

## **DADAULO: An Integrated Aldersgate College-Quezon Campus Administration Building**

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### **ABSTRACT**

To create an environment that improves occupant well-being and productivity while encouraging sustainability, this project investigated the architectural integration of biophilic design concepts into the new administrative building for Aldersgate College – Aurora Campus. To create a harmonious relationship between the constructed environment and nature, the design drew on the natural beauty of Aurora province by incorporating features such as natural light, ventilation, and flora. Important tactics included outdoor courtyards and terraces to promote engagement with nature, internal gardens and green walls to enhance air quality and aesthetics, and wide windows and breeze blocks to optimize natural light. To maximize sustainability and usefulness, cutting-edge technologies such as energy modeling software, Sketchup, and Enscape were employed. Informed by surveys and interviews, user-centric design principles guided the design of pleasant, practical rooms, while careful consideration of the site's terrain and vegetation ensured the building matched and enriched its surroundings. The end product was a biophilic haven that serves the college's administrative requirements while offering a calm, motivating environment. This study sets a new benchmark for educational institutions and serves as a model for future projects that incorporate nature into the built environment, showcasing the potential of biophilic design to transform administrative buildings into sustainable, health-promoting spaces.

*Keywords:* Biophilic Architecture, Administration Building, Aldersgate College, Sustainability, Campus Planning

### **INTRODUCTION**

Agriculture is the main economic activity in the Cagayan Valley region, which is where Aldersgate College's Aurora Campus is situated. Fertile fields and a wide range of agricultural goods, such as rice, corn, and other fruits and vegetables, are its main features. But the region also has difficulties in providing high-quality agricultural education and training.

The campus layout of agricultural institutions should be carefully considered. Campus plans can greatly enhance the educational environment, promote teamwork and research, and help the agriculture sector as a whole grow. Students may receive a thorough education and be prepared to meet the needs of the agriculture industry with a campus plan that includes a range of facilities, such as labs, research centers, demonstration farms, and classrooms.

According to Minkos et al. (2017), further guidance is essential to successfully nurture schools that actively support equitable educational outcomes for all students, even though school leaders play a critical role in creating safe and inclusive settings for diverse student populations. By supervising the delivery of comprehensive student support services, such as guidance counseling, special education programs, and social-emotional support, school administration plays a critical role in guaranteeing equal educational results.

With a supporting annex building for low-traffic services, the proposed project, "DADAULO: An Integrated Aldersgate College-Quezon Campus Administration Building,"

aimed to centralize administrative functions, housing executives who make important decisions regarding the school's operations, policies, and programs. It stands for power and leadership in the school that oversees students' support services and academic pathways.

The school administration buildings in the Philippines are a vibrant illustration of the interaction between historical influences and contemporary educational reforms. On the one hand, leadership practices are still influenced by the history of Spanish and American colonialism, with Filipino leadership styles subtly emphasizing biological links (Antonio & Gamage, 2007). The design and arrangement of governmental buildings may reflect this cultural difference, which might occasionally result in a more centralized or hierarchical system.

A sustainable campus creates a comprehensive approach to education and community life by balancing environmental responsibility with social well-being and economic sustainability (Felix, 2023). This multifaceted accomplishment requires action on several levels of campus operations. According to Felix (2023), by striking a balance between social responsibility, economic sustainability, and environmental responsibility, a sustainable campus develops an all-encompassing approach to education and community life (Felix, 2023). This complex process entails taking necessary action at several campus operational levels. As stated by Felix (2023), renewable resources and energy efficiency are important ways to reduce the environmental impact. Students' environmental consciousness is increased when sustainability concepts are incorporated into studies and programs. Furthermore, it is critical to support professors and students in making sustainable choices by implementing initiatives such as waste reduction plans and eco-friendly transportation options (Lehman et al., 2013).

## METHODOLOGY

### Ocular Inspection

It Included thorough analysis of the designated site for the Semi-Agriculture Education. This entailed assessing the project site's climatic setting, accessibility, existing structures, environmental factors, zoning, and social considerations.

### Consultation

To support the technical components of the research and the design solution, consultation interviews were conducted with a range of specialists to obtain crucial information for the project. All phases of the idea, from planning and conception to development and beyond, were guided by this data analysis. The project's needs have already been established via preliminary data analysis. Furthermore, because it highlights possible obstacles and possibilities, analyzing this data was essential for developing and improving the design solution. In particular, data gathered at the agricultural research center was examined to guide the project's initial design.

### Research Participants

The participants included in this study consisted of the following:

- A. The president of Aldersgate College, Rev. Dr. Micah Ryan B. Ramel, Ph.D., oversees all college administration.
- B. The vice president of administration of Aldersgate College, the person in charge of all administrative matters at the aforementioned college, is Engr. Josephine P. Jasmin, MBA, MEP-CE.

- C. Executive Designer, Engineer, Aurora Campus, Aldersgate College. Angelito G. Capuno, RME, MBA, is in charge of the college's new campus and infrastructure improvements in the Quezon municipality.
- D. The Quezon Municipal Planning and Development Officer, Ms. Maybelle Blossom Dumlao-Sevillena, is in charge of overseeing and carrying out public works and infrastructure development projects for the Quezon Local Government Unit.

### Architectural Books and Other Resources

Books, e-books, manuscripts, manuals, construction rules and regulations, published research, journals and articles, and the internet provided the additional material required to support the study topic.

- A. **National Building Code of the Philippines** - a consistent set of guidelines for appropriate architectural design.
- B. **Revised Fire Code of the Philippines** - a guide to building laws and regulations that describes common fire safety and preventative measures, and how to address fire safety violations.
- C. **Batasang Pambansa Blg. 344** – a law that establishes minimal standards for making public buildings accessible to people with disabilities
- D. **UI Greenmetric World University Rankings**- an annual rating of sustainability-related universities. The University of Indonesia launched the program, which rates universities globally according to their dedication to and efforts in support of sustainability.
- E. **Sustainable Development Goals (SDGs)**: defined as "development which meets the needs of current generations without compromising the ability of future generations to meet their own needs".

### Consultation Result

Aldersgate College aims to deliver a more advanced learning environment. It intends to extend its campus into Quezon, a nearby community. This expansion includes the planned new college campus and the development of one of its new schools, the School of Agriculture, which offers agricultural courses and contributes to improving agriculture education in the province and municipality by introducing new programs that could benefit the community. Additionally, the proponent listed several potential development zones, including the administrative building, the school of agriculture building, and the school of religion building. The proponent said that the researchers are free to choose what is most effective for the site and that there are no restrictions on where infrastructure may be placed.

### Demand and Supply Analysis

In the evolving landscape of private higher education, specialized semi-agricultural institutions are emerging as a compelling option, merging academic rigor with practical agricultural training. Unlike established public institutions, whose enrollment is often driven by population growth, private schools require a nuanced understanding of market dynamics.

The demand for a semi-agricultural education is intrinsically linked to the community's interest in this specialized field. A heightened awareness of sustainable food systems and a desire for experiential learning are key drivers. To gauge potential

enrollment, researchers should analyze local demographic data to identify families with a vested interest in agriculture or sustainable living practices.

On the supply side, securing adequate land for agricultural activities presents a unique challenge for private semi-agricultural schools. Beyond physical resources, these institutions must ensure access to qualified faculty with both academic expertise and practical agricultural knowledge, capable of bridging the gap between theory and practice. Curriculum development is crucial, balancing academic requirements with the acquisition of essential farming skills. Collaborations with local farms, agricultural organizations, or universities can provide invaluable resources, expertise, and internship opportunities.

A comprehensive market analysis for a specialized semi-agricultural school extends beyond traditional economic models. It necessitates a deep understanding of the community's desire for an educational experience that fosters environmental stewardship and cultivates practical agricultural skills. The school's ability to deliver on this promise, coupled with its commitment to sustainable practices that align with evolving food systems, is paramount to its success. By conducting a thorough analysis that considers these factors, specialized semi-agricultural schools can effectively position themselves to meet the growing demand for this unique educational model.

### Marketing Strategy

The marketing message should emphasize hands-on learning opportunities, such as farm-to-table initiatives, greenhouse management, and animal husbandry programs. Highlighting the school's commitment to local food systems and fostering a connection with nature can resonate with families seeking an alternative educational approach that prepares students for a future focused on food security and environmental sustainability.

Beyond mere functionality, the campus's architectural design and features can be intentionally crafted to reflect the school's educational philosophy and institutional identity (Pont & Jacobs, 2017). Incorporating biophilic design, which demonstrates a commitment to environmental responsibility, alongside collaborative learning spaces that promote student interaction, can be impactful.

Furthermore, strategically presenting the administrative building through compelling visuals and virtual tours can engage prospective stakeholders and leave a lasting impression on potential donors, faculty, and students. By showcasing the administrative building as a symbol of the school's values and dedication to excellence, it can attract supporters and establish a strong foundation for the future campus.

Effective marketing strategies for a semi-agricultural campus may include:

- **School Website:** This platform serves as a primary tool for promoting the school to a broad audience. Social media advertisements and brochures can highlight the unique benefits of a semi-agricultural education. This may include testimonials from alumni who have pursued careers in agriculture, industry job growth data, success stories of student-led farm-to-table initiatives, and detailed information on offered courses and other relevant details.
- **Social Media:** This medium can disseminate information about course offerings, open house events, and other activities. For instance, Facebook can be used to showcase the school's services and gather feedback from alumni or current students for continuous improvement. Specifically, it can highlight hands-on learning opportunities through

images and videos of students working in greenhouses, caring for animals, or participating in field projects.

- **Open House Events:** These events should focus on showcasing the school's agricultural features. Virtual tours of the school's grounds, gardens, and animal facilities can be offered. Prospective students and families can interact with faculty and current students to gain a firsthand understanding of the program.
- **Sustainability Emphasis:** The school's commitment to sustainable agricultural practices should be highlighted. This includes showcasing the use of renewable energy sources, organic gardens or fields, and responsible animal husbandry practices. This approach can appeal to environmentally conscious families.
- **Scholarship Opportunities:** Providing scholarships or financial aid specifically for students interested in pursuing an agricultural education can broaden access and attract motivated individuals.
- **Community Activities:** Hosting events at the administrative building, such as open houses or informational seminars, allows potential stakeholders to experience the facility firsthand and engage with school leadership.

## TECHNICAL STUDY

Project Location: Aldersgate St., Aurora, Quezon, Nueva Vizcaya, Region II, Northern Luzon Philippines

Region: Region II (Cagayan Valley)

Climate: Tropical Rainwater Climate

## Design Concepts

### *Biophilic Design*

The project was guided by the biophilic idea of designing a school administration building, emphasizing the use of natural materials and nature-inspired features to create a peaceful, effective, and connected work environment for employees. Additionally, by utilizing living walls, water features, natural materials, and optimizing natural light and ventilation, the design aimed to reduce stress, increase focus, and enhance the general well-being of school administrators. Beyond just being aesthetically pleasing, this biophilic design promotes a connection to nature within the structure, sets a positive example for pupils, and increases environmental consciousness among the school community.

In addition to encouraging a relationship with nature within the building, this biophilic approach has a wider impact. By providing an aesthetically pleasing, environmentally conscious setting, the administration building could serve as a strong example for today's youth. By creating a bond with nature outside of the classroom, this might raise environmental consciousness among the school community.

### **Basic Elements:**

The following were elements applied to the Administration Building:

- A. The building's rooftop is equipped with **solar panels**. The solar panel can serve as a source of energy and electricity to support the entire structure because the location is far from the town.
- B. **Natural ventilation** enhances airflow and air quality.
- C. **Natural Lighting** enhances visibility and reduces electricity consumption.

- D. **Open Spaces** promotes natural settings of ventilation and lighting and also serves as a multi-purpose space for educational events and community occasion

### Design Considerations

- A. **Biophilic Design**, the main concept of which is to enhance nature for the benefit of people. Other design elements are enhanced by the thoughtful application of biophilic elements.
- B. **Sustainability Practice**: Artificial systems are not necessarily due to natural light and ventilation.
- C. **Sustainable materials and water-efficient landscaping** reduce their negative effects on the environment.
- D. **Accessibility**: The administrative building must adhere to universal design standards and be inclusive. Simple navigation is made possible by the natural surroundings and clear signs.
- E. **Circulation**: Wayfinding pathways and interior courtyards encourage movement and interaction. Simple space reconfiguration is made possible by modular plants and furnishings.

### Design Strategies

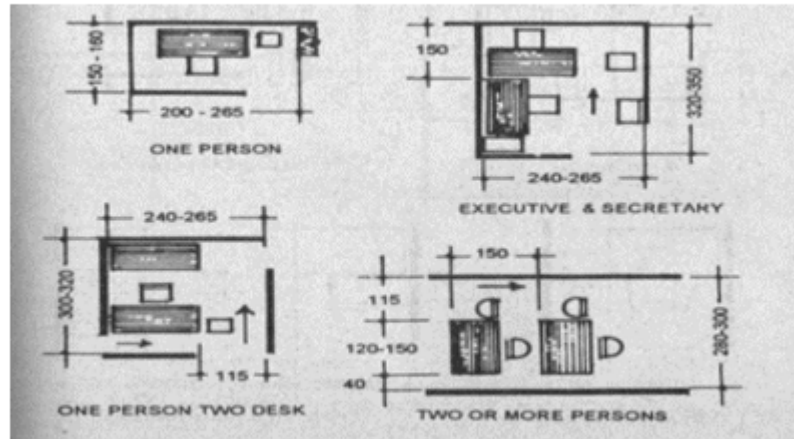
- 1. **Visual Bond with the Natural World**
  - a. The building has large windows on all sides to allow for natural ventilation.
  - b. There are covered spaces and places to sit close to gardens.
- 2. **Non-Rhythmic Sensory Stimuli**
  - a. View of the open agricultural fields.
  - b. Air quality from surrounding trees and bushes
- 3. **Thermal & Airflow Variability**
  - a. Solar panels assembly at roof top
  - b. Breeze Blocks and open-air balconies
  - c. Building orientation
- 4. **Presence of Water**
  - a. River and esplanade
- 5. **Dynamic and Diffuse Light**
  - a. Direct sunlight
  - b. Light buffered by trees
  - c. Light distribution
- 6. **Connection with Natural Systems**
  - a. In-site water infrastructure

## 7. Office Layout

- a. Team-based Layout

**Figure 1**

*Small Office Layout*



*Source: Designer's Handbook*

## 8. Biomorphic Forms and Patterns

- a. Window details: trim and moldings, glass color, texture, mullion design, window reveal detail.

## 9. Material Connection with Nature

- a. Accent details (natural wood grains, wood-textured PVC)
- b. Natural color palette, particularly greens and school theme colors

## 10. Complexity & Order Nature of the Space Patterns

- a. Façade

## 11. Prospect

- a. Balconies, catwalks, staircase landings
- b. Views including shade trees, bodies of water

## 12. Refuge

- a. Spaces reserved for reflection, relaxation, reading, or complex cognitive tasks
- b. Covered student areas are outside the administration building.

## 13. Mystery

- a. Winding paths

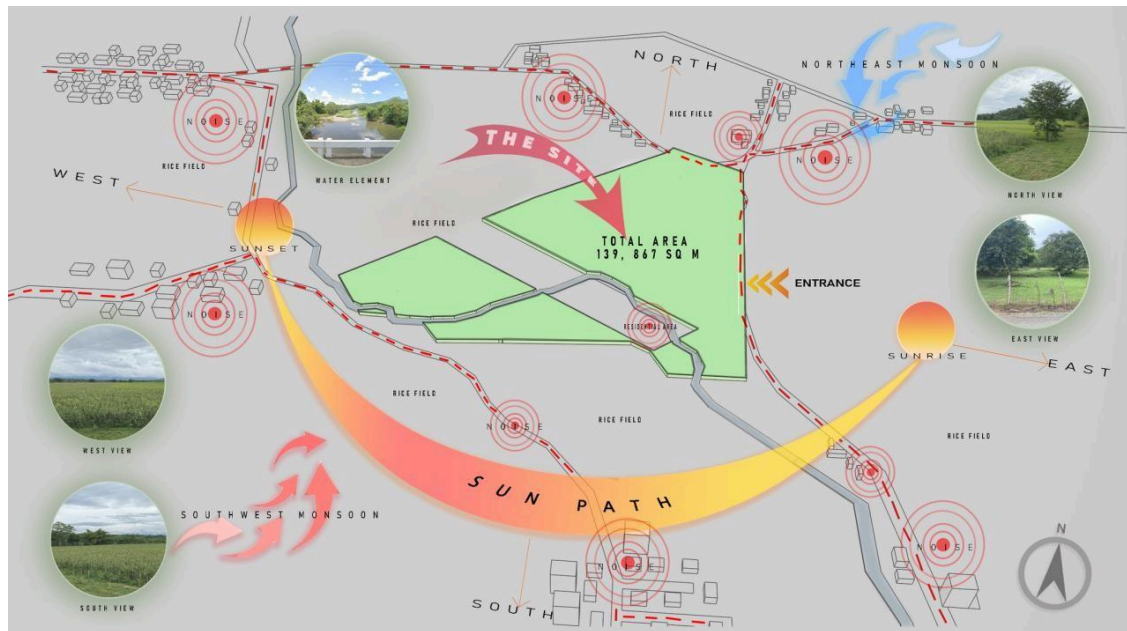
## 14. Risk/Peril

On-site water features

## Site Analysis

The orientation, sun path, wind direction, warmest and coolest areas, noise from vehicles and the surrounding environment, and the current vegetation are all depicted in the site study.

**Figure 2**  
*Site Analysis*



On the site, environmental noise is also audible. Due to its location on an open agricultural field, the Aldersgate College, Aurora Campus site receives more sunlight and less shadow overall. Additionally, the site's overall land size is 139,867 square meters.

### SWOT Analysis Strength

- A. The site's extensive agricultural land implies a sizable region devoted to farming, offering plenty of room for a range of applications and advancements in the fields of agriculture and research.
- B. The site's level topography makes construction simple by decreasing the need for extensive grading or land leveling, which might save costs, time, and project complexity. Because the location is agricultural land, there is an opportunity to immediately engage in real-world farming activities. Users may learn firsthand from real agricultural operations thanks to this feature.
- C. A creek or other natural resource on the property offers a natural water source for irrigation and aquatic ecosystem research. Given that the project is a semi-agricultural campus, integrating sustainable construction practices within the campus architecture ought to encourage them. In keeping with the campus's agricultural emphasis, the buildings' environmental impact may be reduced by utilizing natural light and ventilation, renewable energy sources like solar panels, and water-saving technologies.

### Weakness

- A. The location may have fewer users and stakeholders if there aren't many residential regions close by. Because of lesser community involvement, less direct assistance from nearby neighbors, and perhaps restricted access to local labor and supplies, this might result in a less active campus community. Long commutes may be required for researchers, staff, and students, further impeding

a sense of community.

- B. A possible shortcoming in terms of overall operation is a central living area on campus. This location could disrupt the coherent design and growth of the academic and agricultural cores, making it more difficult to integrate various zones and to travel about the campus effectively. Additionally, it can limit future growth in research centers, instructional structures, or agricultural activities. Access routes and infrastructure (roads, utilities) surrounding core houses may become more complex to design, and it may be difficult to balance residents' privacy with the requirements of a functional campus.
- C. It might be challenging to control humidity and temperature in structures used for both academic and agricultural purposes. Buildings with adequate insulation and energy-efficient temperature control systems are essential.

### **Opportunity**

- A. The local community might be greatly empowered by the introduction of an agricultural education program. The initiative may significantly enhance the communities' agricultural knowledge and skills by teaching them modern farming methods and sustainable practices. Better lifestyles, more output, and general economic prosperity can follow from this. Additionally, this potential can be significantly increased by the presence of a well-equipped school administration facility. This might entail working with nearby farms, creating curricula, and doing needs analyses. Additionally, certain spaces inside the building may be used for training sessions, workshops, and community outreach initiatives. This enables direct information sharing between the community and the school, giving residents access to the newest farming techniques.
- B. Because no other school in the town offers comparable agricultural education programs, the center has a distinct edge that might draw students, get funding, and result in fruitful partnerships, enhancing its standing as a crucial player in community development. Additionally, the organization has the capacity to improve regional agricultural innovation and education standards. By spearheading these initiatives, the center might build a strong reputation and become recognized as an authority in the subject.
- C. Additionally, a framework like this encourages grant applications for agricultural research and teaching. These funds can be used for equipment, new activities, and even scholarships for local children. The school might turn the administrative facility into a center for hiring people, acquiring resources, and encouraging collaboration if it makes efficient use of it. This positions the school as a pioneer in agricultural education and cutting-edge methods in the region.

### **Threats**

- A. The establishment of a sufficient road network is a significant difficulty faced by the residential area on the proposed school site. These homes act as tangible obstacles to the building of essential roads, which might hinder campus access and internal communication.
- B. This might lead to a poorly run school where people and things move more slowly, which would lower the operational efficiency of the research center. Additionally, residents who do not want their homes to be moved or their lifestyles disturbed are likely to oppose plans to build highways through the

residential area.

- C. A complex web of problems is created by the planned development, which also raises the possibility of land-use disputes. If not properly planned, combining homes, educational facilities, and agricultural land in one location might lead to conflict. Planning and zoning permissions may be delayed by these problems, which may even turn into legal disputes. Careful deliberation and strategic planning are required to strike a balance between the interests of citizens, agriculture, and education.

### Space Functions and Considerations

1. **Executive Offices:** These are private areas used by top officials, such as the superintendent or principal.
2. **Conference Rooms:** There are both big and small conference rooms accessible for internal and external meetings with community members, parents, faculty, and staff.
3. **Administrative staff** such as secretaries, receptionists, and data entry specialists have an open workspace in the general office area.
4. **Records/archive rooms:** These spaces offer safekeeping for transcripts, student files, and other important documents.
5. **Main lobby and Reception area:** In a friendly setting, visitors may check in, wait for appointments and obtain information.
6. **Staff lounge:** A cozy space with cooking facilities where staff members may relax, chat and have lunch.
7. **The Human Resources Office** is where hiring, interviewing, and employee relations activities take place.

### SOCIOECONOMIC STUDY

**Social benefits** - Cooperative efforts in composting programs, farmers' markets, and on-campus gardens fosters a sense of community. Healthy lives are promoted by local, fresh food options and green spaces for recreation. This may be reflected in the administrative building by displaying student-grown veggies in the entryway, creating a welcoming, vibrant space.

**Cultural benefits** - Students gain knowledge of sustainable practices and of many food cultures through the integration of agriculture. The administrative building itself may host cultural events centered on food and farming, or incorporate architectural elements that respect regional agricultural customs.

**Educational benefits** - Courses on food systems, sustainability, and agriculture provide students with practical learning experiences. The line between theory and practice is blurred when the campus farm turns into a living laboratory, and the administrative building may house research centers or schools devoted to these fields.

**Health benefits** -Produce sales and agricultural education initiatives are two ways the school might make money. A rise in the demand for goods and services might be advantageous to nearby companies. A farm-to-table cafe may even be located in the administrative building, promoting the local economy and exhibiting the campus's agricultural abundance.

**Economic benefits: Selling crops or offering agricultural education programs** are two ways the school might generate revenue. Increased demand for goods and services might benefit local businesses. A farm-to-table cafe may even be located in the administrative building, showcasing the campus's agricultural wealth and stimulating the local economy.

**Environmental benefits** - Water conservation and on-site composting are examples of sustainable practices that can be implemented. The campus farm provides pollinator habitat and promotes biodiversity. By utilizing recycled materials and energy-efficient technologies, the administration building may set a strong example for sustainable practices on campus and serve as a model for green construction.

**FINANCIAL STUDY**

**Table 1**  
*Phases of Implementation*

SUMMARY OF TOTAL PROJECT COST		
1	First Floor	12287200
2	Second Floor	8223600
3	Miscellaneous	19270000
<b>Total Project Cost</b>		<b>39,780,800</b>

**CONCLUSION**

The researcher focused on a well-rounded educational experience when designing the campus. A peaceful yet invigorating atmosphere can be created by biophilic elements such as gardens and water features. Different learning styles will be accommodated, and interaction will be encouraged in flexible learning environments. Integration of technologies, such as virtual reality and smart irrigation, will further improve the experience. Finally, the campus will be environmentally friendly, employing rainwater collection, solar panels, and other measures to mitigate its environmental impact.

Students will enjoy easy access to research resources, campus transportation, classroom spaces, and even farm-fresh food alternatives thanks to the school's well-designed layout. Dedicated research spaces, cozy workspaces, and chances to learn about sustainable agriculture are all advantages for faculty and staff. Workshops on healthy eating and sustainable practices, maybe supported by a community garden or local farmers' markets, may help the community thrive. This emphasis on inclusivity can enrich the lives of students, staff, teachers, and the community at large while establishing a thriving center for learning and sustainability practices.

**RECOMMENDATIONS**

The Aldersgate College - Aurora Campus may grow and evolve as a result of the examination of the proposed project. As the researcher examined the gathered information and devised a remedy for the study's issue, several suggestions emerged. In

light of the findings of this study, the following suggestions are offered:

- Because the study's result is primarily intended for scholarly reasons, a number of factors, including structural and technical components, should be taken into account and further planned. The hallway's dimensions should be consistent, and all drawings should include technical labels, callouts, and line weights. This is especially important for the area that handles rainwater collection and demonstrates water flow.
- It is also recommended that the proponent add other sustainable technologies, other than those stated in the study.
- Provide details from what is stated on the basic elements of the design, like providing explanations and illustrations through the proposed design.
- Provide other information on office plans as a guide for the researchers.

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