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REVIEWER'S REPORT

Manuscript No.: IJAR-59769

Title: Sustainable HVAC Operations and Energy Efficient Maintenance Frameworks for Smart Buildings in Saudi Arabia under Vision 2030.

Recommendation:

Accept as it is .....

Accept after minor revision.....

Accept after major revision .....

Do not accept (*Reasons below*) .....

Rating	Excel.	Good	Fair	Poor
Originality		✓		
Techn. Quality		✓		
Clarity		✓		
Significance	✓			

Reviewer Id: JPR-385

Reviewer's Comment for Publication.

The manuscript addresses an important and practically relevant subject concerning sustainable HVAC operations and energy-efficient maintenance in Saudi smart buildings under Vision 2030. It provides a structured critical review of recent literature covering climate-responsive operation, supervisory control, model predictive control, fault detection and diagnosis, condition monitoring, and maintenance strategies. A notable strength is its integrated approach, connecting energy efficiency with equipment reliability, indoor environmental quality, thermal comfort, and lifecycle maintenance. The proposed six-stage framework offers a coherent conceptual structure for translating building data and diagnostic information into verified maintenance actions and measurable operational outcomes. The discussion of Saudi climatic conditions, including inland heat and coastal humidity, adds regional relevance. The manuscript also appropriately distinguishes simulation-based findings from field-validated outcomes and identifies important research gaps concerning local validation, data quality, lifecycle costs, and occupant health. The performance indicators and practical implementation considerations further strengthen its potential value for facility managers, researchers, and building owners. Overall, the manuscript has good technical relevance, practical significance, and a clear conceptual contribution. However, some language and formatting inconsistencies, particularly in technical terminology, compound words, table presentation, and reference formatting, affect its academic presentation. **Minor revision is recommended** to improve consistency and readability before publication.