ISSN: 2320-5407

International Journal of Advanced Research

Publisher's Name: Jana Publication and Research LLP

www.journalijar.com

ISSN NO. 2320-5407

REVIEWER'S REPORT

Manuscript No.: IJAR- 56025

Title: Navigating Darkness: A Proposal for Dark Infrastructure to Reduce Light Pollution and Enhance NatureÂ's Pathways

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 Name: **ANAPANA GOPAL**

Reviewer's Comment for Publication.

General Comments

The manuscript addresses an increasingly important yet underexplored dimension of urban ecology: artificial light at night (ALAN) as a spatial barrier to ecological connectivity. By proposing "dark infrastructure" as a design and planning framework, the study makes a timely contribution at the intersection of landscape architecture, urban ecology, and environmental planning. The focus on Bonifacio Global City (BGC), a highly illuminated and rapidly urbanizing district, provides a compelling and relevant case study.

Overall, the paper is conceptually strong, visually driven, and grounded in contemporary literature. However, it would benefit from clearer articulation of research objectives, improved language consistency, and tighter methodological explanations to strengthen its academic rigor and readability.

Content and Originality

The concept of dark infrastructure as a parallel to blue-green infrastructure is a notable strength and demonstrates originality in framing darkness as a *design resource* rather than merely an absence of light. The integration of biotope mapping, ecological management zoning, and least-cost path analysis shows thoughtful synthesis of ecological planning tools.

While the idea itself is not entirely novel, the application of dark infrastructure within a dense Southeast Asian urban context adds originality and regional relevance. The study successfully extends existing ecological light pollution literature into a design-oriented proposal, which is appropriate for a journal focused on architecture and landscape architecture.

To further enhance originality, the paper could more explicitly differentiate how its approach advances beyond existing dark corridor or lighting mitigation studies.

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Technical Quality

The technical approach is generally sound and appropriate for a conceptual research study. The use of QGIS, spatial datasets (soil, slope, land cover, light pollution), and least-cost path analysis is well aligned with the study objectives.

However, some technical aspects require clarification:

- Criteria used in the value assessment matrix and weighting of variables should be explained more explicitly.
- Resolution, temporal range, and limitations of the light pollution data (e.g., VIIRS or lightpollutionmap.info) should be briefly discussed.
- The decision to exclude the final "effectiveness assessment" step of the Sordello et al. (2022) framework is justified, but its implications for interpretation should be more clearly acknowledged.

Providing these clarifications would strengthen methodological transparency and reproducibility.

Language and Presentation

The manuscript demonstrates strong academic intent but suffers from frequent spacing errors, missing punctuation, and inconsistent formatting, particularly in the abstract and section transitions. These issues occasionally interrupt readability and should be carefully revised.

Strengths include:

- Appropriate use of disciplinary terminology
- Clear explanation of ecological concepts for a design-oriented audience

Areas for improvement:

- Standardize spacing between words throughout the manuscript
- Improve sentence flow in the abstract and introduction
- Ensure consistent capitalization of terms (e.g., "dark infrastructure," "ecological networking map")

A thorough language and copy-editing pass is strongly recommended.

Structure and Organization

The paper follows a logical and conventional academic structure, progressing clearly from introduction and literature review to methodology, results, and conclusion. The subdivision of management strategies (create, improve, integrate, preserve) is particularly effective and well supported by literature.

However:

- Research objectives or guiding questions should be explicitly stated at the end of the Introduction.
- Some sections, particularly the Results and Analysis, rely heavily on figure descriptions and could benefit from deeper interpretive discussion.
- The "Terms of Publication" section should be clearly separated from the main academic content or moved to supplementary material, as it disrupts narrative flow.

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References and Citations
The reference list is current, relevant, and well aligned with the study's focus. The manuscript demonstrates strong engagement with key literature on ALAN, bats, urban connectivity, and landscape-scale mitigation strategies.
Minor issues to address:

- Ensure consistency in citation formatting (journal names, italics, spacing)
- Verify incomplete or truncated references (e.g., Longcore, 2023)
- Confirm uniform use of ampersands (&) and author initials

Overall, the literature base is solid and appropriate for publication.

Overall Recommendation
The manuscript presents a valuable and well-conceived contribution to the discourse on ecological urbanism and light pollution mitigation. With revisions focused on language clarity, methodological detail, and structural refinement, the paper has strong potential for publication in a design- and planning-oriented academic journal.

Final Decision
Minor Revision
The study is suitable for publication pending:

- Careful language and formatting corrections
- Clearer articulation of objectives and methodological criteria
- Minor structural refinements to improve academic coherence

Once these issues are addressed, the paper will make a meaningful contribution to research and practice on dark infrastructure and nocturnal ecological connectivity.