

# Evaluating Performance Limitations of Movable Partition Systems to Achieve Spatial Flexibility in Convention Centres in Uyo

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## ABSTRACT

The growing demand for multifunctional convention centres has increased the need for interior spaces that can be reconfigured efficiently without compromising user comfort or operational performance. Movable partition systems have become an important architectural solution for achieving spatial flexibility by allowing large halls to accommodate multiple events simultaneously. However, their effectiveness is often constrained by acoustic deficiencies, operational inefficiencies, maintenance challenges, and inadequate integration within the building. This study evaluates the performance limitations of movable partition systems in achieving spatial flexibility in convention centres, with reference to Uyo, Akwa Ibom State, Nigeria. It is pursued through two objectives: identifying the types of partition system, acoustic, operational, and material constraints that limit performance; and proposing architectural improvements for convention centres in Uyo. A mixed-method research approach was adopted, combining a systematic review of existing literature, comparative case studies of ExCeL London and Convene 155 Bishopsgate, a structured field survey of three convention facilities in Uyo, and semi-structured interviews with facility managers and architectural practitioners. Field evidence from the Akwa Ibom Tropicana Resort, Ibom Hotel and Golf Resort Facilities, and Emerald Event Center confirms that acoustic performance remains the most critical determinant of partition effectiveness, with sound leakage through joints, seals, and adjacent building elements identified by both the literature and local stakeholders as the primary cause of spatial functionality failure. Operational factors including inadequate storage, mechanical wear, inefficient circulation planning, and inappropriate material selection also significantly influence long-term performance and adaptability. Based on the evidence from literature, case studies, and local field data, the study proposes a Performance-Based Movable Partition Design Framework (PMPDF) integrating acoustic performance, operational efficiency, material and structural integration, and space planning as interconnected design considerations. The study concludes that movable partition systems should be treated as integral components from the conceptual stage rather than secondary building elements.

**Keywords:** movable partition, convention centre, spatial flexibility, acoustic performance, Uyo.

## INTRODUCTION

Some building types are increasingly expected to hold more than one event simultaneously so as to keep the facility in use and not dormant. Convention centres sit at the extreme end of this demand, they are designed to host conferences, exhibitions, banquets, and performances sometimes concurrently, while adapting smoothly to different occupancy patterns and event scales. The movable partition is one of the primary architectural tools for making this work.

Spatial flexibility, as defined by Geldermans et al. (2019), is a building's capacity to adapt its internal configuration to changing functions and needs with minimal intervention, time, and disruption. Convention centres exemplify this need. Luster (2017) describes them as large facilities where groups of individuals gather around shared interests, noting that they also serve as civic icons and economic anchors for their surrounding communities.

Movable partitions, operable walls, folding panels, sliding screens, allow large halls to be subdivided into smaller, functional zones. In theory, this enables concurrent events with quite different spatial requirements. In

practice, the systems are regularly compromised by acoustic deficiencies, mechanical wear, inadequate storage, and a failure to coordinate with circulation planning (Chen et al., 2009; Eze et al., 2023). In Uyo, Akwa Ibom State, convention centres play a meaningful role in the region's events and tourism economy, particularly as the state government advances the Ibom International Convention Arena as a centrepiece of its ARISE tourism agenda (Akwa Ibom State Government, 2025; Punch, 2026). Yet movable partition design in these facilities is rarely treated as a priority at the conceptual stage. This paper addresses that gap, offering architects and designers an evidence-based account of partition performance limitations and practical guidance for improving design outcomes.

## **Aim And Objectives**

The aim of this study is to evaluate the performance limitations of movable partition systems in achieving spatial flexibility in convention centre design, with specific reference to facilities in Uyo. This is pursued through two objectives:

- i. Identifying the types of partition system, acoustic, operational, and material constraints that limit performance.
- ii. Proposing architectural improvements for convention centres in Uyo.

## **Statement of The Problem**

Convention centres generate substantial noise across concurrent events, making effective spatial separation a functional necessity. Movable partition systems have become an essential component of contemporary convention centre design because they enable large halls to be divided into smaller functional spaces while maximising flexibility and space utilisation (Schmidt III et al., 2010). However, despite their widespread adoption, the performance of movable partition systems remains a significant challenge in many convention centres worldwide.

In Nigeria, and particularly in Uyo, there is limited empirical research examining the integration of movable partition systems within convention centre design. Existing studies on public buildings have largely focused on architectural aesthetics, structural performance, or general space planning, while relatively little attention has been given to flexible spatial design and the operational effectiveness of movable partitions. As Uyo continues to position itself as Nigeria's foremost conference and tourism destination, anchored by facilities such as the Akwa Ibom Tropicana Resort and the newly commissioned Ibom International Convention Arena understanding the design factors that influence partition performance becomes essential for improving building functionality and long-term sustainability.

## **LITERATURE REVIEW**

### **Convention Centres**

Convention centres are commercial facilities capable of hosting large gatherings for a wide variety of events, concerts, trade exhibitions, banquets, and conferences. Adewale and Ewuoso (2023) noted that these facilities have become significant structures in the events and tourism industry, contributing meaningfully to the economic and social character of their host cities. Their value depends entirely on their ability to respond to a wide variety of event configurations and occupancy densities, which requires a high degree of spatial flexibility.

### **Sound Transmission Class (STC)**

Sound Transmission Class (STC) is the standard single-number rating for quantifying how well a building element attenuates airborne sound; the higher the rating, the more effective the acoustic isolation (Andrea et al., 2020). In convention centres, where large-scale events may occur simultaneously in adjacent halls, STC ratings of 60 and above are typically necessary to prevent disruptive sound transfer between spaces (Borzym, 2021). The gap between what many installed partitions deliver and what convention centres actually need is considerable.

## Types and Configurations of Movable Partition Systems

**a. Accordion Partitions:** Panels fold against one another when retracted, making them economical and compact. However, continuous hinge gaps allow sound and light to pass through. Field testing by Borzym (2021) found that accordion units performed from satisfactory to inferior compared to rigid panel systems, making them poorly suited to environments where acoustic separation is critical.



Figure 1. operable and foldable wall systems (source: OKInteriors corp, 2015)

**b. Sliding Panel Systems:** Individual or paired panels suspended from overhead tracks, capable of omnidirectional movement. These offer the greatest layout flexibility and the widest range of stacking configurations, including remote stacking (Huang, 2011). These are the most appropriate system type for convention centres.



Figure 2. sliding panel systems (source: LINVISIBLE Nigeria Ltd, 2026)

**c. Demountable Partitions:** Modular, semi-permanent wall systems that can be assembled and disassembled relatively quickly. They offer better acoustic performance than accordion systems, but limited reconfigurability reduces their usefulness in venues requiring frequent layout changes.



Figure 3. demountable partition systems (source: Aluminium Office Partition Service, 2026)

**d. Vertical Lift Systems:** Panels retract upward into a ceiling cavity, delivering the highest acoustic performance of all partition types. Substantial plenum depth is required, and installation costs are the highest in the category, limiting adoption in cost-sensitive projects (Geldermans et al., 2019).



Figure 4 vertical partition walls retracting. (source: daitachi partition wall, 2025)

**e. Manual and Electrically Operated Systems:** Manually operated systems are the most affordable option for straightforward linear divisions, but require considerable physical effort. Electrically operated systems reduce manual effort and are suitable for venues requiring frequent reconfiguration (Jurdy & Gray, 2016).

### Performance Limitations

**a. Acoustic Constraints:** Yeh et al. (2011) provide empirical data showing that under normal operating conditions with unsealed joints, a steel-framed movable partition achieved an STC of only 31, compared to STC 41 when fully sealed, a 10-point differential caused primarily by joint gaps, not panel material. Sentagi et al. (2019) confirm that even double gypsum board panels with rockwool infill achieved an STC of only 45, with flanking noise through the surrounding structure as the primary limitation.

**b. Operational Shortcomings:** Debris accumulation on overhead tracks causes misalignment and mechanical failure, disrupting smooth operation. Where storage bays are absent or inadequate, operational flexibility is reduced. Barnaby et al. (2023) note that spatial efficiency is compromised when partition systems are not coordinated with circulation and functional planning.

**c. Material and Integration Considerations:** Material choice and joinery design directly determine long-term partition performance. Steel-framed systems with precision aluminium extrusion joinery are the current performance benchmark but carry higher initial costs than timber alternatives. Bob G. et al. (2019) emphasise the value of reversible and adaptable materials that support quick reconfiguration.

## METHODOLOGY

This study adopts a mixed-method research design that triangulates three complementary strands of evidence: (i) a systematic literature review, (ii) comparative case studies of internationally recognised convention facilities, and (iii) primary field data collected from centres in Uyo through structured physical surveys and semi-structured interviews. The integration of local empirical evidence from Uyo directly addresses the performance context of the study and strengthens the generalisability of findings to similar developing-city convention environments in Nigeria.

### Systematic Literature Review

Two academic databases, ResearchGate and ScienceDirect were used as primary sources for the literature review. These platforms were selected for their extensive coverage of peer-reviewed material in architecture, building science, and acoustic engineering. The search focused on articles addressing spatial flexibility, movable partition systems, acoustic performance in multifunctional buildings, and convention centre design. Materials were selected based on their relevance to the study's objectives, their methodological rigour, and their empirical contribution to understanding the performance limitations under investigation.

### Comparative Case Studies

Two internationally recognised convention facilities, ExCeL London (Phase 3) and Convene 155 Bishopsgate, London were selected as comparative case studies on the basis of their documented implementation of high-



performance movable partition systems. These cases provided measurable acoustic benchmarks (Rw 55 dB and Rw 52 dB respectively) against which local facility performance in Uyo could be contextualised.

### Field Survey of Convention Facilities in Uyo

To provide local empirical grounding, a structured physical survey was conducted across three convention facilities in Uyo, Akwa Ibom State. The facilities surveyed were:

- i. Akwa Ibom International Convention Centre (Tropicana Resort, Uyo) — a three-level facility with a ground-floor hall seating 800, a mezzanine and first-floor main auditorium combining to seat 5,000, and 8 equipped meeting rooms.



Figure 5. tropicana mall. (source: <https://businessday.ng/news/article/tropicana-trade-fair-opens-with-impressive-lineup-of-exhibitors-in-akwa-ibom/>)

- ii. Ibom Hotel & Golf Resort Conference Facilities (Uyo) — comprising 10 meeting rooms with a largest conference room of 4,850 sq. ft. and a total event space of 61,699 sq. ft.



Figure 6. ibom hotel and resort. (source: [https://www.tripadvisor.com/Hotel\\_Review-g663676-d654251-Reviews-or70-IBOM ICON Hotel Golf Resort-Uyo Akwa Ibom State.html](https://www.tripadvisor.com/Hotel_Review-g663676-d654251-Reviews-or70-IBOM_ICON_Hotel_Golf_Resort-Uyo_Akwa_Ibom_State.html))

- iii. Emerald Event Center (Uyo) — a 1,000-capacity state-of-the-art event centre used for weddings, workshops, seminars, and corporate events.



Figure 7. emerald event centre. (source: <https://venues.ng/venue/emerald-event-center-akwa-ibom>)

The survey instrument assessed four performance parameters aligned with the study's analytical framework: (a) partition type and specification, (b) observable acoustic performance indicators (e.g., visible joint gaps, presence

of floor/ceiling seals, panel material), (c) operational provisions (storage bays, track condition, ease of reconfiguration), and (d) space planning integration (circulation coordination, maintenance access). Survey responses were recorded on a standardised checklist and supplemented by photographic documentation.

### **Semi-Structured Interviews**

Semi-structured interviews were conducted with eight (8) key informants drawn from two professional groups, facility managers responsible for day-to-day operations at the three surveyed Uyo convention facilities ( $n = 3$ ), and architectural practitioners with direct design or consultancy experience in convention centre or large public assembly projects in Uyo and the wider Akwa Ibom State ( $n = 5$ ). Purposive sampling was employed to ensure participants had direct, relevant experience with partition systems in convention settings.

The interview guide was structured around five thematic areas: (1) types of partition systems currently installed or specified in convention facilities in Uyo, (2) perceived acoustic performance and common failure modes, (3) operational challenges encountered during space reconfiguration, (4) maintenance frequency and associated costs, and (5) design recommendations for improving partition performance in the local context. Interviews were audio-recorded with participant consent and subsequently transcribed verbatim. Participants were assigned pseudonymous codes (FM1–FM3 for facility managers; AP1–AP5 for architectural practitioners) to ensure confidentiality throughout analysis and reporting.

Interview transcripts were analysed using thematic analysis following the six-phase framework of Braun and Clarke (2006): familiarisation with data, generating initial codes, searching for themes, reviewing themes, defining and naming themes, and producing the report. The analysis identified four primary themes, acoustic inadequacy, operational inefficiency, material inappropriateness, and design integration failure, which directly corroborated and contextualised the patterns identified in the literature review and international case studies.

### **Triangulation and Validity**

The convergence of findings across three independent data sources published literature, international case studies, and primary local field evidence constitutes methodological triangulation, strengthening the internal validity and transferability of the study's conclusions (Denzin, 1978; Creswell & Plano Clark, 2018). Where divergences emerged between local field conditions and international benchmarks, these were treated as findings in their own right, highlighting the specific design gaps that characterise convention centre development in Uyo.

### **Case Study Analysis**

#### **ExCeL London Exhibition Centre (Phase 3)**

ExCeL London is one of Europe's largest purpose-built exhibition and convention venues, located at the Royal Victoria Dock in East London. Phase 3, completed in 2024 and operational from 2025, represents the largest expansion since the venue's inception. The partition system uses a manual, top-hung Dorma Hüppe Variflex system comprising 1.2 km of overhead track and 548 individual panel elements finished in high-pressure durable laminate. The system achieves an acoustic rating of  $R_w$  55 dB, enabling simultaneous multiple-event operation with documented speech privacy between adjacent halls.

#### **Etc. Venues, 155 Bishopsgate (Convene 155 Bishopsgate)**

Convene 155 Bishopsgate is a purpose-built conference and exhibition venue occupying approximately 3,749  $m^2$  across two floors within the Broadgate commercial district, London, accommodating over 1,000 delegates. A 21-metre high Dorma Hüppe Variflex wall divides the main space, supplemented by five additional walls creating individual meeting rooms. The system operates semi-automatically and achieves a  $R_w$  52 dB acoustic rating. Pass doors and adjacent panels are fully glazed to maintain natural light transmission throughout subdivided spaces.

## Comparative Analysis of Case Studies

| Performance Parameter | ExCeL London             | Etc. Venues / Convene 155     | Critical Threshold          |
|-----------------------|--------------------------|-------------------------------|-----------------------------|
| Acoustic Rating       | Rw 55 dB                 | Rw 52 dB                      | STC 45 minimum              |
| Operation Type        | Manual (top-hung)        | Semi-automatic                | Consistent operability      |
| Scale                 | 1.2 km track, 548 panels | 21 m high main wall + 5 walls | —                           |
| Glazed Elements       | Pass doors only          | Full-height glazing           | Requires acoustic treatment |

### Field Survey And Interview Findings: Uyo Convention Facilities

The field survey and semi-structured interviews conducted across the three convention facilities in Uyo yielded contextually specific evidence that both confirms and extends the patterns identified in the literature and international case studies. Four primary themes emerged from the thematic analysis of interview transcripts: acoustic inadequacy, operational inefficiency, material inappropriateness, and design integration failure.

### Partition Types Identified in Uyo Facilities

The survey revealed that the dominant partition system type across the three surveyed facilities is the accordion (folding) partition, with manual operation. None of the facilities surveyed had installed steel-framed sliding panel systems or vertical lift systems. This finding is significant given the literature's consistent identification of accordion partitions as the weakest acoustic performer. As one facility manager noted:

*"We use the folding partition because it is what was installed when the hall was built. Nobody asked us what we needed acoustically. The panels fold away easily but when there are two events at the same time, the noise from one hall completely enters the other."* (FM2, Facility Manager, Uyo)

### Acoustic Performance Findings

The field survey identified visible gaps at panel-to-panel joints, absent or deteriorated floor seals, and uninsulated panel edges across all three facilities. No acoustic rating data was available for the installed systems from any of the facility managers, confirming the absence of acoustic specification at the design stage. An architectural practitioner with experience in Uyo public building design described the prevailing attitude thus:

*"In most of the convention projects we see in this city, the partition is a last-minute decision. The structural engineer draws the grid, the services consultant coordinates their runs, and then the partition gets fitted in whatever space is left. There is no acoustic brief, no STC target, nothing. The client just wants something that closes the space."* (AP3, Architectural Practitioner)

This observation directly corroborates Yeh et al.'s (2011) finding that unsealed joints reduce partition acoustic ratings from STC 41 to as low as STC 31 and is consistent with the broader pattern identified by David and Fergus (2011), who noted that acoustic separation in large spaces cannot be achieved by partition materials alone without coordinated ceiling and floor treatment.

### Operational and Maintenance Findings

Operational difficulties were reported consistently across all three facilities. Two of the three facilities had overhead tracks showing visible debris accumulation and signs of mechanical wear. In one facility, a section of track had been disabled and the corresponding panels were permanently stacked against a wall, effectively reducing the usable hall area. One facility manager explained:

*"The rollers on the track were always jamming. We called the company that installed it but they said spare parts were not available locally. We ended up just leaving those panels pushed to one side permanently. Now we cannot configure that part of the hall at all." (FM1, Facility Manager, Uyo)*

An architectural practitioner highlighted the deeper design cause of this operational failure:

*"The problem is that the partition is specified like a piece of furniture, you pick it, you install it, and you forget it. There is no maintenance plan, no budget, no training for the staff who will be operating it daily. In international venues like ExCeL, maintenance is part of the building management system from day one." (AP1, Architectural Practitioner)*

### Design Integration Findings

The survey found that in all three Uyo facilities, partition storage provisions were inadequate or entirely absent. In two facilities, panels in their stacked position obstructed designated emergency egress routes. Circulation routes were not coordinated with partition configurations, meaning that space reconfiguration required moving event furniture and temporarily blocking corridors. One architectural practitioner summarised the design integration deficit as follows:

*"The way I see it, acoustic performance and operational efficiency are downstream consequences of an upstream design decision, whether the architect treats the partition as an architectural element from the beginning or as an afterthought at the finishing stage. In Uyo, it is almost always the latter." (AP5, Architectural Practitioner)*

### Field Survey Summary: Uyo Facilities vs. International Benchmarks

| Performance Parameter | Uyo Facilities (Surveyed)                | International Benchmark (ExCeL / Convene 155) | Gap / Finding                            |
|-----------------------|------------------------------------------|-----------------------------------------------|------------------------------------------|
| Partition type        | Accordion / manual folding               | Steel-framed sliding panel (top-hung)         | Lower acoustic & operational performance |
| Acoustic rating       | Not specified / below STC 35 (estimated) | Rw 52–55 dB                                   | Critical underperformance                |
| Joint sealing         | Absent or deteriorated in all facilities | Factory-sealed with site verification         | Primary acoustic leakage source          |
| Storage provisions    | Inadequate or obstructing egress         | Dedicated remote stacking bays                | Operational and safety deficit           |
| Maintenance           | No formal protocols; reactive only       | Planned preventive maintenance schedule       | Premature mechanical failure             |

## INTERPRETATION OF RESULTS

The primary objective of this study was to evaluate the performance limitations of movable partition systems in achieving spatial flexibility in convention centre design and to identify architectural strategies capable of improving their effectiveness, particularly for convention centres in Uyo. The triangulated findings from the literature review, international case studies, and local field data present a coherent and mutually reinforcing picture: movable partition performance is determined not by any single component, but by the degree to which acoustic performance, operational efficiency, material selection, and space planning are integrated as coordinated design priorities from the earliest stage of the architectural process.

Acoustic performance remains the most critical determinant of partition effectiveness. The literature consistently identifies sound transmission through panel joints, floor seals, ceiling interfaces, and adjacent building elements



as the major causes of performance failure (Yeh et al., 2011; Borzym, 2021; Sentagi et al., 2019). The international case studies demonstrate that STC-compliant performance (Rw 55 dB at ExCeL; Rw 52 dB at Convene 155) is achievable when acoustic requirements are established during the early design stage. The Uyo field survey and interviews reveal a stark divergence: no acoustic specifications were found in any of the three surveyed facilities, and observed joint conditions suggest in-situ performance substantially below the STC 45 minimum generally considered acceptable for speech privacy.

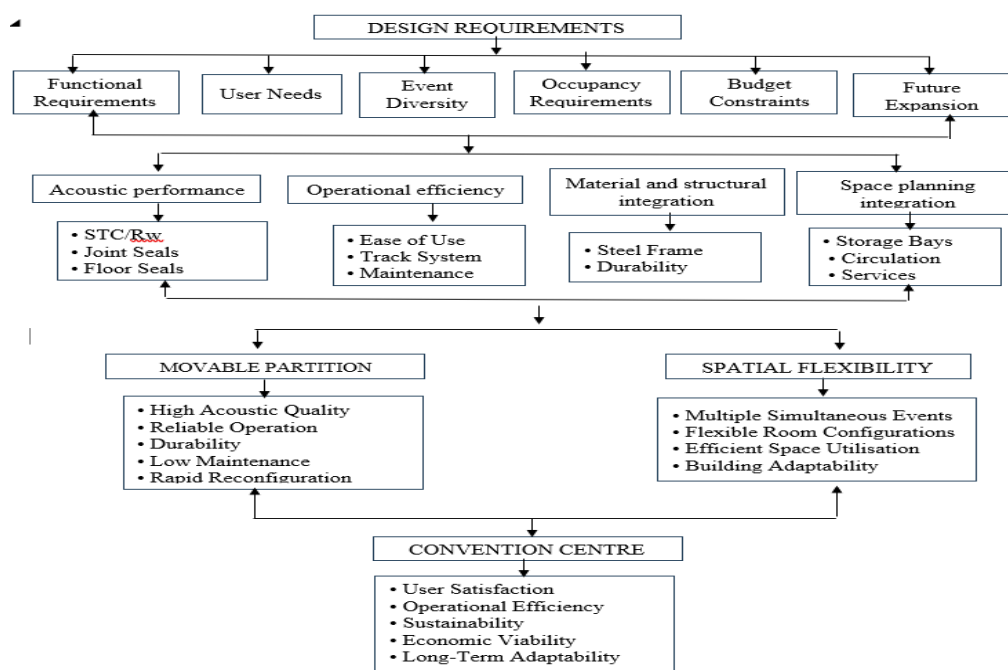
The operational findings from Uyo extend and localise the patterns described by Barnaby et al. (2023) and Schmidt III et al. (2010). The absence of storage bays, reactive-only maintenance cultures, and the use of imported partition systems without local spare parts availability compound the generic design failures documented in the international literature with context-specific vulnerabilities that must be addressed in any design framework targeting the Nigerian convention centre environment.

Material findings align with those of Bob G. et al. (2019) and Yeh et al. (2011): the exclusive use of accordion-type partitions across all surveyed Uyo facilities, driven by initial cost considerations rather than lifecycle performance, represents the single most addressable design decision with the greatest impact on acoustic and operational outcomes.

The interview data adds a qualitative dimension that the literature alone cannot provide: the cultural and procurement context in which partitions are selected in Uyo. The consistent theme across practitioner interviews that partition systems are treated as afterthoughts rather than architectural components identifies a professional practice gap as important as any technical specification deficit. Addressing this requires not only revised design guidance (as embodied in the PMPDF framework below) but also advocacy within professional practice for acoustic-first partition design mandates in convention facility briefs.

## The Performance-Based Movable Partition Design Framework (PMPDF)

Based on the synthesis of the literature, comparative case studies, and local field evidence, the study proposes the Performance-Based Movable Partition Design Framework (PMPDF). The framework argues that effective spatial flexibility in convention centres is achieved through four interconnected design variables, all of which must be addressed at the conceptual design stage:



## Graphical Interpretation of PMPDF Framework

**i. Acoustic Performance:** sound insulation ratings (minimum Rw/STC 55 dB for convention hall use), joint sealing, floor and ceiling interface design, and control of flanking sound transmission.

**ii. Operational Efficiency:** ease of operation, preventive maintenance planning, track system selection, and speed of space reconfiguration relative to event turnover requirements.

**iii. Material and Structural Integration:** steel-framed panel systems with precision aluminium extrusion joinery, structural coordination, durability specification, and compatibility with building services.

**iv. Space Planning Integration:** dedicated partition storage bays (including remote stacking), circulation route coordination, emergency egress compatibility, and mechanical and electrical services coordination.

When properly integrated, these four variables produce improved acoustic separation, reliable operation, reduced maintenance requirements, and efficient room reconfiguration outcomes that directly address the deficiencies identified in both the international literature and the local Uyo field evidence.

## CONCLUSION

Movable partition systems are an essential tool for achieving spatial flexibility in convention centres, but the evidence reviewed in this paper, drawn from the peer-reviewed literature, international case studies, and primary field data from Uyo demonstrates that their performance in practice frequently falls short of what is required. Acoustic inadequacy is the most critical limitation, unsealed steel-framed partitions achieve STC ratings as low as 31 under operating conditions (Yeh et al., 2011), well below the minimum needed for meaningful sound separation in large multifunctional halls. Operational wear, storage deficiencies, and poor design integration compound the problem. In Uyo, the field survey and interview data reveal that these generic limitations are aggravated by the prevalent use of accordion partitions without acoustic specification, the absence of storage provisions, the lack of maintenance planning, and a professional culture that treats partition systems as finishing elements rather than architectural components.

The central argument of this paper is that these limitations are not inevitable. They arise primarily from a failure to treat movable partition performance as a design priority at the conceptual stage. The PMPDF proposed in this study provides a structured framework for addressing this failure. For convention centres in Uyo and for the Ibom International Convention Arena now under development integrating acoustic performance, operational efficiency, appropriate materials, and space planning coordination from the earliest design decisions is not a luxury but a functional and economic necessity.

## RECOMMENDATIONS

**i. Integrate acoustic strategy at the conceptual stage:** As David and Fergus (2011) make clear, partitions alone cannot achieve adequate sound isolation; surrounding surfaces must be treated as part of a holistic acoustic system. An STC/Rw of 55–59 dB, as demonstrated at ExCeL London, should be adopted as the minimum target for convention hall partitions in Uyo.

**ii. Replace accordion systems with steel-framed sliding panel systems:** Field evidence from Uyo confirms that all surveyed facilities use accordion partitions, the poorest-performing category. Steel-framed systems with aluminium extrusion joinery should be specified in any new or refurbished convention facility in Uyo (Yeh et al., 2011).

**iii. Design dedicated storage and circulation provisions:** Remote stacking configurations are particularly valuable in convention halls where floor area is at a premium. The field survey found that stacked panels currently obstruct emergency egress in two Uyo facilities a safety failure that must be urgently resolved (Eze et al., 2023).

**iv. Establish preventive maintenance protocols:** Interview evidence from Uyo consistently identified reactive-only maintenance as a direct cause of partition failure and permanent loss of operational capacity. Maintenance protocols, access provisions, and local spare parts availability should be agreed at the design stage.

**v. Adopt adaptable, locally maintainable materials:** The selection of materials should account for local supply chain realities; specification of imported systems without local service support, as found in the Uyo survey, creates operational vulnerabilities not encountered in international contexts (Bob G. et al., 2019).

**vi. Mandate acoustic specifications in convention facility briefs:** Professional bodies and project clients should require acoustic performance targets not just partition types to be defined in the architectural brief for all convention centre projects in Nigeria, as the absence of such targets is the root cause of the performance gap documented in this study.

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