



Dr. Emilio B. Espinosa, Sr. Memorial
State College of Agriculture and Technology
Cabitan, Mandaon, Masbate

INSTITUTIONAL ACCREDITATION

AREA VIII

INFRASTRUCTURE and other LEARNING RESOURCES

Area VIII –Infrastructure and Other Learning Resources highlights DEBESMSCAT's commitment to providing a safe, functional, accessible, sustainable, and conducive environment for teaching, learning, research, extension, and student development. The College implements needs-based planning, systematic maintenance, safety and risk management, and strategic utilization of its facilities. Its laboratories and shops support hands-on learning, research, innovation, extension, and production, while its ICT systems, library collections, e-books, and electronic journals provide accessible and technology-driven learning resources.



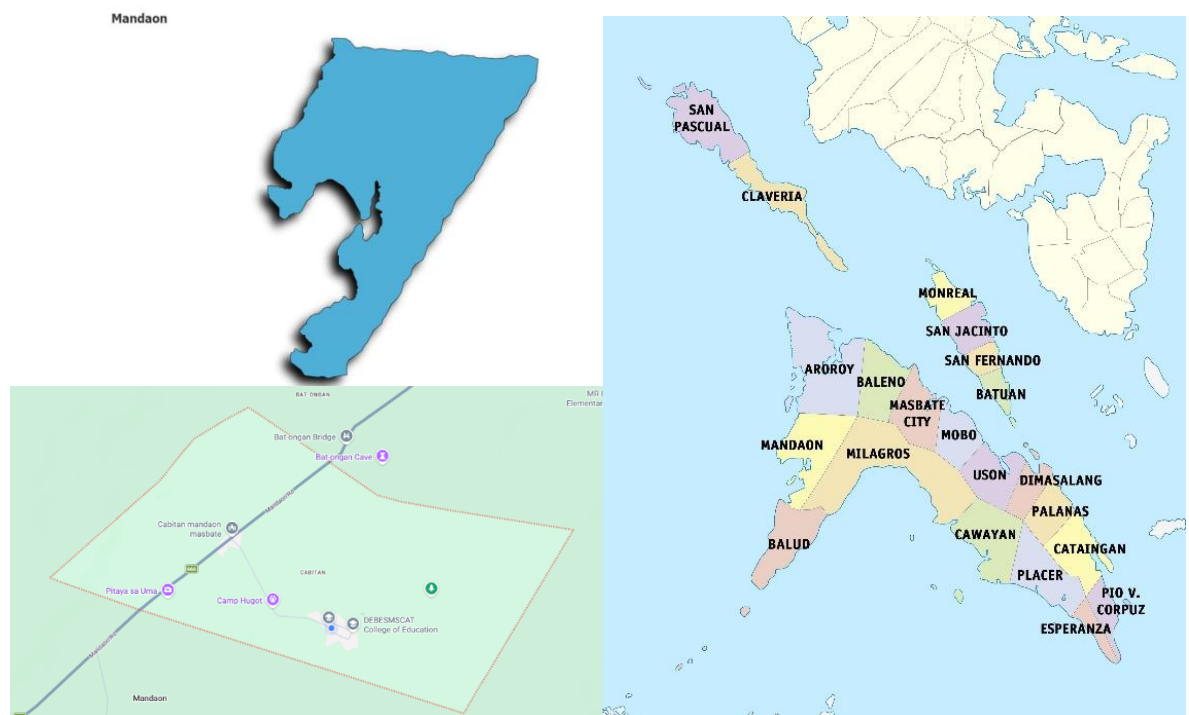
PARAMETER A. SCHOOL CAMPUS/SITE

A.1 Campus Plan

The Dr. Emilio B. Espinosa, Sr. Memorial State College of Agriculture and Technology (DEBESMSCAT) Main Campus is located at Barangay Cabitan, Municipality of Mandaon, Province of Masbate, occupying an extensive land area of approximately 3,668 hectares. The campus is characterized by predominantly rolling terrain, with a substantial portion of its land historically devoted to agricultural, instructional, research, and other institutional activities. It is situated approximately 56.5 kilometers from Masbate City, the provincial capital, making it an important educational and agricultural development center serving Mandaon and the surrounding municipalities of Masbate.

The campus is situated within Barangay Cabitan, at approximately 12°17'46" North latitude and 123°20'25" East longitude (12.2960° N, 123.3403° E). The general elevation of Cabitan at these coordinates is approximately 57 meters above mean sea level, reflecting the gently rolling to undulating physical character of the area. Its relatively large landholding and predominantly agricultural setting provide significant opportunities for the development of academic facilities, agricultural production and demonstration areas, research and extension facilities, open spaces, conservation areas, and other land uses required for the long-term physical development of the campus.

The Municipality of Mandaon is located in the Province of Masbate at approximately 12°13'33" North latitude and 123°17'03" East longitude and has a total land area of approximately 319.15 square kilometers or 31,915 hectares. According to the 2020 Census of Population and Housing, Mandaon had a population of approximately 44,122 persons. The municipality is administratively divided into twenty-six (26) barangays. Based on the current Philippine Standard Geographic Code classification, Cabitan is classified as an urban barangay, while the remaining twenty-five (25) barangays are classified as rural. Cabitan therefore serves not only as the location of the DEBESMSCAT Main Campus but also as one of the municipality's principal institutional and educational areas.



Map 1: Map of Cabitan, Mandaon Masbate

Province of Masbate				
Districts	City/Municipality	Land Area	Barangays	Population
I	6	814.48	116	185,496
II	7	2,053	209	383,325
III	8	1,284	225	323,572
Total	21	4,151.78	550	892,393

Source: PPDO, Masbate



Map 2: Main Campus Vicinity Map

THIS SITE

Geographically, the Municipality of Mandaon is bounded by the Municipality of Aroroy on the north, Municipality of Balud on the south, Municipality of Milagros on the east, and the Municipality of Cawayan on the west. It is situated in the northern portion of the Province of Masbate and forms part of the agricultural and economic landscape of mainland Masbate. The municipality is characterized by rolling terrain, agricultural plains, and coastal areas that support various livelihood activities, particularly farming, livestock production, and fisheries.

Located within the municipality is Barangay Cabitan, where the Dr. Emilio B. Espinosa, Sr. Memorial State College of Agriculture and Technology (DEBESMSCAT) Main Campus is situated. The campus is positioned within an agricultural setting that complements the institution's mandate as a higher education institution specializing in agriculture, science, technology, and related fields. The surrounding landscape provides opportunities for agricultural research, extension services, demonstration farms, and environmentally sustainable development initiatives.

The municipality is part of the Masbate Island landmass, which forms part of the Bicol Region (Region V) and serves as a transition area between the Luzon mainland and the Visayan islands. The natural environment surrounding Mandaon consists of agricultural lands, forest areas, watershed zones, and coastal ecosystems that contribute to the province's biodiversity and ecological resources. These environmental characteristics influence the physical planning and future development directions of the DEBESMSCAT Main Campus, particularly in terms of land utilization, conservation, and climate-resilient infrastructure planning.

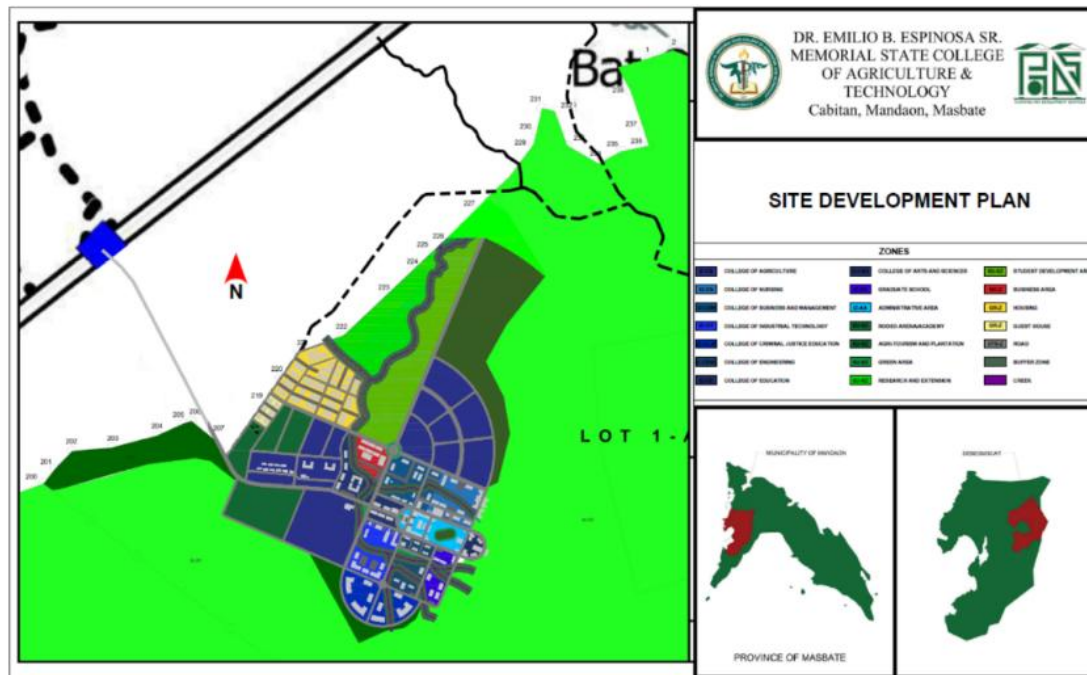


Figure 1: DEBESMSCAT Mandaon Campus Existing Site Development Plan

The DEBESMSCAT Main Campus (Map 2) is located in Barangay Cabitan, Municipality of Mandaon, Province of Masbate and is accessible through the municipal and barangay road networks connecting the campus to the town proper and nearby barangays. The campus can be reached through available public utility vehicles (PUVs) and private transportation that serve students, faculty members, employees, and visitors coming from Mandaon and neighboring municipalities. Its strategic location within the municipality allows the campus to function as an educational and agricultural development hub for the City of Masbate.

The campus occupies a vast institutional landholding characterized by agricultural and open spaces suitable for academic, research, extension, and production activities. The main campus area is integrated with existing road networks providing access to different institutional facilities, academic buildings, agricultural areas, and support facilities. The internal circulation system is connected to local access roads that link the campus to Barangay Cabitan and the municipal center of Mandaon.

Situated within the agricultural landscape of Mandaon, the campus generally exhibits gently rolling to undulating terrain with varying slopes suitable for agricultural research and technology demonstration areas. The extensive land area provides opportunities for future campus expansion, including academic facilities, student support facilities, research centers, agricultural production zones, and environmental conservation areas.

The campus location is influenced by the environmental characteristics of mainland Masbate, which is generally exposed to climatic conditions affecting the Bicol Region, including seasonal heavy rainfall, tropical cyclones, and extreme weather events. The surrounding agricultural lands, drainage networks, and natural terrain features require careful consideration in campus planning, particularly in relation to stormwater management, slope stabilization, disaster risk reduction, and climate-resilient infrastructure development.

As part of the planning considerations, the DEBESMSCAT Main Campus shall integrate sustainable land-use strategies that balance institutional growth, agricultural productivity, environmental protection, and resilience against natural hazards common to the region.

Type	Municipality
Island group	Luzon
Region	Bicol Region (Region V)
Province	Masbate
Barangay count	26
Postal code	5411
Coastal/Landlocked	Coastal
Marine waterbodies	Sibuyan Sea
Philippine major island(s)	Masbate
Area (2007)	280.80 km ² (108.42 sq mi)
Population (2015)	41,262
Density (2015)	147 / km ² (381 / sq mi)
Coordinates	12° 14' North, 123° 17' East (12.2262, 123.2841)
Estimated elevation	6.5 meters (21.3 feet) above sea level

Source: PhilAtlas

SITE DEVELOPMENT PLAN AND INFRASTRUCTURE PLAN

With the threat of climate change looming over us, it is of utmost importance that the design will adapt to the changes the climate change while bring about, including flooding, heat, and other factors brought about by the change in nature. Therefore, DEBEMSCAT will adapt the Green and Sustainable Design that will need minimal maintenance cost and maximizing and taking advantage of the natural elements present within the vicinity.

The college will have its own water and electrical supply minimizing the dependence in the services of utility company to save cost and at the same time, making the whole institution independently operational on its own, this, in long turn, will create sustainable community within the institution.

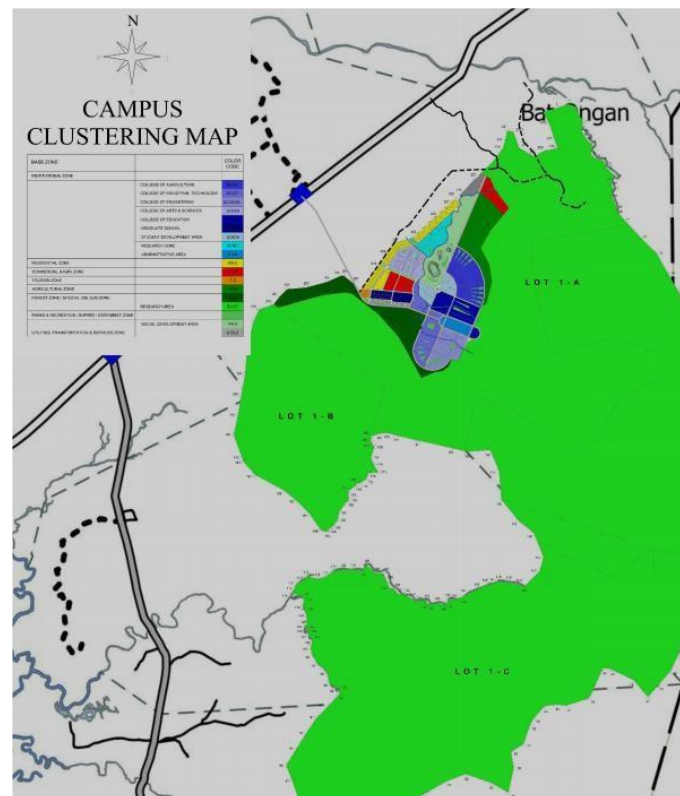


Figure 2:
CAMPUS
CLUSTERING

The 3,660 hectares vast land will be fully utilized for a greener environment inside DEBESMSCAT. Large portion of the land will be allocated for forest reserved, rice land, pasture land, agro ecotourism, coconut plantation and for production and research area.

Currently, DEBESMSCAT land area is utilized institutional use. Along its mandate of delivering quality education, one of the major thrusts of DEBESMSCAT is the program in Agriculture and Technology. Faculty researchers and even partners from private agencies have funded environmental projects such as reforestation, coconut plantation, carabao breeding, among others. Land area is widely utilized for research and production purposes and potentially improve its use by introducing other agriculture technology usually intended for discovering new knowledge both by students and faculty researchers.

SUMMARY OF LUDIP

REQUIRED	DEBESMSCAT NOW	REMARKS
Topography	DEBESMSCAT has documented the topographic characteristics of its campus. The LUDIP identifies the area as having varied terrain including mountainous areas, rolling hills, and agricultural landscapes. The campus topography is also considered in zoning, land use allocation, and development planning.	Compliant – Topographic conditions are considered and incorporated in the LUDIP for future development.

REQUIRED	DEBESMSCAT NOW	REMARKS
Location	DEBESMSCAT has identified and documented its campus locations. The institution currently has campuses/sites in Mandaon and Cawayan, with planned additional campuses in Aroroy, San Fernando, and Masbate City.	Compliant – Campus locations are established and included in the LUDIP.
Accessibility	Accessibility is addressed through existing and proposed road networks. The LUDIP includes campus transportation planning, interconnected roads, and future transportation systems for students, personnel, and visitors.	Compliant – Accessibility provisions are incorporated; continuous improvement of road networks is planned.
Soil Condition	Soil and geological considerations are included through discussions on geological features, hazards, land characteristics, and suitability of areas for different uses. The LUDIP considers climate, geology, topography, and soil conditions in identifying risks such as flooding, landslides, ground shaking, and liquefaction.	Compliant – Soil/geological factors are considered in planning; detailed site-specific soil investigation may still be required for future infrastructure projects.
Adequate school site size	DEBESMSCAT has sufficient land resources for institutional expansion. The Mandaon Campus has approximately 3,660.3786 hectares , while Cawayan Campus has 1.5 hectares . Land allocation is planned for academic, research, extension, production, and other institutional functions.	Compliant – Available land area is adequate and strategically allocated through the LUDIP.
Disaster and Risk Reduction measures	DEBESMSCAT incorporated climate change adaptation and disaster resilience measures in the LUDIP. The plan includes hazard assessment, structural resiliency, fire safety, green architecture, and identified evacuation areas with support facilities.	Compliant – Disaster risk reduction measures are integrated into campus planning and infrastructure development.

DEBESMSCAT's updated LUDIP addresses the required elements on site suitability, land characteristics, accessibility, land area, and disaster resilience. Some requirements (such as detailed soil testing and future site-specific studies) may still require implementation during actual infrastructure projects.

A.2 Standards

The Dr. Emilio B. Espinosa, Sr. Memorial State College of Agriculture and Technology (DEBESMSCAT) ensures that all institutional facilities and infrastructure projects comply with established national standards for safety, functionality, and sustainability. The College adheres to the provisions of the National Building Code of the Philippines (P.D. 1096), which provides the minimum requirements and regulations governing the design, construction, use, occupancy, and maintenance of buildings and structures to safeguard life, health, property, and public welfare.

All construction projects undertaken by DEBESMSCAT undergo comprehensive planning, evaluation, and approval processes. The College secures the necessary permits and clearances required by relevant government agencies, including building permits, certificates of occupancy, and other regulatory approvals, to ensure that all facilities are legally compliant and constructed according to approved plans and specifications. In addition, fire safety requirements are strictly observed through compliance with the standards of the Bureau of Fire Protection (BFP), including the acquisition of Fire Safety Evaluation Clearances, Fire Safety Inspection Certificates, and other related permits to ensure the protection of students, faculty, personnel, and stakeholders.

As part of its commitment to structural safety and reliability, DEBESMSCAT conducts necessary soil investigation and geotechnical testing prior to the development and construction of building facilities. The soil testing process provides essential information regarding the bearing capacity, stability, and physical characteristics of the foundation soil, which serves as a basis for appropriate structural design and foundation planning. The results of these assessments ensure that building structures are designed according to actual site conditions, reducing potential risks associated with soil settlement, instability, and other geotechnical concerns.

The structural design and engineering specifications of DEBESMSCAT buildings are developed in accordance with the National Structural Code of the Philippines (NSCP) 2015. The NSCP 2015 provides standards for the structural design of buildings, including requirements for strength, stability, and resistance against environmental forces such as earthquakes and wind loads. Through compliance with these standards and the integration of soil investigation results, the College ensures that its facilities are structurally sound, durable, and resilient.

Furthermore, DEBESMSCAT integrates safety considerations in the planning, development, and maintenance of its physical facilities. The institution continuously monitors the condition of buildings, classrooms, laboratories, offices, and other learning spaces to ensure that they remain safe, functional, accessible, and conducive to teaching, learning, research, and extension activities.

Through strict adherence to national building regulations, structural standards, geotechnical assessment requirements, and fire safety provisions, DEBESMSCAT

demonstrates its commitment to providing a secure and quality physical environment aligned with the expectations of institutional accreditation. These efforts reflect the College's dedication to protecting its stakeholders and sustaining facilities that support academic excellence, institutional growth, and sustainable development.

Republic of the Philippines
Province of Masbate
Municipality of Mandaon
OFFICE OF THE BUILDING OFFICIAL

APPLICATION FOR BUILDING PERMIT
☒ NEW ☐ RENEWAL ☐ AMENDATORY

APPLICATION NO. 2021-006
APRIL 15, 2021 AREA NO. 0001
05038

BOX 1 (TO BE ACCOMPLISHED IN PRINT BY THE APPLICANT)

OWNER/APPLICANT LAST NAME FIRST NAME	TRIP
M.J. <u>DEBESMSCAT</u>	
FOR CONSTRUCTED OWNED BY AN ENTERPRISE	FORM OF OWNERSHIP
ADDRESS: NO. STREET BARANGAY CADMAN	OWNER
MUNICIPALITY MANDAON ZIP CODE 5211	CELLPHONE#
LOCATION OF CONSTRUCTION: LOT NO. BLK NO. TCT NO. TAX DEC. NO. 1916	
STREET BARANGAY CADMAN MUNICIPALITY MANDAON CITY	

SCOPE OF WORK:

☐ NEW CONSTRUCTION	☐ RENOVATION	☐ RAISING
☐ ERECTION	☐ CONVERSION	☐ ACCESSORY BUILDING/STRUCTURE
☐ ADDITION	☒ REPAIR	☐ OTHERS(SPECIFY)
☐ ALTERATION	☐ MOVING	

USE OR CHARACTER OF OCCUPANCY:

☐ GROUP A: RESIDENTIAL DWELLINGS	☐ GROUP F: INDUSTRIAL	☐ OTHERS SPECIFY
☐ GROUP B: RESIDENTIAL HOTEL/APARTMENT	☐ GROUP G: INDUSTRIAL STORAGE AND HAZARDOUS	
☐ GROUP C: EDUCATIONAL/RECREATIONAL	☐ GROUP H: RECREATIONAL/ASSEMBLY OCCUPANT LOAD LESS THAN 1000	
☒ GROUP D: INSTITUTIONAL	☐ GROUP I: RECREATIONAL/ASSEMBLY OCCUPANT LOAD 1000 OR MORE	
☐ GROUP E: BUSINESS AND MERCHANTILE	☐ GROUP J: AGRICULTURAL/ACCESSORY	

OCCUPANCY CLASSIFIED: 1
NUMBER OF UNITS: 1
TOTAL FLOOR AREA: 145.43 SQUARE METERS

TOTAL ESTIMATED COST P. 3,361,175.47
PROPOSED DATE OF CONSTRUCTION 07/06/2021
EXPECTED DATE OF COMPLETION 07/30/2021

BOX 2 FULL-TIME INSPECTOR AND SUPERVISOR OF CONSTRUCTION WORKS(REPRESENTING THE OWNER)

ADDRESS: DOBLACION, MANDAON, MASBATE	PRC NO. 0148765	VALIDITY 03/9/2023
INSURANCE BY <u>DELIC-VILLANUEVA</u>	PTR NO.	DATE ISSUED
ARCHITECT OR CIVIL ENGINEER (Signed and Seal Over Printed Name)	ISSUED AT.	TRIP 415-615-4142-000
DATE		

BOX 3

APPLICANT <u>RENEE A. VILLANUEVA, PhD</u> DATE	WITH MY CONSENT: LOT OWNER <u>RENEE A. VILLANUEVA, PhD</u> DATE
(Signature Over Printed Name)	(Signature Over Printed Name)
ADDRESS: CAD MAN, MANDAON, MASBATE	ADDRESS: CADMAN, MANDAON, MASBATE
CTC NO. 10372416 Date Issued: 02/14/2016 (Place Issued MANDAON, MN)	CTC NO. 8572416 DATE ISSUED 07/04/21 PLACE ISSUED MANDAON, MN

BOX 4

REPUBLIC OF THE PHILIPPINES
CITY/MUNICIPALITY OF MASBATE
BEFORE ME, at the City/Municipality of MASBATE, on April 08, 2021 personally appeared the following:

<u>DR. RENEE A. VILLANUEVA</u>	<u>02/24/2021</u>	<u>MANDAON, MASBATE</u>
APPLICANT	CTC NO.	DATE ISSUED
<u>DR. EMILIO B. ESPINOSA, Sr.</u>	<u>02/24/2021</u>	<u>MANDAON, MASBATE</u>
LICENSED ARCHITECT OR CIVIL ENGINEER	CTC NO.	DATE ISSUED

Whose signatures appear hereinabove, known to me to be the same persons who executed this standard prescribed form and acknowledged to me that the same is their free and voluntary and deed.

WITNESS MY HAND SEAL on the date and place above written.

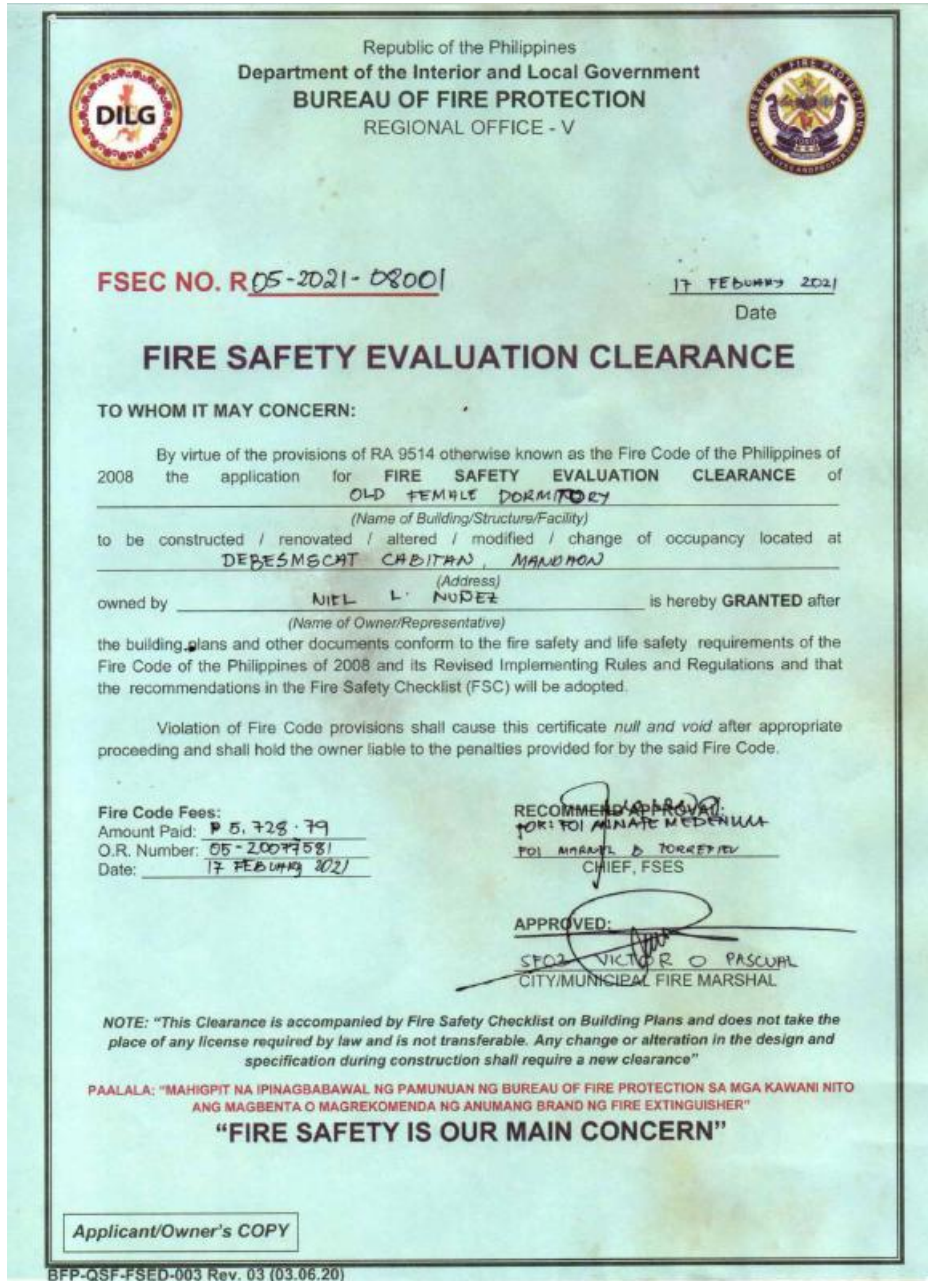
Doc No. 238
Page No. 18
Book No. 98
Series of 107

ATTY. RUBEN A. SORIANO
NOTARY PUBLIC FOR MASBATE
ROLL NO. 2709 (RECEIVED JAN 4, 2021)
PTR NO. 0148765 (RECEIVED JAN 17, 2021)
RECEIVED JAN 17, 2021
NOTARY PUBLIC (Until December 31, 2021)
P.O. BOX 145552
Cebu City, 6000

DEBESMSCAT ensures that all institutional construction and facility development projects comply with the National Building Code of the Philippines (PD 1096) and other applicable government standards. The College secures the required Building Permit from the Office of the Building Official to verify that all architectural, structural, electrical, mechanical, sanitary, and related plans are properly evaluated and approved.

The approved Building Permit serves as evidence that the institution follows established construction procedures and maintains safe, functional, and compliant facilities. In

addition, DEBESMSCAT ensures that building designs adhere to the National Structural Code of the Philippines (NSCP) 2015) and coordinates with concerned agencies for additional safety requirements, including fire protection compliance.



Republic of the Philippines
Department of the Interior and Local Government
BUREAU OF FIRE PROTECTION
REGIONAL OFFICE - V

FSEC NO. R05-2021-08001 **17 FEBRUARY 2021**
Date

FIRE SAFETY EVALUATION CLEARANCE

TO WHOM IT MAY CONCERN:

By virtue of the provisions of RA 9514 otherwise known as the Fire Code of the Philippines of 2008 the application for **FIRE SAFETY EVALUATION CLEARANCE** of **OLD FEMALE DORMITORY** (Name of Building/Structure/Facility) to be constructed / renovated / altered / modified / change of occupancy located at **DEBESMSCAT CAPITAN MANDANAN** (Address) owned by **NIEL L. NUDEZ** (Name of Owner/Representative) is hereby **GRANTED** after the building plans and other documents conform to the fire safety and life safety requirements of the Fire Code of the Philippines of 2008 and its Revised Implementing Rules and Regulations and that the recommendations in the Fire Safety Checklist (FSC) will be adopted.

Violation of Fire Code provisions shall cause this certificate null and void after appropriate proceeding and shall hold the owner liable to the penalties provided for by the said Fire Code.

Fire Code Fees:
Amount Paid: **P 5,728.79**
O.R. Number: **05-20077581**
Date: **17 FEBRUARY 2021**

RECOMMENDED APPROVAL:
FOR: TOI ANIMATE MCDENUNIA
POI: MARCEL D. TORRES
CHIEF, FSES

APPROVED:
SFCO: VICTOR O. PASCUAL
CITY/MUNICIPAL FIRE MARSHAL

NOTE: "This Clearance is accompanied by Fire Safety Checklist on Building Plans and does not take the place of any license required by law and is not transferable. Any change or alteration in the design and specification during construction shall require a new clearance"

PAALALA: "MAHIGPIT NA IPINAGBABAWAL NG PAMUNUAN NG BUREAU OF FIRE PROTECTION SA MGA KAWANI NITO ANG MAGBENTA O MAGREKOMENDA NG ANUMANG BRAND NG FIRE EXTINGUISHER"

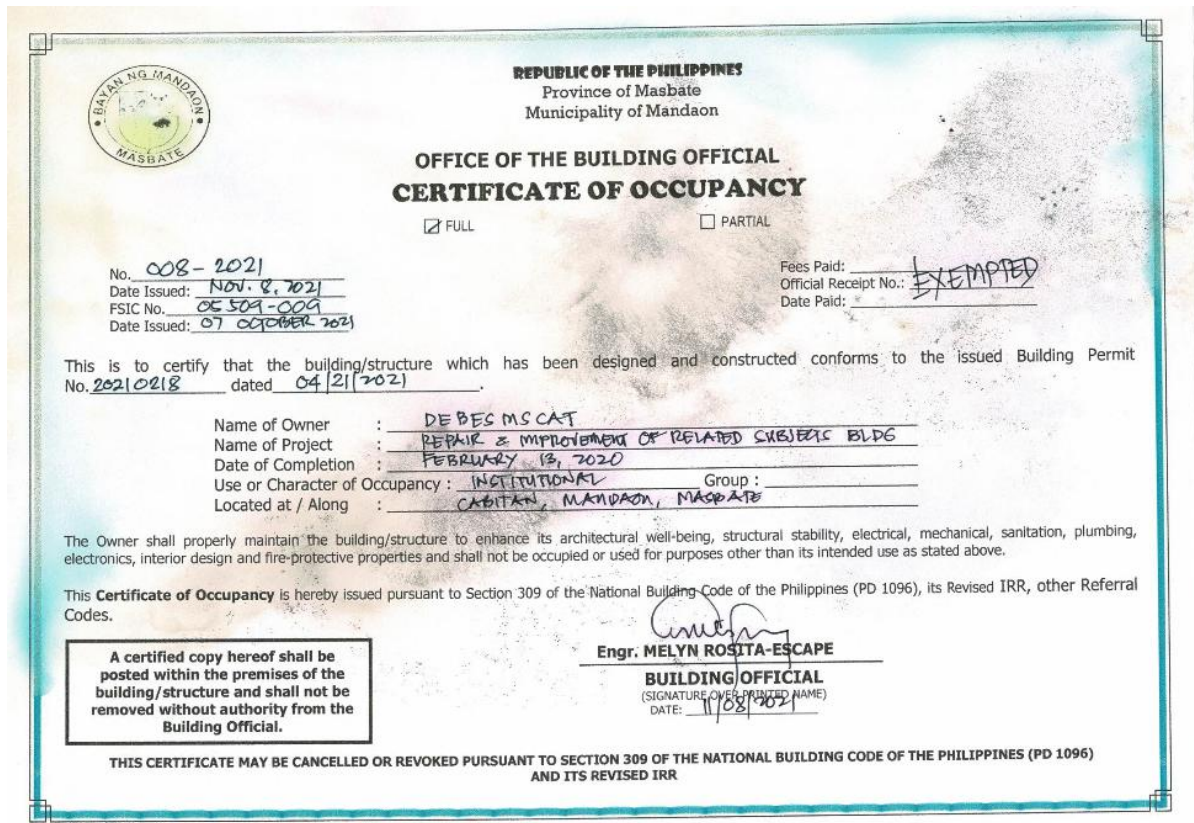
"FIRE SAFETY IS OUR MAIN CONCERN"

Applicant/Owner's COPY

BFP-QSF-FSED-003 Rev. 03 (03.06.20)

DEBESMSCAT ensures compliance with national fire safety standards through the acquisition of a Fire Safety Evaluation Clearance (FSEC) issued by the Bureau of Fire Protection (BFP), Regional Office V. The clearance certifies that the building plans and related documents conform to the fire safety and life safety requirements of the Fire Code of the Philippines (RA 9514) and its Revised Implementing Rules and Regulations.

The issuance of the FSEC confirms that the institution's facilities have undergone evaluation and that appropriate fire prevention and protection measures are incorporated into the design and construction process. This ensures the safety and protection of students, faculty members, personnel, and other stakeholders within the campus.



As part of its commitment to maintaining a safe and conducive learning environment, DEBESMSCAT obtained a Certificate of Occupancy issued by the Office of the Building Official, Municipality of Mandaon, Province of Masbate. The certificate confirms that the building/structure owned by the College was designed and constructed in conformity with the approved Building Permit and complies with the requirements of the National Building Code of the Philippines and other applicable referral codes.

The issued Certificate of Occupancy serves as official documentation that the facility has passed the required evaluation and inspection by the Building Official and is suitable for its intended institutional use. It further affirms that essential aspects of the building, including architectural design, structural stability, electrical systems, mechanical systems, sanitation, plumbing, and fire safety provisions, have been considered in accordance with applicable standards.

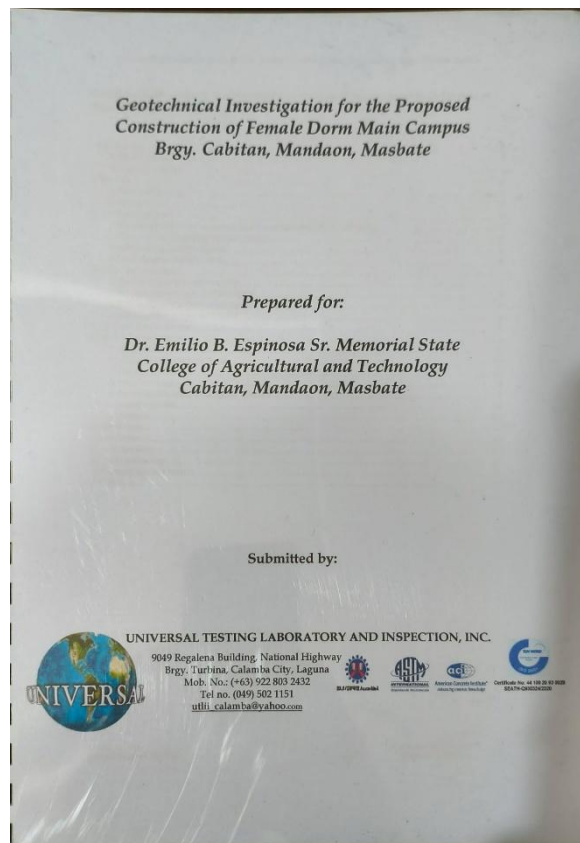


Figure 3. Geotechnical Investigation Report conducted for the proposed construction of the Female Dormitory, DEBESMSCAT Main Campus, Cabitan, Mandaon, Masbate, ensuring foundation safety and structural stability through soil assessment.

As part of its commitment to ensuring structural safety and reliability of its facilities, the Dr. Emilio B. Espinosa, Sr. Memorial State College of Agriculture and Technology (DEBESMSCAT) conducted a Geotechnical Investigation for the Proposed Construction of the Female Dormitory at the Main Campus, Brgy. Cabitan, Mandaon, Masbate.

The study, conducted by the Universal Testing Laboratory and Inspection, Inc., evaluated the soil properties and site conditions to determine the appropriate foundation requirements for the proposed structure. The results of the investigation served as a technical basis for safe structural design and construction planning, ensuring that the facility complies with engineering standards and supports long-term stability and safety.

Through the conduct of soil testing and geotechnical assessment, DEBESMSCAT demonstrates its commitment to implementing quality assurance measures in infrastructure development and maintaining a safe physical environment for its students and stakeholders.

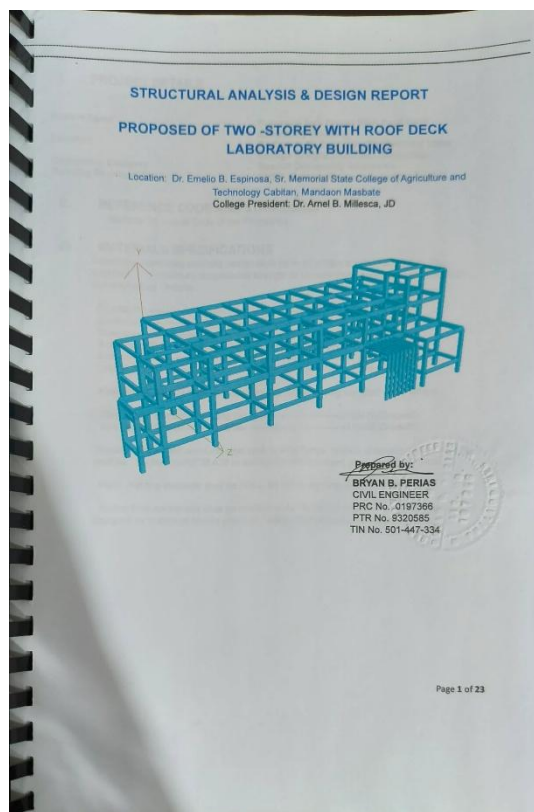


Figure 4. Structural Analysis and Design Report for the Proposed Two-Storey Laboratory Building with Roof Deck at DEBESMSCAT Main Campus, Brgy. Cabitan, Mandaon, Masbate. The structural design was prepared in accordance with the National Structural Code of the Philippines (NSCP) 2015 to ensure the building's strength, stability, and safety against design loads, including environmental forces such as earthquakes and wind.

As part of its commitment to structural safety and quality infrastructure development, the Dr. Emilio B. Espinosa, Sr. Memorial State College of Agriculture and Technology (DEBESMSCAT) ensures that all building projects undergo proper structural analysis and design evaluation.

The Structural Analysis and Design Report for the Proposed Two-Storey Laboratory Building with Roof Deck was prepared by a licensed Civil Engineer to verify the structural adequacy and stability of the proposed facility. The design considers the requirements of the National Structural Code of the Philippines (NSCP) 2015, ensuring that the building can withstand applicable loads and environmental conditions.

A.3 Cite three benefits of a well-designed and properly zoned institution.

A well-designed and properly zoned institution provides a safe, efficient, and conducive environment for teaching, learning, research, and administrative operations. The following are three major benefits:

1. Enhanced Safety and Security

Proper zoning ensures the organized placement of buildings, facilities, and activity areas, reducing potential hazards and conflicts between different institutional functions. It supports compliance with safety standards such as the National Building Code, fire safety regulations, and accessibility requirements, thereby protecting students, employees, and other stakeholders.

2. Improved Efficiency and Functionality of Facilities

A properly planned institutional layout allows convenient access and connectivity among classrooms, laboratories, offices, libraries, student service areas, and other facilities. Strategic zoning improves movement, reduces congestion, maximizes the use of available spaces, and promotes efficient delivery of academic and administrative services.

3. Creation of a Conducive Learning and Working Environment

Effective institutional design considers environmental factors such as ventilation, lighting, landscaping, noise control, and open spaces. Proper zoning creates a comfortable and productive atmosphere that supports quality instruction, research activities, student engagement, and overall institutional development.

A.3.1. Land Use Strategies and Space Allocations

DEBESMSCAT Land use will purposely for academic, research and education quality improvement. The 3,660 hectares was subdivided to different land use category to ensure its full utilization despite its being timberland in the large portion. Half of the land of DEBESMSCAT (Around 1,700 hectares) is under negotiation with DAR since his was awarded wrongfully to agrarian reform program beneficiaries. A total of 1,869 hectares is allocated for different use as in table below

From the 241,50 hectares intended for academic use, this was subdivided in to institutional zone wherein academic buildings laboratory, research, housing and dormitories and allied facilities and services will be built up.

Detailed Description of the Cores

The Academic Core is divided into clusters or service areas such as Academic Services, Student Development Services, Auxiliary Support Services, and General Administrative Support Services. The Academic Services includes academic buildings and laboratories while the student development services include facilities for the development of sports, culture, arts, fitness, social hall, and the student center. The Auxiliary Support Services on the other hand pertains to facilities that are vital in the operation of a school as a library, medical/dental, canteen, cafeteria, dormitory, and other earning areas.

The General Administrative Services covers facilities that are in support of administrative and general operations such as the administration building, motor pool, MRF, powerhouses, and offices.

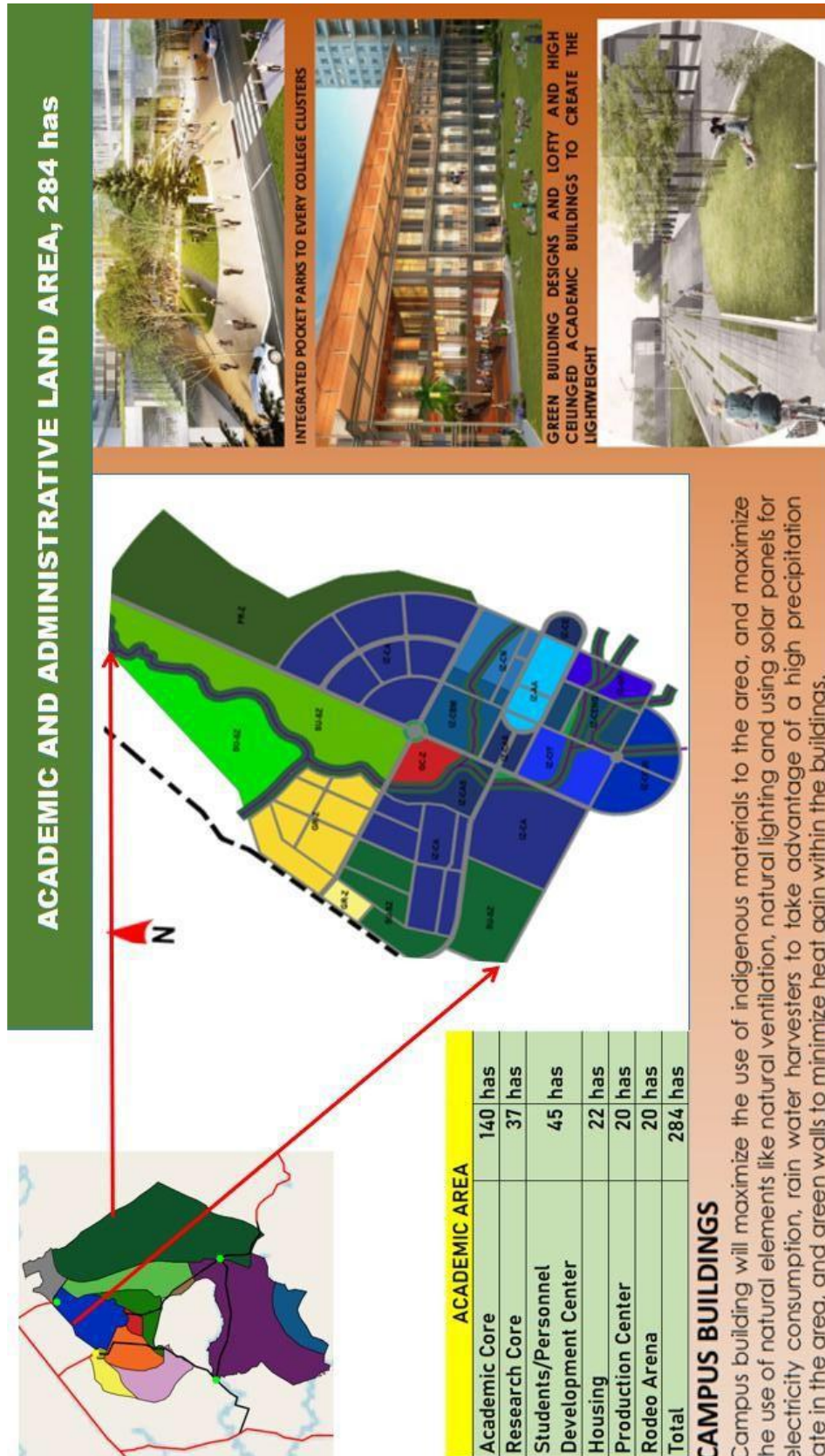


Table 30 : Land Use Allocation for Academic/Institution Area

LAND USE	AREA
Academic Core	140 has
Research Core	37 has
Students and Personnel Development Area	45 has
Housing Area	22 has
Production and Commercial Area	20 has
Rodeo Center	20 has
TOTAL	284 has

Academic Core

The academic or institutional area has a total of more or less 284 hectares. This is located in the northwest part DEBESMSCAT Land holdings. The development site is designed to cater the four major thrusts and mandates of an academic institution which is to provide quality instruction, research and extension services. DEBESMSCAT envisioned that the academic area will be buildable consistent with the DEBESMSCAT zoning policy. The academic core is where the academic infrastructures like building with classrooms, laboratory rooms, comfort rooms, hand washing, function halls and other academic facilities are to be constructed. This is divided into nine (9) colleges (6 existing, 3 new) with allocated area ranges from 16 has to 20 hectares. College of agriculture has allotted additional 50 hectares for their laboratory plantation as required by Bachelor of Agriculture program.

The colleges are clustered strategically so that its laboratory and academic components will not affect the environmental elements of each campus. In each college, basic necessity for studies was included like libraries, cafeterias, dormitories, parking, open spaces and parks and recreation.

College of Criminal Justice Building

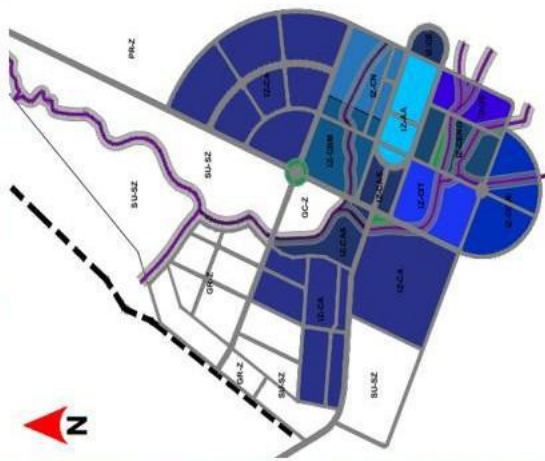


Components: a.) 4 Storey Smart Building with Solar, with lecture and laboratory rooms, mini library, cafeteria and student lounge

CBM Admin Building and Hotel



- College of Agriculture
- College of Arts and Sciences
- College of Engineering
- College of Industrial Technology
 - College of Education
- College of Business Management
 - College of Nursing
- College of Criminal Justice Education
 - Graduate School



New GS Academic Building



CIT Food Technology Building

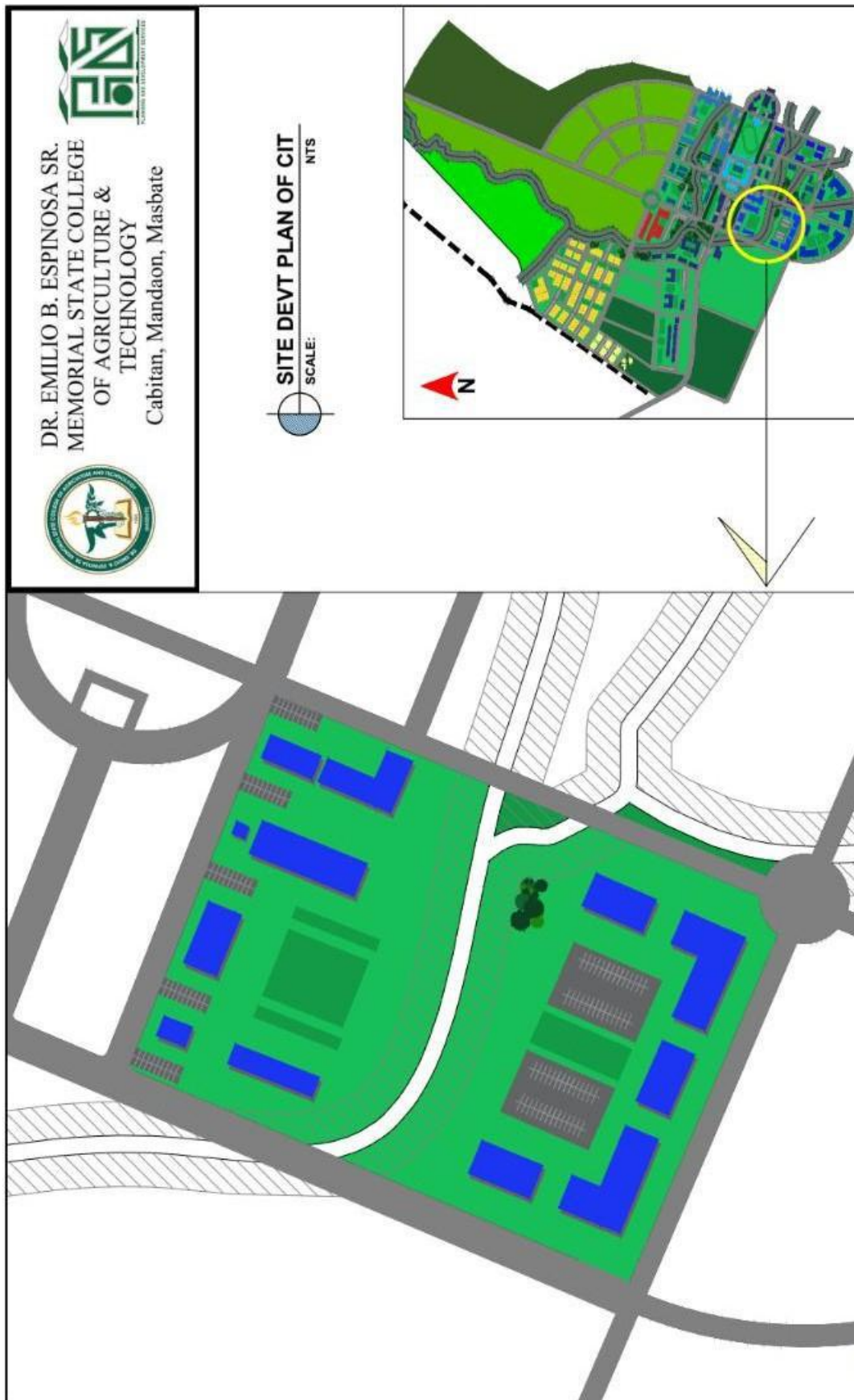


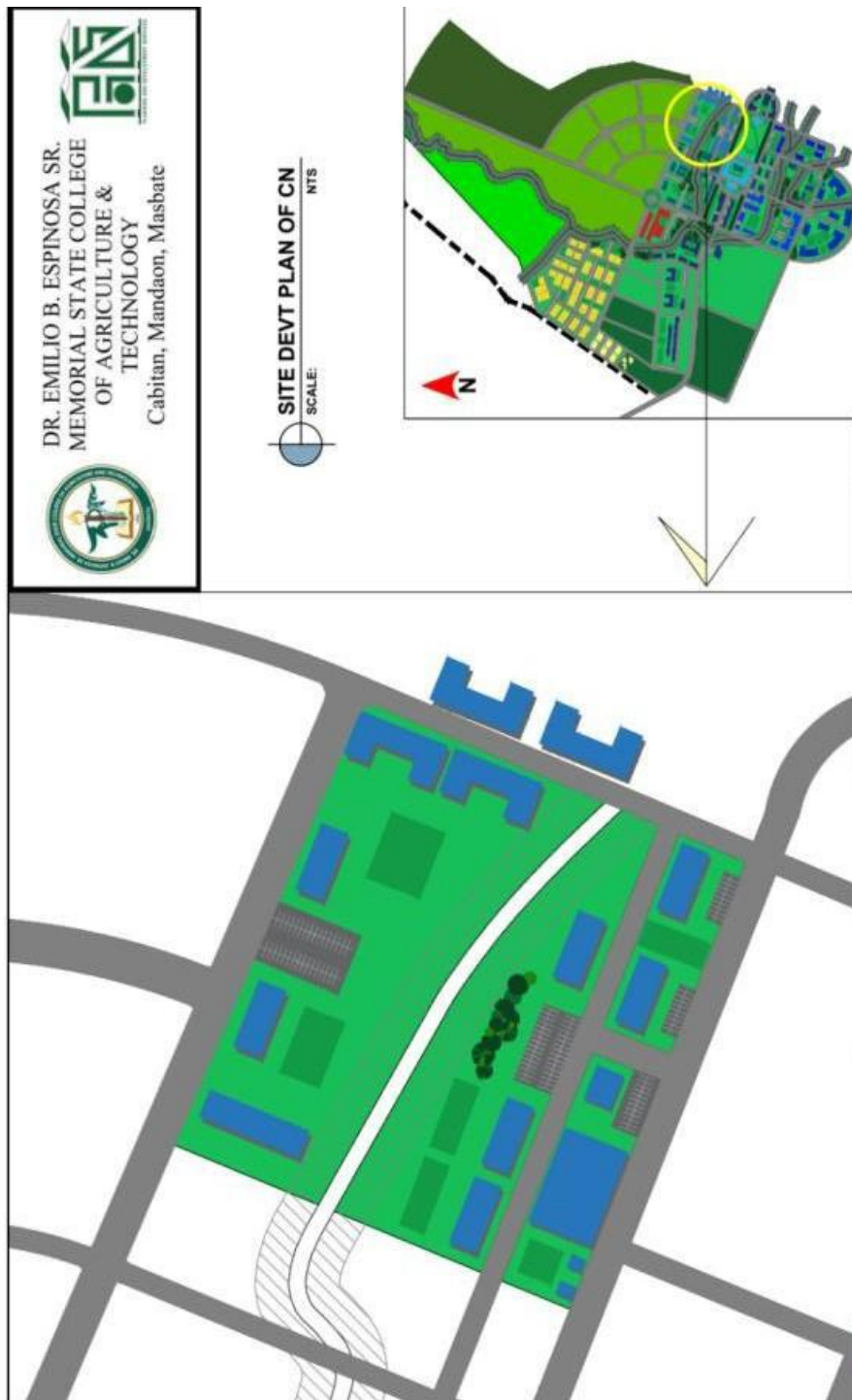
College of Nursing Building

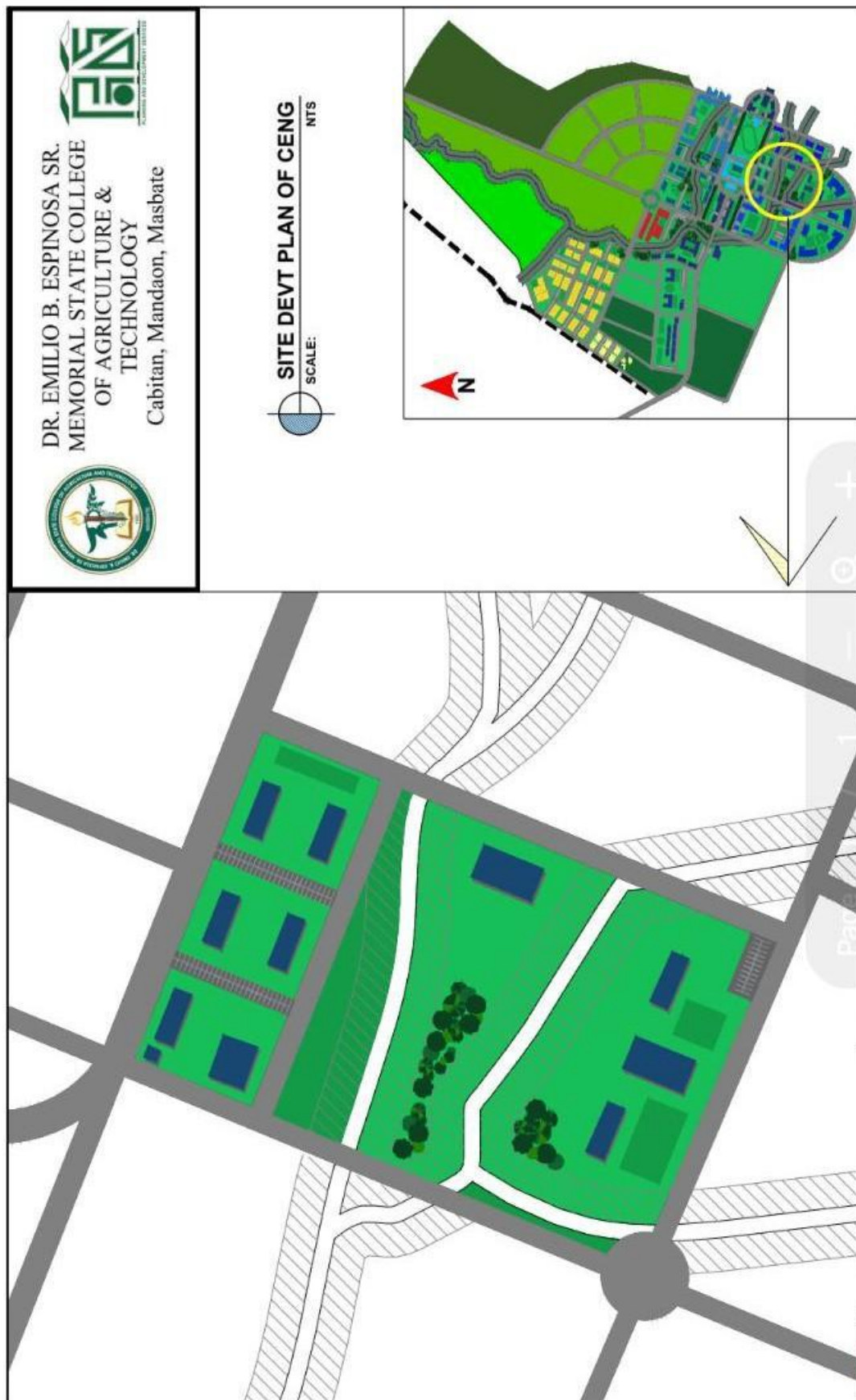


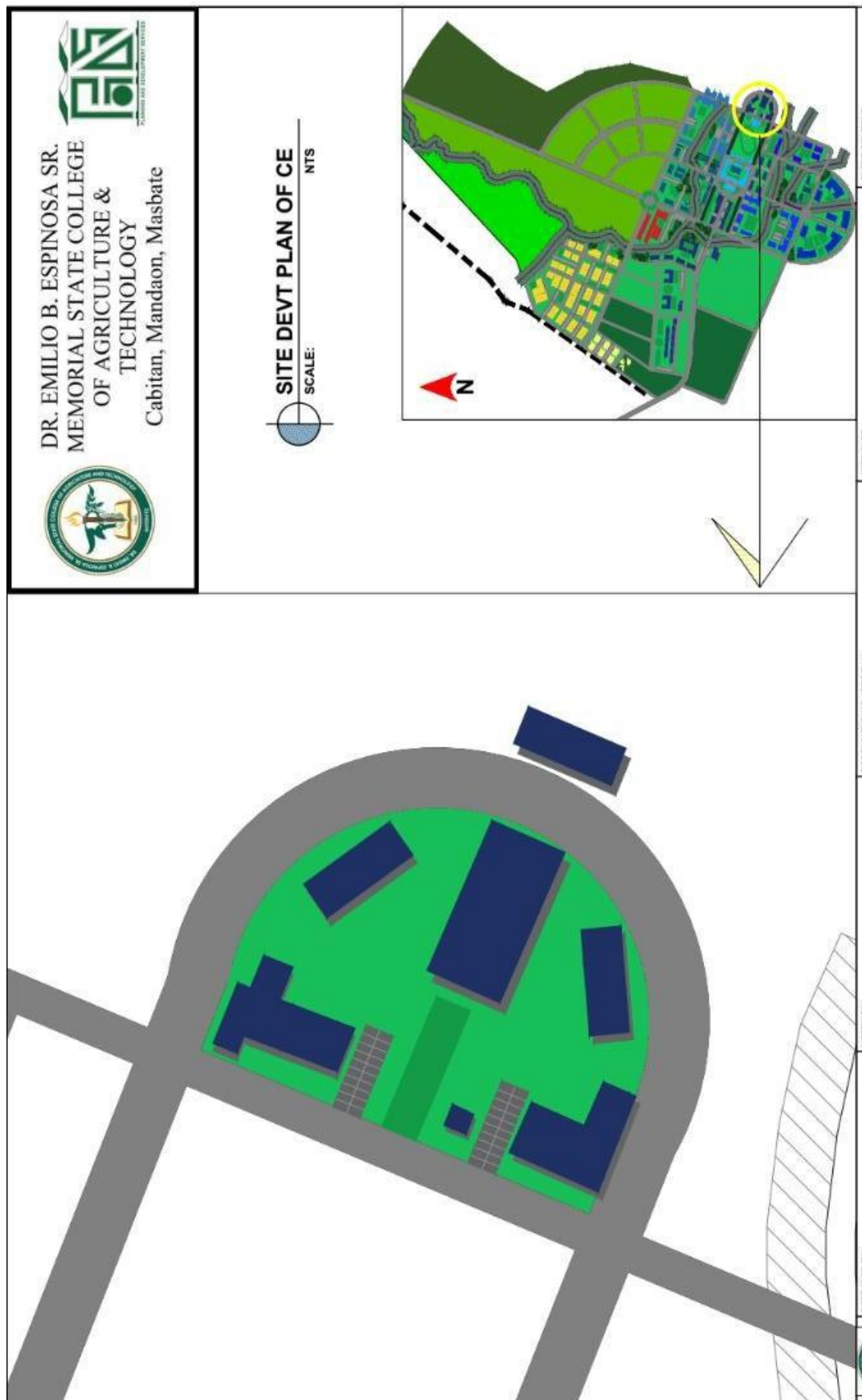
CAS Academic Building

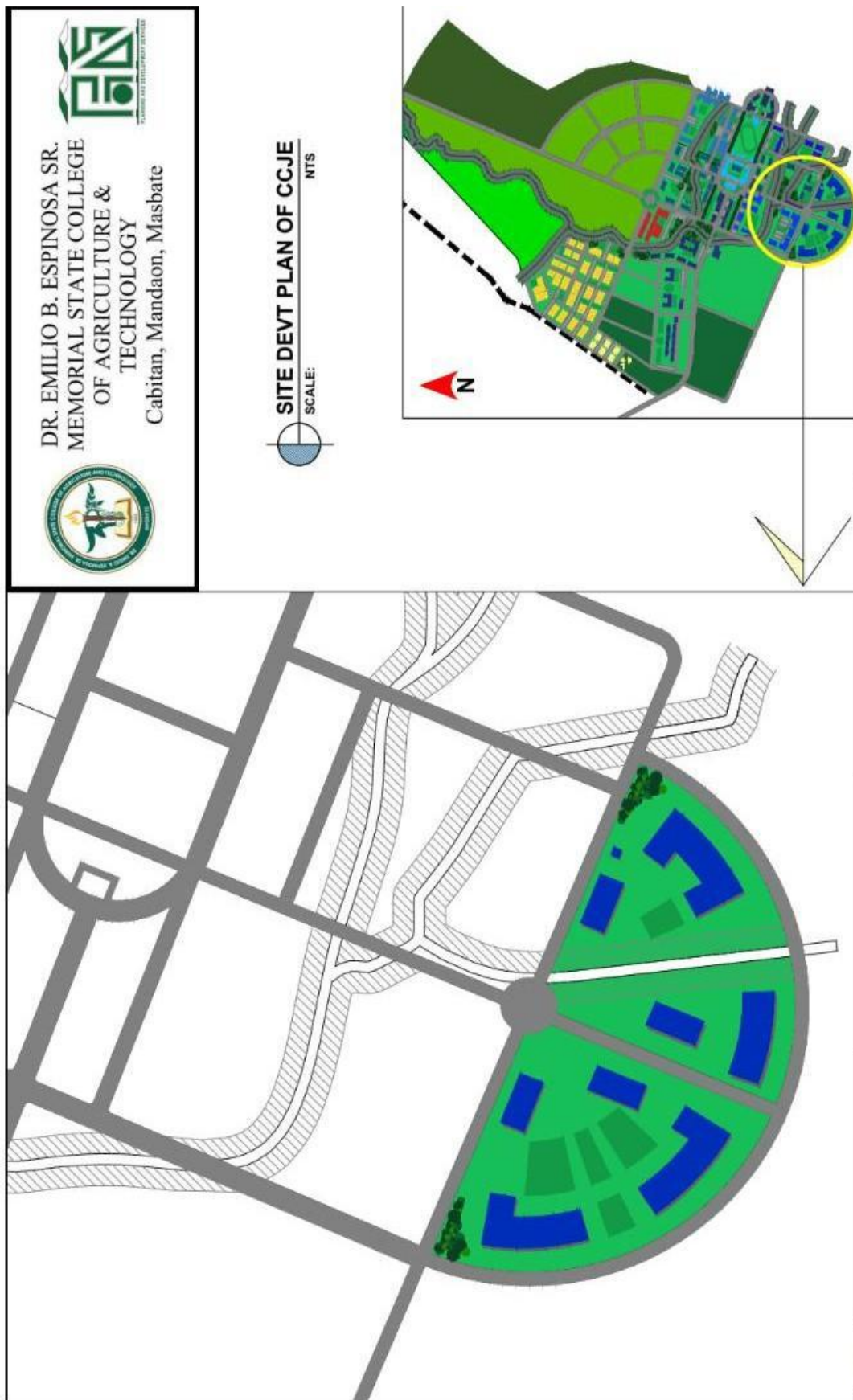


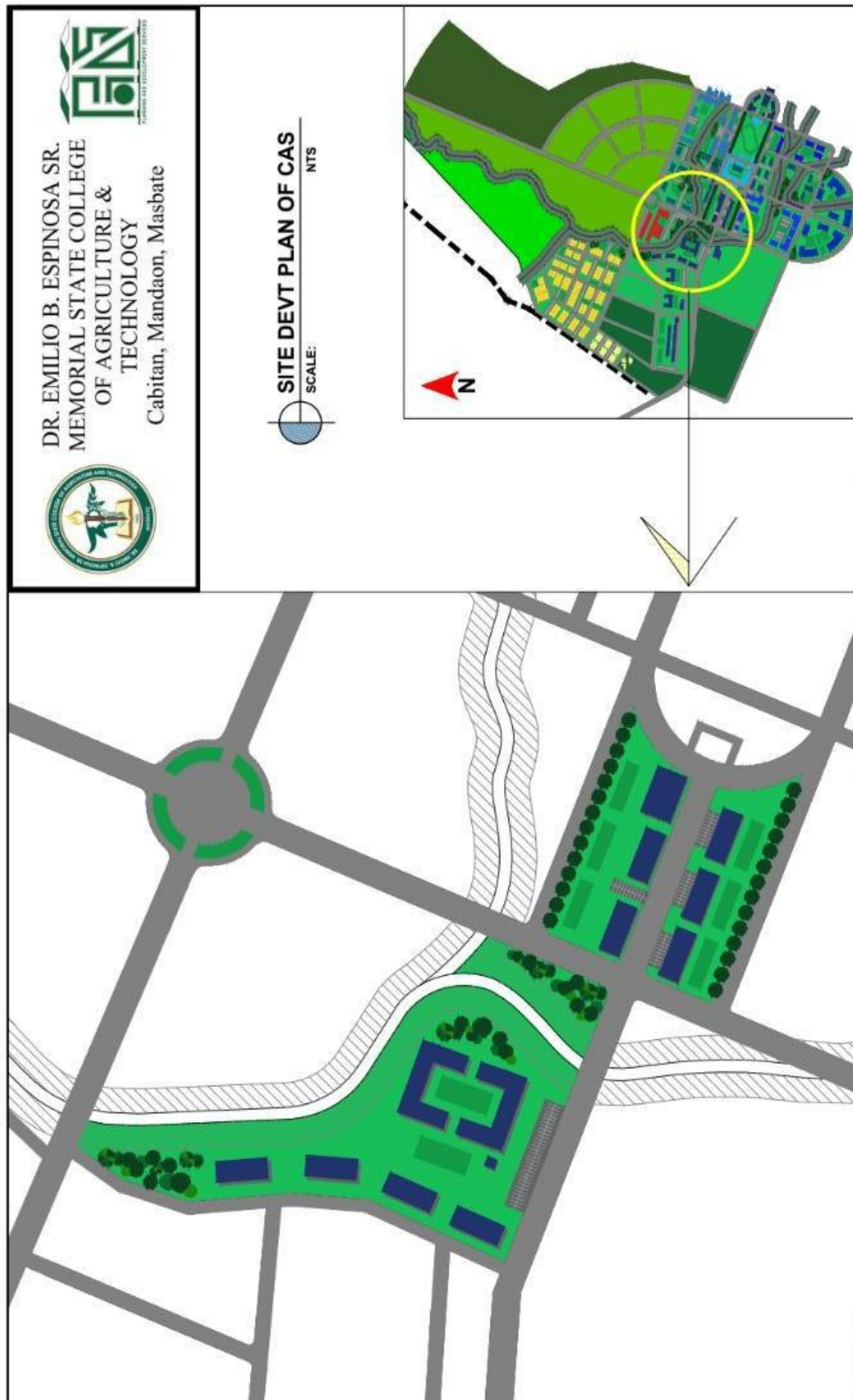


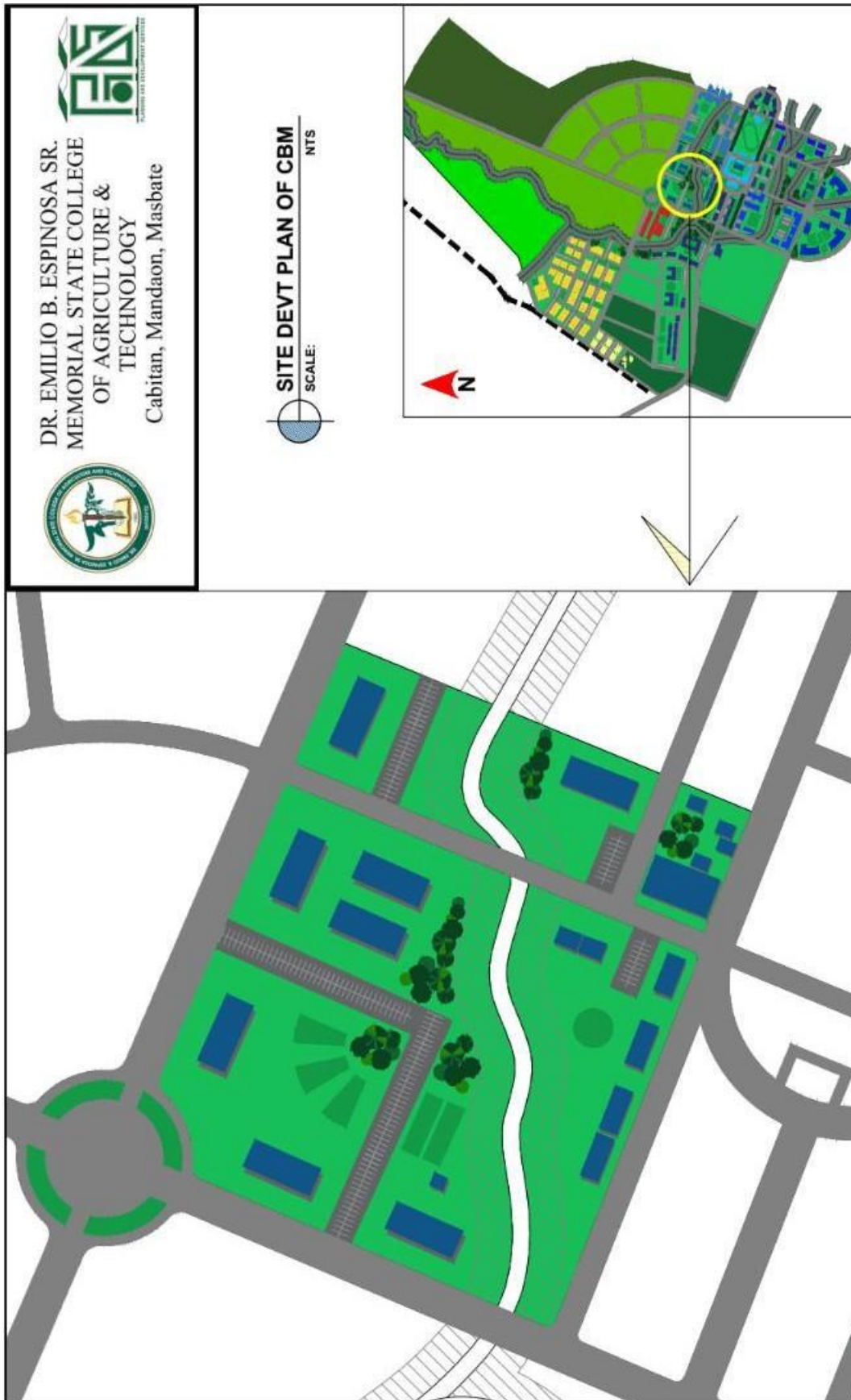


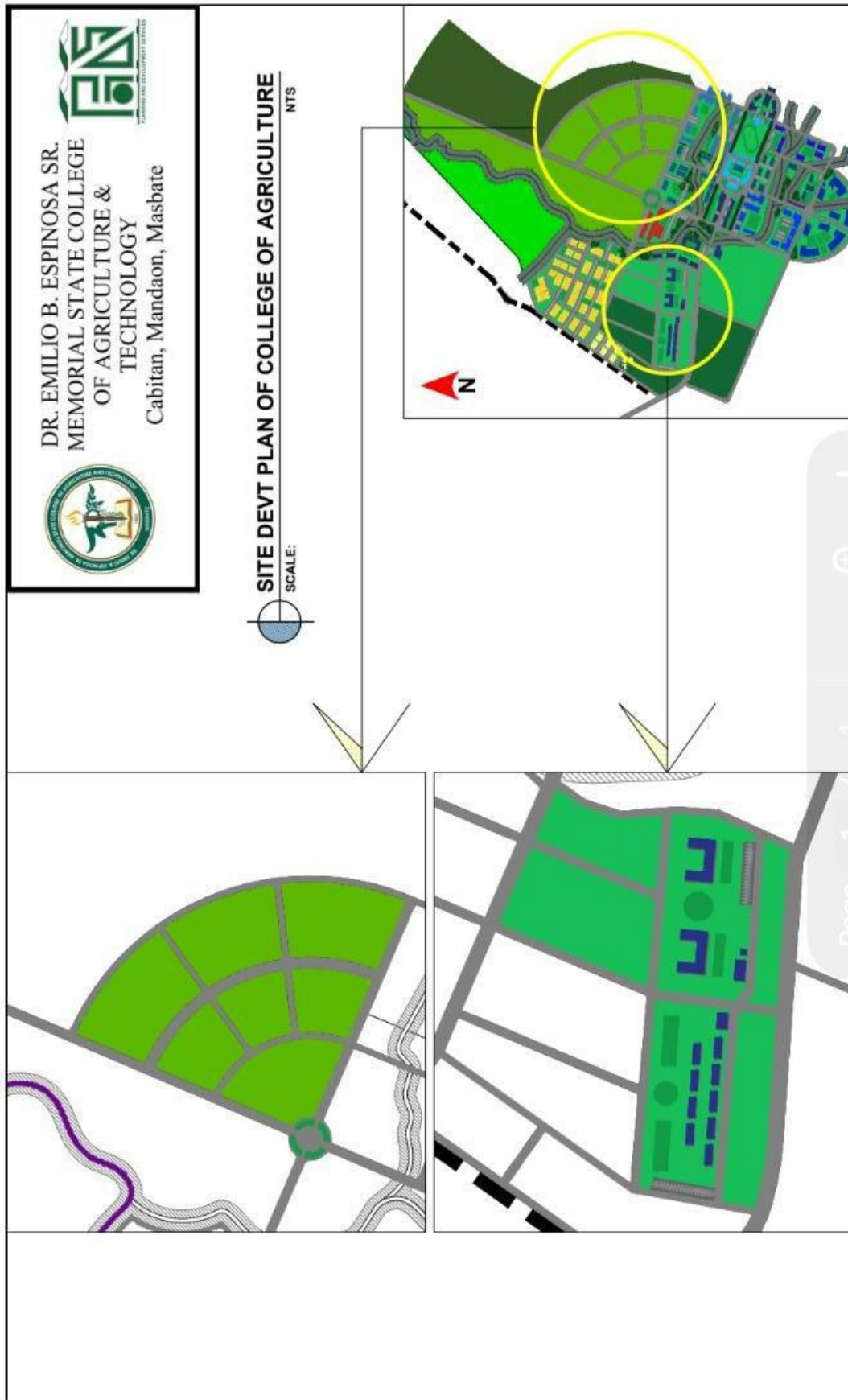












A.4 Cite three best strategies used in designing the institution.

The Dr. Emilio B. Espinosa, Sr. Memorial State College of Agriculture and Technology (DEBESMSCAT) applies strategic approaches in the planning, design, and development of its physical facilities to ensure a safe, functional, and sustainable institutional environment. The following are three best strategies implemented in designing the institution:

1. Compliance-Based and Safety-Oriented Design Strategy

DEBESMSCAT ensures that all institutional buildings and infrastructure projects are designed and constructed in accordance with national standards, including the National Building Code of the Philippines (PD 1096), Fire Code of the Philippines (RA 9514), and National Structural Code of the Philippines (NSCP 2015). The institution secures necessary permits, clearances, and technical evaluations such as building permits, fire safety clearances, certificates of occupancy, soil testing, and structural analysis to guarantee the safety, stability, and durability of facilities.

2. Functional Zoning and Efficient Space Planning Strategy

The institution utilizes proper zoning principles in allocating spaces for academic buildings, laboratories, administrative offices, student facilities, agricultural areas, and support services. This approach ensures efficient movement, accessibility, proper utilization of land resources, and a well-organized campus environment. Facilities are strategically located based on their functions to minimize conflicts, improve operational efficiency, and support effective delivery of academic and institutional services.

3. Sustainable, Resilient, and User-Centered Design Strategy

DEBESMSCAT integrates sustainability and user needs in the design and development of its facilities. Building designs consider natural lighting, ventilation, accessibility, environmental conditions, and future expansion requirements. Through resilient design practices, including geotechnical investigations and structural assessments, the institution ensures that facilities can withstand environmental challenges while providing a safe, comfortable, and conducive environment for students, faculty members, researchers, and stakeholders.

PARAMETER B. INFRASTRUCTURE

B.1 The Infrastructure and Facilities

The Dr. Emilio B. Espinosa Sr. Memorial State College of Agriculture and Technology (DEBESMSCAT) Main Campus provides a diverse range of infrastructure and facilities that constitute the physical learning environment of its students and support the delivery of its academic, research, extension, production, administrative, health, and student development functions. The facilities are distributed across the campus and organized according to their intended purposes and the requirements of the various academic and institutional units.

As an agricultural and technology-oriented higher education institution, DEBESMSCAT provides a combination of classroom-based, laboratory-based, experiential, agricultural, technical, and technology-assisted learning environments. These facilities enable students to acquire theoretical knowledge and develop practical competencies through actual laboratory exercises, demonstrations, production activities, technical training, research, and other hands-on learning experiences.

Academic and Laboratory Facilities

The College has 31 academic and laboratory buildings and facilities that provide instructional spaces for its various academic programs. These include the Agricultural and Biosystems Engineering Building, New College of Arts and Sciences Building, Civil Engineering Building, Old College of Arts and Sciences Building, Civil Technology Building, Automotive Building, College of Industrial Technology Building, ICT Laboratory Building, Food Service Building, Audio-Visual Building, Research and Extension Building/Masbate Food and Development Center, New Graduate School Building, Graduate School Building, NSTP/BPED Building, Homemaking Building (BSED), Related Subjects Building (BEED), BEED Building, BSED Building, Vo-Ag Building, BTLED Building, Science Laboratory Building, Animal Husbandry Building, ATC Building, Tissue Laboratory Building, Crop Science Building, Agroforestry Building, Agriculture Education Building, Animal Science Building, Agricultural Engineering Building, Mechanical Fabrication and Power Training Center, and Production Building/Dairy Training Center, currently utilized as a classroom facility.

These facilities provide appropriate spaces for lectures, laboratory activities, demonstrations, practical exercises, technical training, research, and other program-specific learning activities. Specialized facilities such as the Science Laboratory, ICT Laboratory, Fabrication and Power Training facilities, Tissue Laboratory, Agricultural Engineering facilities, and agriculture-related buildings support competency-based and experiential learning consistent with the College's academic mandate.

The Audio-Visual Building houses the Speech Laboratory, providing an instructional environment where students can develop communication, speaking, listening, pronunciation, and other language-related competencies through practical and technology-assisted activities.

The Research and Extension Building/Masbate Food and Development Center provides space for research, extension, innovation, and related development activities, supporting the College's mandate beyond classroom instruction.

The College's physical learning environment is further enhanced by the Two-Storey Smart Classroom Buildings implemented by the Department of Public Works and Highways (DPWH) Regional Office V. These facilities provide additional modern instructional spaces and support technology-enhanced teaching and learning. The Smart Classroom Buildings complement the College's existing classrooms and laboratories and contribute to expanding and improving instructional capacity.

Administrative and Student Support Facilities

DEBESMSCAT also maintains facilities that provide essential administrative, academic, learning resource, and student support services. These include the Administrative Building, Supply Office, GAD Office, Warehouse, Power House, Office of the College Registrar, General Library, Office of Student Affairs and Services, Students' Quarter and Training Center, and FM Station.

The General Library provides learning resources and study spaces that complement classroom instruction, while the Office of Student Affairs and Services and Students' Quarter and Training Center support student welfare, development, training, organizations, and co-curricular activities. The Registrar's Office provides essential academic records and registration services, while other administrative and operational facilities support the efficient delivery of institutional services.

Health and Wellness Facilities

The College provides facilities that support the health and well-being of the academic community, including the College Clinic and Animal Clinic. The College Clinic provides a dedicated space for basic health services and health-related assistance to students, faculty, and staff.

In addition, the College Infirmary implemented by the DPWH Regional Office V further strengthens the College's health and wellness infrastructure. The facility provides an improved environment for the delivery of health and medical support services and contributes to the overall safety and welfare of students and other members of the College community.

Assembly, Recreational, and Student Development Facilities

The College provides spaces for physical education, recreation, cultural activities, student organizations, institutional gatherings, and other co-curricular and extracurricular activities. These include the Covered Court, Function Hall, Amphitheater, Chapel, Eco-Tourism Park, and three (3) bleachers.

These facilities provide venues for sports and physical activities, assemblies, institutional programs, cultural events, student organization activities, community engagement, and other activities that contribute to the holistic development of students.

Housing and Accommodation Facilities

To support the accommodation needs of students, guests, and institutional activities, DEBESMSCAT maintains Male and Female Dormitories and Mini Hostels. The campus also has Presidential Cottage 1 and Presidential Cottage 2, which provide additional accommodation and support facilities for authorized institutional use.

These facilities contribute to the College's capacity to accommodate students and guests participating in academic, training, extension, and other institutional activities.

Income-Generating Project and Support Facilities

Consistent with its agricultural and technology-oriented mandate, DEBESMSCAT maintains various Income-Generating Project (IGP) and support facilities that provide opportunities for practical learning, production, skills development, and institutional income generation. These include the School Canteen, Water Refilling Station, Fabrication Laboratory, Production Building, Poultry Production Building, Smoke Fish Facility, Swine Building and Facilities, School Rice Granary, and School Rice Mill.

These facilities serve not only operational and income-generating purposes but also provide opportunities for students to engage in actual production processes and apply knowledge and skills acquired from their respective programs. They contribute to the College's experiential learning environment and support its agricultural and technology-oriented institutional mandate.

Continuing Infrastructure Development and Maintenance

The College continuously improves its physical learning environment through the construction, rehabilitation, repair, upgrading, and maintenance of facilities. Infrastructure development priorities are determined through institutional planning, assessment of facility requirements, academic program needs, accreditation requirements, safety considerations, stakeholder feedback, and available resources.

The College also coordinates with appropriate government agencies and partners in the implementation of infrastructure projects. Among the significant recent infrastructure initiatives are the Two-Storey Smart Classroom Buildings and the College Infirmary implemented by the Department of Public Works and Highways (DPWH) Regional Office V. These projects complement the College's existing infrastructure by providing additional instructional spaces and improved health and wellness facilities.

The College recognizes that infrastructure development must be accompanied by appropriate maintenance and management. Regular inspection, monitoring, repair, rehabilitation, and maintenance are undertaken by the responsible offices and units to preserve the functionality, safety, and usability of the facilities. Concerns identified through inspections, monitoring activities, and stakeholder feedback are considered in planning subsequent repair, maintenance, and improvement activities.

The physical learning environment is likewise supported by initiatives on cleanliness, environmental management, campus greening, waste management, safety, and disaster risk reduction. Proper organization and maintenance of classrooms, laboratories, offices, common areas, and outdoor spaces contribute to a campus environment that is conducive to learning, work, research, extension, and student development.

Assessment

DEBESMSCAT has established a diverse, functional, and multi-purpose infrastructure system that supports its core functions in instruction, research, extension, production, administration, health and wellness, and student development. The range of academic and laboratory facilities provides students with opportunities for both theoretical and experiential learning, while the administrative, learning resource, student support, recreational, residential, and production facilities provide the complementary services and environments necessary for holistic student development.

The availability of specialized facilities and production-oriented infrastructure is particularly responsive to the College's agricultural and technology-oriented mandate. The Two-Storey Smart Classroom Buildings and College Infirmary implemented by DPWH Regional Office V further strengthen the physical learning environment by providing additional instructional capacity and enhanced health-support facilities.

The continuing efforts of the College in infrastructure development, rehabilitation, upgrading, maintenance, inspection, and monitoring demonstrate its commitment to providing and sustaining a physical environment that is safe, accessible, functional, well-maintained, and conducive to learning. These efforts also demonstrate the College's responsiveness to the changing requirements of its academic programs and the needs of its students, faculty, staff, and other stakeholders.

Summary of Main Campus Facilities

Category	Facilities
Academic and Laboratory Buildings/Facilities	31
Administrative and Student Support Facilities	10
Health and Wellness Facilities	2
Assembly and Recreational Facilities	8
Housing Facilities	5
IGP and Support Facilities	9
Additional Facilities (Ongoing Construction)	2
Total Listed Buildings/Structures/Facilities	67

Note: The counts above are based on the facility inventory provided by DEBESMSCAT. Facilities that are described as buildings, structures, units, or functional areas are included in the inventory according to their current use and classification.

B.1.1 The Buildings

Name of Building	Total Area (m ²)	No. of Classrooms	No. of Lab. Rooms	No. of Offices	No. of Restrooms	No. of Function Rooms	Others (specify)
ACADEMIC AND LABORATORY BUILDINGS							
1. Agricultural & Biosystems Engineering Building	295.35 sq.m.	5	N/A	1	2	6	N/A
2. College of Arts and Sciences Building (New)	267.975 sq.m.	1	3	1	1	5	N/A
3. Civil Engineering Building	295.35 sq.m.	N/A	6	N/A	2	6	N/A
4. College of Arts and Sciences Building (Old)	267.975 sq.m.	4	N/A	2	1	7	N/A
5. Civil Technology Building	407.54 sq.m.	1	4	N/A	2	5	N/A
6. Automotive Building	336.9 sq.m.	N/A	5	N/A	2	6	Calibration Room
7. College of Industrial Technology Building							
8. ICT Laboratory Building	185.77 sq.m.	N/A	4	1	2	5	N/A
9. Food Service Building	405 sq.m.	1	2	N/A	4	3	Tool Room
10. Audio Visual Building	416.954 sq.m.	1	2	N/A	2	3	N/A
11. Research And Extension Building / Masbate Food and Development Center	450 sq.m.	2	2	4	5	14	Training Hall Kitchen Storage Display Area Conference Room

12. New Graduate School Building	405 sq.m.	3	3	1	5	4	Electrical Room
13. Graduate School Building	426 sq.m.	3	1	1	2	6	Accreditation Room
14. NSTP / BPED Building	183.04 sq.m.	3	1	N/A	2	4	N/A
Name of Building	Total Area (m ²)	No. of Classrooms	No. of Lab. Rooms	No. of Offices	No. of Restrooms	No. of Function Rooms	Others (specify)
15. Homemaking Building (BSED)	1,033.8 sq.m.	4	N/A	3	3	7	Storage Room
16. Related Subjects Building (BEED)	338.1 sq.m.	6	N/A	N/A	2	6	N/A
17. BEED Building							
18. BSED Building							
19. Vo-Ag Building	1,711.666 sq.m.	9	N/A	1	13	11	Stage Activity Area
20. BTLED Building	342 sq.m.	4	2	N/A	7	6	Storage Electrical Room
21. Science Laboratory Building	336 sq.m.	7	7	N/A	4	7	Storage Electrical Room
22. Animal Husbandry Building	307.8 sq.m.	5	N/A	1	4	6	N/A
23. ATC Building	958.5 sq.m.	9	N/A	2	2	11	N/A
24. Tissue Laboratory Building	241.5 sq.m.	N/A	2	N/A	2	3	Machine Shop
25. Crop Science Building	405 sq.m.	2	1	1	4	5	Storage
26. Agroforestry Building	405 sq.m.	2	1	1	4	5	Storage
27. Agriculture Education Building	405 sq.m.	2	1	1	4	5	Storage
28. Animal Science Building	432 sq.m.	2	1	1	4	5	Storage
29. Agricultural Engineering Building	432 sq.m.	2	1	1	4	5	Storage
30. Mechanical Fabrication	300 sq.m.	1	1	1	4	3	Student's Locker

and Power Training Center							
31. Production Building / Dairy Training Center (Now classroom)	245.025 sq.m.	1	1	1	3		

DEBESMSCAT provides adequate buildings, spaces, and facilities to support the academic, administrative, and student-related needs of the College. The Main Campus has a diverse range of facilities that provide appropriate spaces for classrooms, laboratories, faculty and staff offices, administrative offices, learning resource areas, student services, health and wellness, recreation, dining, accommodation, and other institutional functions.

Adequate classrooms and laboratory facilities are provided across the different academic buildings to support lectures, discussions, laboratory exercises, demonstrations, practical activities, and other instructional requirements. Specialized learning spaces, including the ICT Laboratory, Science Laboratory, Speech Laboratory, Fabrication Laboratory, Tissue Laboratory, Agricultural Engineering facilities, Mechanical Fabrication and Power Training Center, and various agriculture- and technology-related laboratories and facilities, provide students with appropriate environments for experiential and hands-on learning.

The College also provides faculty, staff, and administrative offices distributed among the academic and administrative buildings. These spaces support the day-to-day functions of academic departments, administrative units, and institutional offices. The Administrative Building, Office of the College Registrar, Office of Student Affairs and Services, GAD Office, Supply Office, and other support offices provide accessible spaces for the delivery of essential services to students, faculty, staff, and other stakeholders.

For learning and study purposes, the General Library provides access to learning resources and study areas that complement classroom instruction. Student-centered facilities such as the Students' Quarter and Training Center provide additional spaces for student activities, training, meetings, organizations, and other student development programs.

Health and wellness needs are supported by the College Clinic, which provides basic health services and assistance to students, faculty, and staff. The College Infirmary, implemented by the DPWH Regional Office V, further strengthens the campus' health-support infrastructure and provides additional space for health and medical services.

The College also provides adequate spaces for food services and student amenities, including the School Canteen and Water Refilling Station, which provide accessible food and drinking-water services within the campus. The Function Hall and other common areas may likewise accommodate institutional activities, gatherings, and related functions.

Adequate comfort rooms and sanitation facilities are provided in the different buildings and activity areas to serve the needs of students, faculty, staff, and visitors. These facilities are

regularly monitored and maintained to promote cleanliness, sanitation, accessibility, and user safety.

The campus is further supported by recreational and assembly facilities, including the Covered Court, Amphitheater, Function Hall, Chapel, Eco-Tourism Park, Open Field, and bleachers. These facilities provide venues for physical activities, student organizations, cultural programs, institutional events, and other activities that contribute to student development and campus life.

The College also provides dormitories, mini hostels, and other accommodation facilities to support the residential needs of students and authorized users. Roads, pathways, open spaces, utility facilities, and other campus support infrastructure complement the buildings and contribute to the overall functionality and accessibility of the physical learning environment.

Overall, the existing buildings, spaces, and amenities provide adequate and functional provisions for teaching and learning, administration, student services, health and wellness, study, recreation, dining, accommodation, and other institutional activities. The College continuously undertakes inspection, maintenance, repair, rehabilitation, and upgrading of its facilities to ensure that they remain safe, clean, accessible, functional, and conducive to learning and student development.

B.2 Results of the Infrastructure Program

DEBESMSCAT's continuing Infrastructure Program has contributed to the improvement, expansion, and sustainability of the College's physical learning environment. Three significant results of the program are:

1. Improved and Expanded Instructional and Learning Facilities

The College has continuously developed, rehabilitated, repaired, and upgraded academic and laboratory facilities to respond to the requirements of its academic programs. The availability of specialized laboratories, technology-assisted learning spaces, agricultural and technical facilities, and additional classroom facilities has strengthened the capacity of the College to provide classroom-based, laboratory-based, experiential, and hands-on learning. The Two-Storey Smart Classroom Buildings implemented by DPWH Regional Office V further increased the availability of modern instructional spaces and enhanced the College's capacity for technology-supported teaching and learning.

2. Improved Student Services, Health, and Campus Amenities

Infrastructure development has also strengthened facilities that support student welfare and holistic development. The provision and improvement of the College Clinic, College Infirmary implemented by DPWH Regional Office V, General Library, Students' Quarter and Training Center, dormitories, canteen, recreational facilities, and other student support spaces have enhanced the accessibility and delivery of essential services. These facilities provide students with appropriate spaces for health services, study, training, recreation, dining, accommodation, and other activities that contribute to a conducive campus environment.

3. Sustained Functionality, Safety, and Responsiveness of Campus Facilities

The implementation of regular inspection, monitoring, preventive maintenance, repair, rehabilitation, and upgrading has helped preserve the functionality and usability of the College's infrastructure. Facility deficiencies and maintenance requirements identified through inspections and stakeholder feedback are considered in subsequent infrastructure planning and improvement activities. These practices contribute to maintaining a campus environment that is safe, functional, accessible, clean, and responsive to the changing requirements of academic programs and stakeholders.

B.3 Three Best Techniques Used in the Infrastructure Program

DEBESMSCAT employs the following three best techniques in the planning, implementation, and management of its Infrastructure Program:

1. Needs-Based and Participatory Infrastructure Planning

Infrastructure requirements are identified based on academic program needs, facility utilization, institutional priorities, accreditation requirements, safety considerations, inspection findings, and feedback from students, faculty, staff, and concerned offices. This approach ensures that infrastructure projects are prioritized according to actual needs and contribute directly to the improvement of the learning environment.

2. Regular Inspection, Monitoring, and Preventive Maintenance

The College conducts regular ocular inspections, condition assessments, project monitoring, and maintenance activities to identify structural, architectural, electrical, plumbing, safety, and other facility concerns at an early stage. Findings are documented and used as a basis for repair, rehabilitation, maintenance, and upgrading. This technique helps prevent further deterioration, extend the useful life of facilities, and maintain safe and functional spaces.

3. Inter-Agency Coordination and Resource Optimization

The College coordinates with government agencies, particularly the Department of Public Works and Highways (DPWH) Regional Office V, as well as other partners and concerned institutional offices, in the planning and implementation of infrastructure projects. This approach enables DEBESMSCAT to maximize available resources and facilitate the development of major facilities such as the Two-Storey Smart Classroom Buildings and College Infirmary. The College likewise prioritizes the efficient use of existing facilities through appropriate rehabilitation, adaptive use, maintenance, and upgrading rather than relying solely on new construction.

Overall Assessment

The implementation of these infrastructure strategies has enabled DEBESMSCAT to progressively improve its physical learning environment while ensuring that available resources are directed toward priority needs. The combination of needs-based planning, regular facility monitoring and maintenance, and strategic coordination with government agencies and partners supports the sustainability and responsiveness of the College's Infrastructure Program.

PARAMETER C: LABORATORIES AND SHOPS

Laboratories and shops are essential components of quality education, providing students with opportunities to translate theoretical knowledge into practical skills and real-world applications. They serve as learning environments where students develop technical competence, critical thinking, problem-solving, and hands-on skills relevant to their respective programs.

Beyond instruction, laboratories and shops support research, innovation, extension, and production activities, enabling faculty and students to generate knowledge, develop practical solutions, and share appropriate technologies with communities and industry. Adequate, functional, and safe facilities therefore contribute significantly to the achievement of learning outcomes and the preparation of competent, industry-ready graduates.

C.1 Laboratories and Shops Supporting Instructions

The Dr. Emilio B. Espinosa Sr. Memorial State College of Agriculture and Technology (DEBESMSCAT) recognizes the vital role of adequate, functional, safe, and well-maintained laboratories and shops in achieving quality education and developing the competencies required of its students. As an institution offering academic programs that require practical, technical, scientific, agricultural, and industry-oriented learning experiences, the College continuously ensures that its laboratories and shops are responsive to the instructional, research, extension, and training needs of its academic programs.

DEBESMSCAT implements a systematic and needs-based approach to the provision, management, utilization, maintenance, and improvement of laboratory and shop facilities. The adequacy of these facilities is assessed based on program requirements, curriculum outcomes, student population, laboratory activities, equipment needs, and emerging instructional and technological requirements. Academic units work closely with concerned administrative offices in identifying facility and equipment requirements, while appropriate planning, budgeting, procurement, inventory, and maintenance mechanisms are implemented to support their continued functionality.

The College likewise places strong emphasis on safety, risk reduction, and proper utilization of laboratories and shops. Appropriate tools, equipment, supplies, safety signages, emergency materials, fire protection equipment, first-aid provisions, and personal protective equipment are provided according to the nature of activities conducted. Regular inspection, cleaning, inventory, maintenance, and monitoring of equipment and facilities are undertaken to ensure their functionality, safety, and readiness for use.

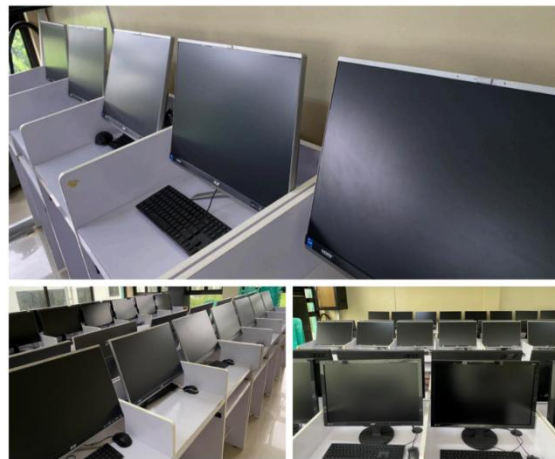
Through these institutional systems and practices, DEBESMSCAT strives to provide safe, accessible, functional, and adequately equipped laboratories and shops that support meaningful hands-on learning, enhance student and faculty productivity, minimize risks and accidents, and contribute to the attainment of the desired learning outcomes of its academic programs.

I. Computer Laboratories

1. ICT Laboratory



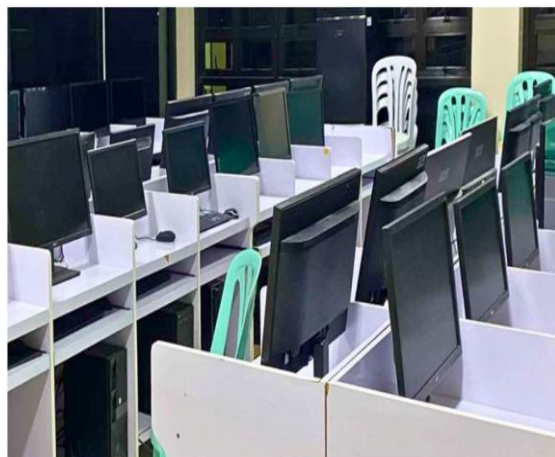
COMPUTER LABORATORY ROOM 1



COMPUTER LABORATORY ROOM 2



COMPUTER LABORATORY ROOM 3



COMPUTER LABORATORY ROOM 4



Laboratory Classes



The ICT Laboratory Room is a dedicated facility designed to enhance digital literacy, programming, and technical skills through hands-on learning and practical applications. It is equipped with individual computer workstation arranged in a structured layout that allows for both individual and collaborative learning.

The laboratory is air-conditioned, well-lit, and properly ventilated to ensure a comfortable learning environment. It includes tables and chairs, computers, and multimedia equipment to support interactive instruction and demonstration.

In compliance with institutional and CHED/DepEd standards, the room is fitted with appropriate electrical safety features and fire protection equipment. The overall setup

promotes a conducive environment for effective teaching and learning in the field of Information and Communication Technology (ICT).

II. Science Laboratories

1. General Science and Physics Laboratory



The DEBESMSCAT Science Laboratories serve as essential instructional facilities that provide students with meaningful hands-on and experiential learning opportunities. The laboratories complement classroom instruction by allowing students to apply scientific concepts through actual experimentation, observation, measurement, and analysis.

The facilities are equipped with traditional scientific apparatus and modern laboratory instruments that support practical activities in mechanics, electricity and magnetism, optics, thermodynamics, and basic analytical science. These resources help students develop competencies in experimental techniques, accurate data collection, critical thinking, scientific analysis, equipment handling, and laboratory safety.

Laboratory activities are conducted in accordance with curricular requirements and applicable CHED standards, ensuring that the facilities and learning experiences contribute to the attainment of program outcomes. Through these laboratories, DEBESMSCAT strengthens students' scientific competencies and readiness for advanced studies, research, and professional practice.

III. Laboratories for Engineering Program

1. OLD LIBRARY (Converted to Laboratory for College of Engineering)



The College of Engineering Laboratory is a well-equipped facility that upholds the institution's commitment to quality, outcomes-based education by ensuring that laboratory resources remain appropriate, adequate, and relevant to the demands of the engineering curriculum. Through its various equipment and trainers, the laboratory reinforces classroom instruction with applied, hands-on learning experiences that go beyond theoretical discussion. Students are given direct exposure to industry-standard tools and technologies, preparing them for the practical realities of professional engineering practice and strengthening their employability upon graduation.

The laboratory plays a significant role in the attainment of program learning outcomes, particularly in developing students' technical competencies, problem-solving ability, and capacity to apply engineering concepts in real-world settings. As such, it stands as a tangible reflection of the institution's continuing investment in infrastructure development; an effort aligned with the standards and geared toward the sustained improvement of engineering education quality.

2. Boiler Room

The Boiler Room bridges the gap between classroom theory and industrial application by giving students direct exposure to a functioning boiler system. Rather than relying solely on diagrams and calculations, students are able to observe real steam generation processes,

understand boiler components and safety mechanisms, and apply thermodynamic and fluid mechanics principles in a live setting. For Mechanical Engineering students, this reinforces learning in thermodynamics, heat transfer, and power plant engineering. For Chemical Engineering students, it strengthens understanding of process systems, energy balances, and industrial equipment operation. This hands-on exposure develops technical competence, safety awareness, and practical readiness for careers in power generation, process industries, and plant operations.



3. Calibration Building

The Calibration Building strengthens instruction by giving Mechanical, Chemical, and Civil Engineering students direct, hands-on access to precision testing and measurement equipment. Mechanical and Chemical Engineering students benefit from the fluid mechanics and hydraulics apparatus, which reinforce principles of flow behavior, pressure dynamics, and energy losses essential to process and thermal systems. Civil Engineering students, meanwhile, gain practical experience in soil mechanics, materials testing, and surveying — skills critical to structural design, foundation analysis, and construction quality control. By working directly with calibrated instruments, students develop accuracy, analytical thinking, and confidence in interpreting real experimental data rather than relying solely on theoretical computation.

IV. Shared Laboratories for Engineering and Industrial Technology Programs

1. Fabrication and Laboratory Building

The Fabrication and Laboratory Building strengthens instruction by shifting learning from theoretical discussion to direct, hands-on application. Students no longer simply study machining principles, material properties, or automotive systems in the abstract, they operate the actual machines, test real materials, and produce tangible outputs. This exposure builds technical precision, problem-solving skills, and confidence in using industry-standard equipment, ensuring graduates are job-ready and better prepared for licensure examinations, industry immersion, and professional practice.



V. Workshops

1. Electrical and Electronics Laboratory Workshop

The Electrical and Electronics Laboratory Workshop strengthens instruction by giving Electronics and Electrical Technology students direct, hands-on experience with the same panels, wiring systems, and trainer modules used in actual industrial and residential electrical work. Rather than learning wiring and circuit concepts through theory alone, students physically install, test, and troubleshoot power and control circuits, and work with electronic components to understand their practical application. This hands-on training builds technical proficiency, safety awareness, and job-ready skills, preparing students for certification exams, on-the-job training, and employment in electrical installation, maintenance, and electronics servicing.



2. Civil Technology Workshop

The Civil Technology Workshop strengthens instruction by giving students direct, hands-on experience with the same tools and equipment used in actual construction and

carpentry work. Rather than learning construction techniques through lecture alone, students practice cutting, drilling, measuring, and drafting using real workshop tools, while surveying instruments allow them to apply site layout and land measurement principles in practical exercises. This hands-on exposure builds technical precision, safety consciousness, and job-ready skills, preparing students for certification, on-the-job training, and employment in construction, carpentry, and related building trades.

3. Automotive Technology Workshop

The Automotive Technology Building strengthens instruction by allowing students to move beyond theoretical study of engine systems and directly engage in diagnostic problem-solving using simulated real-world fault scenarios. Through the Engine Fault Diagnostics Simulator, students learn to systematically identify, analyze, and resolve engine malfunctions — developing critical troubleshooting skills without the risks and costs associated with practicing on actual faulty vehicles. Exposure to hybrid engine fault simulation further ensures that students are trained on emerging automotive technologies, preparing them for the shifting demands of the modern automotive service industry. This hands-on, simulation-based approach builds diagnostic accuracy, technical confidence, and job readiness for careers in automotive repair and maintenance.

C.2: Inventory of Laboratories and Shops

To demonstrate the adequacy, functionality, and relevance of its laboratories and shops, DEBESMSCAT maintains an inventory of facilities supporting its various academic programs. The inventory provides essential information on the department/course, laboratory or shop name, size and location, functions, and available equipment and amenities. It serves as a reference for facility utilization, resource planning, equipment management, maintenance, and continuous improvement in support of quality instruction and skills development.

Department/ Course	Name of Lab/Shop	Size (sq.m)	Location	Function/s	Equipment/Amenities Provided
• Bachelor of Science in Computer Science • Bachelor of Science in Information Systems • Bachelor of Science in Industrial Technology • Bachelor of Arts in Economics	ICT Laboratory	112.08	ICT Laboratory Building	Computer Laboratory	• Desktop Computers • Drawing Pads • Smart TV • Printer • Scanner • Network Router/Switch

Department/ Course	Name of Lab/Shop	Size (sq.m)	Location	Function/s	Equipment/Amenities Provided
• Bachelor of Science in Entrepreneurship • Bachelor's in public administration • Bachelor of Science in Agriculture • Bachelor of Science in Computer Engineering • BSEd and Agriculture Courses					
• Bachelor in Public Administration • Bachelor of Arts in Economics • Bachelor of Science in Entrepreneurship • College of Agriculture • College of Education	Speech Laboratory	409.28	Audio Visual Laboratory	Laboratory	• Centralized Instructor Console • Projectors • Sound System • Headset • Audio Interfaces
All Programs	General Science and Physics Laboratory	483	Science Laboratory Building	Science Laboratory	• Newton's Color Disc • Boyle's Law/Gas Law Apparatus • Wimshurst Machine • Van de Graaff Generator • Density/Specific Gravity Set • Centrifuge Analytical Balance (Electronic Scale) • Laboratory Centrifuge • Laboratory Oven / Incubator • Supporting Glassware & Tools • Spatulas • Microscopes • Fume Hood / Biosafety Cabinet

Department/ Course	Name of Lab/Shop	Size (sq.m)	Location	Function/s	Equipment/Amenities Provided
					• Hot Plate Stirrer & Analytical Balance • Beakers • Erlenmeyer Flasks (Conical Flasks) • Graduated Cylinders • Test Tubes • Volumetric Flasks • Reagent Bottles
• Bachelor of Science in Mechanical Engineering • Bachelor of Science in Chemical Engineering • Bachelor of Science in Civil Engineering • Bachelor of Science in Electrical Engineering • Bachelor of Science in Agricultural and Bio-System Engineering	Engineering Laboratory	378	Old Library (Converted to Engineering Laboratory)	Laboratory and Academic	• Refrigeration And Air Conditioning Machine • Electro-Hydraulic Machine • Motor Control • Mechatronics Machine • Computer-Aided Design Room • Digital Trainer • Electronics Motor Control Trainer • Electronics Training Bench
• Bachelor of Science in Mechanical Engineering • Bachelor of Science in Chemical Engineering	Boiler Room	52	Boiler Room	Laboratory	Steam Boiler Machine
• Bachelor of Science in Civil Engineering • Bachelor of Science in Chemical Engineering • Bachelor of Science in Mechanical Engineering	Calibration	300	Calibration Building	Academic and Laboratory	• Pitot Static Tube • Pascal's Module • Orifice Discharge • Energy Losses in Pipe • Osborne-Reynolds Demonstration • Impact Of a Jet • Hydrostatic Pressure • Gillmore Apparatus • Buoyancy Square Type, C Type And V Type

Department/ Course	Name of Lab/Shop	Size (sq.m)	Location	Function/s	Equipment/Amenities Provided
					• Flow Over Weir • Plastic Limit Set • Electromagnetic Sieve • Shaker • Unconfined Compression Tester • Vicat Apparatus • Large Capacity Sample • Splitter • Hydraulic Bench • Laboratory Oven • Machine For Direct and Residual Shear Test • Standard Penetration Tester • Motorized CBR Testing Machine • Surveying Equipment • Welding Machine • Analytical Precision: The Lutron Ph-211 • Mechanical Resilience: Tata Cobalt Drill Bits
• College of Engineering Programs • College of Industrial Technology Programs	Fabrication and Laboratory	154	Fab-Lab	Laboratory	• Universal Testing Machine (UTM) • CNC Milling Machine • Lathe Machine Station 1, 2, and 3 • Milling Machine • 3D Printers • Laser Cutter And Engraver Machines • Portable Cylinder Reboring Machine
• Bachelor of Science in Electronics Technology • Bachelor of Science in Electrical Technology	Electronics and Electrical Technology Workshop/Lab Room	63	CIT-ELT Room 1	Academic, Workshop and Laboratory	• Power Circuit Panel • Control Circuit Panel • Electronics Module Trainer • Electrical Module Trainer
• Bachelor of Science in Civil Technology	Civil Technology	63	CIT-Civil Technology Room 3	Academic, Workshop	• Drafting Table • Personal Protective Equipment

Department/ Course	Name of Lab/Shop	Size (sq.m)	Location	Function/s	Equipment/Amenities Provided
	Workshop/Lab Room			and Laboratory	• Grinder • Planer • Table Saw • Jigsaw • Driller • Precision Tools • Saw • Metering Tools • Circular Saw
• Bachelor of Science in Automotive Technology • Bachelor of Science of Mechanical Engineering	Automotive Workshop	336.6	CIT Automotive Workshop	Academic, Workshop and Laboratory	• Automotive Engine Fault Diagnostic Simulator Auto Fault • Hybrid Engine Fault Diagnostic Simulator • ORDI Engine Assembly and Disassembly Training Equipment • Auto Transmission Fluid Exchanger Injector Computer Testing in Cleaner • Tool Cabinet Trolley

3. Cite at least three effects of your existing Laboratories and Shops

1. Enhanced Student Learning and Technical Competencies

The facilities provide hands-on learning opportunities that enable students to translate theoretical knowledge into practice, strengthening their technical, analytical, problem-solving, and practical competencies and contributing to the achievement of program learning outcomes.

2. Strengthened Research, Innovation, and Production

The laboratories and shops provide appropriate facilities for research, experimentation, product development, fabrication, calibration, and production activities. They enable faculty and students to generate knowledge, develop innovative solutions, and apply technologies in agriculture, science, ICT, engineering, and other disciplines.

3. Improved Industry Engagement and Community Extension

The facilities support skills training, demonstrations, technology transfer, and technical services for industry partners, farmers, communities, and other stakeholders. Through these activities, DEBESMSCAT strengthens industry-responsive education, community engagement, and the practical application of institutional expertise.

C.4: BEST PRACTICES

DEBESMSCAT's best practice in laboratory and shop management is anchored on three integrated aspects: systematic resource management and maintenance, comprehensive safety and risk management, and outcome-based utilization with continuous improvement. This ensures that its laboratories and shops remain adequate, functional, safe, and responsive to the instructional and developmental needs of its academic programs.

1. Systematic Laboratory Resource Management and Maintenance

DEBESMSCAT implements a systematic approach to ensure the adequacy, functionality, and sustainability of laboratory and shop facilities and equipment. This includes regular inventory, designated laboratory-in-charge, proper budgeting and procurement, equipment maintenance, calibration, warranty monitoring, and facility repair or refurbishment. These practices ensure that laboratory resources remain available, functional, and responsive to program requirements.

2. Integrated Laboratory Safety and Risk Management

The College institutionalizes safety and risk management practices to protect students, faculty, and laboratory personnel. Safety training, laboratory safety manuals and guidelines, appropriate safety signage, fire extinguishers, first-aid kits, eyewash facilities, emergency exits, dual-door access, and evacuation maps are provided and regularly monitored.

3. Outcome-Based Laboratory Utilization and Continuous Improvement

Laboratories and shops are managed based on their contribution to student learning, faculty productivity, research, skills development, and achievement of program outcomes. Regular utilization and monitoring of laboratory activities are supported by student laboratory outputs, grading records, projects, competitions, exhibits, and faculty accomplishments. Results of utilization and facility assessment serve as bases for further improvement and resource allocation.

D. Non-Print, Digital and Electronic Resources

DEBESMSCAT utilizes non-print, digital, and electronic resources to enhance instruction by providing students and faculty with accessible, relevant, and technology-enabled learning materials. These resources support interactive teaching, independent learning, research, collaboration, and access to up-to-date information, complementing traditional instructional materials and promoting effective, flexible, and learner-centered education.

Through the provision, proper utilization, maintenance, and continuous improvement of digital and electronic resources, the College strengthens the achievement of learning outcomes, digital competencies, student engagement, and faculty instructional effectiveness, in support of its commitment to quality and responsive education.

D.1

Information and Communication Technology (ICT) plays a vital role in the general operations of Dr. Emilio B. Espinosa, Sr. Memorial State College of Agriculture and Technology (DEBESMSCAT) by supporting efficient, accurate, and timely delivery of academic, administrative, student, and institutional services. It facilitates the management, processing, storage, and retrieval of institutional data, communication and coordination among offices, online and digital transactions, student information and records management; learning and teaching activities, financial and administrative processes, and the dissemination of information through digital platforms. ICT also supports decision-making by providing reliable data and reports for planning, monitoring, and evaluation. Through the use of appropriate systems, networks, hardware, software, and digital services, DEBESMSCAT is able to streamline its operations, reduce manual processes and errors, improve accessibility of information, strengthen institutional communication, and enhance the overall quality, efficiency, and responsiveness of its services to students, faculty, personnel, and other stakeholders.

D.1.1

ICT Resource/Equipment	Brief Description	Specific Use/Purpose
Google Classroom	a free web-based platform that simplifies creating, distributing, and grading assignments in a digital environment. It acts as a digital hub that connects teachers and students, streamlining classroom communication and workflow.	Organizes coursework, distributes assignments, and streams announcements.
Interactive Whiteboards	a large, touch-sensitive display screen that connects to a computer and digital projector to turn lessons into interactive experiences. It allows teachers and students to control software, write notes, and manipulate digital content directly on the board using a finger or a specialized pen.	Replaces traditional boards for touch-driven, dynamic lessons.
Computer Laboratories	a dedicated space in a school or university equipped with multiple computers, network connectivity, and specialized software to provide students with hands-on digital learning. It serves as a centralized hub where students develop digital literacy, conduct research, and learn practical technical skills.	Provides portable access to e-books, and apps.

D.1.2

ICT Resource/Equipment	Brief Description	Specific Use/Purpose
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SIAS	is an integrated institutional system that manages student information and academic records while supporting registrar, cashiering, and accounting operations. It centralizes student data, facilitates enrollment and records processing, and streamlines financial transactions, billing, and reporting for more efficient and accurate delivery of services.	Fully integrated registrar, cashiering, and accounting software
AIS	is a digital platform used to manage academic information, including the uploading and recording of student grades, administration of teacher evaluations, and generation of academic reports. It supports efficient data management and facilitates the preparation of required reports for submission to CHED.	Uploading of grades, Teacher Evaluation, Generate reports for submission to ched
Online Admission System	is a digital platform that facilitates the application and admission process of DEBESMSCAT. It enables applicants to register, complete admission forms, submit required documents, and monitor their application status online, while allowing admission personnel to efficiently manage, validate, and process applicant records.	applicants to submit online applications, monitor application status, and receive admission-related information online.

D.1.3

ICT Resource/Equipment	Brief Description	Specific Use/Purpose
SIAS	is an integrated institutional system that manages student information and academic records while supporting registrar, cashiering, and accounting operations. It centralizes student data, facilitates enrollment and records processing, and streamlines financial transactions, billing, and reporting for more efficient and accurate delivery of services.	Generation of billing and cashiering reports; management of student master lists; creation and management of class sections, courses, programs, and departments; and maintenance of personnel profiles.
AIS	is a digital platform used to manage academic information, including the uploading and recording of student grades, administration of teacher evaluations, and generation of academic reports. It supports	Management and assignment of class schedules, generation of faculty evaluation reports, and provision of academic

	efficient data management and facilitates the preparation of required reports for submission to CHED.	analytics to support administrative monitoring, planning, and decision-making.
Online Admission System	is a digital platform that facilitates the application and admission process of DEBESMSCAT. It enables applicants to register, complete admission forms, submit required documents, and monitor their application status online, while allowing admission personnel to efficiently manage, validate, and process applicant records.	Generation of PDF copies of admission applications; monitoring and tracking of applicants' application status; sending email notifications regarding admission results; and generation of admission-related reports for CHED submission and administrative decision-making.

D.2 Other Resources

DEBESMSCAT provides a range of non-print, digital, and electronic learning resources to complement conventional instructional materials and support the diverse learning needs of students and faculty. These resources are made available through appropriate facilities, platforms, and equipment and are regularly monitored and maintained to ensure accessibility and functionality.

D.2.1 Non-Print Resources

D.2.2 Digital

D.2.3 Electronic

D.3 Maintenance and Repair System

DEBESMSCAT implements a systematic maintenance, repair, and upkeep program to ensure that its buildings, ICT facilities, and electronic resources remain functional, safe, reliable, and responsive to the needs of instruction and institutional operations. The maintenance system is carried out through regular inspection, preventive maintenance, corrective repair, monitoring, documentation, and appropriate resource planning, with designated offices responsible for specific areas.

D.3.1 Buildings

The Office of the Project Management, Physical Plant and Development Services (PMPDS) is primarily responsible for the maintenance, repair, and upkeep of the College's buildings and physical facilities. Regular inspections and monitoring are conducted to identify structural, electrical, plumbing, roofing, ventilation, lighting, and other facility-related concerns.

Identified deficiencies are addressed through preventive and corrective maintenance activities, including routine cleaning, minor repairs, electrical and plumbing works, repair of doors and windows, roof and gutter maintenance, painting, and other necessary facility

improvements. Maintenance requests, inspection findings, work orders, and accomplishment reports serve as bases for prioritizing and monitoring maintenance activities.

Major repair, rehabilitation, and improvement requirements are incorporated into appropriate plans, budgets, procurement programs, and project monitoring mechanisms, ensuring that facilities remain safe, functional, and conducive to teaching, learning, and institutional operations.

D.3.2 Facilities

D.3.3

Conduct preventive and corrective maintenance throughout the year through systematic planning, scheduling, and implementation of regular maintenance activities to ensure the reliability, functionality, and continuous operation of ICT equipment and systems.

D.4 Results of the Utilization and Maintenance of Other Learning Resources

The systematic utilization and maintenance of DEBESMSCAT's non-print, digital, and electronic learning resources have contributed to the following results:

- 1. Improved Accessibility and Continuity of Learning**

Well-maintained computers, ICT facilities, audiovisual equipment, and other digital resources provide students and faculty with reliable access to instructional materials and technology, supporting continuous and technology-enabled teaching and learning.

- 2. Enhanced Learning, Research, and Productivity**

Functional digital and electronic resources facilitate interactive instruction, research, information access, communication, and academic activities, resulting in improved student engagement and faculty productivity.

- 3. Increased Reliability and Service Life of Resources**

Regular inspection, preventive maintenance, timely repair, and proper equipment management reduce downtime and prevent premature deterioration, thereby extending the useful life of equipment and ensuring efficient utilization of institutional resources.

D.5 Best Three Strategies for the Maintenance of Other Learning Resources

- 1. Preventive Maintenance and Regular Inspection**

The institution conducts scheduled inspection, cleaning, testing, updating, and preventive maintenance of computers, ICT equipment, audiovisual devices, and other electronic resources to identify and address potential problems before major breakdowns occur.

- 2. Systematic Monitoring, Documentation, and Accountability**

Equipment is properly inventoried and monitored through property records, condition assessments, maintenance logs, service requests, repair records, and accomplishment

reports. These records provide a basis for maintenance planning, budgeting, repair, replacement, and appropriate disposition.

3. Timely Corrective Repair and Continuous Resource Improvement

Reported equipment problems are assessed and prioritized based on urgency, functionality, safety, and institutional needs. Defective components are repaired or replaced, while obsolete or uneconomical-to-repair equipment is evaluated for upgrading, replacement, or appropriate disposition in accordance with institutional and government policies.