



Facilities and Infrastructure Management in an Islamic Boarding School: A Case Study of *Pesantren Darullughah Wadda'wah*, Pasuruan

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ABSTRACT

Management of facilities and infrastructure in Islamic boarding schools is a crucial factor in supporting the quality of education, but academic studies in this area are still limited. This study aims to analyze the implementation of facility and infrastructure management at Dalwa Islamic Boarding School based on Islamic values, describe its management cycle, identify challenges and opportunities, and formulate an integrated management model. The study used a qualitative approach with a case study design. The results show that Dalwa Islamic Boarding School has internalized Islamic values (amanah, ikhlas, efficiency, anti-israf, and maslahah) in the management of facilities and infrastructure. The management cycle includes six continuous stages: planning through annual deliberations, procurement based on the best specifications, distribution, use with an orderly schedule, preventive and educational maintenance involving students, and disposal of assets through transparent and documented procedures. Challenges faced include limited competent human resources, a suboptimal documentation system, tensions between tradition and modernization, and demands for environmental sustainability. Available opportunities include the adoption of information technology, strategic partnerships with the government and corporations, and the development of a green Islamic boarding school model. This study proposes a Values-Based and Technology-Based Infrastructure Management (MSPBNT) model supported by three pillars: integration of Islamic values, a structured management system, and adoption of information technology. This model is expected to serve as a reference for Islamic boarding schools (pesantren) in managing facilities and infrastructure effectively, efficiently, accountably, and in an educational and Islamic manner.

Keywords: Management, Facilities, Infrastructure, Islamic Boarding Schools, Islamic Values

ABSTRAK

Manajemen sarana dan prasarana di pesantren merupakan faktor krusial dalam mendukung kualitas pendidikan, namun kajian akademik di bidang ini masih terbatas. Penelitian ini bertujuan untuk menganalisis implementasi manajemen sarana dan prasarana di Pesantren Dalwa yang berlandaskan nilai-nilai Islam, mendeskripsikan siklus pengelolaannya, mengidentifikasi tantangan dan peluang, serta merumuskan model manajemen terintegrasi. Penelitian menggunakan pendekatan kualitatif dengan desain studi kasus. Hasil penelitian menunjukkan bahwa Pesantren Dalwa telah menginternalisasi nilai-nilai Islam (amanah, ikhlas, efisiensi, anti-israf, dan maslahah) dalam pengelolaan sarana dan prasarana. Siklus manajemen mencakup enam tahap berkelanjutan: perencanaan melalui musyawarah tahunan, pengadaan berbasis spesifikasi terbaik, pendistribusian, penggunaan dengan jadwal tertib, pemeliharaan preventif dan edukatif yang melibatkan santri, serta penghapusan aset melalui prosedur transparan dan terdokumentasi. Tantangan yang dihadapi meliputi keterbatasan SDM kompeten, sistem dokumentasi yang belum optimal, ketegangan tradisi dan modernisasi, serta tuntutan keberlanjutan lingkungan. Peluang yang tersedia antara lain adopsi teknologi informasi, kemitraan strategis dengan pemerintah dan korporasi, serta pengembangan model green pesantren. Penelitian ini mengusulkan model Manajemen Sarana Prasarana Berbasis Nilai dan Teknologi

(MSPBNT) yang didukung tiga pilar: integrasi nilai-nilai Islam, sistem manajemen terstruktur, dan adopsi teknologi informasi. Model ini diharapkan menjadi acuan bagi pesantren dalam mengelola sarana dan prasarana secara efektif, efisien, akuntabel, serta edukatif dan islami.

Kata Kunci: Manajemen, Sarana Dan Prasarana, Pesantren, Nilai-Nilai Islam

INTRODUCTION

Within the Indonesian education system, the importance of facilities and infrastructure management is normatively emphasized through various regulatory frameworks, including **Government Regulation No. 19 of 2005 on the National Education Standards** and its subsequent amendments, which explicitly recognize facilities and infrastructure standards as one of the eight National Education Standards.¹ More specifically, regulations issued by the **Ministry of Religious Affairs** and other policies governing *pesantren* (Islamic boarding schools) establish the minimum standards for facilities and infrastructure that should be fulfilled by Islamic boarding school-based educational institutions (*pesantren*).² Nevertheless, a considerable gap often exists between these normative regulations and actual implementation, particularly in *pesantren* that have experienced rapid and organic growth, where the expansion of physical facilities frequently precedes formal planning and systematic management.

Educational facilities and physical infrastructure constitute fundamental components that support the teaching and learning process. Adequate facilities and infrastructure play a pivotal role in ensuring the delivery of high-quality education while preparing learners to meet contemporary challenges.³ Bafadal defines educational facilities and infrastructure management as a collaborative process of utilizing all educational facilities and infrastructure effectively and efficiently to achieve predetermined educational objectives.⁴ In Islamic educational institutions, the management of facilities and infrastructure is inherently complex, encompassing not only the technical management cycle—including planning, procurement, and maintenance—but also strategic challenges related to dynamic budgeting and resource allocation. This complexity is further intensified by the dual demands of accountability: compliance with national educational standards and the moral-spiritual responsibility associated with managing financial resources derived from grants, *waqf* (Islamic endowments), and charitable donations. Consequently, facilities and infrastructure management should not be regarded merely as a technical administrative function but rather as a strategic determinant that directly influences the academic environment, teachers' performance, and the long-term quality of educational outcomes.

One of the most prominent Islamic boarding schools recognized for its educational facilities is *Pesantren Darullughab Wadda'wah* (commonly known as *Pesantren Dalwa*), located in

¹ Undang-Undang Republik Indonesia Nomor 20 Tahun 2003 Tentang Sistem Pendidikan Nasional, 1, No. 1 (2020): 153–62.

² Habib Hasyim Bin Alwi Al Bin Yahya, 'Analisis Hukum Normatif Atas Implementasi Perlindungan Hukum Terhadap Pengelolaan Pendidikan Pesantren Dalam Upaya Meningkatkan Kualitas Pendidikan' (Phd Thesis, Universitas Islam Sultan Agung Semarang, 2025), <https://Repository.Unissula.Ac.Id/42254/>.

³ Ahmad Ansori Et Al., 'Efektivitas Pengelolaan Sarana Dan Prasarana Pendidikan Dalam Meningkatkan Kualitas Pembelajaran', *Al-Ikhtiar: Jurnal Studi Islam* 2, No. 3 (2025): 186–200.

⁴ Ibrahim Bafadal, *Manajemen Perlengkapan Sekolah Teori Dan Aplikasinya*, 2004.

Bangil, Pasuruan, East Java, Indonesia.⁵ Over the years, the institution has experienced remarkable growth and has become one of Indonesia's leading modern Islamic boarding schools, particularly renowned for its intensive Arabic and English language programs that have produced thousands of highly qualified graduates. Beyond its academic reputation, however, an equally important question arises: how does a *pesantren* of such scale and organizational complexity manage thousands of physical assets including dormitory buildings, language laboratories, a grand mosque, operational vehicles, kitchen equipment, and information technology infrastructure to ensure that these resources effectively and sustainably support the educational process.

Academic research on facilities and infrastructure management in Islamic educational institutions, particularly *pesantren*, remains relatively limited compared with studies focusing on curriculum development, instructional methods, or *pesantren* leadership.⁶ Yet inadequate facilities and infrastructure management can substantially undermine educational quality. Poorly maintained buildings may reduce students' learning comfort, malfunctioning language laboratories may impede flagship educational programs, and ineffective asset management may generate inefficiencies that unnecessarily consume institutional resources.⁷ Conversely, effective facilities and infrastructure management creates a conducive, efficient, and sustainable learning environment that significantly contributes to the achievement of educational goals.⁸

Several previous studies have examined various aspects of facilities and infrastructure management in Islamic educational institutions. Hidayati Suhaili et al.⁹ explored participatory planning practices in *madrasah*, while Adif¹⁰ and Tahang¹¹ highlighted maintenance challenges arising from limited operational budgets. Likewise, Nyi Mas Arum Sari¹² described asset supervision practices within *pesantren*. However, these studies have predominantly focused

⁵ Pondok Pesantren Darullughah Wadda'wah, 'Pondok Pesantren Darullughah Wadda'wah - Membentuk Generasi Qur'ani', Pesantren Dalwa, Accessed 6 June 2026, <https://mydalwa.info>.

⁶ Feiby Ismail Et Al., 'Problematika Manajemen Sarana Dan Prasarana Di Madrasah Swasta', *Journal Of Islamic Education Leadership* 1, No. 2 (2021): 108–24.

⁷ Lumban Raja Yuda Kristian, *Pengaruh Manajemen Sarana Dan Prasarana Terhadap Hasil Belajar Peserta Didik*, 2026, <https://digilib.unila.ac.id/99300/>.

⁸ Moh Nasir Et Al., 'Strategi Pemberdayaan Sekolah Sebagai Upaya Peningkatan Manajemen Pendidikan', *Journal Of International Multidisciplinary Research* 1, No. 2 (2023), https://www.researchgate.net/profile/Fauzan-Firdaus-4/publication/387027211_Strategi_Pemberdayaan_Sekolah_Sebagai_Upaya_Peningkatan_Manajemen_Pendidikan/links/675cfcd58a08a27dd0c0f9f4/Strategi-Pemberdayaan-Sekolah-Sebagai-Upaya-Peningkatan-Manajemen-Pendidikan.Pdf.

⁹ Hidayati Suhaili Et Al., 'Evaluasi Pengelolaan Sarana Dan Prasarana Pendidikan Islam Di Pondok Pesantren Asy Syarif Untuk Optimalisasi Infrastruktur Dalam Mendukung Pembelajaran', *Menara Ilmu : Jurnal Penelitian Dan Kajian Ilmiah* 19, No. 2 (2025): 188–96, <https://doi.org/10.31869/mi.v19i2.6141>.

¹⁰ Adif Wiansyah, 'Manajemen Sarana Dan Prasarana Pendidikan Di Madrasah Tsanawiyah Pondok Pesantren Al-Ishlah Danau Pauh Kabupaten Merangin Provinsi Jambi' (Other, Uin Sts Jambi, 2025), <http://digilib.uinjambi.ac.id/id/eprint/4718/>.

¹¹ Tahang Tahang, 'Implementasi Manajemen Sarana Dan Prasarana Dalam Meningkatkan Mutu Pendidikan Di Pondok Pesantren Bustanul Ulum Tanjung Jabung Timur' (Other, Uin Sts Jambi, 2024), <http://digilib.uinjambi.ac.id/id/eprint/1956/>.

¹² Nyi Mas Arum Sari, 'Manajemen Sarana Dan Prasarana Di Madrasah Aliyah Nahdlatul Ulama Putri Buntet Pesantren Cirebon Tahun 2024' (Diploma, S1 - Manajemen Pendidikan Islam Uin Ssc, 2025), <https://web.syekhnurjati.ac.id/>.

on identifying operational issues in a descriptive and fragmented manner. They have not empirically examined how Islamic values—such as *amanah* (trustworthiness), *itqan* (professional excellence), avoidance of *israf* (wastefulness), and *maslahah* (public benefit)—are systematically integrated throughout the entire asset management cycle, encompassing participatory planning, anticipatory procurement, scheduled distribution, preventive maintenance, and accountable asset disposal.

Moreover, previous studies have largely overlooked several contemporary issues that have become increasingly important in modern educational management. These include the utilization of information technology for digital asset inventory systems, the management of external partnerships—such as corporate social responsibility (CSR) initiatives and alumni networks—to ensure financial sustainability, and the integration of environmentally sustainable principles (*green pesantren*) into the planning and management of educational facilities.

The most significant gap in the existing literature lies in the absence of studies that formulate and empirically evaluate a structured and measurable managerial intervention model for facilities and infrastructure management in Islamic educational institutions. Accordingly, this study is both timely and necessary because it not only addresses the gap in integrative management practices within *Pesantren Dalwa*—which represents a critical case due to its extensive asset portfolio and diverse funding sources but also offers a theoretical contribution through the development of the Value- and Technology-Based Facilities and Infrastructure Management Model (MSPBNT). This conceptual framework integrates the asset management cycle, Islamic spiritual values, and digital technology adoption into a unified management model, thereby addressing a significant gap that remains underexplored in the international literature on Islamic educational management.

This study aims to analyze the implementation of facilities and infrastructure management at *Pesantren Dalwa* from the perspective of Islamic values, describe the complete asset management cycle from planning to disposal, identify the major challenges and opportunities encountered in managing educational facilities and infrastructure, and formulate a facilities and infrastructure management model for *pesantren* that integrates Islamic values, contemporary management systems, and information technology to enhance the effectiveness, accountability, and sustainability of educational asset management..

METHOD

This study employed a qualitative approach using a case study design to gain an in-depth, holistic, and contextual understanding of facilities and infrastructure management¹³ at *Pesantren Dalwa*, Bangil, Pasuruan. The institution was selected as a critical case because of its extensive asset portfolio, diverse funding sources, and the integration of Islamic values with technological practices in asset management. The study was conducted over a three-month period, from January to March 2026.

Seven key informants were selected through purposive sampling based on the following criteria: (1) direct involvement in policymaking, implementation, or utilization of

¹³ Prof Dr, 'Sugiyono, Metode Penelitian Kuantitatif Kualitatif Dan R&D', *Cv. Alfabeta, Bandung* 25 (2008).

facilities and infrastructure; (2) a minimum of two years of service at the institution; and (3) willingness to participate voluntarily in the study. The informants consisted of the Vice Director for Facilities and Infrastructure, the Head of the Construction Division, the Inventory Coordinator, the Treasurer for Facilities and Infrastructure, two senior *santri* (students of an Islamic boarding school), and one administrative staff. Data were collected through three complementary methods: (1) semi-structured in-depth interviews; (2) systematic non-participant observation conducted over 14 non-consecutive days using observation checklists and detailed field notes; and (3) document analysis of institutional archives, including five years of inventory records, asset disposal reports, the School Revenue and Expenditure Budget Plans (*RAPBS*) from three planning periods, and photographic documentation of institutional activities. Source triangulation and methodological triangulation were employed to enhance the credibility and trustworthiness of the findings. The number of participants was determined based on the principle of data saturation.¹⁴

Data were analyzed using the **interactive model of Miles and Huberman**, which involves three simultaneous and iterative processes¹⁵. Data reduction began with **verbatim transcription** of interview recordings, followed by **manual open coding**, which generated initial codes such as *participatory planning through deliberation*, *anti-israf procurement specifications*, and *periodic asset audits*. These initial codes were subsequently organized into eight major thematic categories: **Islamic value foundations** (*amanah*, *itqan*, avoidance of *israf*, and *maslahah*), planning, procurement, distribution, utilization, maintenance, asset disposal, and technology-partnership innovation. Data display was developed through thematic matrices and descriptive narratives integrating verbatim interview excerpts with observational evidence.

Conclusion drawing and verification were conducted continuously using the constant comparative analysis technique by comparing findings across informants, data sources, and periods of data collection. The final interpretations, including the proposed Value- and Technology-Based Facilities and Infrastructure Management¹⁶ Model (MSPBNT), were further validated through reflective discussions with two key informants to ensure interpretive accuracy. The trustworthiness of the study was strengthened through source triangulation (comparing information obtained from institutional managers, teachers, and *santri*), methodological triangulation (integrating interviews, observations, and document analysis), and member checking, whereby research findings were returned to the participants for confirmation and validation.¹⁷

RESULTS AND DISCUSSION

¹⁴ Norman K. Denzin and Yvonna S. Lincoln, *Introduction: The Discipline and Practice of Qualitative Research*, 2008, <https://psycnet.apa.org/record/2008-06339-001>.

¹⁵ Matthew B. Miles et al., *Qualitative Data Analysis* (Sage, 2014), [https://www.google.com/books?hl=id&lr=&id=3CNrUbTu6CsC&oi=fnd&pg=PR1&dq=Miles,+M.+B.,+Huberman,+A.+M.,+%26+Salda%C3%B1a,+J.+\(2014\).+Qualitative+Data+Analysis+\(3rd+ed.\).+Sage&ots=Lj9YnjTJ1d&sig=q51rknUQnrLA_qjh5t6F26W4RWU](https://www.google.com/books?hl=id&lr=&id=3CNrUbTu6CsC&oi=fnd&pg=PR1&dq=Miles,+M.+B.,+Huberman,+A.+M.,+%26+Salda%C3%B1a,+J.+(2014).+Qualitative+Data+Analysis+(3rd+ed.).+Sage&ots=Lj9YnjTJ1d&sig=q51rknUQnrLA_qjh5t6F26W4RWU).

¹⁶ Barney Glaser, 'Strauss.(1967). The Discovery of Grounded Theory', *Alsine de Gruyter, New York*, 1967.

¹⁷ Mathew B. Miles Et Al., *Analisis Data Kualitatif: Buku Sumber Tentang Metode Metode Baru* (Penerbit Universitas Indonesia (Ui-Pres), 1992).

Implementation of Facilities and Infrastructure Management at *Pesantren Dalwa*

To understand the implementation of facilities and infrastructure management at *Pesantren Dalwa*, it is first necessary to establish a clear understanding of what constitutes educational facilities and infrastructure, why their management is essential, and which Islamic values should serve as the foundation for their governance. These three dimensions form the conceptual basis for a comprehensive understanding of facilities and infrastructure management, extending beyond its technical and administrative aspects.

Bafadal defines educational facilities as all equipment, materials, and furnishings that are directly utilized in the educational process, including desks, chairs, whiteboards, books, laboratory equipment, and computers. These resources constitute the operational instruments that support teaching and learning activities and facilitate the achievement of educational objectives.¹⁸ In contrast, educational infrastructure refers to the fundamental physical facilities that indirectly support the educational process, including school buildings, classrooms, school grounds, access roads, and utility systems such as electricity and water supply. Although these resources are not directly used during classroom instruction, they provide the essential physical environment that enables educational activities to be conducted effectively, safely, and sustainably.¹⁹

In the context of *Pesantren Dalwa*, which accommodates thousands of *santri* (students of an Islamic boarding school) who reside and study within the boarding school complex, the scope of facilities and infrastructure management is exceptionally extensive. It encompasses not only core educational facilities such as the mosque, dormitory buildings, classrooms, and laboratories but also supporting facilities essential to students' daily lives, including kitchens, bathrooms, sports facilities, and healthcare clinics. As explained by Saefudin, Head of the Construction Division:

"Here, every development project is driven by the spirit of service (*khidmah*) to those who seek knowledge. In the management practices of a *pesantren* like Dalwa, facilities and infrastructure cannot be separated. Take the bathrooms, for example. The building itself is considered infrastructure, but when the buckets or water dippers are damaged, the *santri* immediately complain because their hygiene routines are disrupted. That is why, in the facilities and infrastructure division, we prefer to view everything as a single integrated support system. The greater challenge is scheduling access to the computer laboratories for thousands of *santri* while the number of computers remains limited. This is fundamentally an issue of educational facilities, yet it also affects the infrastructure because the laboratories become continuously overcrowded."

From the perspective of Islamic educational management, the management of facilities and infrastructure cannot be separated from the Islamic values that should underpin

¹⁸ Murni Murni, 'Manajemen Sarana Dan Prasarana Pendidikan', *Jurnal Mimbar Akademika* 2, No. 2 (2018): 40–57.

¹⁹ Juita Gusniati Et Al., 'Standar Sarana Dan Prasarana Pendidikan Dasar Dalam Meningkatkan Proses Pembelajaran Yang Efektif', *Elementary School: Jurnal Pendidikan Dan Pembelajaran Ke-Sd-An* 11, No. 2 (2024): 572–82.

every aspect of institutional governance.²⁰ At least four Islamic values are particularly relevant to facilities and infrastructure management.²¹ The first is *amanah* (trustworthiness and responsibility).²² In Islam, every asset and resource entrusted to an individual or an institution constitutes an *amanah* that must be managed responsibly and to the best of one's ability.²³ Qur'an, Surah An-Nisa (4:58) explicitly instructs those entrusted with responsibility to discharge that trust faithfully and deliver it to those entitled to it.²⁴ Within the context of a *pesantren*, educational facilities and infrastructure represent an *amanah* entrusted by *waqf* (Islamic endowment) donors, benefactors, and the broader community. Consequently, these assets must be managed with a high degree of responsibility, integrity, and accountability.²⁵

This implies that facilities and infrastructure management in a *pesantren* extends beyond mere compliance with formal regulations; it represents a spiritual commitment to performing every task with excellence for the sake of Allah²⁶ Mulyasa emphasizes that the principle of *itqan* (professional excellence and perfection in work) constitutes the core of Islamic educational management, distinguishing it fundamentally from a purely secular approach to educational administration²⁷

The third principle is efficiency and the avoidance of *israf* (wastefulness and extravagance).²⁸ Islam explicitly prohibits wasteful and excessive use of resources.²⁹ In the context of facilities and infrastructure management, this principle requires that the procurement, utilization, and maintenance of assets be carried out efficiently—neither below the level required to support educational activities effectively nor beyond what is reasonably necessary, as excessive expenditure constitutes *israf* and is inconsistent with Islamic ethical accountability.³⁰ This principle has important practical implications, ranging from evidence-based needs assessment and careful planning to the selection of construction materials that

²⁰ Nispi Syahbani Et Al., 'Optimalisasi Manajemen Sarana Dan Prasarana Di Lembaga Pendidikan Islam: Kajian Normatif Dan Strategi Implementatif', *Al-Zayn: Jurnal Ilmu Sosial & Hukum* 3, No. 4 (2025): 5354–64.

²¹ Icha Aulia R. Sormin And Muhammad Sirozi, 'Prinsip-Prinsip Perencanaan Pengembangan Sarana Dan Prasarana Pendidikan Islam', *Jurnal Inovasi, Evaluasi Dan Pengembangan Pembelajaran (Jiepp)* 4, No. 3 (2024): 472–77.

²² Kholishudin Kholishudin, 'Nilai Filosofis Tanggung Jawab; Etika Dan Moral Dalam Perspektif Islam', *Journal Of Sharia Economics* 7, No. 1 (2025): 34–52.

²³ Iwan Hermawan Et Al., 'Konsep Amanah Dalam Perspektif Pendidikan Islam', *Qalamuna: Jurnal Pendidikan, Sosial, Dan Agama* 12, No. 2 (2020): 141–52.

²⁴ Sulastri Sulastri And Ainur Rosyidah, 'Penafsiran Amanah Dalam Kitab Tafsir Al-Munir Oleh M. Wahbah Az-Zuhaili: (Study Of The Quran Surah Al-Ahzab: 72, Surah An-Nisa': 58 And Surah Al-Anfal: 27)', *Al-Bayan: Jurnal Ilmu Al-Qur'an Dan Hadist* 3, No. 2 (2020): 212–34.

²⁵ Ahmad Gazali, 'Analisis Manajemen Wakaf Dalam Pemberdayaan Aset Wakaf Pada Pondok Pesantren Al-Risalah Batetangnga' (Phd Thesis, Iain Parepare, 2024), <https://Repository.Iainpare.Ac.Id/Id/Eprint/8519/>.

²⁶ Umar Sidiq And Wiwin Widyawati, 'Kebijakan Pemerintah Terhadap Pendidikan Islam Di Indonesia', *Ponorogo: Cv. Nata Karya*, 2019, <https://Repository.Iainponorogo.Ac.Id/483/1/Kebijakan%20pemerintah%20thd%20pend%20islam.Pdf>.

²⁷ H. Enco Mulyasa, *Manajemen Dan Kepemimpinan Kepala Sekolah* (Bumi Aksara, 2022).

²⁸ Baitul Hamdi, 'Prinsip Dan Etika Konsumsi Islam (Tinjauan Maqashid Syariah)', *Islamadina: Jurnal Pemikiran Islam* 23, No. 1 (2022): 1–15.

²⁹ Siti Nurun Nadhifah And Ahmad Syakur, 'Etika Konsumsi Dan Tantangan Hedonisme Perspektif Al-Qur'an Dan Hadis', *Jesya (Jurnal Ekonomi Dan Ekonomi Syariah)* 8, No. 1 (2025): 557–68.

³⁰ Junaidi Bashri Et Al., 'Peran Sarana Dan Prasarana Dalam Menunjang Kualitas Pendidikan', *Serumpun: Journal Of Education, Politic, And Social Humaniora* 3, No. 2 (2025): 155–71.

are durable and functional without being unnecessarily luxurious.³¹ As explained by Ahmad, the Vice Director for Facilities and Infrastructure:

"From our perspective, providing the best does not mean purchasing the most luxurious or the most expensive items. Rather, it means selecting what is most appropriate for its intended purpose, most durable, and capable of delivering the greatest long-term benefit for the santri. Take the mattresses in the dormitories, for example. We do not buy inexpensive folding mattresses that last only a year, but neither do we purchase expensive branded mattresses that cost three times as much. Instead, we choose mattresses with high-density foam, solid wooden frames, and a two-year warranty. Although they are slightly more expensive than average, they have proven to remain in good condition after five years of use. That, in our view, represents the best choice because it is efficient in the long term and reflects the principle of avoiding israf."

The fourth principle is *maslahah* (the promotion of the common good and public welfare).³² This principle emphasizes that facilities and infrastructure management in a *pesantren* should consistently prioritize the collective well-being of *santri*, teachers, and the entire boarding school community.³³ Consequently, decisions regarding procurement priorities, space allocation, and asset maintenance should be guided by careful assessments of which actions will generate the greatest positive impact on the quality, effectiveness, and comfort of the educational process.³⁴ Baharuddin and Makin argue that the principle of *maslahah* should serve as the primary guiding framework for managerial decision-making within Islamic educational institutions.³⁵

Baharuddin and Makin argue that the principle of *maslahah* should serve as the primary guiding framework for managerial decision-making within Islamic educational institutions.³⁶ The National Education Standards (SNP), as stipulated in Government Regulation No. 19 of 2005 and its subsequent amendments, establish the minimum standards for educational facilities and infrastructure. These standards encompass land, school buildings, classrooms, laboratories, libraries, and various supporting facilities required to ensure the effective implementation of educational activities.³⁷ For *pesantren* (Islamic boarding schools), Minister of Religious Affairs Regulation No. 30 of 2020 on the Establishment and Administration of *Pesantren* provides a more specific regulatory framework governing the minimum standards and operational requirements for the establishment, management, and

³¹ Bintang Noor Prabowo Et Al., 'Peran Arsitek Dalam Facility Management (Fm) Di Level Bangunan Gedung: Perspektif Dan Konteks Indonesia', *Modul 24*, No. 1 (2024), <https://ejournal.undip.ac.id/index.php/modul/article/view/64622>.

³² Mufarrihul Hazin Et Al., 'Hak Asasi Manusia Dalam Perspektif Islam Dan Maqashid Al-Syari'ah', *Cendekia: Jurnal Studi Keislaman* 7, No. 1 (2021): 101–14.

³³ Ainur Rofiq, 'Konseling Kiai Terhadap Manajemen Pesantren', *Conseils: Jurnal Bimbingan Dan Konseling Islam* 2, No. 1 (2022): 14–39.

³⁴ Laila Wahyuni, *Manajemen Strategi Pengelolaan Sarana Dan Prasarana Dalam Mencapai Prestasi Madrasah*, N.D., Accessed 5 June 2026, <https://eprints.iainu-kebumen.ac.id/id/eprint/1376/>.

³⁵ Baharuddin Baharuddin And Moh Makin, 'Manajemen Pendidikan Islam', Uin-Maliki Press, 2016, <http://repository.uin-malang.ac.id/1440/>.

³⁶ Nabila Zoenda Nashirah Et Al., 'Administrasi Sarana Dan Prasarana Dan Implementasinya Di Pesantren', *Penerbit Tahta Media*, 2025, <https://tahtamedia.co.id/index.php/issj/article/view/1559>.

³⁷ Miftahul Fikri, 'Konsep Dasar Manajemen Pendidikan & Peran Standar Operasional Prosedur (Sop)', *Konsep Dasar Manajemen Pendidikan & Peran Standar Operasional Prosedur (Sop)* 24 (2020): 1–18.

development of Islamic boarding school institutions..³⁸ Although these regulatory frameworks provide useful minimum standards, Mulyasa argues that minimum standards should not be regarded as the ultimate goal of educational institutions. Instead, high-quality educational institutions should strive to exceed these baseline requirements through the continuous improvement and development of their facilities and infrastructure in order to better support educational excellence and institutional sustainability.³⁹

Based on the findings from observations and interviews, *Pesantren Dalwa* has begun to systematically internalize these Islamic values into its facilities and infrastructure management practices. The institution demonstrates a strong commitment to integrating Islamic ethical principles into the governance of its educational assets. The principle of *amanah* (trustworthiness and accountability) is reflected in a transparent inventory recording system and periodic asset audits conducted by the foundation, ensuring that every asset can be properly accounted for to *waqf* donors, benefactors, and other stakeholders. Likewise, the principle of efficiency through the avoidance of *israf* (wastefulness) is implemented through procurement policies that are consistently based on comprehensive needs assessments rather than ceremonial considerations or unnecessary expenditure. As explained by Ahmad, the Vice Director for Facilities and Infrastructure:

Within the broader framework of educational management theory, George R. Terry identifies four fundamental management functions—planning, organizing, actuating, and controlling (POAC)—which are equally applicable to the management of educational facilities and infrastructure. These four interrelated functions provide a systematic framework for ensuring that educational assets are planned, organized, utilized, and monitored effectively and efficiently in support of institutional objectives..⁴⁰ When these four management functions are implemented consistently in the management of *pesantren* facilities and infrastructure, and their execution is guided by the Islamic values discussed above, they give rise to what may be described as Islamic values-based facilities and infrastructure management. This model of asset management is not only effective from a managerial perspective but also meaningful in terms of its spiritual and ethical dimensions. It integrates managerial efficiency with Islamic moral principles, ensuring that institutional resources are managed responsibly, sustainably, and in ways that maximize benefits for the educational community while fulfilling religious and ethical obligations..⁴¹ This represents the **ideal vision** that should serve as the guiding framework for *Pesantren Dalwa* and other modern *pesantren* in managing their educational facilities and infrastructure. By integrating sound management practices with Islamic ethical values, *pesantren* can develop a sustainable asset

³⁸ Yusuf Hanafiah, 'Madrasah Diniyah: Antara Realitas, Political Will, Dan Political Action', *Al-Fabim: Jurnal Manajemen Pendidikan Islam* 2, No. 1 (2020): 35–61.

³⁹ Mulyasa, *Manajemen Dan Kepemimpinan Kepala Sekolah*.

⁴⁰ Neri Wijayanti And Febrian Arif Wicaksana, 'Implementasi Fungsi Manajemen George R Terry Dalam Meningkatkan Mutu Lembaga Pendidikan', *Jurnal Cerdik: Jurnal Pendidikan Dan Pengajaran* 3, No. 1 (2023): 30–43.

⁴¹ Dwi Retno Setyowati, 'Implementasi Integrasi Nilai-Nilai Pendidikan Agama Islam Pada Pembelajaran Biologi Di Tarbiyatul Mu'allimin Wal Mu'allimat Al Islamiyyah Pondok Pesantren Darunnajah Jakarta' (Phd Thesis, Universitas Islam Sultan Agung Semarang, 2025), <https://Repository.Unissula.Ac.Id/42542/>.

management system that not only supports educational excellence but also embodies the principles of accountability, stewardship, and public benefit that lie at the heart of Islamic educational philosophy.⁴²

Facilities and Infrastructure Management Cycle at *Pesantren Dalwa*

The facilities and infrastructure management cycle at *Pesantren Dalwa* reflects the integrated implementation of the four fundamental management functions—planning, organizing, actuating, and controlling—in the governance of educational facilities and infrastructure. The planning function is realized through annual consultative meetings (*musyawarah*) involving the *pesantren* leadership, *asatidz* (Islamic teachers), and representatives of the *santri* to identify facility needs and establish development priorities based on the principle of *maslahah* (the common good).

The organizing function is reflected in the organizational structure of the Facilities and Infrastructure Division, which clearly delineates responsibilities among the Inventory Coordinator, the Technical Maintenance Team, and the Treasurer for Facilities and Infrastructure. The actuating function is implemented through procurement practices guided by the principles of efficiency and the avoidance of *israf* (wastefulness), whereby every procurement decision is based on selecting the most appropriate and durable specifications to meet institutional needs rather than pursuing unnecessary luxury. Finally, the controlling function is carried out through periodic reporting to the foundation and transparent annual asset audits conducted at the end of each academic year.

As explained by Anwar:

"Every year we conduct a planning meeting, followed by the procurement of the best and most durable equipment according to actual needs. The assets are then distributed to the respective units, utilized according to established schedules and regulations, maintained regularly, and, when they are no longer serviceable, disposed of through formal procedures."

The facilities and infrastructure management cycle implemented at *Pesantren Dalwa* is consistent with the framework proposed by Barnawi, who argues that educational facilities and infrastructure management comprises six interrelated stages: planning, procurement, distribution, utilization, maintenance, and disposal. Each stage possesses distinct characteristics, challenges, and best practices that require systematic implementation to ensure the effectiveness, efficiency, and sustainability of educational asset management.⁴³

In the context of the continuous growth of *Pesantren Dalwa*, planning must take into account projected increases in the number of *santri*, the development of new educational programs, and the facility standards required to sustain the institution's academic excellence. This perspective is consistent with the view of Robbins and Coulter, who argue that without effective planning, the procurement of facilities and infrastructure tends to be reactive,

⁴² Paul Hersey And Kenneth H. Blanchard, 'Management Of Organizational Behavior', prentice-Hall Inc., 1969 (Cloth And Soft Cover. Soft Cover \$3.95): Utilizing Human Resources', *Academy Of Management Journal* 12, No. 4 (1969): 526–526, <https://doi.org/10.5465/Amj.1969.19201155>.

⁴³ M. Arifin Barnawi, 'Manajemen Sarana Dan Prasarana Sekolah', *Ar-Ruzz Media*, 2012.

responding only after needs have escalated into critical problems, rather than proactive, anticipating future requirements before they become operational challenges.

The first stage of the management cycle planning is arguably the most critical and, at the same time, one of the most frequently neglected stages, particularly in institutions that experience rapid and organic growth, such as *pesantren*. Effective planning requires a systematic needs assessment to identify existing assets, determine facility deficiencies, evaluate assets requiring repair or replacement, and anticipate future infrastructure needs that will support the institution's ongoing educational development and strategic expansion.

Barnawi identifies two complementary types of facilities and infrastructure planning that should be implemented concurrently: short-term planning, typically conducted on an annual basis and focused on operational needs, and long-term planning, spanning approximately five to twenty years, which is strategic in nature and directed toward the institution's long-term development, sustainability, and future expansion. Together, these planning horizons enable educational institutions to address immediate operational requirements while anticipating future challenges and opportunities in a systematic and sustainable manner.⁴⁴ In the context of *Pesantren Dalwa*, as a well-established institution that continues to expand, both forms of planning are indispensable. Short-term planning ensures the availability of facilities and infrastructure required to support the institution's operational needs within the current academic year, whereas long-term planning ensures that the physical development of the *pesantren* remains aligned with its broader academic vision, institutional mission, and long-term strategic objectives. The integration of these two planning horizons enables the institution to respond effectively to immediate operational demands while maintaining a coherent and sustainable trajectory for future growth. Integrasi antara rencana pengembangan sarana-prasarana dengan rencana strategis pesantren secara keseluruhan adalah salah satu kunci keberhasilan manajemen yang sering diabaikan.⁴⁵ Mulyasa menekankan bahwa dalam setiap keputusan pengadaan, pertimbangan transparansi dan akuntabilitas harus selalu diutamakan terutama karena pesantren umumnya mengelola dana publik (wakaf, donasi, SPP) yang harus dapat dipertanggungjawabkan kepada para pemangku kepentingan.⁴⁶ Ini sangat relevan untuk Pesantren Dalwa, yang sebagai pesantren terkemuka tentu menerima kepercayaan (amanah) berupa donasi dan wakaf dari banyak pihak.⁴⁷

For *pesantren* that are supported by **waqf** (Islamic endowment) assets, as is the case for many Islamic boarding schools in Indonesia, **waqf asset management** entails distinct **Islamic jurisprudential (fiqh)** considerations that must be thoroughly understood by institutional administrators. Since *waqf* assets are entrusted for specific religious and social purposes, their management must comply not only with sound managerial principles but also with the legal and ethical provisions of Islamic law to ensure that they are preserved, utilized

⁴⁴ Ruang Lingkup Manajemen Sarana Dan, 'Bab Ii Ruang Lingkup Manajemen Sarana Dan Prasarana Pendidikan', *Manajemen Sarana Dan Prasarana*, 2023, 15.

⁴⁵ Bernawi Arifin, 'Manajemen Sarana Dan Prasarana Sekolah', *Jogjakarta: Ar-Ruzz Media*, 2012.

⁴⁶ Shokib Nasirudin, 'Implementasi Akuntabilitas Dan Transparansi Pengelolaan Dana Zakat, Infak, Shadaqah Dan Wakaf Pada Yayasan Lembaga Amil Zakat, Infak, Shadaqah Dan Wakaf (Lazis Dan Wakaf) Sabilillah Malang' (Phd Thesis, Universitas Islam Negeri Maulana Malik Ibrahim Malang, 2018), [Http://Etheses.Uin-Malang.Ac.Id/13900/](http://Etheses.Uin-Malang.Ac.Id/13900/).

⁴⁷ Mulyasa, *Manajemen Dan Kepemimpinan Kepala Sekolah*.

productively, and maintained in accordance with the intentions of the *waqf* donors (*waqif*).⁴⁸ The *nazhir* (the legally appointed manager or trustee of *waqf* assets) has the responsibility to manage *waqf* property productively and in accordance with its designated purpose. This obligation includes preserving the sustainability of the endowed assets, ensuring their optimal utilization for public benefit, and administering them in compliance with both Islamic legal principles and the intentions of the *waqif* (the donor of the *waqf*).⁴⁹ In the context of *pesantren* facilities and infrastructure, this means that *waqf* assets may not be sold, transferred, or repurposed without complying with the strict procedures prescribed by Islamic law (*Sharia*). Any modification to the status or intended use of *waqf* property must adhere to the relevant legal and religious regulations to ensure that the original intent of the *waqif* is preserved and that the assets continue to serve their designated religious, educational, or social purposes.⁵⁰ A sound understanding of *waqf* law is therefore an essential competency for facilities and infrastructure management personnel in *pesantren*. This competence enables administrators to manage endowed assets in accordance with both professional management principles and the requirements of Islamic jurisprudence. It also represents one of the defining characteristics that distinguishes facilities and infrastructure management in Islamic educational institutions from that of general educational institutions.

Given the scale of *Pesantren Dalwa*, which manages thousands of assets distributed across multiple units and locations, an information technology–based inventory management system supported by an integrated digital database that is accessible to all relevant departments is no longer merely a desirable option but an urgent institutional necessity. Such a system would facilitate accurate asset tracking, enhance transparency and accountability, improve coordination among administrative units, and support timely decision-making regarding procurement, maintenance, utilization, and asset disposal. Ultimately, the adoption of an integrated digital inventory system would strengthen the efficiency, sustainability, and overall effectiveness of facilities and infrastructure management within the *pesantren*.⁵¹

In the context of a *pesantren* such as *Pesantren Dalwa*, which manages numerous historic buildings alongside newly constructed facilities, a well-planned and systematically scheduled maintenance program represents a critical long-term investment. For *Pesantren Dalwa*, the cost of preventive maintenance addressing potential deterioration before damage occurs is substantially lower than the cost of corrective maintenance, which involves repairing assets after significant damage has already taken place.

This perspective is supported by Bush and Middlewood, whose study on school asset management across various countries found that educational institutions implementing structured preventive maintenance programs were able to reduce their long-term maintenance expenditures by approximately 30–40% compared with institutions that relied primarily on reactive maintenance practices. These findings underscore that preventive

⁴⁸ Kepentingan Umat And Irfan Faiz Almalik, *Strategi Pengelolaan Harta Benda Wakaf Untuk*, N.D., Accessed 5 June 2026.

⁴⁹ Abdurrahman Kasdi, 'Peran Nadzir Dalam Pengembangan Wakaf', *Ziswaf: Jurnal Zakat Dan Wakaf* 1, No. 2 (2016): 1–14.

⁵⁰ Walidah Mubarakah, *Analisis Pengelolaan Dan Pemberdayaan*, N.D., Accessed 5 June 2026.

⁵¹ Gareth R. Jones And Gareth R. Jones, *Organizational Theory, Design, And Change*, 2013, https://Kaizen-Ju.Com/Storage/Images/Files/File_17534721143ewab.Pdf.

maintenance not only extends the service life of educational facilities and infrastructure but also enhances operational efficiency, optimizes resource utilization, and contributes to the long-term sustainability of institutional assets.⁵²

Amid the ongoing process of modernization, *pesantren* face the challenge of preserving the traditional values that have long served as the foundation of their educational system.⁵³ At *Pesantren Dalwa*, the maintenance of educational facilities and infrastructure also has an educational dimension. The involvement of *santri* (students of an Islamic boarding school) in maintaining cleanliness and caring for the *pesantren* environment commonly known in the *pesantren* tradition as *kerja bakti* (communal voluntary work) is not merely a cost-saving mechanism for environmental maintenance. Rather, it constitutes an integral part of *santri* character development. Values such as responsibility, environmental stewardship, and a sense of belonging to the institution are cultivated through their direct participation in maintaining the *pesantren* environment. This pedagogical wisdom has long been embedded in the *pesantren* tradition and should continue to be preserved, even in an era when *pesantren* are becoming increasingly modern and rely more extensively on professional cleaning services. As revealed in our interview with the Head of the Facilities and Infrastructure Division:

"We have transparent and well-documented procedures. Every asset proposed for disposal due to severe damage or the end of its useful life must first be reviewed in a team meeting involving the Facilities and Infrastructure Division, the Finance Division, and representatives of the Foundation. We prepare an official asset disposal report that clearly states the reasons for the disposal. All disposals are properly recorded in the inventory register, and this reflects our commitment to upholding the principle of amanah (trust and accountability)."

At *Pesantren Dalwa*, an established asset disposal mechanism is implemented as the final stage of the facilities and infrastructure management cycle. Asset disposal refers to the process of releasing facilities and infrastructure from institutional accountability based on justifiable and accountable reasons. As stated by Bafadal, assets may be disposed of when they are severely damaged and no longer economically feasible to repair, have reached the end of their useful life, have been lost, or are no longer aligned with institutional needs. A proper asset disposal process should be conducted through transparent and well-documented procedures and, particularly in the case of *waqf* assets, in accordance with the principles of Islamic law (*sharia*).⁵⁴ In practice, however, many *pesantren* in Indonesia remain weak in this aspect. Numerous assets that are no longer fit for use are not formally removed from the inventory, resulting in inaccurate asset records and creating potential legal and administrative issues. From the various management cycles implemented at *Pesantren Dalwa*, it is important to understand that this cycle is not a linear process that occurs only once, but rather a continuous and iterative cycle. The disposal of an asset should trigger evaluation and planning for its replacement; routine maintenance provides valuable information for future planning; and the effective utilization of facilities and infrastructure depends on a well-

⁵² Tony Bush, *Theories Of Educational Leadership And Management*, 2020, <https://www.torrossa.com/Gs/Resourceproxy?An=5018841&Publisher=Fz7200>.

⁵³ Barlian Fajri And Naser Ali Abdulghani, 'Symbolic Interactionism Between Students And Caregivers In Pesantren', *Al-Jadwa: Jurnal Studi Islam* 5, No. 1 (2025): 1–19.

⁵⁴ Bafadal, *Manajemen Perlengkapan Sekolah Teori Dan Aplikasinya*.

organized distribution system. The integration and coherence of all these stages constitute the foundation of effective and sustainable facilities and infrastructure management. This should serve as the benchmark for *Pesantren Dalwa* in managing its extensive and highly valuable institutional assets.

Challenges and Opportunities in Facilities and Infrastructure Management at *Pesantren Dalwa*

The findings from observations conducted in the inventory warehouse and the Facilities and Infrastructure Administration Office indicate that asset records are still maintained manually using ledger-based inventory books. Of the 320 recorded asset items, the researcher identified 15 items that did not clearly specify the year of acquisition, while 8 items lacked standardized inventory identification codes. This condition creates difficulties in tracking the service life of assets and determining maintenance priorities. These findings are further supported by documentary evidence in the form of the 2024 asset disposal report, which states that one ladder and five waste bins had to be disposed of because the dates of their most recent routine maintenance could not be accurately identified.

Every *pesantren* faces challenges in implementing effective facilities and infrastructure management while also encountering opportunities and innovative approaches to address them. This study identified several major challenges faced by *Pesantren Dalwa* as a large, modern, and continuously expanding Islamic boarding school. As stated by Saefudin:

"In carrying out our khidmah (service) in the Facilities and Infrastructure Division, we certainly face challenges, and we openly acknowledge them. In general, pesantren place greater emphasis on the study of the kitab kuning (classical Islamic texts) and Islamic sciences. Managing buildings, electrical systems, and asset inventories requires knowledge that we have acquired through formal education as well as practical experience. However, we have begun involving santri who possess technical and computer-related skills, while also collaborating with alumni who have backgrounds in management and with anyone who can contribute their expertise. We also provide gradual training for santri serving in this division. Ultimately, we believe that limitations should never become an excuse for failing to improve."

The primary challenge faced by *Pesantren Dalwa* is the limited availability of human resources with expertise in facilities and infrastructure management. Like many *pesantren*, the institution is primarily managed by *kyai* and *ustadz* who possess extensive expertise in Islamic scholarship but do not necessarily have formal educational backgrounds in asset management, civil engineering, or educational administration. Consequently, facilities and infrastructure management is often carried out intuitively and based on practical experience rather than being guided by structured management principles.

This finding is further supported by the researcher's observations in the Facilities and Infrastructure Division office, which revealed that of the seven permanent staff members, only two had formal educational backgrounds in management or engineering. The remaining staff were *pesantren* graduates who had acquired their competencies through self-directed learning and practical experience. Furthermore, the 2025 personnel records indicate that none of the Facilities and Infrastructure Division staff possessed professional certification in asset management or building engineering.

This finding is further corroborated by a separate interview with Ahmad, the Vice Head of the Facilities and Infrastructure Division, who acknowledged that the planning of construction projects frequently encounters technical constraints because staff members have difficulty interpreting architectural drawings (*blueprints*) and accurately estimating project costs. Consequently, the *pesantren* often has to engage external consultants for large-scale construction projects.

As noted by Mujamil Qomar in his discussion of Islamic educational management, the limited managerial capacity of human resources constitutes one of the most fundamental challenges faced by Islamic educational institutions in Indonesia. For *Pesantren Dalwa*, the most realistic solution is to combine capacity-building and professional development for existing staff with the recruitment of qualified professionals for technical positions requiring specialized expertise. However, unlike previous studies that merely identified this issue, the present study found that *Pesantren Dalwa* has begun to address this challenge proactively by involving *santri* with technical expertise and establishing partnerships with alumni strategy that will be discussed further in the section on opportunities.

The second challenge concerns the limitations of the documentation and asset-recording system. Many *pesantren*, including relatively large institutions, continue to manage their facilities and infrastructure inventories manually or through highly simplified recording systems. This situation gives rise to several problems, including difficulties in monitoring the current condition of institutional assets, an increased risk of asset loss or misuse that may go undetected, and the inability to make procurement decisions based on accurate and reliable data. As emphasized by Barnawi and Arifin, an effective inventory management system constitutes a fundamental prerequisite for all other functions of facilities and infrastructure management. Without accurate and comprehensive asset records, planning, procurement, maintenance, and asset disposal cannot be carried out effectively, as each of these management functions relies on a sound and reliable inventory system.⁵⁵

This finding reinforces the argument of Barnawi and Arifin that an effective inventory system is a fundamental prerequisite for all functions of facilities and infrastructure management. Without accurate and up-to-date inventory records, planning, procurement, maintenance, and asset disposal are all carried out on a fragile foundation. However, the field data indicate that this weakness does not stem from a lack of awareness on the part of the management. Rather, it is primarily attributable to budgetary constraints and limited technical capacity to transition to a digital inventory system, thereby revealing a significant opportunity for institutional improvement.

The next challenge concerns the tension between tradition and modernization in *pesantren* management. *Pesantren* such as *Pesantren Dalwa*, which are deeply rooted in Islamic traditions while remaining receptive to modernization, often face a fundamental dilemma: to what extent should managerial modernization be promoted, and how can such modernization be implemented without undermining the values and ethos that have long constituted the institution's distinctive strengths? In the context of facilities and infrastructure management, this dilemma is reflected in questions such as whether the

⁵⁵ Barnawi, 'Manajemen Sarana Dan Prasarana Sekolah'.

pesantren should develop highly modern and luxurious facilities to compete with international schools, or whether physical simplicity should instead be preserved as an integral component of the educational values instilled in *santri*. Nevertheless, Nata offers an important perspective by arguing that the facilities required by educational institutions are not necessarily those that are the most luxurious, but rather those that are the most functional and most conducive to achieving their educational objectives.⁵⁶

Tantangan yang relevan di era kontemporer adalah keberlanjutan (*sustainability*) pengelolaan sarana dan prasarana dalam konteks perubahan lingkungan dan tuntutan ramah lingkungan. Dalam beberapa tahun terakhir, isu keberlanjutan lingkungan semakin mendapatkan perhatian dalam pengelolaan lembaga pendidikan di seluruh dunia. Sebagaimana diungkapkan Fullan bahwa lembaga-lembaga pendidikan yang tidak mengintegrasikan prinsip-prinsip keberlanjutan dalam pengelolaan fisik mereka tidak hanya menanggung biaya operasional yang lebih tinggi dalam jangka panjang, tetapi juga kehilangan kesempatan untuk mendidik siswanya tentang tanggung jawab lingkungan.⁵⁷

Another challenge that is particularly relevant in the contemporary era is the sustainability of facilities and infrastructure management in the context of environmental change and the growing demand for environmentally responsible practices. In recent years, environmental sustainability has received increasing attention in the management of educational institutions worldwide. As noted by **Fullan**, educational institutions that fail to integrate sustainability principles into the management of their physical facilities not only incur higher long-term operational costs but also miss valuable opportunities to educate students about environmental responsibility.⁵⁸

On the other hand, advances in information technology present highly promising opportunities for innovation in *pesantren* facilities and infrastructure management. Increasingly affordable and user-friendly software-based asset management systems enable *pesantren* to digitalize inventory records, automate maintenance scheduling, monitor asset conditions in real time, and generate accurate reports to support planning and accountability. Applications of this kind, which have long become standard practice in large organizations, can now be readily adapted to the context of educational institutions, including *pesantren*. Bush and Middlewood explain that the implementation of technology-based asset management systems in schools across various countries has consistently resulted in significant cost savings and substantial improvements in institutional accountability.⁵⁹

Based on the findings from observations, in-depth interviews, and document analysis, the funding of facilities and infrastructure development and maintenance at *Pesantren Dahwa* is supported through strategic partnerships with various stakeholders. These include the central and regional governments through grant programs for Islamic educational institutions, business organizations and corporations through Corporate Social

⁵⁶ H. Abuddin Nata, *Manajemen Pendidikan: Mengatasi Kelemahan Pendidikan Islam Di Indonesia* (Kencana, 2012).

⁵⁷ Michael Fullan, 'System Thinkers In Action', *Innovation. U.K. London: Dfes With NcsI*, 2004, [Http://Cmapspublic.Ihmc.Uk/Rid=1j8m7dysh-Kpm40s-26wb/Systemthinkersinaction%20fullan.Pdf](http://Cmapspublic.Ihmc.Uk/Rid=1j8m7dysh-Kpm40s-26wb/Systemthinkersinaction%20fullan.Pdf).

⁵⁸ Barlian Fajri And Oktio Frenki Biantoro, 'Nilai-Nilai Sholawat Wahidiyah Dalam Menumbuhkan Kecerdasan Spiritual Dan Akhlakul Karimah', *Jurnal Pendidikan Islam* 13, No. 1 (2023): 72–92, <https://doi.org/10.38073/Jpi.V13i1.1098>.

⁵⁹ Bush, *Theories Of Educational Leadership And Management*.

Responsibility (CSR) initiatives, successful alumni through structured donation and *waqf* programs, as well as educational and research institutions interested in collaborating on the development of research facilities and innovation.

In the contemporary era, the ability to establish and manage external partnerships has become an increasingly critical managerial competency for nonprofit organizations, including Islamic educational institutions, particularly as expectations regarding the quality of educational facilities continue to rise while internal resources remain inherently limited.

Observations conducted in the *santri* dormitories corroborate this finding. Of the 20 mattresses randomly inspected across three dormitory rooms, 18 remained in good and serviceable condition despite having been in use for approximately three to five years. However, the observations also revealed increasing external pressure from several parents who requested improvements to bathroom and study room facilities to a standard comparable with that of international schools. Such expectations have the potential to shift the ethos of simplicity that has long been a defining characteristic of the *pesantren* tradition..

In addition, *Pesantren Dalwa* has begun developing a **Green *Pesantren*** model as part of its innovation in facilities and infrastructure management. The concept of a Green *Pesantren*, which integrates sustainability principles into the physical design and environmental management of Islamic boarding schools, has gained increasing attention within the discourse of Islamic education in Indonesia. Its implementation includes the use of solar panels to generate renewable energy, environmentally friendly wastewater treatment systems, community-based waste management involving *santri*, and the development of *pesantren*-based agricultural initiatives. These innovations are not only environmentally sustainable but also serve as effective educational media for cultivating students' awareness of human responsibility toward the environment.

For *Pesantren Dalwa*, which possesses extensive land resources and a strong tradition of innovation, the development of a Green *Pesantren* model represents a highly promising opportunity to strengthen its identity as an Islamic educational institution that is not only academically excellent but also environmentally responsible.

Observations conducted in the *pesantren* computer laboratory revealed that the existing network infrastructure and hardware are already capable of supporting the adoption of a cloud-based asset management system. All 15 computers in the laboratory were connected to the internet with adequate bandwidth, and several younger staff members demonstrated basic proficiency in using spreadsheets and management applications. These findings are consistent with the study by Bush and Middlewood, which reported that the implementation of technology-based asset management systems consistently leads to significant cost savings and enhanced institutional accountability. However, what distinguishes the present findings is the identified potential for **co-creation** by involving *santri* with information technology competencies as both system implementers and trainers—a model that has not yet been widely adopted by other *pesantren*.

Integrating the analyses presented above, this study proposes a facilities and infrastructure management model that can be adopted by both *salaf* and modern *pesantren*, namely the Value- and Technology-Based Facilities and Infrastructure Management (MSPBNT) Model. This model is founded on three mutually reinforcing pillars. The first

pillar, value integration, ensures that every decision related to facilities and infrastructure management is guided by the Islamic values of *ikhlās* (sincerity), *amanah* (trust and accountability), honesty, efficiency, and *maslahah* (public benefit). The second pillar, a structured management system, applies a comprehensive management cycle including planning, procurement, distribution, utilization, maintenance, and asset disposal supported by clear procedures, accurate documentation, and transparent accountability. The third pillar, technology adoption, emphasizes the use of information technology to enhance the efficiency, accuracy, and sustainability of asset management.

When implemented synergistically, these three pillars establish a facilities and infrastructure management system that is not only managerially effective but also educationally meaningful and firmly grounded in Islamic values.

CONCLUSION

Based on the findings of this study on the implementation of facilities and infrastructure management at *Pesantren Darullughab Wadda'wah* (Dalwa), several conclusions can be drawn.

First, *Pesantren Dalwa* has implemented facilities and infrastructure management grounded in Islamic values, namely *amanah* (transparency and accountability in asset management), *itqan* (professionalism and excellence in work), efficiency and the avoidance of *israf* (preventing waste while emphasizing long-term benefits), and *maslahah* (prioritizing the common good). These values are embedded throughout the management process, as reflected in transparent inventory recording systems, periodic audits, and procurement policies based on systematic needs assessments rather than ceremonial considerations.

Second, the facilities and infrastructure management cycle at *Pesantren Dalwa* encompasses six interconnected stages: planning through annual deliberation (*musyawarah*), procurement based on appropriate specifications and institutional needs, distribution, utilization according to established schedules and regulations, maintenance through preventive and educational approaches involving *santri*, and asset disposal conducted through transparent and well-documented procedures. Collectively, these stages demonstrate the integration of Terry's four managerial functions planning, organizing, actuating, and controlling within a continuous and sustainable management cycle.

Third, *Pesantren Dalwa* faces several managerial challenges, including the limited availability of personnel with professional expertise in asset management, suboptimal documentation and inventory systems, the tension between preserving traditional *pesantren* values and embracing modernization, and the increasing demand for environmentally sustainable facilities management. Nevertheless, these challenges also present important opportunities, particularly through the adoption of digital asset management technologies, the development of strategic partnerships with government institutions, corporate organizations through Corporate Social Responsibility (CSR) programs, and alumni networks, as well as the advancement of a Green *Pesantren* model that promotes environmentally responsible educational facilities.

Finally, this study proposes the Value- and Technology-Based Facilities and Infrastructure Management (MSPBNT) Model, which is founded upon three interrelated

pillars: the integration of Islamic values, the implementation of a structured management system, and the adoption of information technology. This model is expected to serve as a practical and conceptual framework for *Pesantren Dalwa* and other Islamic boarding schools in managing educational facilities and infrastructure more effectively, efficiently, transparently, and sustainably, while preserving the educational and spiritual values that characterize Islamic educational institutions.

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