to inadequate infrastructure, poorly designed public transport systems, and lack of policy enforcement. This study examines the current state of transport accessibility and safety for individuals with disabilities in Ibadan. Through field surveys, stakeholder interviews, and policy reviews, the research identifies key barriers such as non-compliant vehicles, lack of designated pedestrian paths, and low- level of driver training. It also highlights safety concerns, including risks of accidents, harassment, and difficulty in emergency evacuations. The findings underscore the need for inclusive transport planning, investment in accessible infrastructure, and public awareness initiatives. The study recommends a multi-stakeholder approach involving government agencies, transport unions, and disability advocacy groups to create a safer and more inclusive transport system in Ibadan.

Keywords: Special needs, Transportation accessibility, Safety, Ibadan, Inclusive infrastructure

OPERATIONAL MODALITY AND PATRONAGE OF ELECTRIC MOTORCYCLE IN ABEOKUTA CITY

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Abstract
The introduction of electric motorcycles (e-bikes) in Abeokuta City, Ogun State, marks a major step toward sustainable urban mobility and economic resilience in Nigeria. Introduced in July 2024 as part of the Ogun State E-Mobility Programme, the initiative deployed 2,000 electric motorcycles and tricycles to cut transportation costs by up to 40% and reduce carbon emissions. Each e-bike can travel 75–80 kilometres per charge and is supported by strategically located battery swap stations, including at MKO Abiola Stadium and Pansheke Skating Ground. The operational model is based on a public-private partnership involving companies like Spiro, which aims to install 13 battery swap stations within six months, with plans to scale up to 250. To improve affordability for riders, financing options such as lease-to-own schemes are in place. Despite these efforts, challenges remain particularly concerns about battery durability, limited charging infrastructure, and the high upfront cost of e-bikes among others. The deployment of electric motorcycles in Abeokuta city showcases a proactive approach in addressing transportation challenges and environmental concerns. This paper investigates the mode of operation of this motorcycle and modality to ascertain sustainability and resilient future. Primary survey was employed, 200 questionnaires which represent 10% of the total motorcycle and tricycle deployed to the city will be administered to the riders and passengers, however, the data collected will be analyse using simple statistical tools. Secondary data will also be sourced to serve as complement to the primary data.

Keywords: Transportation**,** Operational, Modality, Patronage, Electric motorcycle

SUSTAINABLE PRESERVATION OF NIGERIA'S CULTURAL HERITAGE: A CASE STUDY OF IREFIN PALACE, IBADAN, NIGERIA

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Abstract
The histories of nations often reside not only in documented texts but also in the tangible structures and landmarks scattered across cities. Fadamiro et al. (2011) aptly noted that cultural heritage finds its most vivid expression in buildings. This work centers on the evaluation of the Irefin Palace, a symbol of culture, tradition and historical value in Ibadan, Oyo State, Nigeria. It was built in 1910 by Oba Irefin Ogundeyi, a philanthropist and advocate of formal education, who had great influence in the community. In Africa, palaces are the most significant building type, serving various functions, this historic edifice, situated at Oke-Ofa, Beere (the centre of Ibadan), represents a significant chapter in the cultural history of Ibadan in particular, and Yorubaland, in general. The analysis encompasses the historical significance, architectural design, indigenous building materials used, and preservation measures taken to date, with respect to Irefin Palace. Through on-site examination and interviews of residents and neighbors, this proposed intervention aims to gauge contemporary perceptions of the building's use and relevance, alongside the sustainability of earth, timber and bamboo as building materials. Additionally, the work will look into how modern architectural design orientations can influence the structure without tampering with the originality of the building identity, emphasizing its continued resonance as a repository of historical and cultural heritage.

Keywords: Preservation, Historical buildings, Yoruba cultural heritage, Earth building, Building Conservation

SPATIOTEMPORAL DYNAMICS OF LAND USE/LAND COVER AND LAND SURFACE TEMPERATURE AND THEIR EFFECTS ON ECOLOGICAL HEALTH INDICATORS IN ABEOKUTA, NIGERIA

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Abstract
There are significant challenges posed by Urban expansion to environmental sustainability, particularly in fast-growing cities like Abeokuta, Nigeria. There is a pressing gap in city-specific studies that quantify land use-land cover changes and their impact on ecological health in Abeokuta using advanced geospatial tools, which this research aims to address. The research utilized Landsat imagery to assess LULC dynamics from 1983 to 2023, while ecological indicators such as the Normalized Difference Vegetation Index (NDVI), Modified Normalized Difference Water Index (MNDWI) and Normalized Difference Built-up index (NDBI) were applied to evaluate vegetation, water body and built-up changes. Geographically Weighted Regression (GWR) and Ordinary Least Squares (OLS) models were employed to quantify the relationship between LULC, Land surface temperature (LST) and ecological health indicators. The results reveal a notable increase in built-up areas from 134.99 km² (5.97%) in 1983 to 609.09 km² (26.96%) in 2023 and demonstrated a substantial decline in vegetation and water bodies. This urban sprawl has contributed to a significant rise in mean surface temperature. Regression analyses confirmed that built-up areas increase heat accumulation, while green and water-covered spaces provide cooling benefits. There is also a strong correlation between land surface temperature and LULC patterns over the two decades, with R^2 values increasing from 0.87 in 2003 to 0.89 in 2023, which indicates that urbanization, vegetation loss, and shrinking water bodies have increased and influenced temperature variations across the landscape. The adjusted R^2 values (0.76 and 0.80) and decreasing residual sums of squares further affirm improved model performance over time, while a reduction in bandwidth suggests that LST responses to land cover became more spatially localized. Spatial distribution maps reveal a shift from moderate to increase in LST. These trends confirm a significant spatially varying relationship between LST and ecological indices (NDVI, NDBI, MNDWI). The research demonstrates that unchecked urban growth significantly impacts environmental stability, leading to increased Land surface temperature (LST), reduced ecological resilience, and increased climate vulnerability. The findings reflect the urgent need for sustainable urban planning practices that incorporate green infrastructure, enforce land-use regulations, and promote climate-sensitive development.

Keywords: Modified Normalized Difference Water Index, Normalized Difference Vegetation Index, Normalized Difference Built-up index, Land Surface Temperature, Geographically Weighted Regression

ASSESING THE IMPACT OF GREEN BUILDING STRATEGIES ON USER'S EXPERIENCE AND PERCEPTION IN SELECTED HOTELS IN NIGERIA

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Abstract
The pursuit of sustainable construction practices has become increasingly vital in modern society, with green building methods offering a promising solution to mitigate environmental impact, enhance energy efficiency, and promote overall sustainability. Green building practices have gained significant importance in recent years due to their potential to mitigate environmental impacts, enhance energy efficiency, and promote sustainable development. Semi-structured interviews with users from the selected hotels was employed in this study to explore how the implementation of green building strategies within the hotel setting affects the experiences and perceptions of its users. The findings of this research contribute to the understanding of the practical implications of green building strategies in the Nigerian hospitality sector, shedding light on their influence on user satisfaction, energy efficiency, and overall environmental impact. Moreover, the study provides valuable insights for hotel operators and policymakers seeking to promote sustainable practices within the industry while maintaining high standards of user experience and comfort.

Keywords: Green, Building strategies, Hotel users

INTEGRATING ARTIFICIAL INTELLIGENCE FOR INNOVATION IN THE BUILT ENVIRONMENT: A FRAMEWORK FOR ENHANCED DESIGN, CONSTRUCTION AND MANAGEMENT

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Abstract
Artificial Intelligence (AI) is increasingly recognized as a transformative force within the built environment, offering novel solutions for improving project planning, real-time monitoring, energy optimization, and lifecycle facility management. As global cities grapple with the demands of urbanization, climate resilience, and productivity enhancement, the integration of AI technologies into the design, construction, and management of built assets becomes both a necessity and a strategic advantage. However, despite its potential, the adoption of AI in the built environment particularly in developing economies remains limited due to high implementation costs, digital infrastructure deficits, lack of skilled personnel, and organizational resistance. This study investigates the current state of AI adoption in the built environment, with a focus on identifying prevailing technologies, evaluating operational benefits, understanding implementation barriers, and proposing a strategic framework for broader and more effective deployment. A mixed-methods research design was adopted, comprising a quantitative survey of 150 construction and infrastructure professionals in Nigeria, Ghana, and South Africa, and qualitative interviews with 12 experts in AI implementation, construction technology, and policy. The data were analysed using descriptive statistics, thematic analysis, and multiple linear regression to examine the predictors of AI adoption. Key findings indicate that AI-enhanced BIM, predictive maintenance systems, and AI-powered energy management tools are the most commonly implemented solutions. Regression analysis revealed that organizational readiness, availability of digital infrastructure, and top management support are significant positive predictors of AI adoption ($p < 0.01$), while perceived high costs negatively impact implementation. The study concludes that while awareness of AI benefits is growing, actual adoption is constrained by systemic barriers, including limited digital infrastructure and skills gaps. To address these challenges, the study proposes a framework centred on capacity building, regulatory development, public-private collaboration, and context-specific AI solutions.

Keywords: Artificial Intelligence, Built environment, BIM, Construction technology, AI adoption

AN APPRAISAL OF TECHNOLOGY IMPACT ON PROCUREMENT AND SUPPLY CHAIN OF NIGERIAN INTERNATIONAL BREWERY

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Abstract
Integrating technology into operations is vital for enhancing productivity, cutting costs, and improving transparency. However, while affluent nations have embraced these advancements, their impact in developing countries remains underexplored. This study evaluates the influence of e-procurement and ICT solutions on brewery performance. Stratified sampling divided respondents into management and junior staff across three departments, followed by purposive random sampling to survey 316 respondents. The regression analysis revealed a significant positive effect of e-procurement on the performance of Nigerian International Brewery PLC ($F = 209.924$; $P = 0.00$; $R^2 = 0.74$). Despite these benefits, the brewery faces significant challenges in implementing ICT in procurement and supply chain management. The study recommends involving employees in the change process and offering comprehensive training to ease the transition to new technologies and address resistance effectively.

Keywords: Procurement, Supply chain management, ICT, Brewery

EXPLORING THE NEXUS: ASSESSING THE INFLUENCE OF DIGITAL PAYMENTS ON TRAVEL BEHAVIOUR AND PERCEIVED ENVIRONMENTAL BENEFITS IN IBADAN, OYO STATE, NIGERIA

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Abstract
The growth of mobile money, online payments, and digital platforms is changing how people conduct daily activities, including travel, which also impacts on carbon emission in Ibadan, Nigeria. Several studies have focused on the broader implications of digitalization for environmental outcomes. However, this study assessed the influence of digital payments on travel behaviour and perceived environmental benefits in Ibadan. Activity-based travel demand theory underpins the study**.** Using a cross-sectional research approach, the study utilizes survey data randomly administered to 120 respondents to analyse the relationship between digital payment usage and bank/ATM visit frequency, as well as factors influencing the adoption of digital transactions. Descriptive statistics, correlation, and regression analyses were employed to quantify these relationships, while qualitative data provided contextual insights. Female respondents were 66.7%., mean age was 33.37±13.39 years. Average monthly savings was ₦3333.33±2666.42 due to reduced bank visits. About 25% walked to ATM machine stands. Inferential analysis revealed a statistically significant positive correlation between the frequency of using POS terminals and the frequency of visits to banks now compared to five years ago ($r = .509$, $p < 0.01$). This suggests that increased POS terminal usage is associated with a decrease in the frequency of bank visits, which consequently reduces carbon emission. Regression analysis showed that frequency of POS usage significantly predicts the frequency of bank visits ($\beta = .445$, $p < 0.01$). Content analysis also revealed that increased awareness of digital transactions, especially among elderly individuals, could further reduce the need for physical bank visits and their associated environmental impacts. The study concludes that digital transactions are influencing travel behaviour in Ibadan by reducing the frequency of bank visits. This reduction has the potential to lower carbon emissions associated with transportation. However, barriers to the complete adoption of digital transactions remain. The findings suggest a need for policies promoting digital financial inclusion and increased public awareness campaigns. Further research with a larger sample size and more robust measures of carbon emissions is recommended.

Keywords: Digital transactions, Travel behaviour, Carbon emissions, Urban mobility, Activity-based model

ARTIFICIAL INTELLIGENCE IN ARCHITECTURAL INTELLIGENCE – WHEN BUILDINGS THINK

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Abstract
As the world faces growing challenges – climate change, security risks, urban crowding, and resource depletion – there's a need for the built environment to become more responsive and intelligent. This paper explores how Artificial Intelligence (AI) is increasingly being used in architecture and urban planning as a tool for designing buildings and cities that are more sustainable, adaptable, and secure. Drawing on cases of smart cities, autonomous construction, the study uses real-world case studies and design research to examine both the practical and philosophical implications of integrating AI into spaces. The findings show that AI has the potential to make buildings more predictive and self-adjusting, while also raising important questions about design authorship, fairness, and the human role in an increasingly data-driven world. The study suggests that there is a need to rethink how we teach, regulate, and imagine architecture in the age of AI. It further suggests that rather than replacing human creativity, AI can be a powerful collaborator in designing the resilient, responsive, and regenerative spaces of tomorrow.

THE INFLUENCE OF BIOPHILIC DESIGN ON STUDENTS' WELL-BEING AND EXPERIENCE IN NIGERIA UNIVERSITY

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Abstract
As a modern design approach, biophilic design encourages the incorporation of natural components into the built environment, which has a substantial impact on human health, well-being, and productivity. Bringing living structures to our educational spaces, especially universities, when most educational spaces are devoid of natural features, is a concept that needs to be pervasive within the architects and designers who are responsible to create healthy and creative spaces for the students. This study seeks to examine the principles/features of biophilic design that are universally adopted to reduce the feelings of stress and anxiety, enhanced physical health. The research adopted a descriptive research method, with the use of observation checklists schedules, interviews and an in-depth review of existing literature. Four federal universities students centre in Nigeria were purposively selected for this research, with findings showing low attendant level of the application of biophilic design principles in the design of students Centre. Furthermore, the research established results that the biophilic experience of Space and Place was moderately considered in Translational and Bounded Spaces in the studied student Centres and the findings also reveal a level of dissatisfaction of the aesthetics and beauty of the studied student centres, it also clearly reveals that users of the studied student Centres have restricted Direct Contact with Nature both within interior spaces as well as exteriors of the studied facilities. Finally, the research concluded that Biophilic design principles which offer sustainable solutions to improve mental health and wellbeing is a treasure-trove which Nigeria as a country should harness in students Centres, other educational buildings and all building as a whole.

Keywords: Biophilic design, Students' well-being, Students' attraction, Students' experience

ASSESING THE INTEGRATION OF LEEDS' GREEN BUILDING STRATEGIES IN THE HOTEL DESIGN

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Abstract
Hospitality industry is one of the major consumptions of energy in the built environment. The energy crisis therefore prompted hoteliers to focus on energy conservation strategies. Thus, green building brings together a vast array of practices and techniques to reduce and ultimately eliminate the impacts of new buildings on the environment and human health. The objective of the paper is to determine the conditions of green building strategies as adopted by nurses in hospital based on LEEDS in selected hotels, Nigeria. Survey descriptive research method was adopted. Data collected through structured (Leeds) check lists were analysed using frequency table and simple percentage method. The findings revealed that case study 1 (Transcorp Hilton Hotel, Abuja) has the highest level of green building strategies followed by case study 4 (Raddison Blu Hotel V.I Lagos) then case study 3 and 4 having the lowest. However, All the hotels didn't adopt renewable source of energy rather, make use diesel powered generators as an alternative source of energy which is a disadvantage because the fumes from the generator is harmful to the natural environment. In conclusion, this research has provided valuable insights into an extensive examination of green building strategies and their implications in the Nigeria Hotel. These strategies have contributed to improved indoor air quality, energy efficiency, and the overall sustainability of the hotel. In line with this study, it is very salient for designer to get the sustainability data of a site and also have a good knowledge of the green building strategies before commencing any design, most potently renewable energy sources knowledge of the site in question.

Keywords: Green building strategies, Nigeria hotel, LEEDS label, Tourism sustainability and Built environment

DESIGNING A REGENERATIVE BUILDING: INTEGRATING A NATURE-BASED SOLUTION FOR NET POSITIVE IMPACT IN NIGERIA

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Abstract
The growing need for sustainable architecture has led to the incorporation of regenerative design. This paradigm goes beyond traditional sustainability approaches by promoting the regeneration and enrichment of ecosystems in built environments. This research examines the application of Nature-Based Solutions (NBS) in regenerative building design, intending to achieve net-positive environmental, economic, and social impacts in Nigeria. Utilizing a qualitative research approach based on case studies, this research evaluates regenerative design principles and their application in different architectural paradigms. This study leverages ecological knowledge, biomimicry, and regenerative design principles to create sustainable and socially engaging architectural solutions. In addition, it highlights the importance of a systems approach, which integrates ecological, social, and economic systems in the creation of self-sustaining environments. The research aims to include the exploration of the impact of regenerative buildings on energy efficiency, water cycles, carbon sequestration, and the enhancement of biodiversity. The results show that regenerative architecture has the potential to enhance indoor comfort significantly, maximize energy use, and enhance biodiversity through biomimicry and creative design solutions. The performance objectives related to regenerative design include the production of excess energy, the purification of water, and the restoration of natural environments, thus positively impacting the environment. This research highlights the key success factors related to the design of regenerative buildings and the opportunities and challenges of utilizing nature-based solutions (NBS). It also indicates the integration of ecological intelligence and design practices, which is imperative to the maximal benefits of regenerative architecture. The paper concludes by providing recommendations to architects, designers, and policymakers involved in sustainable housing development in Nigeria. recommending the prioritization of nature-based solutions to ensure resilient communities and a sustainable future. By leveraging insights from successful practices in developed countries, Nigeria can advance resilient and regenerative housing initiatives, paving the way for a sustainable and thriving future for its rapidly growing urban population. In addition, collaborative efforts across disciplines, together with the sharing of best practices, are imperative for the development of regenerative design principles in the built environment.

Keywords: Regenerative design, Nature-based solutions, Sustainable architecture, Building

IMPACTS OF FLOOD INCIDENCES ON WATER RESOURCES MANAGEMENT IN IBADAN METROPOLIS, NIGERIA

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Abstract
This study investigates the impacts of flooding on water resources management in Ibadan, Oyo State, Nigeria. The objective of the study was to assess how flood events influence water quality, availability, and management practices in the region. The study addressed a critical gap in understanding the relationship between increasing urbanization, climate change, and flood risk in the context of water resources management. A mixed-methods research design was employed, using both qualitative and quantitative approaches. The population included residents from flood-prone areas and water management professionals, with a sample size of 100 respondents. Data were collected using questionnaire and interviews. Descriptive statistics, correlation, and regression analyses were used to examine relationships between flood severity and water quality parameters, while thematic analysis provided insights from interviews. The key findings revealed a significant increase in flood frequency over the past five years, with over 70% of respondents reporting regular flood experiences. Regression analysis demonstrated that flood events accounted for over 60% of the variation in water quality. The study concludes that inadequate drainage systems exacerbate the severity of flooding, significantly affecting water resources.

Keywords: Climate change, Flood risk, Ibadan, Water quality, Water resources management

INNOVATIVE SUSTAINABLE DESIGN STRATEGIES FOR BUILT HERITAGE CONSERVATION AND ADAPTATIVE RESILIENCE IN ZARIA CITY-NIGERIA

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Abstract
The urgent need for innovative sustainable design strategies in old Zaria City, Nigeria in the face of the prevalent conventional conservation methods cannot be overstated. Here the challenges of climate change, evolving cultural value systems are intersected with the imperatives for responsive heritage conservation in the ancient cityscape. The built environment in Zaria city is rich in historical and cultural significance, yet it faces vulnerabilities due to rising temperatures and extreme weather events as well as the socio-cultural dynamics. Consequently, there is a critical gap in effectively integrating climate adaptation measures into heritage preservation practices, which often overlooks the traditional community role in these dynamics. Specific objectives of the study include; identifying optimal design approaches, assessing community engagement levels, and evaluating policy frameworks that impact sustainable practices. A mixed-methods approach was employed, for surveys of attitudes and interviews with stakeholders. Analysis of quantitative data will be through use of SPSS, while thematic analysis will be adapted for qualitative data validation. Study's preliminary findings suggest that while there is significant community interest in preserving Zaria's cultural heritage, existing policies and practices often prioritize short-term gains over sustainable strategies. There is an urgent need for training programs in sustainable design tailored to local contexts, reflecting traditional practices while integrating modern climate adaptation techniques. Also, there is need for holistic framework that incorporates local community, indigenous materials and climate-specific adaptations. Study recommends; enhancing community engagement, and reviewing policy regulations to support sustainable design practices across all stakeholders. While, future applications of this research could extend to similar cities for sustainable and resilient built environment globally.

Keywords: Built environment, Climate adaptation, Heritage conservation, Sustainable design, Zaria

HEALTHY LIVING: EXAMINING RELATIONSHIP BETWEEN HOUSING TYPOLOGY, HEALTH AND GENERAL WELLBEING OF RESIDENTS OF ILORIN CITY, NIGERIA

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Abstract
This study tried to explore the probable connections between housing typology (physical and design characteristics) and the quality of residents' health in Ilorin city. *All the 22 political wards that made up the three Local Government Areas in Ilorin city were purposively selected. One per cent (1.0%) of the house population in Ilorin which summed up to 1,098 houses was randomly sampled for questionnaire administration. Standardisation and Scaling as well as Compositing and Indexing were employed to analyse responses from the residents*. Regression analysis was used to examine the relationship between house types and health of residents; producing a coefficient 'R' of 0.040 and implying a low degree of overlap at 16.3%. It also indicated a low degree of correlation between two variables with high constant of 149.4 and probability of 0.000. The Beta coefficient of housing typology is 1.660 which was considered insignificant P value = 0.062 at 95% significant level. In the foregoing, housing typology and residents' health have no reliable association. It therefore means that housing typology contributes a very little to residents' health. It follows therefore, that whatever the type of housing, with high quality outdoor environment, high quality indoor environment, having adequate in-house and community facilities, will guarantee relative good health for the residents. Residents may live in duplex, or highly rated building, if the outdoor, and indoor environment are of poor quality, or no basic in-house and basic community facilities, the residents is prone to ill-health and morbidity.

Keywords: Physical and design characteristics, Housing typology, Residents' health, Community facility, Environmental quality

DESIGNING OUT CRIMES: INTEGRATING CPTED INTO ARCHITECTURAL DESIGNS IN IBADAN, NIGERIA

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Abstract
The prevailing urban crime in Nigeria's cities poses a serious threat to public safety and sustainable development. In Ibadan, where informal settlements are common and urban growth is mostly uncontrolled, environmental design elements are crucial in determining crime trends. In order to strategically address these issues, this research explores how Architectural framework in Ibadan may include the concepts of Crime Prevention Through Environmental Design (CPTED). The study uses a mixed approach to identify the main environmental factors that contribute to crime in a few high-incidence neighbourhoods. These methods include geographical analysis, field observations, and semi-structured interviews with community members, law enforcement personnel, and urban designers. The findings show a lack of integration of CPTED principles including natural surveillance, access control, territorial reinforcement, and maintenance, as well as a gap between current planning practices and safety-oriented design techniques. The study recommends an adaptive methodology for CPTED's implementation and makes the case for its systematic integration into the city's planning procedures and regulations. The findings underscore the need for architects, urban designers, and policymakers to collaboratively adopt CPTED-informed approaches in the development of safer and more resilient urban spaces.

Keywords: Crime Prevention Through Environmental Design (CPTED), Urban planning, Urban safety, Informal settlements, Crime prevention

A COMPARATIVE ANALYSIS OF RENTAL TRENDS IN RESIDENTIAL AND COMMERCIAL REAL ESTATE INVESTMENTS IN IBADAN, NIGERIA

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Abstract
The research paper was aimed at providing helpful insights and guidance to prospective and existing real estate investors in Ibadan metropolis on what, why and where (3W) to invest for better returns on investment (ROI). The study employed mixed methods research design which combined elements of quantitative research using structured and unstructured questionnaire, qualitative research using semi-structured interview conducted on the residents, and personal observation to provide answers to the research questions. The study was conducted on both the residential and commercial real estate properties in the low-, medium- and high-density neighbourhoods of Ibadan. Agodi GRA (Ibadan North Local Government), Akobo (Lagelu LG) and Moniya (Akinyele LG) were selected as the low, medium and high-density residential areas, respectively. On the other hand, Alakia, Iwo Road/Idi Ape and Dugbe CBD were designated as the low, medium and high-density commercial neighbourhoods. The study also utilized 10-year secondary data of rental values in these neighbourhoods from 2014 to 2023. A total of one hundred (100) residents of the neighbourhoods were contacted, while only eighty-six percent of the respondent provided full responses which were utilized for analysis. The findings show a steady increase in rental value of both residential and commercial properties in both the residential and commercial neighbourhoods over the period considered. In addition, it was evident that residential properties have higher rental trends than the commercial properties over the 10-year period. On the other hand, it was established that commercial properties (shopping complexes) had higher returns on investment (ROI) than the residential due to a higher number of occupants or tenants of shopping complexes in a specific area of landed property. Although there is housing shortage in Nigeria which is a challenge for many lessees, the study has revealed that a sizable number of people in the study areas still preferred investment in commercial activities (businesses) to make quick living.

Keywords: Rental values, Trends, Real estate investments, Returns on Investments (ROI), Residential properties, Commercial properties

COMMUNITY PERCEPTION OF ACOUSTIC ENVIRONMENTS IN ABUJA CONVENTION CENTRES: INSIGHTS FROM A USER SURVEY

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Abstract
Acoustic quality is a critical, yet often overlooked, component of user experience in public architectural spaces. In convention centres, where diverse activities such as conferences, exhibitions, and performances take place, sound clarity and noise control significantly affect user satisfaction and participation. This study explores the perception of users regarding the acoustic environment in selected convention centres in Abuja, Nigeria. It draws on empirical data gathered through a structured questionnaire administered to 400 users across three major convention centres: The International Conference Centre, Shehu Musa Yar'Adua Centre, and the NAF Conference Centre. The survey examined users' awareness, satisfaction levels, and perceived effectiveness of existing acoustic features in these facilities. Findings indicate that while a significant portion of users acknowledged the importance of good acoustics, many were dissatisfied with noise control, speech intelligibility, and echo management in high-traffic and large-audience spaces. The results suggest a disconnect between architectural intent and actual user experience, underscoring the need for more user-centred acoustic strategies. This paper advocates for the integration of community feedback into the design and retrofitting processes of convention centres to ensure environments that support clear communication and comfort. It further highlights the role of social sustainability in public infrastructure, arguing that inclusive acoustic design fosters greater engagement, accessibility, and functional efficiency. By analysing user perceptions, this study provides valuable insights for architects, policymakers, and facility managers aiming to enhance acoustic performance in convention venues.

Keywords: Acoustic design, Social sustainability, Convention centres, Noise control, Architectural acoustics, Public buildings

DEVELOPING HOTEL-SPECIFIC DESIGN QUALITY INDICATOR FRAMEWORK: A CONTENT ANALYSIS APPROACH

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Abstract
In recent years, the hospitality industry has witnessed growing emphasis on enhancing hotel design quality to improve guest satisfaction, operational efficiency, and competitive advantage. With hotels evolving as dynamic environments where physical design significantly influences customer experience, developing systematic frameworks to assess design quality tailored specifically to this sector is of paramount importance. This study employs a qualitative content analysis of scholarly research papers to identify and consolidate design quality indicators (DQIs) relevant to hotels. The analysis extracted 48 hotel DQIs which were then compared against the established DQI framework developed by the UK's Construction Industry Council (CIC) to assess coverage and alignment. Findings reveal that the hotel specific DQIs cover 59% of the CIC's comprehensive DQI categories, with notable compliance in Functionality (65%) and Impact (64%), while Build Quality shows comparatively lower correspondence (46%). Additionally, five new indicators unique to hotel environments were identified, highlighting the need for sector-specific adaptations. Frequent emphasis was placed on indicators such as sufficiency of lighting, visual form and aesthetics, and furniture layout, reflecting their critical role in guest experience. The study concludes that while the CIC's DQI framework provides a robust foundation, hotel design assessment benefits from customized indicators addressing the unique operational and experiential characteristics of hospitality environments. It is recommended that future research develops and validates a concise, hotel specific DQI tool to assist stakeholders in making informed design and investment decisions, ultimately improving guest satisfaction and business performance.

Keywords: Design quality, Hotel design quality, Design Quality Indicator (DQI), Content analysis, Hospitality servicescape

MANAGEMENT OF SUSTAINABLE REAL ESTATE DEVELOPMENTS: THE ADVOCATION OF REGULAR SERVICE QUALITY ASSESSMENT IN RESIDENTIAL PROPERTY MANAGEMENT PRACTICE

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Abstract
There are several studies on sustainability of the built environment but there is paucity of transdisciplinary studies on the subject in relation to the business concept of service quality assessment in property management. This study aimed at examining the components of service quality in the residential property management practice of Estate Surveying and Valuation (ESV) firms in Ibadan, Nigeria; with a view to providing information that will guide quality service of managers of the sustainably built residential space. The objectives of the study were to examine the profiles of the ESV firms; examine the scope of management activities in residential property management by the ESV firms; and analyse the perception of the property managers as regards service quality delivery in residential property management in the study area. A cross-sectional survey was conducted on ESV firms in the study area with the use of a structured questionnaire as a data collection instrument. A total of 110 copies of the questionnaire were distributed, out of which 81 respondents (representing 73.6%) completed and returned the questionnaire. Data obtained from the field of survey was analysed using descriptive statistics including frequency counts converted to percentages, weighted mean score (WMS) and inferential statistics (including Analysis of Variance and Posthoc test using Tukey HSD). Results from the study reveal that tenant selection, collection and remittance of rent, maintaining cordial landlord-tenant relationship, preparation of schedule of inventory, and supervision of maintenance and repairs are the most important management activities in residential property management practice among the property managers. Also, the study reveals that timely response to repair and maintenance requests; transparent billing, rent collection and accounting practices; clear communication about lease terms, charges and fees; ensuring repairs are durable and done by skilled personnel; and regular upkeep to prevent breakdowns and other issues were the major components of service quality in the management of residential premises in a sustainable built environment. The study recommends that property managers should be conversant with the identified components of service quality to ensure consistent client satisfaction and preserve the profitable performance of real estate service business of property managers in a changing but sustainable world.

CLIMATE CHANGE ADAPTATION STRATEGIES AMONG SMALLHOLDER FARMERS IN OBAFEMI-OWODE, NIGERIA: AN EMPIRICAL ANALYSIS OF PERCEPTION, VULNERABILITY AND RESILIENCE

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Abstract
Climate change continues to threaten agricultural productivity, food security, and rural livelihoods across sub-Saharan Africa. In Nigeria, smallholder farmers who constitute the majority of agricultural producers are especially susceptible to climate-related risks. This study investigates adaptation strategies employed by smallholder farmers in Obafemi-Owode, Nigeria, with specific objectives to assess their awareness of climate change, identify factors influencing their perceptions, examine its effects on farming activities, and explore the adaptation strategies adopted. A mixed-methods approach was utilized, combining quantitative data from a survey of 120 farmers with qualitative insights from focus group discussions and key informant interviews. Findings reveal a high level of climate change awareness (78%) among farmers, with radio (70.8%) and peer communication (72.5%) as primary information sources. Key factors shaping farmers' perceptions include access to irrigation infrastructure (59.2%), cultural beliefs and knowledge (50.8%), irregular rainfall patterns (48.3%), and rising temperatures (44.2%). Among the impacts, delayed planting (40.8%) emerged as a significant effect of climate variability. In terms of adaptation, the most commonly reported strategy was redirecting water flow into farmlands (47.5%). The study underscores the need to enhance farmer capacity through targeted awareness campaigns, practical training, and improved access to extension services. It recommends that adaptation strategies be context-specific, accessible, and grounded in local realities to effectively build resilience among vulnerable farming communities.

Keywords: Climate change adaptation, Smallholder farmers, Vulnerability, Resilience, Sustainable livelihoods, Nigeria

ABANDONED ELITES RESIDENTIAL BUILDINGS IN KANO CITY

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Abstract
Rapid culture change results in the transformation of elites' residential buildings in Kano city. The buildings are designed and built along foreign models and depict unique architectural styles. These customised buildings are designed to satisfy the taste and ego of the clients. However, with the passage of time, the buildings become abandoned and they pose a lot of negative threats to the immediate neighbourhood. The research investigates the impact of these buildings on the liveability of the city. Three houses were investigated in each of the four socio-economic periods of development in the city. The research found out that socio-economic and socio-cultural factors have significant influence on the abandonment of elites' residential buildings. There is therefore a need to deeply study the socio-cultural and socio-economic lifestyle of the clients and the future users of these buildings when conceptualising the design brief by the architect in order to ensure sustainable operation of these buildings in Kano city.

Keyword: Culture change, elites, residential buildings, Kano city

ETYMOLOGICAL DISTINCTIONS AND LEXICAL SEMANTICS OF TRADITIONAL AND VERNACULAR ARCHITECTURE

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Abstract
The lexical, semantical, and etymological interpretations of traditional and vernacular architecture have been subject to rigorous debate in architectural discourse. From the lexical semantics perspective, these terms may appear synonymous, even though there are visible rays of divergence between what is traditional or vernacular as it relates to architecture. The ubiquity of traditional and vernacular does not lend itself to distinct overarching definitions, either contextual or conceptual, as clear lines of dissimilarity are difficult to draw, and both terminologies have been utilized interchangeably in architectural discourse. This exploratory study was based upon qualitative analysis of historical and archival mentions of traditional and vernacular in architectural discourse to dissect the intricacies of the lexical and semantical adaptations. The scrutiny of the etymology of traditional and vernacular architecture underscored the transient, obvious, and implied meanings the terminologies have been intrinsically and consummately utilized to convey as well as related adaptations such as folk, spontaneous, indigenous, local, popular, native, anonymous, rude, or primitive architecture. Traditional and vernacular both have Latin origins with underlying etymological distinctions. Traditional evolved from "traditio" meaning "handing down" while vernacular evolved from "vernaculus" which means native, home-born, or indigenous. Traditional architecture is passed down through genealogical lines embedded in the cultural and customary practices often specific to a region. Similarly, vernacular architecture which is native and indigenous is as well specific to a region adopting local materials and techniques reflecting the cultural and environmental context of the region. Traditional architecture can be tied to a specific culture or people while vernacular architecture can be tied to a region or locality. In essence, traditional architecture is people-bound and vernacular architecture is region-bound. While traditional architecture is distinctly culture-specific, vernacular architecture articulates fragments of architectural elements symbolizing cultural diffusion arising from extraneous influences.

Keywords: Etymology, Lexical, Semantics, Traditional, Vernacular

DESIGNING FOR ZERO ENERGY PERFORMANCE: A SIMULATION STUDY OF STRATEGIES FOR ACHIEVING NET ZERO ENERGY PERFORMANCE FOR DIFFERENT HOUSING TYPOLOGIES IN NIGERIA

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Abstract
Nigeria's projected population of 377 million by 2050 will significantly increase housing and energy demands, straining the country's already unreliable energy infrastructure. Nigeria's reliance on fossil fuels further complicates efforts to reduce carbon emissions in the housing sector, further jeopardising Nigeria's commitment to the United Nations (UN) Sustainable Development Goals (SDGs) and therefore necessitating urgent action. Net-zero energy buildings (NZEBs) offer a potential solution by reducing energy consumption, easing infrastructure burden, lowering carbon emissions, and improving occupant well-being. However, NZEB adoption in Nigeria, like many emerging economies, is limited, partly due to a lack of technical expertise. The purpose of this study is to investigate the design approaches that could deliver net zero energy performance in diverse housing typologies in Nigeria. Four existing buildings in Lagos, each representing a different housing typology were selected for the study. Construction drawings, occupancy schedules, and energy consumption data (based on electricity bills) were collected. Using eQUEST (v3.65) with DOE-2 (v2.2) for modelling, calibration and energy performance simulation, the study aims to demonstrate the feasibility of achieving net zero performance for these typologies, and to identify the solution strategies that could deliver optimal zero energy performance. The findings are expected to inform both policy and design practices in Nigeria.

Keywords: Design strategies, Net zero performance, Nigerian Housing typologies, Building Performance simulation, Model calibration

NEXUS BETWEEN RESILIENCE AND LIFECYCLE IN URBAN HOUSING COMMUNITIES

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Abstract
Housing as a basic need of man, has led to significant development in housing design. Likewise, urban housing communities evolved in new cities, to accommodate diverse residents. The concept of resilience has been widely discussed across various disciplines, as the ability to absorb, adapt, and recover from disturbances. With increasing urban populations and the intention of the Sustainable Development Goal 11 (SDG 11), for cities to become resilient, necessitates an in-depth study of resilience and lifecycle stages of housing communities. The resilience of urban housing communities throughout their lifecycle stages is essential for sustainable development, particularly in developing countries, where rapid urbanization pose significant challenges. Therefore, this literature review aims to explore the interplay between resilience and lifecycle stages in urban housing communities, with a view to provide insights for the metamorphosing Nigerian cities. The research will focus on the concept of resilience and its relevance to the study. Employing a literature review approach, the study will examine the dynamics of resilience at different stages of the lifecycle of urban housing communities. Results from the study will synthesize resilience during the different stages of the communities and provide case studies across the globe to illustrate best practices. This study will serve as a valuable resource for policymakers, urban designers, and researchers, offering a roadmap towards a more resilient and sustainable city. Additionally, the study will provide the Nigerian urban housing communities with resilience strategies that integrate local context.

Keywords: Lifecycle, Resilience, Urban housing, Sustainable development, Communities

A REVIEW OF BIM AND DIGITAL COLLABORATION TECHNOLOGY WITHIN THE NIGERIA CONSTRUCTION AND DESIGN INDUSTRY

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Abstract

Building Information Modelling (BIM) and digital collaboration technologies are transforming the global construction industry, yet adoption in Nigeria remains underdeveloped. The sector continues to face challenges like building collapses, project delays, and cost overruns—issues BIM could address. However, adoption is hindered by a lack of infrastructure, high software costs, limited interdisciplinary collaboration, and insufficient training. This systematic review assesses the state of BIM adoption in Nigeria, identifying key barriers such as inadequate policies, a shortage of skilled professionals, and reluctance to transition from traditional methods. Despite these obstacles, the review highlights promising opportunities in sustainability, cost efficiency, and collaboration. The findings reveal that while BIM awareness is increasing, its practical implementation remains limited. Bridging this gap will require targeted training, enhanced collaboration, and stronger regulatory frameworks to support industry-wide BIM adoption.

Keywords: Building Information Modelling (BIM), Digital collaboration, Nigerian construction industry, Technology adoption

EXPLORING USERS' PERCEPTIONS ON EFFECT OF BIOMIMICRY DESIGN STRATEGIES IN CONFERENCE CENTRE ARCHITECTURE IN SOUTHWEST NIGERIAN UNIVERSITIES

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Abstract

Biomimicry design strategies offer innovative and sustainable architectural solutions by drawing inspiration from nature. These strategies enhance energy efficiency, environmental sustainability and user-friendly designs. Most of the existing conference centres has not harnessed the strategies of biomimicry design into its content making them not users-friendly. This study examines the perceptions of users regarding the effects of biomimicry design strategies in selected Conference centres in Southwest Nigeria. This study employed a mixed-method approach using multi stage sampling technique. A sample of 350 respondents was selected from7000 users of conference centres in selected Universities of Southwest Nigeria. A structured questionnaire focusing on evaluation of users' perceptions regarding aesthetics, functionality, sustainability, and assess the impact of biomimicry strategies on users was administered to the respondents. Data were analysed using descriptive statistical tools and Total Weighted Value (TWV) method while qualitative data were contentualised. The study revealed varying levels of biomimicry adoption across selected universities, with Covenant University (CU) demonstrating the highest integration of biomimicry strategies (TWV=4.29); Obafemi Awolowo University (OAU) TWV=4.32; with highest value from University of Ibadan (UI) TWV=5.60. Users' perceptions of biomimicry-based design were generally positive, with 65% of respondents acknowledging its benefits. CU led in perceived aesthetic integration of (TWV = 4.39), OAU (TWV= 4.45) and UI (TWV = 4.70). Biomimicry's influence on users' well-being was most pronounced at UI (TWV= 4.74), OAU (TWV = 4.42) and CU (TWV = 4.37). Energy efficiency benefits and environmental sustainability perception were most notable at CU (TWV = 4.39) and lowest at the UI (TWV = 3.86). Case studies revealed reliance on conventional architectural approaches and insufficient adoption of biomimicry strategies, integration of passive design elements which hinders the sustainability, energy efficiency, and functional appeal of the Conference centres. The integration of biomimicry principles and adoption of passive strategies remains inconsistent. The study concludes that biomimicry features enhances sustainability, energy efficiency, and users' experience in conference centre designs. It is recommended that Architects should prioritize passive cooling, use climate-responsive materials and adaptive building forms which can promote awareness of sustainable Architecture to create a user-friendly environment.

Keywords: Architects; Biomimicry, Conference centres, Southwest Nigeria, Sustainability

EVALUATION OF HOUSING QUALITY IN MAKOKO'S WATERLOGGED AREA, LAGOS, NIGERIA: TOWARDS DESIGNING SUSTAINABLE AND RESILIENT HOUSING UNITS

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Abstract
Environmental challenges and flooding have intensified the need for sustainable housing solutions particularly in vulnerable communities such as waterlogged areas. Despite on-going efforts, housing quality in Makoko, Lagos, remains substandard with issues related to flooding, poor sanitation, and weak structural resilience. This study evaluates housing quality in Makoko area, Lagos and explores sustainable and resilient housing channelled to the need of the community. A multi-stage sampling technique was employed to select a sample size of 400 from a population of 250000 households. A set of structured questionnaire was used to collect data on: socio-economic; housing condition/quality and neighbourhood characteristics of Makoko. Case studies were carried out to explore the existing housing models while community-led involvement was also conducted. Data were analysed using both descriptive statistics and content analysis. The study reveals that Makoko residents are predominantly low-income earners, with over 60% engaging in informal occupations; 57% living in homes with more than five (5) while educational attainment is 48% of secondary level; 59% have access to adequate healthcare. Most homes are built with timber and bamboo, with 79% having aluminium roofing though cost-effective but highly vulnerable to flooding, pests, and fire hazards. The absence of basic amenities - clean water (82%); sanitation (76%); waste management (81%) worsens living conditions with majority (80%) relying on communal water sources and makeshift waste disposal while (63%) having access to electricity supply. Poor ventilation and overcrowding (68%) contribute to high indoor temperatures and inadequate air circulation; 75% of households having suffered structural damage from flooding and harsh weather while 65% reported frequent illnesses linked to poor sanitation with (71%) lacking legal land ownership, while climate change and rising water levels exacerbate flooding affecting over 75% of households. Despite these challenges, 67% implement adaptations like raising floors and reinforcing walls; (38%) Community-driven flood-mitigation strategies and (22%) floating structures. The study concludes that Makoko's housing remains structurally weak and environmentally vulnerable. It is recommended that there should be integration of sustainable construction materials, use of elevated flood-resistant structures, enhancement of infrastructures with improved sanitation systems and increasing community participation to promote a sustainable and resilient living area.

Keywords: Environmental challenges, Housing condition, Sustainable, Vulnerable communities, Waterlogged area

ANALYSING URBAN EXPANSION AND LAND USE/COVER CHANGES IN ABEOKUTA, NIGERIA: IMPLICATIONS FOR SUSTAINABLE BUILT ENVIRONMENTS

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Abstract
Rapid urbanization in Nigeria's southwestern cities, including Abeokuta, has led to significant land use/land cover changes, posing environmental challenges and impacting sustainable development. This study analyses the dynamics of urban expansion and land use/land cover changes in Abeokuta, Nigeria, and explores its implications for sustainable built environments. Using remote sensing and geographic information system techniques, we mapped and analysed land use/land cover changes between 2000 and 2020. Our results show a significant increase in built-up areas, from 15.6% to 34.5%, and a corresponding decrease in vegetation cover, from 64.2% to 45.1%. The expansion of built-up areas has led to increased impervious surfaces, loss of biodiversity, and increased risk of flooding. Our findings highlight the need for effective urban planning and management strategies to mitigate the adverse environmental impacts of urbanization. We recommend the adoption of sustainable land use practices, green infrastructure, and urban design principles that prioritize environmental sustainability. This study provides valuable insights for policymakers, urban planners, and stakeholders seeking to promote sustainable built environments in Abeokuta and similar cities in Nigeria.

Keywords: Urban expansion, land use/land cover changes, remote sensing, geographic information systems, sustainable built environments.

FROM POLICY TO PRACTICE: PUTTING UNIVERSAL DESIGN INTO PRACTICE IN THE NIGERIAN BUILT ENVIRONMENT

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Abstract
In the context of rising socio-spatial inequalities, Universal Design (UD) offers a promising alternative to promoting social sustainability and inclusivity in the built environment. Although inclusive design has gain global traction, its practical implementation in the Nigerian context remain limited. The paper examines the UD concept in the context of accessibility and socio-spatial inclusion to enhance social sustainability in Nigeria. The study employed a multiple embedded case study approach to assess UD awareness, its implementation practices, and institutional readiness for integration. Triangulation of data uses various sources and context within and across the built environment settings. The findings indicate a significant disparity between policy intentions and actual implementation, with limited awareness among the professionals and academics, poor regulatory enforcement, and a insufficient stakeholders involvement. Moreover, the architectural education curriculum shows inadequate coverage of UD concepts. Practitioners revealed limited community engagement in design processes, which perpetuates socio-spatial exclusion, particularly affecting vulnerable groups such as persons with disabilities and the elderly. Despite the manifestation of these challenges, promising initiatives and advocacy efforts underscore the transformative potentials of UD principles at early design stage. Thus, to embed the UD principles within Nigeria's development agenda the paper advocate for policy reform, integration of UD into National Building Codes (NBC), architectural curriculum reviews and promotion of community-driven design initiatives. A bottom-up approach presents a viable pathway to UD operationalisation and fostering equitable, socio-spatially inclusive built environment that respect the dignity and diversity of all users in Nigeria and beyond.

Keywords: Community participation, Inclusive built environment, Policy reform, Social sustainability, Universal design

KITCHEN AS A COMMUNAL SPACE: PROMOTING HOUSEHOLD INTERACTION THROUGH FOOD PREPARATION

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Abstract
The parent-child relationship plays a fundamental role in a child's development, with a positive dynamic significantly influencing their happiness, success, and future sustainability. The interplay between peace, violence, and development is multidimensional and often misunderstood in policy, research, and intervention programs within contemporary cultural norms. As noted by Kira Birditt and Hough, "The parent-child relationship is one of the longest-lasting social ties human beings establish." This study explores how kitchen orientation and kitchen toolkits—designed for both children and adults—can motivate families to engage regularly in food preparation. Such interactions foster better parent-child communication in daily life. Adopting a psychological perspective, this research employs interviews, observations, and testing with families to examine food-making dynamics in structured and semi-habitable living environments, as well as its broader effects on environmental and community well-being. The findings highlight the importance of kitchen interactions in enabling families to share quality time despite hectic schedules, strengthening bonds through collaborative cooking.

Keywords: Parent-child relationship, Family bonding, Kitchen interaction, Collaborative cooking, Communal space

AN EXAMINATION OF HOUSING CONDITIONS' IMPACT ON RESIDENTS' HEALTH AND WELLBEING, IBADAN, NIGERIA

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Abstract
Housing plays a crucial role in health and wellbeing, indicating physical and mental health outcomes, and contributing to social and economic stability. Adequate and safe housing is a fundamental human right, and improvements in housing conditions can save lives and reduce diseases and death. This work examines the impact of housing conditions on the health and wellbeing of the Residents of Ibadan., Nigeria, with a view to providing strategies that can improve residents' health and wellbeing. Variables like health, housing, safety/security, earning capacity and satisfaction level were used to measure residents' wellbeing. Data were collected from both primary and secondary sources. A total of Two hundred and fifty (250) residents of different residential apartments (tenement buildings, blocks of flats, bungalows and duplexes) were examined. The results showed that majority of people live in poor housing conditions with regards to roof and ceiling, windows, doors, walls, floor, bedrooms, kitchen, toilet/baths facilities and amenities, refuse and waste disposal and neighborhood or environmental conditions. Secondly, these people dominate the workforce in the nation and their communities. Thirdly, majority of the people are financially incapacitated. Fourthly, the conditions of most houses fall greatly below average, which expose them to so many health challenges, and lastly, their effectiveness and efficiency are adversely affected. As solutions to the above, both governments, real estate investors and individuals have their roles to play. Governments should be concerned with the living conditions of the people, providing adequate facilities to residential neighborhoods, giving access to mortgage(loan) at a bearable interest rate, promoting good quality local building materials and ensuring housing codes, building byelaws and building approval are adhered to. Real estate investors and occupiers also should ensure they carry out their roles to ensure residents' wellbeing.

Keywords: Examination, Housing, Housing conditions, Health. Wellbeing

ASSESSMENT OF SAFETY MANAGEMENT SYSTEMS IN NIGERIA CONSTRUCTION INDUSTRY

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Abstract
Construction remains a major contributor to economic growth of nations. The kind of challenges in the sector make it lags behind in terms of performance when compared to other sectors. Differences in the socio-cultural practises, language diversity and literacy level that exist between the developed and the developing countries are identified as crucial in influencing construction site health and safety practices. The study assesses health and safety practises in Nigeria construction industry with a view to improve its performances. A self-administered questionnaire was employed. A total of 78 built professionals were involved in the study. The method of analysis is basically by the use of descriptive analysis using SPSS. The results show that the particular context of developing countries requires a holistic view of health and safety management that takes account of the contextual environmental culture of construction sites. The main elements from reviewing of commonly used Health and Safety Management System Standard have high influence on construction project; it was also revealed that Auditing, reviewing and improvement ranked high among other elements. The results of the analysis of factors influence of elements for health and safety management of construction companies were all rank high. This means that the entire element has high influence on construction project. This study forms a good basis for determining the strategies for creating an enabling environment for improving health and safety performance in the Nigerian construction industry.

Keywords: Safety management system, Construction health and safety, Traditional beliefs, Socio-cultural practices; Site accident

RENTAL VALUE VARIATIONS ACROSS RESIDENTIAL ZONES IN SELECTED SOUTH-WESTERN NIGERIAN CITIES

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Abstract
This study conducts a comparative assessment of the rental values of residential housing across three major cities in South-Western Nigeria: Ibadan, Akure, and Abeokuta. The research focuses on three key housing typologies – 1-bedroom, 2-bedroom, and 3-bedroom flats – within low-, medium-, and high-density residential zones. Through a detailed empirical analysis involving statistical summaries and graphical illustrations, the study examines the influence of housing characteristics, building conditions, age of structures, and neighbourhood amenities on rental values. Findings reveal significant variations in rental prices across the study locations and housing types. In Ibadan, the average net rent ranges from ₦121,770 for 1-bedroom flats to ₦665,677 for 3-bedroom flats, with higher values in low-density zones. Akure exhibits lower rental averages, with 1-bedroom flats averaging ₦128,482 and 3-bedroom flats at ₦391,810. Conversely, Abeokuta records the highest average rents – ₦198,133 for 1-bedroom flats and ₦906,916 for 3-bedroom flats – attributable to its proximity to Lagos and increasing demand for quality housing. Across all cities, the study identifies that newer and well-maintained buildings command higher rents. Amenities such as water supply, drainage, security, and modern fittings significantly influence rental values, while high-density areas offer the most affordable housing options, albeit with poorer infrastructure. The research further demonstrates that the distribution of rental values is often skewed, with kurtosis values indicating varying concentration around the mean, reflecting the heterogeneity of property markets within and across the cities. The study concludes that spatial location, building age, physical condition, and infrastructural amenities are critical determinants of rental values in South-Western Nigeria. These findings have practical implications for real estate investors, urban planners, and policymakers seeking to understand market dynamics and address housing demand more effectively. Future research could expand the scope to include informal settlements and evaluate how socio-economic changes impact rental housing affordability.

Keywords: Rental values, Residential housing, South-western Nigeria, Urban density, Property market dynamics

FLEXURAL STRENGTH AND DIMENSIONAL STABILITY OF *ANOGEISSUS LEIOCARPUS* (AYIN) COMPOSITES

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The wood industries generate enormous wastes which are sources of environmental pollution. Conversion of these items into value added products such as ceiling / panel boards for building construction seems a viable means of combating the environmental menace. This work therefore examined the flexural strength and dimensional stability of wood composites made from African birch (*Anogeissus leiocarpus*) bonded with Polystyrene Based Resin (PBR) and Conventional Water based Resin (CWR) used in the wood industry. Particles of *A. leiocarpus* were locally sourced, mixed separately with PBR and CWR, formed into boards and conditioned. Test Samples of the *A. leiocarpus* composites were prepared and tested for flexural strength (Moduli of Rupture (MOR) and Elasticity (MOE)) and dimensional stability (Thickness Swelling (TS) and Water Absorption (WA)) in accordance with ASTM standards. The results obtained revealed that the MORs and MOEs of the composites ranged between 3.2 to 6.1N/mm^2 and 2659.2 to 9358.1N/mm^2 respectively. The respective TS and WA were 1.4 – 14.8% and 17.6 - 81.7% indicating dimensional instability and moderate strength. Composites bonded with PBR had better flexural strengths and dimensional stability than those of CWR. The fabricated composites cannot be used for exterior structural purposes but as interior insulating components such as ceiling board and panelling.

Keywords: *Anogeissus leiocarpus*, Wood composites, Flexural strength, Dimensional stability

LAND SURFACE TEMPERATURE VARIABILITY AND POLIOVIRUS RESURGENCE IN NIGERIA: A REMOTE SENSING SATELLITE PERSPECTIVE

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Abstract
On August 24, 2020, Nigeria was declared free of wide poliovirus (WPV). However, 415 cases were recorded across eleven states as of December 2021. Nine of the states are in the northern part of the country, where land surface temperature (LST) is probably high. Understanding the contributions of LST to the incidence of poliovirus in Nigeria should be a public health concern. We used Landsat ETM+ images of 2021 obtained from USGS for the eleven states (Kebbi, Sokoto, Kaduna, Katsina, Zamfara, Nasarawa, Kwara, Federal Capital Territory (FCT), Niger, Ekiti, and Lagos.); from where Normalized Difference Vegetation Index (NDVI) images were derived. The Landsat user's handbook provided the model used to convert the digital number of the thermal infrared band to spectral radiance, while Plank's inverse function was used to extract the effective at-sensor brightness temperature from the spectral radiance. The surface emissivity (SE) based on NDVI is used to retrieve the final LST. It was observed that Katsina has the highest mean value of 0.178 and a standard deviation of 0.0102 while Lagos has the least value of NDVI. For SE, Katsina has the highest mean value of 0.806 and a standard deviation of 0.00121 while Lagos has the least. The coefficient of determination R^2 (0.794) showed a strong positive correlation between the mean of SE with reported cases of WPV, which depicted a downward trend from the norther to the southern states. Katsina had the highest mean value of 38.42 with a standard deviation of 1.82 of LST and coefficient determinant R^2 (0.45) shows a positive correlation between the mean of LST and WPV reported. The Coefficient of determination (R^2) (0.86) of WPV with LST, NDVI, and SE presented a better prediction power of land surface temperature.

Keywords: WPV, LST, NDVI, SE, Landsat images

SECURITY INFRASTRUCTURE AND RESIDENTS' SAFETY WITHIN THE UNIVERSITY OF IBADAN, OYO STATE, NIGERIA

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Abstract
In order to maintain safety at higher education institutions while striking a balance between protection and transparency, security infrastructure is essential. Underfunding and antiquated technology make the University of Ibadan's problems with theft, violence, cultism, and cybercrime worse. This study examines the security infrastructure and residents' safety within the University of Ibadan, with a view to suggesting policies to influence security governance in the campus community. The concepts of urban security governance and security culture provided the framework while primary and secondary data were sourced using structured questionnaire and key informant interview. Simple random technique was used in selecting 151 residential quarters from 444 for household survey while 2 Chairmen of Residents' Association, 1 Chief Security Officer, 1 Security Personnel and 2 Student Residents Representative were interviewed. The study revealed that 53% of respondents were male and 47% female, with the largest age group being 37-54 years (47.7%). Most respondents were senior staff (54.3%), followed by junior staff (32.5%) and students (13.2%). Majority rated security as fair (75.5%); minority rated it as bad (9.9%) and good (14.6%) while residents' confidence in security facilities was rated as fair (89.4%) and good (8.6%). Identified key challenges to campus security include: insufficient funding, limited participation in security initiatives, and uneven distribution of security infrastructure. Advocacy for government and private sector involvement; awareness on campus residents' involvement in community security; regular in-service training for campus security officers and adoption of technology in improving campus security surveillance were recommended.

Keywords: Security infrastructure, Residents' safety, Crime, University of Ibadan

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