nicholls state university

THE COASTAL CENTER

in Conjunction with Lafourche Parish Government and the Coastal Protection and Restoration Authority

Lafourche Parish Government
Nicholls State University
Duplantis Design Group, P.C.

coastal center task force

Dr. Jay Clune, *Nicholls State University*
Kristen Anselmi, *Nicholls State University*
Dr. Alex Arceneaux, *Nicholls State University*
Dr. Chris Bonvillain, *Nicholls State University*
Timothy Bush, *Louisiana's Cajun Bayou Tourism*
Jason Chauvin, *T. Baker Smith*
Lacey Crochet, *Nicholls State University*
Monique Crochet, *Nicholls State University*
Jerad David, *Nicholls State University*
Dr. John Doucet, *Nicholls State University*
Dr. Quenton Fontenot, *Nicholls State University*
Dr. Gary LaFleur, *Nicholls State University*
Benjamin Malbrough, *Bayou Lafourche Fresh Water District*
Simone Maloz, *Restore or Retreat*
Jenny Schexnayder, *Nicholls State University*
Susan Testroet-Bergeron, *Barataria-Terrebonne National Estuary Program (BTNEP)*
Joni Tuck, *Deepwater Gulf of Mexico at Shell*
Amanda Voisin, *Lafourche Parish Government*
Dr. Velma Westbrook, *Nicholls State University*
Dr. Chadwick Young, *Nicholls State University*

further acknowledgments

DESIGN TEAM
Duplantis Design Group
Stephen Viguerie, Principal
Ashley Webre, Project Manager

CONTRIBUTING AGENCIES
CPRA
Rudy Simoneaux, Chief of Engineering
Brian Lezina, Division Chief of Planning and Research

Lafourche Parish Government
Archie Chaisson, Parish President
Amanda Voisin, CZM Administrator

Restore or Retreat
Simone Maloz, Executive Director

CHIEF ADMINISTRATIVE OFFICERS
Nicholls State University
Dr. Jay Clune, President
Dr. Alex Arceneaux, Executive Vice President for Enrollment and External Affairs
Dr.John Doucet, Director of Coastal Initiatives, Dean of College of Sciences and Technology

COASTAL CENTER BUILDING COMMITTEE
Amanda Voisin, Lafourche Parish Government
Simone Maloz, Restore or Retreat
Dr. Jay Clune, Nicholls State University
Dr. John Doucet, Nicholls State University
Jenny Schexnayder, Nicholls State University
Jason Chauvin, T. Baker Smith
Rudy Simoneaux, Coastal Protection and Restoration Authority (CPRA)

TABLE OF CONTENTS

GENERAL INFORMATION

With its proximity to the Gulf of Mexico, the Atchafalaya Basin, the Barataria-Terrebonne estuary, and its service to local communities of the region, Nicholls State University has seen first-hand, how Louisiana's waterways affect everyday life and culture. The campus understands the necessity for coastal research to be at the forefront of campus activity. Given these unique circumstances and its physical location, Nicholls has a unique opportunity to serve the state as an epicenter for coastal and estuarine efforts through research, education, and outreach.


MISSION
The Coastal Center at Nicholls State University supports and pursues protection, restoration, and adaptation efforts through science-based research and solutions within Louisiana's dynamic coastal region.
VISION
A living, working, and resilient coast
GOALS
The Coastal Center at Nicholls State University shall:
· advance scientific research and solutions to restore, protect, and sustain the Louisiana coast
· develop and implement strategies to nourish, manage, and sustain the Atchafalaya and Terrebonne Basins, the Barataria-Terrebonne Estuary, and the Lafourche Delta.
· support the efforts of and partner with local, state, and federal agencies, including Louisiana's Coastal Protection and Restoration Authority, to implement Louisiana's Coastal Master Plan.
· support studies focused on culture, cohesiveness, and resilience of coastal communities.
· train new generations of coastal scientists and coastal stewards through educational programming for K-16+ students.
· support coastal protection and restoration efforts of both professionals and volunteers through development and extension of best practices through outreach.

PROJECT OVERVIEW

In April 2019 on Coastal Day at the Louisiana Capitol , a cooperative endeavor agreement was signed when Nicholls State University joined Governor John Bel Edwards and the Coastal Protection and Restoration Authority to create a "coastal center" on the university campus. The new center would provide a much-needed location for the public and private industry on the coast to work hand in hand with the university, it's educational programs, and facilities.

The Coastal Day agreement allowed local and state entities to begin securing strategic partnerships focusing on coastal protection, restoration, disaster risk education, and nature-based flood defense. Organizations such as Water Institute of the Gulf, the Barataria-Terrebonne National Estuary Program, The Nature Conservancy, the National Resources and Conservation Service, and surrounding universities have already committed to partnering on research collaborations with Nicholls' faculty and students. Educational partnerships, including a new civil engineering-geomatics partnership with the University of New Orleans, have also grown from this initiative.

The concept of the Coastal Center encompasses research for science-based solutions to coastal problems while continuing in its current curriculum of educating new coastal scientists. The center would capitilize on partnerships with groups such as the Bayou Region Business Incubator and the Coastal Technology Assistance Center, both of which will be housed on Nicholls' campus. These types of partnerships will add a business dimension to the university's coastal portfolio and support local businesses ina regional economy that relies on the Gulf coast for success.

Among the partners of the new Coastal Center at Nicholls State University is Lafourche Parish Government. The parish has contributed to the overall progress of Center planning and development with monetary contributions directly supporting programming and schematic design for the building. They have remained a constant partner and continue to support the university and local coastal initiatives.

PHILOSOPHY

From its vantage on Bayou Lafourche and at the center of the Barataria-Terrebonne Estuary, Nicholls State University recognizes its natural responsibility to embrace and work towards solutions that address the challenges of the changing coast. For over 70 years, nearly 90 percent of our students and employees have called Louisiana's coast their home. With its establishment on the grounds of the closest university to the Louisiana coast, the Coastal Center at Nicholls State University will become the center for scientific and research-based solutions targeted to protecting and sustaining coastal Louisiana.

RESEARCH FOCUS

+ Atchafalaya Basin Planning

The Atchafalaya Basin and its unique set of challenges must be a driving force of the center's work. The Basin supports a robust diversity of aquatic organisms supported by the annual flood pulse. Numerous navigable waterways in the Basin provide access to ecological and economic resources throughout Louisiana. Nicholls researchers have been working with partners such as the Nature Conservancy to better understand how the current hydrology in the Basin affects water quality and aquatic animal production Results of this work can be used to develop strategies to modify the internal hydrology of the Basin to improve water quality and improve aquatic animal production, such as crawfish. The natural process of sediment deposition by the Atchafalaya River has been filling in low-lying areas in the Basin causing some navigable waterways to become dangerously shallow. The center will work to develop actions plans to use the abundant sediment of the Atchafalaya River system to restore sediment-starved areas of the Terrebonne system.

+ Physical Restoration and Monitoring

Besides providing physical protection from storms, restoration of barrier islands, ridges, and marsh habitats provides essential habitat for aquatic organisms and breeding shorebirds. The increase in essential habitat will lead to an increase in production of organisms that rely on that habitat. Hydrologic restoration includes manipulating the way water flows through a system and can be used to improve water quality by increasing dissolved oxygen levels. The computer modeling facility in the center will provide a place for engineers and modelers to work together to provide methods that can be used to optimize restoration efforts. Large data sets collected by drones will be processed in the computer modeling facility and be used to map and monitor coastal vegetation and changes to the coastal landscape. Information provided by the computer modeling system will be invaluable information for future restoration activity.

The center will have multiple types of laboratories so that all types of coastal research can be supported. Wet laboratories, plant and soil laboratories, chemistry laboratories and microscopy laboratories will provide the space and equipment necessary to research and monitor restoration projects so that we can continually improve our restoration methods and strategies. Monitoring research projects after construction will provide valuable insight to the design and implementation of future projects.

The center facilities will have office and laboratory space available so that visiting scientists will be able to conduct their research close to the coast. These facilities will allow experts from all around the world to focus on coastal Louisiana.

+ Protection: Flood Control, Structural Protection, Shoreline and Living Shorelines

The Atchafalaya River is a distributary of the Mississippi River and receives approximately 30% of the combined flows from the Red and Mississippi River. The US Army Corps of Engineers control the amount of Mississippi River that flows into the Atchafalaya through constructed control structures. The control structures were built to prevent the Mississippi River from changing its current course to the Atchafalaya River. The Morganza Spillway can divert Mississippi River water into the Atchafalaya Basin if the Mississippi River water level gets too high to prevent flooding below Baton Rouge. Although the Morganza Spillway is rarely used, it is a critical component of flood control for the Mississippi River.

Erosion of marsh is exacerbated by wave energy. Hard structures such can be placed along the marsh edge to reduce the wave energy and protect the soft marsh. However, hard structures tend to sink into the sediment overtime and become non-functional. By placing material along the marsh edge that is conducive to attracting oysters, an oyster reef can become established thus establishing a 'living shoreline.' Each year, new oysters will be recruited to the reef and settle on top of previous oysters so that the reef maintains elevation and continue to protect the marsh edge. Nicholls has a long history of investigating the structure and ecological function of oyster reefs created by placement of various types of structures along the marsh edge.

The center will provide facilities such as a flume/wave tank lab to study the efficacy of various materials used to protect marsh. The wave tank specifically can be used to model bank erosion along levees and study various protective barriers, such as the oyster reefs and other material.

+ Water Quality

Good water quality is critical to sustaining a healthy and productive coastal ecosystem.. Low levels of oxygen can impair aquatic organisms and high nutrient loads can promote eutrophication. The coastal center wet laboratory will be able to conduct controlled experiments to better understand how low oxygen impacts the survival, growth, and reproduction of aquatic organisms.

The water quality and chemistry laboratory will be able to determine nutrient levels from field sites and monitor the impacts of restoration activities on nutrient loads. This information will allow us to modify future restoration projects to ensure good water quality is maintained along our coast.

+ Sedimentation

Coastal Louisiana was built by sediments deposited by the sediment rich Mississippi River over thousands of years. Because the Mississippi is leveed and disconnected from the coastal wetland, the overwhelming amount of sediment is transported directly to the Gulf of Mexico and bypasses our coastal wetlands. Because the majority of water that flows into the Atchafalaya River originates from the Mississippi River, the Atchafalaya River is also a rich source of sediment.

Some areas in the Atchafalaya River Basin are filling in with sediment and new Atchafalaya Deltaic lands are being built by natural sediment deposition. The coastal center will develop computer modelling to better understand sedimentation patterns of the Atchafalaya River and the ecological response to sedimentation. Methods to ameliorate navigable waterways that are filling in can be modelled and implemented. Ideally, the sediment that is available can be transported to the sediment starved regions of the Terrebonne Basin.

+ Fisheries

Coastal fisheries provide ecologic, recreation, and economic value to coastal regions. The coastal center will provide a means to evaluate specific habitat and water quality needs for coastal fishes so that those needs can be incorporated into future restoration projects. The long term sustainability of our coastal fisheries will be a priority of the coastal center and will include understanding the critical aspects of water quality, hydrology, and vegetation to our coastal fisheries.

+ Vegetative Response

Nicholls has extensive knowledge of wetland ecology and vegetation responses along the coast. The Nicholls' Farm has been a critical component to the production and study of coastal plants for restoration projects. Studies have investigated plant response to various degrees of inundation, vegetation and animal changes around newly created marsh terraces, and many other aspects of wetland ecology. The coastal center will enhance future research with the availability of wet, plant, and chemical laboratories. The center will also give Nicholls the ability to quantify the chemistry of animal, plant, and all soil components.

+ Extension, Modelling, and Surveying

Nicholls is home to the only baccalaureate geomatics program in Louisiana and produces surveying professionals trained in not only land and satellite surveying but also UAV technology. Levee districts, ports, and local governmental agencies stand to benefit from physical and computational modeling of water, sediment, and vegetative activity. These technologies, together with Center's research findings, will be extended through development of best practices and training opportunities like short courses and certifications for working professionals and practitioners of coastal and water management.

NICHOLLS COMMITMENT TO THE COAST

Nicholls has exemplified a longstanding commitment to the coast through education, research, and public initiatives. Beginning in 1948, with the campus' conception, Nicholls has always had strong ties to the coast and community that has been expounded upon to this day.

1940

1948

Nicholls State College opens its doors some 50 miles from nearest Gulf coastline.

1950

1958

First petroleum engineering technology program begins

1960

1961

Louisiana Shrimpers Association sponsors research on shrimp life-cycle

1964

First science degree offered

1965

First National Science Foundation-sponsored research

1966

Nicholls College Foundation sponsors shrimp research

1967

Bachelor of Science degree in Marine Biology begins—first baccalaureate marine biology program in Louisiana

1968

National Science Foundation sponsors shrimp aquaculture research

1969

University Farm established (277 acres)

1970

1972

Wisner Foundation signs 50-year coastal land lease with Nicholls to support coastal research

1974

- Geographical survey of historical marshland settlements inaugurated by geography professor Dr. Don Davis
- Gulf Dead Zone first described by biology professor Dr. Alva Harris
- Nicholls Marine Laboratory established at Fourchon, LA—first permanent coastal laboratory in Louisiana
- Louisiana Offshore Oil Port commissions from Nicholls an environmental and ecological impact study of planned platform and pipeline

1979

LUMCON established by Louisiana legislature; Nicholls Marine Laboratory subleased for LUMCON operations and education outreach

1980

1986

Woody Defelice Marine Sciences Center opens at Cocodrie—home of LUMCON; Nicholls faculty and administration instrumental in establishing and administering facility; Nicholls faculty begin utilizing center for research and educational offerings

1990

1990

- Bio-economic model for Louisiana coastal oyster industry established by biology professor Dr. Earl Melancon; adopted as Lease-Yield (seed-harvest) ratio by Louisiana Department of Wildlife and Fisheries; still used to determine monetary damages for leases following disasters.
- Barataria-Terrebonne National Estuary Program (BTNEP) established, placing he university at geographical center of one of the largest and most important estuaries in the country; over years, Nicholls graduates and faculty serve as executives for Program, Management Conference, and Foundation.

1992

BTNEP relocates to campus

1998

- National Coastal Wetlands Summit hosted at Nicholls
- Resource zones for coastal oyster industry established by biology professor Dr. Earl Melancon; become known industry-wide as the "Melancon Maps"

2000

2002

- Masters of Science in Marine and Environmental Biology program begins, focusing on regional, thesis-based research training
- Nicholls joins Long-term Estuary Assessment Group with Tulane University

2003

Calypseaux Expedition inaugurated—annual Gulf education collaboration with LUMCON

2006

University Farm begins service as coastal plants field research station, growing and supplying coastal grasses for plantings and preserving endangered coastal plant species

2010

2010

Institute of Seafood Safety established, sponsored by USDA/NOAA

2013

Nicholls begins service in Academic Liaison Group of The Water Institute

2014

Center for Bayou Studies established, focusing on nexus of coastal/estuarine history, culture, and ecology research; center accepts donation of Bobby Jones Collection—papers from early Terrebonne Parish coastal engineer and architect of barrier islands restoration

2015

Nicholls begins service on the Executive Committee of the Restore Act Center of Excellence

2018

Nicholls celebrates 70th anniversary, some 24 miles from nearest coastline

2019

Plans for Coastal Technology Assistance Center, Coastal Business Incubator, and the NSU Coastal Center are underway

2020

2020

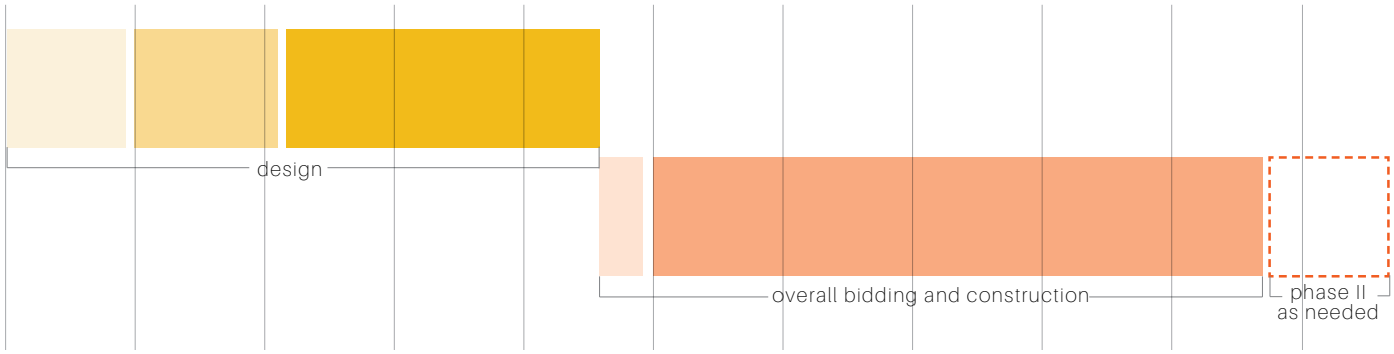
Masters of Marine and Environmental Biology program graduates 100th student; graduates employed by modern coastal agencies such as Department of Natural Resources, Coastal Protection and Restoration Authority, Minerals Management Service/Bureau of Ocean Energy Management, Louisiana Department of Wildlife and fisheries, Louisiana Department of Environmental Quality, Louisiana Oil Spill Coordinator's Office, and multiple universities.

CONSTRUCTION COST CONTROL MEASURES

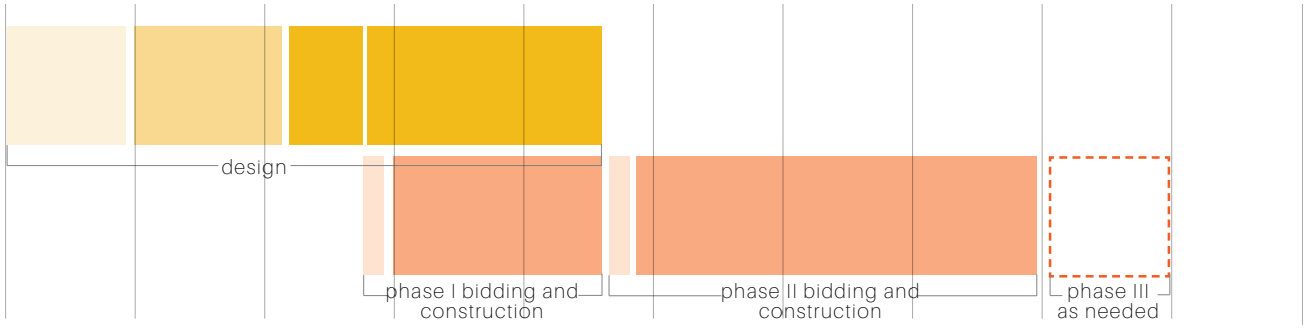
+ Phasing
+ Prioritization
+ Value Engineering

To efficiently appropriate funds for the construction of the building and site, while navigating public funding sources appropriated at undetermined intervals, the Building Committee has investigated multiple ways to complete the entirety of the project with varying schedule and budget restrictions.

+ typical design process



+ phased design process



PHASING

The first of these solutions is phasing the design and construction of the new Coastal Center and site. Phasing is an option commonly associated with the construction of a building. It is important to consider, however, that a phasing approach can also be utilized during the design process, and after building construction is completed.

The typical design process for a building can vary in time depending on the building's size and complexity. By moving the project forward in predetermined phases, progress can be made on a project quicker than in a traditional delivery method. This gives the construction an opportunity to mobilize in smaller bouts and allows for the design process and some of the construction process to overlap for the project schedule to proceed quicker and sooner. One of the ways this can be accomplished is by completing the building's site work and foundation design. These phases can be released for construction while the remaining construction documents are developed. The remaining construction scope can then be subsequently completed by the same or different contractor. Other improvements, including drainage upgrades and street improvements, can also take place independently of the main building construction.
Another option for phasing would include constructing the building shell for future build-out projects. If there comes a point that budget restraints seem inevitable, the exterior of the building can be completed as part of a base building construction contract.. The interior can be completed on an as-needed basis. Internal finishes such as wall cladding systems, flooring, and even mechanical and electrical components could be slated for future construction, while larger and more expensive components such as the building foundation, exterior walls, and roofing would already be completed. This strategy also allows for flexibility in the future if the needs of the Center were to change.

PRIORITIZATION

While a substantial effort has been made to narrow down the program to the most essential spaces, prioritizing spaces and their needs was also agreed upon as an option should the need for restriction occur.

Options can be as simple as prioritizing a building facade over interior spaces or as complex as focusing on specific rooms in a building and compromising on others. Prioritizing a space does not necessarily mean that a space will lack detail or thought, but may have more economical finishes compared to those that might be showcased more. Prioritization can also apply to the center initially and provide future build outs. Spending less money upfront on spaces can create more opportunity for enhancement with future funding at a later date.

VALUE ENGINEERING

Lastly, common value engineering practices could be applied to control the affordability of construction. Value Engineering is a deliberate approach to substitute materials and methods for less expensive alternatives. The intent of this process is to not sacrifice quality or functionality but make a more focused effort to select economical finishes and systems. Some of the most approached solutions include reducing higher price material options on the facades of buildings and limiting specialty design features on the interior of a building.

GUIDELINES

JURISDICTION REQUIREMENTS

Nicholls State University is a public entity owned by the State of Louisiana, it is not bound by local building and permitting requirements. Because of long standing relationships between the city and campus, however, construction drawings are typically shared with public entities for cursory review if they so choose. This allows for any coordination between the campus and city, if it should be required, and allows for the city to make any accommodations if the construction process interferes or impacts city infrastructure.

STATE FACILITY REQUIREMENTS

Whenever state funds are appropriated or used for construction purposes, the state Division of Administration's Facility Planning Office will oversee all aspects of design and construction. This process does require a longer design schedule to incorporate proper state reviews at defined intervals of the design process.

CAMPUS REQUIREMENTS

When designing any new addition to an existing campus, every effort should be made to incorporate existing or future campus facility requirements. This includes, but is not limited to, building management systems, mechanical systems, preferred vendors, internet and technology systems, and electrical systems.

Coordination with the campus during the design process will insure that a new building's maintenance and operation will encompass any future goals for the campus, be within the realm of the campus's capabilities for upkeep and not create an undue burden on those departments.

SUSTAINABILITY

WHAT IS LEED CERTIFICATION?

During the initital project research, information was collected via polls and surveys to better understand the wants and needs for the Coastal Center. When posed with the question, "How Imporant is a LEED certified building?" The average survey answer was 3.78 out of 5. There is an agreed upon advantage to moving forward with a LEED accredited building, however the building committee understands that providing certain programmed spaces take precedent over this certificaiton. As the design process continues, it will be evaluated further whether or not the budget and overall building program can support this endeavor.

LEED certification is a responsible, but not required, building practice that gives credits towards certification for sustainable building practices during the design, construction, and life of the building. Certification is awarded in multiple tiers that range from a basic certification level to a Platinum rating. The major sustainable points of a LEED-certified building design promote smart site development: water conservation over the lifespan of a building, the reduction of waste during construction and use of the building, and sustainable practices that extend to the site and materials used. The lowest certification level for a LEED-certified building is 40 points, where a typical architecture firm incorporates between 20-22 of these points just by good design practice. The point system tops out at 80 points with the highest possible certification rating: Platinum.

Credit points can be given for something as simple as site location, and something as complex as optimizing energy efficiency through the building's systems. An example checklist is provided on the following pages and outlines several opportunities and items that are considered for credit.

LEED certification can provide the owner and user of a building with energy costs savings, water savings, maintenance savings, and waste savings, while a building is being used and operated. It also calls for natural and built solutions to contribute to building performance rather than solely relying on traditional building systems.

While LEED Certification does require an investment from the owner on the front end, it gives a project the marketability of a sustainably built building. LEED Certification provides a competitive edge that can be used to attract tenants or promote organizations initiatives.

Typically, when you are adding a LEED Certification to a project, you should expect to add about 5-30% additional costs depending on the certification level you are trying to achieve. This cost inflation is seen on the design as well as the physical construction of the building. There are also miscellaneous fees added for the registration and review of the project by the council that manages LEED certification credits.

Potential Credits that lend themselves to the Coastal Center Building:

+ *Surrounding Density and Diverse Uses*
+ *Access to Quality Transit*
+ *Bicycle Facilities*
+ *Reduced Parking Footprint*
+ *Open Space*
+ *Heat Island Reduction*
+ *Rainwater Management*
+ *Water Use Reduction*
+ *Optimized Energy Performance*
+ *Renewable Energy Production*
+ *Construction Waste Management*
+ *Daylighting*
+ *Quality Views*
+ *Acoustic Performance*

EXAMPLE PROJECT CHECKLIST

LEED v4 for BD+C: New Construction and Major Renovation
Project Checklist

Y	?	N			
			Credit	Integrative Process	1

0	0	0	**Location and Transportation**		**16**
			Credit	LEED for Neighborhood Development Location	16
			Credit	Sensitive Land Protection	1
			Credit	High Priority Site	2
			Credit	Surrounding Density and Diverse Uses	5
			Credit	Access to Quality Transit	5
			Credit	Bicycle Facilities	1
			Credit	Reduced Parking Footprint	1
			Credit	Green Vehicles	1

0	0	0	**Sustainable Sites**		**10**
Y			Prereq	Construction Activity Pollution Prevention	Required
			Credit	Site Assessment	1
			Credit	Site Development - Protect or Restore Habitat	2
			Credit	Open Space	1
			Credit	Rainwater Management	3
			Credit	Heat Island Reduction	2
			Credit	Light Pollution Reduction	1

0	0	0	**Water Efficiency**		**11**
Y			Prereq	Outdoor Water Use Reduction	Required
Y			Prereq	Indoor Water Use Reduction	Required
Y			Prereq	Building-Level Water Metering	Required
			Credit	Outdoor Water Use Reduction	2
			Credit	Indoor Water Use Reduction	6
			Credit	Cooling Tower Water Use	2
			Credit	Water Metering	1

0	0	0	**Energy and Atmosphere**		**33**
Y			Prereq	Fundamental Commissioning and Verification	Required
Y			Prereq	Minimum Energy Performance	Required
Y			Prereq	Building-Level Energy Metering	Required
Y			Prereq	Fundamental Refrigerant Management	Required
			Credit	Enhanced Commissioning	6
			Credit	Optimize Energy Performance	18
			Credit	Advanced Energy Metering	1
			Credit	Demand Response	2
			Credit	Renewable Energy Production	3
			Credit	Enhanced Refrigerant Management	1
			Credit	Green Power and Carbon Offsets	2

0	0	0	**Materials and Resources**		13
Y			Prereq	Storage and Collection of Recyclables	Required
Y			Prereq	Construction and Demolition Waste Management Planning	Required
			Credit	Building Life-Cycle Impact Reduction	5
			Credit	Building Product Disclosure and Optimization - Environmental Product Declarations	2
			Credit	Building Product Disclosure and Optimization - Sourcing of Raw Materials	2
			Credit	Building Product Disclosure and Optimization - Material Ingredients	2
			Credit	Construction and Demolition Waste Management	2
0	0	0	**Indoor Environmental Quality**		16
Y			Prereq	Minimum Indoor Air Quality Performance	Required
Y			Prereq	Environmental Tobacco Smoke Control	Required
			Credit	Enhanced Indoor Air Quality Strategies	2
			Credit	Low-Emitting Materials	3
			Credit	Construction Indoor Air Quality Management Plan	1
			Credit	Indoor Air Quality Assessment	2
			Credit	Thermal Comfort	1
			Credit	Interior Lighting	2
			Credit	Daylight	3
			Credit	Quality Views	1
			Credit	Acoustic Performance	1
0	0	0	**Innovation**		6
			Credit	Innovation	5
			Credit	LEED Accredited Professional	1
0	0	0	**Regional Priority**		4
			Credit	Regional Priority: Specific Credit	1
			Credit	Regional Priority: Specific Credit	1
			Credit	Regional Priority: Specific Credit	1
			Credit	Regional Priority: Specific Credit	1
0	0	0	**TOTALS**	Possible Points:	110

Certified: 40 to 49 points, **Silver:** 50 to 59 points, **Gold:** 60 to 79 points, **Platinum:** 80 to 110

Citation: 2020 U.S. Green Building Council

SITE SELECTION

In 2019, Nicholls State University created a comprehensive 25-year master plan for the campus that evaluated current campus conditions and identified strategic approaches for future growth and development. The campus master plan encourages growth towards an urban landscape by densifying built areas for accessibility, utilizing vertical building construction, and prolonging campus exposure for students and visitors.

2019 Nicholls State University Master Plan

CAMPUS 25 YEAR MASTER PLAN

When investigating how the new Coastal Center could be incorporated in the existing campus, potential sites were evaluated based on several factors. It was important for the Center to be visible and accessible for the public as well as the student body. The project also couldn't afford delays to clear existing land or provide any substantial land preparation prior to construction. This was also the case when considering current campus infrastructure and drainage capabilities.

After evaluating five potential sites, master plan zoning and drainage studies were evaluated to determine how each positively or negatively affected a new project. For the sake of the exercise, it was assumed that the center would cover approximately 30,000 square feet. Further review indicated that sites on the northern half of campus were upstream of the campus's current drainage infrastructure. To add a new building to the existing system would require significant improvements to the current drainage system. While the campus is making efforts to improve these systems with additional studies and future plans, these systems are currently at capacity and would be inadequate to support new impervious areas such as large buildings and parking lots. By locating a building on the southern half of the campus, the drainage system could accommodate a new facility with minor improvements to the current system. These improvements would benefit the entire campus for any future infrastructure improvements.

The master plan also identified zoning recommendations with existing and future land use diagrams. While the current zoning condition on campus is less concentrated, the future plan encourages densifying academic spaces towards the core of campus, campus life and residential programs radiating out from that core, and athletics towards the perimeter of campus. With the duality of the Coastal Center representing both Academic and Public interest, southern sites were again favorable for ease of access by students and the community alike.

Map showing location of project site. Google Earth, earth.google.com/web/.

SITE SELECTION

It was determined by the campus, in conjunction with the Building Committee, that the site of the current practice football field at the corner Ardoyne Drive and Bowie Road would be the most suitable location based on the Coastal Center's needs. The site is currently home to the university's football practice field. With improvements underway for the current Athletic Administration building and new south endzone football expansion, it was a logical decision for the football practice fields to follow suit and relocate to the south section of campus. The lack of built structures on the site also lends itself to a quick turnover for any new construction to take place with little to no demolition.

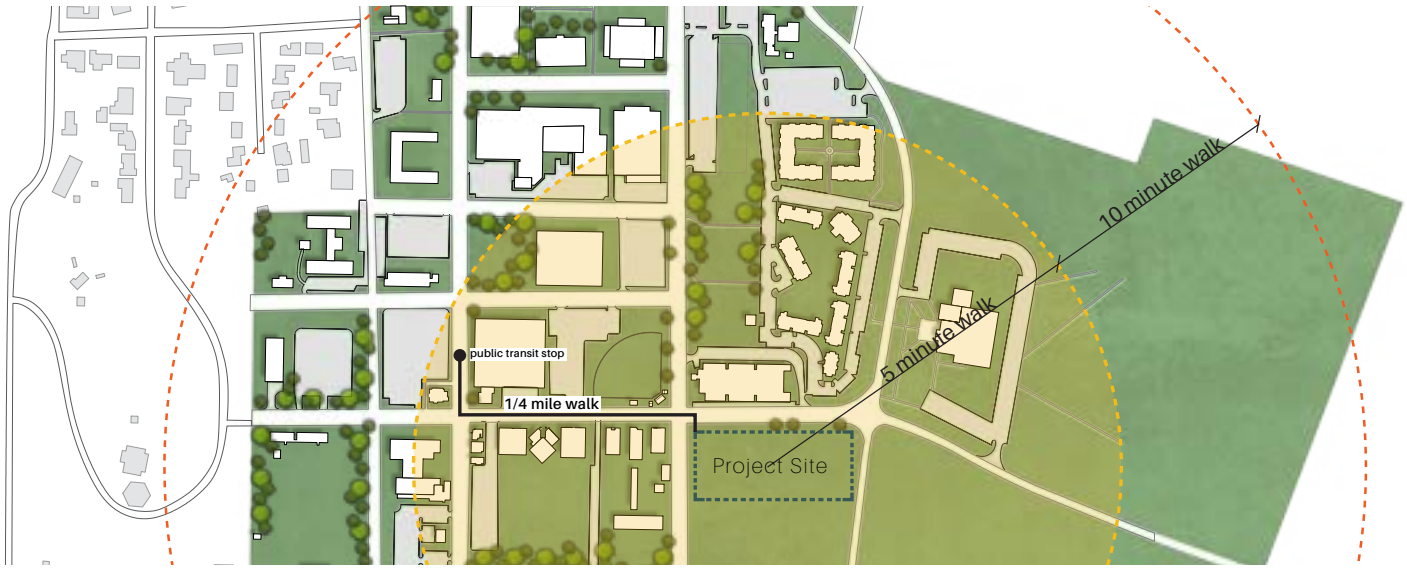
The location of the potential site is also unique because of its accessibility. One of the university's science buildings, Gouaux Hall, is within walking distance, approximately 600 feet from the proposed site and within a 5-minute walking radius of most campus academic buildings. This will allow for close collaboration and shared resources between the two buildings and within shared curriculum. Gouaux Hall is also a stop for the local transit systems, providing public transportation access to the future Coastal Center.

TRAFFIC ANALYSIS

Bowie Road is a highly traveled community corridor connecting Highway 1 to Thibodaux Regional Medical Center. The higher pace traffic in this area makes it ideal for quick access to the Coastal Center and traffic coming to and from the coast and Nicholls Farm by means of Highway 1. This ease of access not only accommodates incoming researchers with samples and specimens for research, but also allows for the public to access the center without interrupting daily campus activities and traffic flows. The large parking lot to the south of the site near Barker Hall allows for overflow parking and both side streets flanking the site provide on-street parking to support the center during high volume operations.

SITE UTILITIES

Utilities can be found primarily to the west of the site along Acadia Drive. Fiber Optic cables as well as low voltage power are available directly on the site, running parallel to Acadia Drive. Water, gas lines, and main electrical lines are available on the opposite side of Acadia Drive, running parallel to the street.



2019 Nicholls State University Campus

2019 Nicholls State University Campus

Scan here to access the digital copy of the
Nicholls State University 2019 Master Plan

Reference the Nicholls State University 2019 Master Plan for additional supporting information:

+ Campus Material Palette
+ Campus Plant Palette
+ Road Distribution Recommendations

BUILDING PROGRAM

Flexibility, adaptability, exclusivity, and collaboration have been held as guiding principles of the Coastal Center's design and development, from the beginning of the programming process.

GUIDING PRINCIPLES

+ Flexibility
+ Adaptability
+ Inclusiveness
+ Collaboration

With the formation of not only a new building but also a new educational and research program, it is imperative that the building respond to development and growth with flexibility and adaptability, especially in research-based spaces. By providing areas that can morph and transform without major monetary investment, the center can become a valuable resource to the university and community not only now, but in years to come.

In line with current campus expectations and goals to update all existing facilities, the new Coastal Center building will be inclusive of all patrons with disabilities and designed according to the Americans with Disabilities Act of 2010. This act requires that any building catering to the public be "designed and constructed in such manner that the facility is readily accessible to and usable by individuals with disabilities…"

Lastly, collaboration has been at the forefront of the design and program thought process from the beginning. One of the goals of the coastal center is to expose the public into the research and academics utilized in daily coastal research.

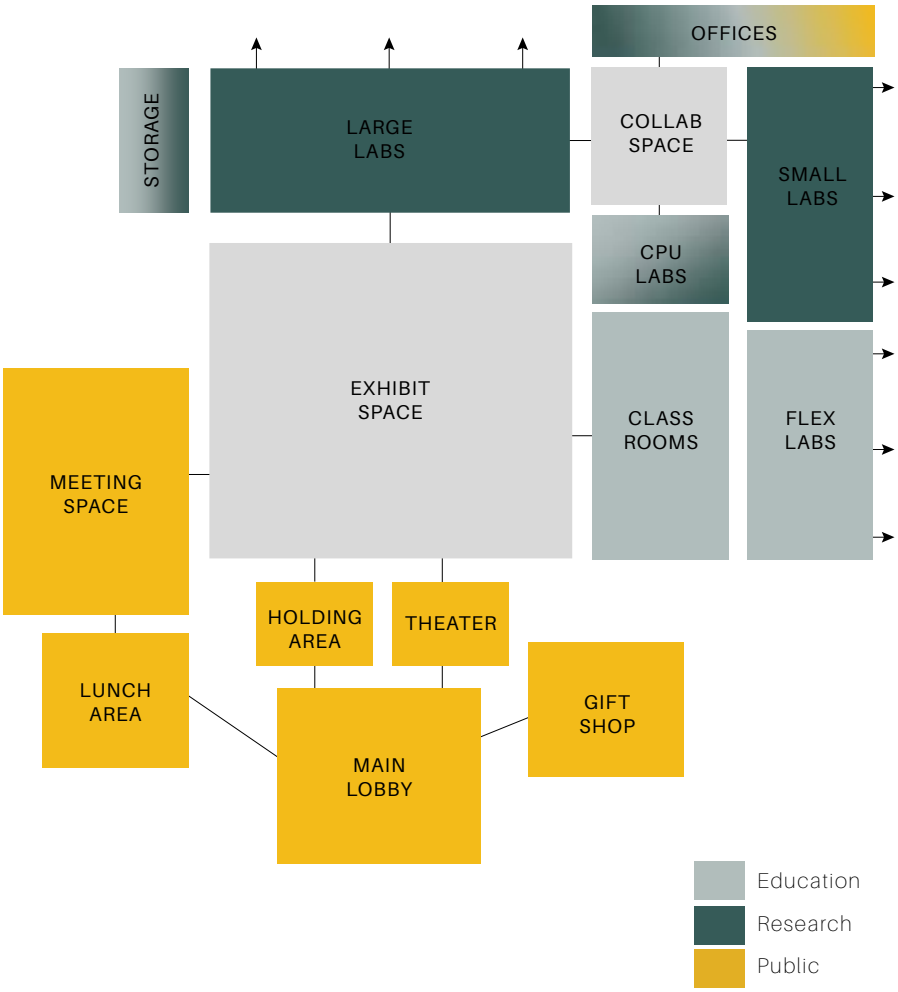
PARTNERSHIPS

A goal of the center is to create a collaborative environment that encourages partnerships, provides opportunity, and fosters growth. One desired partnership would be with the Bayou Region Incubator. This program is currently being developed under the Louisiana Coastal and Technical Assistance Center and aims to provide physical space on campus for small businesses with coastal based missions .

By setting up a "campus within a campus" environment, the business incubator, as well as the Coastal Center, can foster relationships and build on eachother's momentum. Spaces such as meeting rooms can be shared for joint ventures, and local business interested in or affected by coastal research. Multiple entities would have the opportunity to be involved on the ground level with cutting edge research and education.

Citation: 2010 ADA Standards for Accessible Design

ORGANIZATIONAL STRATEGY



After investigating different organizational approaches for the spaces in the building, an "outreach" model seemed most fitting and aligned clearly to the center's inherent goals and mission.

When programming the spaces in the building, there were three clear categories that spaces could be defined by: education, research-based, and public spaces. Noticeable overlaps in the education and research categories form collaboration spaces. When these spaces combine with the need for public outreach, the organization model for the center becomes more deliberate.

In this model, the exhibit space would be the main focus, bringing the public into the center of education and research areas. The exhibit space would have direct connections to the meeting spaces, labs, and classrooms. Researchers and educators would have a separate collaboration space encouraging the transfer of information from professionals in their field, visitors from other universities, and students and graduate students pursuing degrees.

Perimeter access for the meeting space would ensure public interaction with the campus and outdoors, while perimeter lab spaces would be suitable for the intake of larger samples and ease of access for researchers in the field.

SPATIAL AND DESIGN REQUIREMENTS

LOBBY

Staffed Receptionist Desk
Holding Areas for tours/ visitors

EXHIBIT SPACE

Interactive Displays

MEETING SPACE

3,000 sq. ft.	Flexible Meeting Rooms

OFFICES

140 sq. ft.	Director
120 sq. ft. ea.	Admin Staff
120 sq. ft. ea.	(4-6) Resident Scientists
120 sq. ft. ea.	Shared Docent Offices
120 sq. ft.	Educator in Residence/ Coord.
120 sq. ft. ea.	Coastal Reporter – NPR
64 sq. ft. ea.	Grad Student Cubicles
	Shared office storage

KITCHEN

500 sq. ft.	Warming Kitchen/ Break Room

LABS

Field Cluster

1,200 sq. ft.	Wet Lab
1,200 sq. ft.	Plant Lab
500 sq. ft.	Mud / Decontamination Room

Analytical Cluster

500 sq. ft.	Clean Room
400 sq. ft.	Microscopy Lab
800 sq. ft.	Analytical Lab

Electronic Cluster

1,200 sq. ft.	(2) Computer Classrooms
800 sq. ft.	Computer Modelling Lab
500 sq. ft.	Remote Sensing Lab

Education Cluster

800 sq. ft.	Flex Lab
800 sq. ft.	HS / University Classroom
800 sq. ft.	K-12 Activities Area

Perimeter Cluster

800 sq. ft.	(2) Engineering Labs
800 sq. ft.	Multiple Flex Labs
3,000 sq. ft.	Flume / Wave Lab

STORAGE

200 sq. ft.	Additional Storage

CODE INFORMATION

These items are subject to change as the architecture is developed during the schematic design process.

PRELIMINARY CODE REVIEW

A preliminary code review was conducted based on project assumptions that could be made knowing the potential scope and budget for the building and site. These items are subject to change as the architecture is developed during the schematic design process.

For the sake of this review, it is assumed that the building will be approximately 34,000 square feet for the coastal center alone. Some site amenities will be shared with an expected tenant in an adjacent building. It is assumed that the site will be multiple stories and completely accessible.

It is assumed that the project will be classified as a Group B, Business Occupancy with ancillary Assembly spaces for exhibits and meeting rooms. The building should be sprinkled with an integrated Fire Alarm. In order to mitigate costs, a structural steel building could be combined with pre-manufactured metal building systems.

There does not appear to be any code restrictions that would limit the goals and expectations for the project. For reference, a code evlauation graphic is presented on the following pages.

	2015 International Building Code	NFPA 101
	Construction Type	**Construction Type**
Primary Occupancy	Business, Group B	Business
Accessory/ Incidental Occupancy	Assembly, A-3 Meeting & Exhibit Space	Assembly
Fire Protection	Sprinklered	Sprinklered
Fire Alarm	Yes	Yes
Construction Type	Type II B (unprotected)	Type II (000)
Construction Type Limitation	n/a	Assembly permitted on 2nd floor if limited to occupancy of 300 or less per Table 12.1.6
Basic Allowable Building Area (based on A-3 occupancy)	38,000 sq. ft. per Table 506.2	n/a
Allowable Height	75 ft. per Table 504.3	n/a
Allowable No. of Stories	3 per Table 504.3	n/a
Increase Allowable Building Area	0.75x Allowable Bldg Area	n/a
Allowable Height Increase	n/a	n/a
Total Allowable Building Area	66,500 sq. ft. (Section 506.3.3)	n/a
	Ratings (Type IIB) per Table 601 and 602	**Ratings (Type II) per Table A.8.2.1.2**
Structural Frame	0 hour	0 hour
Load Bearing Wall (Exterior)	0 hour	0 hour
Load Bearing Wall (Interior)	0 hour	0 hour
Non-Load Bearing Walls (Exterior)	0 hour	0 hour
Non-Load Bearing Walls and Partitions	0 hour	0 hour
Floor Framing	0 hour	0 hour
Roof Framing	0 hour	0 hour
Roof Class (Table 1505.1 and Section 1505.3)	Class C Minimum	n/a
Exit Access Corridors	0 hour with Sprinkler System	1 hour unless noted in Chapter 12 or 38
Stairways/ Area of Refuge	1 hour when <4 stories	1 hour (8.6.5)
Elevators and Shafts	1 hour when <4 stories (Section 713.4)	1 hour (8.6.5)

	2015 International Building Code	NFPA 101
Means of Egress	2 exits for 1,500 occ./ story Table 1006.3.1	Not less than 2 exits/ story
Corridor Ratings	0 hour for Group B w/ Sprinkler Table 1006.3.1	0 hour w/ Sprinkler 12.3.6
Minimum Corridor Width	44 inches	
Seperation Required for Occupancies	n/a	1 hour between Assembly (> 300) & Business (Table 6.1.14.4.1)
Separation from High Hazard Contents	n/a	1 hour (12.3.2.1 & 38.2.2.2)
Plumbing Count	6 units women 6 units for men Per Table 2902.1 (Assuming 454 Occupants)	n/a
Occupant Load	Business - 100 sq. ft./ person Assembly, A-3 Unconcentrated 15 sq. ft./ person	

DESIGN ELEMENTS

BUILDING DESIGN SURVEY

During the programming process, members of the building committee were given multiple surveys to provide input and determine consensus on multiple topics. One of these surveys consisted of a variety of building exteriors, local and not, that ranged from what is considered a more "traditional" design style to very comtemporary and "modern" design styles. Survey participants were asked to rate each building between 1 and 5 stars; 1 star for an image participants disliked and 5 stars for an image well received. Participants also had an oppurtunity to provide written feedback on each image for more specific input.

After reviewing the results, it was clear that although the building was very important, participants were also concerned with the way the site surrounding the building was treated, developed, and landscaped. They also payed close attention to how a building was sited and its location in a landscape.

Some of the notable comments that resulted in negative ratings included the lack of attention to outdoor spaces and landscaping. Anything too modern or institutional looking tended to receive lower ratings, and participants commented unfavorably on cheaper materials when used on exterior facades.

Some of the more popular styles included the use of brick and layering of different materials. Participants preferred buildings with more height, the use of outdoor spaces, overhangs, and "local flair with modern appeal."

The adjacent page shows some of the highest rated projects from the survey.

+ **Star Commons at Duke Law**
Durham, NC
Shepley Bulfinch

+ **LA Sherrif's Association**
Baton Rouge, LA
Grace & Hebert Architects

+ **UCSB BioEngineering**
Santa Barbara, CA
Moore Ruble Yudell Architects & Planners

+ **Stars Engineers, Administrative Building**
Hanoi, Vietnam
Studio VDGA


LAW

PRECEDENT PROJECT STUDY

UNIVERSITY OF TEXAS AT DALLAS ENGINEERING BUILDING

Architect
Smith Group

Program
Teacing Labs
Traditional Classrooms
Lecture Halls
Computer Labs
Outdoor Courtyard
Auditorium

Size
206,000 sq. ft.

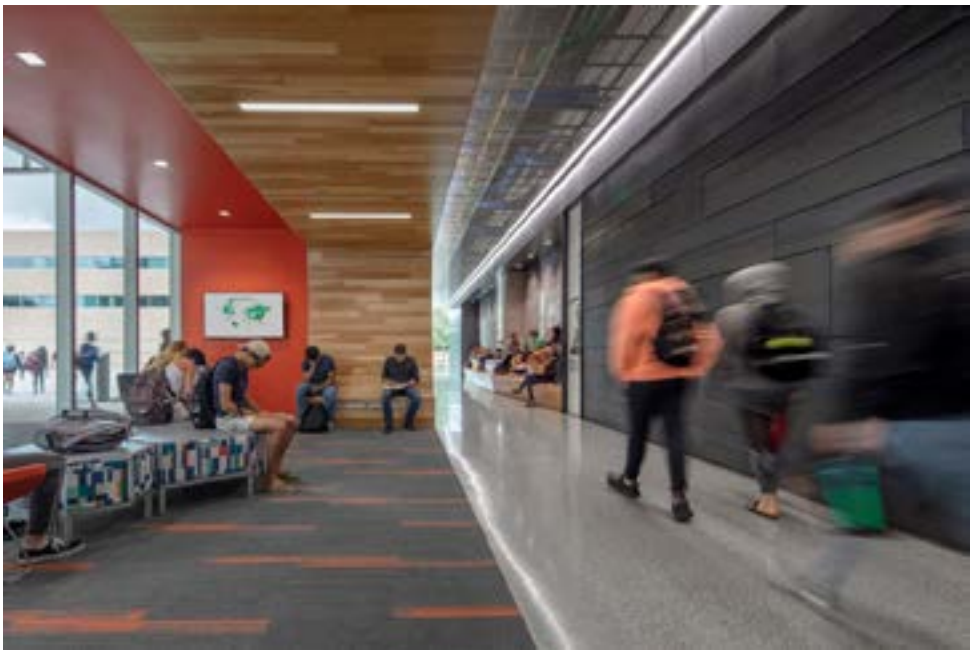
Budget
$110 million

Year Constructed
2018

It is common practice to look at precedent images and projects as a source for inspiration, strategies, and lessons learned on buildings that offer similar design solutions to a new or upcoming project.

The University of Texas at Dallas Engineering Building, while much larger in scale and budget, offers several design solutions and strategies that a building such as the Coastal Center could benefit from or utilize.

Citation: https://www.smithgroup.com/projects/university-of-texas-at-dallas-engineering-building



UNDEDICATED SPACE

The first design strategy utilized in the UT Engineering Building that could be implemented at the Coastal Center is the use of undedicated space for multiple purposes or functions. Undedicated space historically was frowned upon because it was viewed as "wasted space." In reality, and with today's use of versatile spaces, undedicated space can create opportunity for multiple functions and purposes.

By taking a traditional space such as a lobby, strategically locating it in a building, and redefining its parameters, it can function not only as a lobby, but as a circulation space, a holding area before large events, a study space, and an exhibit space. In this scenario, the user determines the function of the space instead of the architecture. Marking spaces with different finishes, utilizing different furniture options, and allocating more square footage to circulation areas are just a few strategies that can begin to accomplish this task.

This strategy does require an investment because although beneficial to the functionality of a space, it is not the most efficient use of a space. Areas like lobbies and corridors can be accomplished with much less square footage or attention to detail.

Another benefit of this strategy is that it can provide short term solutions. For instance, if a group work area is needed, but the budget for a building is restricting the square footage, the group work area can combine with a remote working area, study area, or holding area and serve multiple purposes. This can provide a temporary solution until the Coastal Center grows or develops in the future.

CONSISTENT SET UP

Furniture and technology play a key role in how space can be utilized. If a meeting room and classroom have consistent technology set ups, and flexible seating arrangements, the space can be better utilized. A classroom designed with a meeting space in mind, could function 90% of the time as a classroom, but transform seamlessly into a meeting room after school hours or when not in use. The use of consistent furniture could also allow for easy transformation of a space by bringing in or removing seating and tables as required.

The basic technology requirements of a classroom and meeting room are very similar. Creating repetition and using the same set ups will allow for an easy transition of spaces between campus staff and outside users. Attention to small details like these, can increase productivity and allow for multiple uses, should the need arise.

FLEXIBLE UTILITY SOLUTIONS

With the inherent nature of research and lab work, flexibility and adaptability are key. In the past, tasks could be limited to a set number of outlets only on interior walls, or no access to water in a room. Knowing that these spaces will need to be adaptable ahead of time is key to creating the most efficient workspaces. The UT Engineering building is a great example of how to integrate adaptable utilities in economical ways.

Traditional ceiling designs are closed for many practical reasons, but if left open in certain spaces, open ceilings can provide advantages to rooms with lots of activity. Open ceiling grids expose mechanical, plumbing, and electrical systems to the room below. This is an advantage for any facility manager to have quick access to these systems to make changes or adjustments. This strategy combined with overhead connections can make for a truly adaptable space.

Power can be dropped from above to allow for a room's layout to change and centrally located compressors can provide air and gas at various locations throughout a building. Wall mounted bus bars provide multiple outlet connections that can be added or taken away easily, and exposed raceways are accessible to staff while giving students a visual representation of the systems it takes to run a building.

FURNITURE SOLUTIONS

Outside of the architecture, furniture and interior design can shape a space to a specific use. With today's current furniture options, it is possible to use the same pieces for huddle areas, breakout spaces, study areas and collaboration spaces.

Furniture can also have integrated technology to make working remotely in a building seamless to students, staff, or visitors. This practice aligns with current campus trends. As technology advances, learning can happen anywhere at any time. There can always be an easily accessible space that meets a need, whether that be to gather, learn, or collaborate.

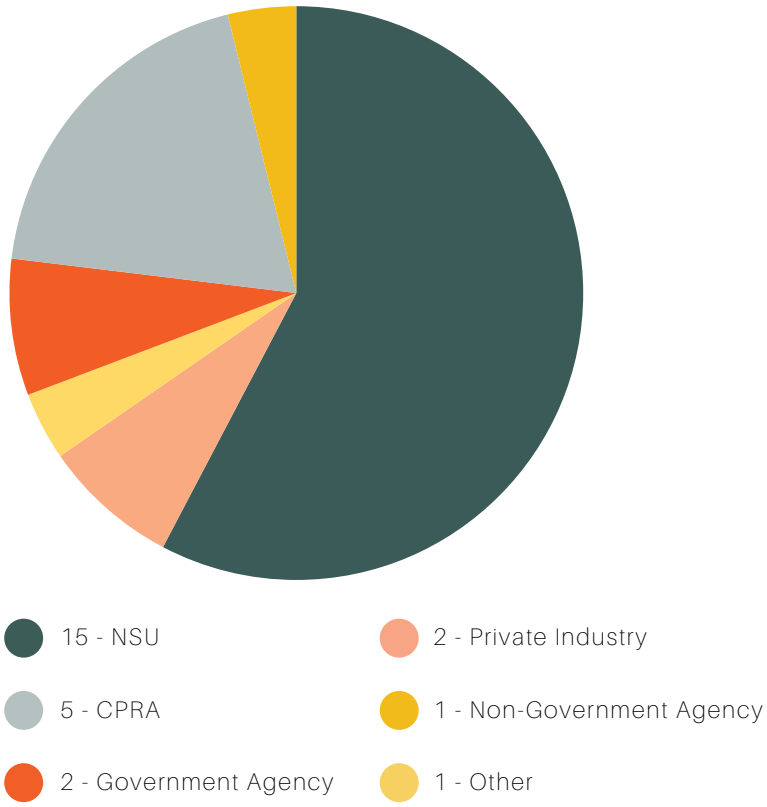
APPENDIX

Survey Results
Memorandum of Understanding

SURVEY RESULTS

The following are survey results from the NSU Coastal Center Building Committee Meeting dated May 21, 2020. An online survey was sent out to members of the Building Committee, Coastal Center Taskforce, Nicholls State University, and CPRA for input on decisions during the programming process.

26 Total Responses



How Important is a LEED Certified Building?

Lab Spaces in Order of Importance

1. Wet Lab
2. Plant Lab
3. Flume/ Wave Lab
4. Computer Modeling Lab
5. Flex Lab
6. Decontamination Room
7. Analytical Lab
8. Remote Sensing Lab
9. Microbiology Lab/ Clean Room

Exhibit Space Themes In Order of Preference

1. Timeline Exhibits that tell a story
2. Interactive Displays/ Theater
3. Cultural Exhibits
4. Theater
5. Age Specific Exhibits for Field Trips
6. Oral History Kiosks

Must Be/ Would Like/ Can Wait

Must Be Included	Would Like to Include	Can Wait to Be Included
Reception Area	Educator in Residence Office	Gift Shop
Educational Displays	Clean Room/ Microbiology Lab	Coffee Kiosk
Director Office/ Admin	Computer Classrooms	Holding Area for Tours
Resident Scientists Offices	Classrooms	
Wet Lab	Warming Kitchen	
Plant Lab	Breakroom	
Mud/ Contamination Room	Exhibit Space	
Computer Modeling	Microscopy Lab	
Flexible Lab Space		
Large Meeting Space		
Small Meeting Space		

Additional Survey Comments

The Coastal Center needs to have a main research focus that the exhibits can provide background on/ expand upon for the visitors. If the plan is to allow viewing of the main lab/experiments, the exhibits should provide information that can help the visitors understand what they viewing, why it is important to coastal Louisiana, and ways that the research can benefit the coastal environment. If the plan is to be more flexible with research topics, you may want to lean more on digital exhibits/interactive displays that can be quickly and cost effectively modified to tailor exhibit information to current research/experiments. Static exhibits would be good for "coastal 101" type background information that shouldn't need modifications depending on current research work at the center.

Spaces that are flexible are important for the first phase while the center is figuring out what it's identity is. Don't rush the exhibit design as it is something that is important to do right and that includes bringing in interpretive exhibit designers and allowing it to be done organically with time. Also, everyone will want to donate stuff for the exhibits, please resist the urge to accept stuff and establishing your goals, objectives, strategies early with the center and being hyper-focused and dedicated to your goal is important otherwise you will end up spending a lot of time and resources caring for someone's stuffed animal collection. Don't underestimate the need for storage, you'll never have enough.

Precedent Image Survey Results

Participants were asked to rate different style buildings on a scale from 1-5 stars based on how appealing they were.

★★

Architectural Design Comments

There was also an option in hte survey for anyone to add comments what they liked and disliked about each image.

DISLIKES

Outdoor spaces and landscaping need to be addressed
Too Modern
Cold, Boxy, Institutional
Cheap
Boring

★★★ ★★★★

LIKES

Bricks; layered look of materials
Height, multi-level
"local flair with modern appeal"
Use of outdoor space
Overhang

State of Louisiana

JOHN BEL EDWARDS
GOVERNOR

April 25, 2019

Dr. Jay Clune, President
Office of the President
Nicholls State University
P.O. Box 2001
Thibodaux, LA 70310

Re: *Memorandum of Understanding between The State of Louisiana through the Coastal Protection and Restoration Authority Board, The Coastal Protection and Restoration Authority, and Nicholls State University Regarding A Study of the Atchafalaya and Terrebonne Basins*

Dear President Clune,

Enclosed please find an original copy of the above referenced agreement for your records.

Should you have any questions, please feel free to contact me. Thank you.

Very truly yours,
Coastal Protection and Restoration Authority

Joann D. Hicks
Administrative Assistant 5
Legal Section

jdh
Enclosures as stated

Post Office Box 44027 • Baton Rouge, Louisiana 70804-4027 • 150 Terrace Avenue • Baton Rouge, Louisiana 70802
(225) 342-7308 • Fax (225) 342-9417 • http://www.coastal.la.gov
An Equal Opportunity Employer

MEMORANDUM OF UNDERSTANDING BETWEEN
THE STATE OF LOUISIANA,
THROUGH THE COASTAL PROTECTION AND RESTORATION
AUTHORITY BOARD,
THE COASTAL PROTECTION AND RESTORATION AUTHORITY,
AND NICHOLLS STATE UNIVERSITY
REGARDING A STUDY OF THE
ATCHAFALAYA AND TERREBONNE BASINS

WHEREAS, this Memorandum of Understanding (MOU) establishes a framework for partnership between the State of Louisiana (State), through the Coastal Protection and Restoration Authority Board (CPRA Board) and the Coastal Protection and Restoration Authority (CPRA), and Nicholls State University (Nicholls) (the Parties) for the study of the Atchafalaya and Terrebonne Basins; and

WHEREAS, the extensive loss of the Louisiana coastal area poses a wide variety of dangers to the people of southern Louisiana and threatens the United States' economy and infrastructure due to adverse impacts on commercial and recreational fisheries, transportation of goods and services, and the exposure of oil and gas infrastructure; and

WHEREAS, the State has experienced greater coastal land loss than any other state in the nation and since 1930, 1,900 square miles of the State's coastal area has turned into open water, and the loss of Louisiana's coastal area continues at the average rate of a football field every 100 minutes; and

WHEREAS, the Terrebonne-Atchafalaya Basin ecosystem encompasses the central coast of Louisiana and is bordered to the east by Bayou Lafourche and to the west by the Chenier Plain; and

WHEREAS, the Terrebonne Basin is an abandoned delta complex with the highest rate of coastal land loss in Louisiana and has lost more than 580 square miles (800,000 acres) of wetlands between 1932 and 2016; and

WHEREAS, during this same time period, while every other basin in Louisiana was losing land, the Atchafalaya Basin gained more than six square miles (3,900 acres) of wetlands in the areas of Wax Lake and the Atchafalaya Delta; and

WHEREAS, a major goal of the State and its citizens is the protection of their remaining coastal areas and the restoration of as much of its lost coastal area as possible; and

WHEREAS, in order to accomplish this goal, the State has developed a 50-year, $50 billion Comprehensive Master Plan for a Sustainable Coast ("Coastal Master Plan") to protect and restore the State's coastal area that is science-based, subject to extensive public vetting, and has been continuously approved by the Louisiana Legislature; and

WHEREAS, pursuant to Act 377 of the 2018 Regular Session creating La. R.S. 49:214.5.2 (Act 377), the Atchafalaya Basin Program was transferred from the Atchafalaya Basin

Research and Promotion Board, Louisiana Department of Natural Resources or CPRA, which will now perform and exercise the powers, duties, functions, and responsibilities of the Program as provided by law.

WHEREAS, pursuant to La. R.S. 49:214.5.3(A)(1), the CPRA Board represents the State of Louisiana's position relative to the protection, conservation, enhancement, and restoration of the coastal area of the state through oversight of integrated coastal protection projects and programs; and

WHEREAS, pursuant to La. R.S. 49:214.1, the Coastal Protection and Restoration Authority or CPRA is the implementation and enforcement arm of the CPRA Board and is directed by the policies set by the Board, and pursuant to La. R.S. 49:214.5.3 and La. R.S. 49:214.1, CPRA shall administer the programs of the Board and shall implement projects relative to the protection, conservation, enhancement, and restoration of the coastal area of the State of Louisiana through oversight of integrated coastal protection projects and programs consistent with the Constitutive intent as expressed in La. R.S. 49:214.1 and the Coastal Master Plan and, where appropriate, CPRA shall administer and implement the obligations under Law by the Board pursuant to this MOU; and

WHEREAS, pursuant to La. R.S. 49:214.6.2(E), CPRA is authorized to utilize the science and technology capacity of Louisiana universities to enhance integrated coastal protection program, projects and activities for multiples purposes, including to increase the knowledge of the physical, chemical, geological, biological or cultural baseline conditions in the coastal area and to identify and develop technologies, models, methods, and demonstrations to carry out the purposes of integrated coastal protection; and

WHEREAS Nicholls is a member of the University of Louisiana System and governed by its Board of Supervisors is the closest university to the Louisiana Gulf Coast in terms of both geographical vicinity, service regions, and scope of its students and employees, has maintained a continuous tradition and record of preparing the entire central Louisiana Gulf Coast region for over 70 years. It carries leadership in training students both regional and worldwide for careers focused on coastal and estuarine protection and restoration. Located adjacent to Bayou Lafourche and just south of the estuary formed by distributaries of the Mississippi River and serves students and employees who are lifetime residents of coastal and estuarine communities built, is committed to addressing coastal and estuarine issues through teaching, research, and service, with particular attention to training new generations of citizens in academic areas important to the state workforce that address coastal protection and restoration; and

WHEREAS, a partnership between the CPRA Board, CPRA, Nicholls and the State shall continue and enhance the important work carried out in the Coastal Master Plan to focus on the specific needs of the Atchafalaya Basin and Terrebonne Basin; and

NOW, THEREFORE, the CPRA Board, CPRA and Nicholls do hereby memorialize their mutual desire to foster a partnership strategy and framework that envisions the mutually developed strategy of communication and communication to foster a cooperative bond between them for the purpose of studying and researching the Terrebonne and Atchafalaya Basins in

order to improve the knowledge of conditions in these Basins and develop technologies, models, methods, and demonstrations to aid in the implementation of integrated coastal protection. Through this partnership, the Parties will focus on creating a coastal center on Nicholls' campus, similar to the Center for River Studies on the Water Campus in Baton Rouge, Louisiana, concentrating on projects, models, and displays of the Atchafalaya River and the Terrebonne and Atchafalaya Basins.

AS SIGNIFIED BELOW:

John Bel Edwards
Governor
State of Louisiana — Date: 4-22-2019

Chip Kline
Chairman
Coastal Protection and Restoration Authority Board — Date: 4/22/19

Lawrence B. Haase
Executive Director
Coastal Protection and Restoration Authority — Date: 4/22/19

Dr. Jay Clune
President
Nicholls State University — Date: 4-22-19

THE COASTAL CENTER

Lafourche Parish Government
Nicholls State University
Duplantis Design Group, P.C.