

# YOUTH AND FAMILY MARINE EDUCATION BUILDING NEWPORT, OREGON

## CONCEPTUAL PLANNING STUDY JANUARY, 2006



*gLas*  
Architectural Group



January 2006

Recognizing the need, opportunity, and potential for collaboration between the Hatfield Marine Science Visitor Center, Oregon Sea Grant's Youth Marine Education and Ornamental Fish Health Programs, Oregon Coast Community College Aquarium Science Program, and the Oregon Coast Aquarium, Oregon Sea Grant convened a workgroup and funded this conceptual planning study for a new state-of-the-art youth and family marine education teaching facility.

As the OSU programs at the Hatfield Marine Science Center grow, especially in the undergraduate and graduate areas, current teaching facilities could be stretched beyond their capacity. Similarly, there are limitations on the growth capacity for the youth programs at the Oregon Coast Aquarium. At the same time, there is a need to develop the art and science of informal education for youth and families. The use of this facility would be part of a social laboratory for OSU. The youth and family marine education building will enhance the overall experience of youth, students, families, and visitors, while reducing conflicts and incompatible uses of research and teaching needs.

This new facility, designed with a green building concept, could potentially serve a variety of purposes and program needs for Oregon State University, the Oregon Coast Aquarium, and the Oregon Coast Community College.

The purpose of this study and document is to serve as a useful tool for master planning and an aide to facilitating further discussions and development of collaborative programming.

We want to thank everyone on the participant list for their time and contributions. We also want to specifically thank Greg Strombeck from OSU Facility Services for his professionalism and leadership in this study. Our appreciation goes to George Boehlert, Director of the HMSC, and Dale Schmidt, CEO of the Oregon Coast Aquarium, for their support and encouragement for staff and board participation. Finally, we want to thank Jim Lewis from gLAs Architectural Group for his guidance and professional work in developing this conceptual planning study.

Sincerely,

Bob Malouf  
Director  
Oregon Sea Grant

Jay Rasmussen  
Associate Director  
Oregon Sea Grant

Jon Luke  
Marine Education Program Associate  
Oregon Sea Grant

## TABLE OF CONTENTS

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1. Participants
2. Project Summary
3. Evaluation of Alternative Sites
4. Description of Proposed Facility
5. Preliminary Sustainability Study and LEED Checklist
6. Anticipated Project Cost
7. Appendices

## PARTICIPANTS

### **Oregon State University**

#### OSU Facilities Services

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#### Oregon Sea Grant

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Jon Luke, Marine Education Program Associate

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### **Oregon Coast Aquarium**

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Norma Paulus, Board Member

Anna Wianko, Board Member

### **Oregon Coast Community College**

Patrick O'Connor, President

Rex Krabbe, Board Member

Bruce Koike, Aquarium Science Program Director

### **gLAs Architectural Group**

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## **PROJECT SUMMARY**

# **gLas**

## **Architectural Group**

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January, 2006

Youth and Family Marine Education Building  
Hatfield Marine Science Center  
Newport, Oregon  
gLas Project No. 05024

## **PROJECT SUMMARY**

### PROGRAM OBJECTIVES:

- Facilitate K-12, college, and life-long learning opportunities at HMSC focused on marine science as a tool to strengthen general math and science literacy.
- Accommodate a statewide K-12 distance learning program.
- Facilitate the collaboration of Hatfield Marine Science Center with the Oregon Coast Aquarium, through program coordination and joint usage of facilities.
- Facilitate combined field-trip visitations to Oregon Coast Aquarium, HMSC Visitor's Center, and this proposed new educational facility.
- Consider the potential sharing of some spaces with OCCC Aquarium Science Program, recognizing the need for isolation of OCCC instructional and research areas from the general public.
- Provide a flexible setting for testing new curricula.

### FACILITY CONCEPT:

- A state of the art learning facility, designed with flexibility to respond to changing technology and program requirements.
- An easily-maintainable facility incorporating a high level of energy efficiency and sustainable design features, meeting LEED Silver Rating Certification requirements.
- Incorporate distance-learning technology, and consider interface with existing HMSC distance learning facility.
- The facility should fit within an overall master plan for the future expansion of HMSC, and should be carefully located and designed to provide convenient public access without interference with HMSC research activities.
- Provide pedestrian connections to Oregon Coast Aquarium and HMSC Visitor's Center to encourage combined field trip visitations.
- Consider potential interconnection for public access from HMSC Visitor's Center.



- Consider a potential linkage of pedestrian pathway system with local interpretive hiking trails.
- Consider the potential of this building as an upper-floor tsunami refuge area.
- Include wind and rain protected multi-purpose outdoor space.
- Provide a covered entry for staging of student groups as they arrive at the facility.

#### FACILITY NEEDS:

- Classroom/Laboratory spaces are to include seawater and filtered freshwater.
- One fume hood will be needed within the facility.
- Classrooms are to accommodate 38 students; with distance-learning capabilities. A variety of classroom sizes may be considered in order to accommodate a broad range of group sizes, including a single classroom which would accommodate up to 60 students.
- Provide a lecture hall; to accommodate 150 students; with distance-learning capabilities.
- Provide 10 private offices and open workspace cubicles for 14 staff members.
- Provide a necropsy lab; equipped with 2 freezers, 1 cooler, a winch for lifting animals, and an exterior overhead door for truck access.
- Provide an animal holding room.
- Provide a locker area for students to leave lunch and jackets.
- Provide ether-net computer connections throughout.
- Provide wireless computer system at all classrooms and lecture hall.
- Provide microphone/sound system at all classrooms and lecture hall.
- Provide acoustic isolation or dampening of aquarium mechanical systems within classrooms.
- Conserve seawater through provision of recirculating systems.
- Provide parking for 22 buses (35 students per bus) with 50% on-site and 50% off-site; plus automobile parking for visitors and staff. The City of Newport requires 4.5 spaces per classroom, for a total minimum requirement of 27 vehicle parking spaces.

#### POTENTIAL SPACE AND SITE PROGRAM:

<u>Space Program:</u>	<u>Qty:</u>	<u>Size:</u>	<u>Area:</u>
Entrance Lobby	1	1300	1300 s.f
General Classroom/Laboratories (38 occupants, with distance-learning equipment)	5	1200	6000
Necropsy Lab.	1	800	800
Animal Holding Room	1	800	800

Project Summary  
January, 2006  
Page 3 of 3

Lecture Hall (150 occupants, with tiered seating and distance-learning equipment)	1	2500	2500
Lecture Hall Control Room	1	100	100
Private Offices	10	140	1400
Open Workstations	14	85	1190
Workroom	1	150	150
General Storage	1	200	200
Furniture Storage	1	200	200
A/V Storage	1	200	<u>200</u>
Subtotal:			14,840 s.f
Building Circulation & Service Space (35%):			<u>5,194</u>
Total:			20,034 s.f.

Site Program:

Bus drop-off near entrance.

Bus parking - 11 spaces on-site, with remainder off-site. (22 total)

Auto parking - 27 spaces, minimum, as required by code.

Ample site lighting at parking areas and pedestrian routes.

Covered outdoor area for student staging and potential lunch area, with exterior boot wash and sink facilities.

Outdoor instructional area adjacent to classrooms, with wind and rain protection.



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## **EVALUATION OF ALTERNATIVE SITES**

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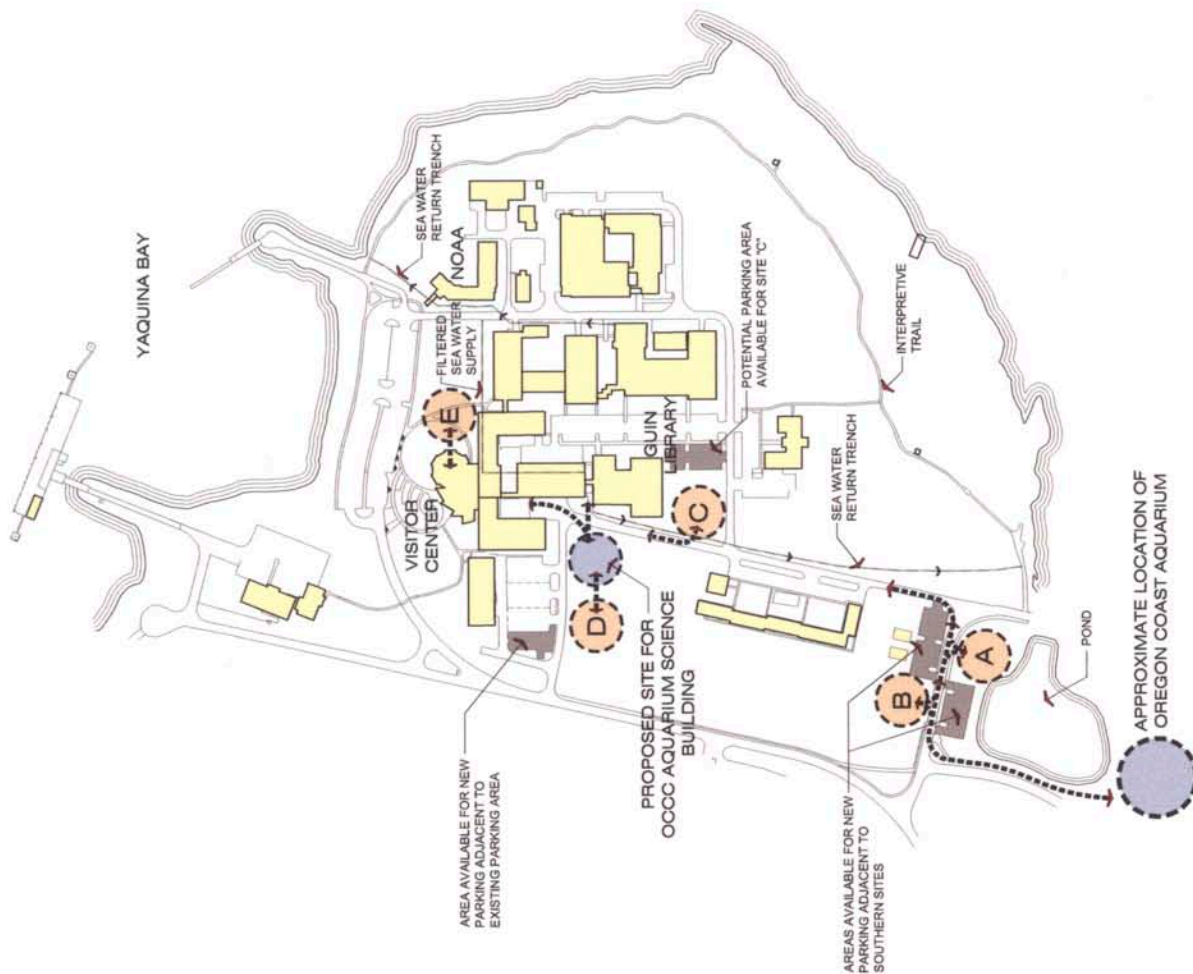
Youth and Family Marine Education Building  
Hatfield Marine Science Center  
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**SITE SELECTION AND MASTER PLANNING:**

The site selection process is the first and most critical step in the process of meeting the stated objective of creating opportunities for collaboration and the sharing of this facility between OSU and OCA. Beyond the logistical needs for functional adjacencies, the location selected for this facility will present a physical statement of its role in the relationship between these institutions. Locations which are too closely tied to either institution may imply a strong statement of “ownership” which would not be beneficial to the collaborative concept.

This report identifies five potential locations for this proposed facility. There may be others which merit consideration. The site selection and planning process should also be carefully coordinated with the location of the Oregon Coast Community College Aquarium Science Building, which is currently designated for a location directly west of the Guin Library; and with the HMSC master planning process which was recently initiated.

Consideration needs to be given to overall campus vehicular circulation, parking, bus drop-off, bus parking, and pedestrian access routes. It has been suggested that a solar-powered electric tram could be acquired, to provide convenient student transportation between sites. It is also extremely critical that the overall seawater supply, treatment, and disposal be carefully considered. Consideration should be given to the conservation of marine water, and the eventual transformation of the campus to recirculating marine water systems. It has been suggested that any new facilities be required to install recirculating systems, as well as effluent treatment facilities meeting regulatory agency requirements and HMSC standards. It may also be appropriate to consider the central generation of emergency power for aquaria life-support and other essential uses.



# POTENTIAL BUILDING SITES

## HATFIELD MARINE SCIENCE CENTER

### YOUTH AND FAMILY MARINE EDUCATION BUILDING





**SITE A**





**SITE B**



**SITE C**





**SITE D**



**SITE E**

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Youth and Family Marine Education Building  
Hatfield Marine Science Center  
Newport, Oregon  
gLAs Project No. 05024

## **EVALUATION OF ALTERNATIVE SITES**

### **SITE A:**

This site is located on property owned by the Port of Newport and leased to the Oregon Coast Aquarium (OCA), at the south side of the Aquarium service access road adjacent to HMSC housing. It is a sandy, flat, brushy area located between the service drive and a significant pond area.

A primary attribute of this site is its adjacency to OCA; facilitating field trip visitations, coordination of programs, and the sharing of facilities.

Another positive feature is its adjacency to a large pond, which could be used for instructional and/or interpretive purposes. The pond would be directly adjacent to the outdoor instructional areas at the south side of classrooms. The pond could represent a safety risk to younger students, which should be given careful consideration.

Bus and vehicular access would be accommodated via the service drive. A bus drop-off zone would be located directly in front, with parking facilities located in the immediate vicinity. Parking could be provided at the north and/or south side of the access road.

Since this site is on OCA property, the seawater system would very likely be provided as an extension of the existing OCA seawater supply and treatment system, subject to further discussion with OCA.

### **SITE B:**

This site is located directly across the service road from Site A, on property owned by the Port of Newport and leased to the Oregon State System of Higher Education, as is also the case with Sites C, D, and E. It is a flat, grassy area located near HMSC modular housing units.

This site offers similar advantages of adjacency to the Oregon Coast Aquarium (OCA), although it does not offer direct adjacency to the pond.

Because this site is on the north side of the access road, a south-facing orientation of classroom and outdoor instructional spaces is not as easily achieved. These spaces would benefit from the solar exposure and protection from summer winds offered by a southerly orientation. Possible solutions to this could include a separate driveway and drop-off area along the north face of the building; or a redesign of the floor plan to provide the entrance and classrooms on the same (south) side of the building. The later solution would provide a less desirable flow within the building, and would not provide visual privacy to outdoor instructional spaces.

As with Site A, parking for 27 vehicles would need to be provided in this vicinity.

If seawater systems are not available from OCA, this site would involve considerable additional expense to extend the HMSC system to this location.

SITE C:

This site is located directly south of the HMSC Guin Library. It is a flat, grassy area originally designated as an expansion area for the Library. Although not as closely linked to OCA as sites A and B, pedestrian access from the Aquarium would not be inconvenient.

Similar to Site B, the orientation of the classrooms and outdoor instructional areas would not be ideal.

Parking would need to be provided in reasonable proximity, but could be provided as an extension of existing parking lots to the south of the west wing and/or at the west end of the visitor's parking lot.

Seawater supply is available as an extension from the existing Education Wing, and a seawater return trench is located in the immediate vicinity.

SITE D:

Site D is located within an area directly to the south of the ODF&W parking lot, a sandy dune area used as a dog exercise area, vegetated with brush and small trees. The site is low, and would require compacted fill as preparation for a building pad.

It offers more convenient access from the HMSC Visitor's Center than Sites A, B, or C; and although not adjacent to OCA, it would be within reasonable walking distance. This site is directly adjacent to the location currently proposed for the future OCCC Aquarium Science Facility.

The building would be located at the south side of the existing service drive, allowing an optimum southerly orientation for classrooms.

Seawater is available at the nearby HMSC Education Wing, and a return trench is located at the west side of Guin Library.

A bus drop-off could be constructed at the front (north) side of the building, and required vehicle parking would be available through expansion of the adjacent ODF&W parking lot or at the west end of the visitor's parking area.

SITE E:

Site E is a flat, lawn area, with views of Yaquina Bay. This site is unique in that it is directly adjacent to the HMSC Visitor's Center, and offers the opportunity for a direct linkage to that facility.

The major detriment to this location is that it is the most remote from OCA, and therefore less likely to fulfill the described role in facilitating a collaboration between these two institutions. It would be more likely to be closely associated with Visitor's Center functions. Other detriments to this location are that it would block views of the bay from the HMSC offices, would preclude the future development of this prominent site area for other larger scale purposes, and would diminish the availability of open space for community events such as SeaFest.

Since the Visitor's Center offers an adequate auditorium, there would be no need to duplicate this space with a new facility at this site. This space would serve a more useful role as a changing exhibit room, a feature not provided currently.

Also, since there is less likelihood of sharing space with OCA, the program for office space would be significantly reduced.

Although these program revisions would reduce construction cost, the funding opportunities and operational benefits of a close collaboration with OCA would be reduced significantly.

With the development of this site, a bus drop-off could be constructed along the south side of the existing visitor's parking lot. However, those parking spaces must be replaced; and additional parking provided for a net gain of 27 spaces. The most likely location for this parking expansion would be at the west end of the current visitor's parking lot.

An existing seawater supply line extends east-west along the north side of the NOAA Office Wing, and within the Visitor's Center; providing a possible source of seawater for the classrooms. The seawater return system at the adjacent Visitor's Center could possibly be utilized, subject to further analysis.

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**DESCRIPTION OF PROPOSED FACILITY**



January, 2006

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#### DESCRIPTION OF PROPOSED FACILITY:

The space program and aesthetic expression for the building will vary, depending upon which site is ultimately selected.

The program for Site E would probably not include a lecture hall because of the adjacent auditorium at the HMSC Visitor's Center. It is also likely that the program for office space would be reduced by approximately 50 percent because of reduced opportunities for shared usage with the Oregon Coast Aquarium. It has been suggested that the lecture hall space would be more useful at this location if used as a changing exhibit space as an adjunct to the Visitor's Center. The opportunity exists for a gallery connection between the two buildings, which would incorporate this proposed educational facility into the flow of public circulation through the Visitor's Center. The space program for any of the other potential sites would apply as described in this report, without substantial modification.

Regardless of which site is selected, there is a need for a bus drop-off near the building entrance and additional parking which results in a net increase of 27 spaces, as required by the City of Newport. Ideally, this parking should be located in the immediate vicinity of the proposed building. Parking facilities should be well illuminated and allow for a range of vehicle sizes, including transport vans and motor homes.

Pedestrian sidewalks and pathways would be incorporated into the project to provide safe and convenient access for student groups walking from the OCA to this facility and the HMSC Visitor's Center. A connection to the HMSC interpretive trail system should also be included.

If the selected site is within the HMSC complex, the aesthetic image and exterior materials should blend with the established campus expression. This would include hipped roof forms with matching concrete wall panels, and anodized aluminum window frames. Sites A and B are more remote from the Campus, and could vary from the established HMSC aesthetic, perhaps with a vocabulary of forms and materials more reflective of the OCA facility.

In any event, the exterior design needs to respond to the specific needs of the coastal climate; with sloped roofs, non-corrosive exterior materials, and generous overhangs. The design also needs to respond to coastal wind patterns, particularly the chilling northerly summer winds and southwesterly winter storm patterns. Entrance vestibules are a necessary feature for any primary entrance, as well as a sheltering entrance overhang.

A large covered plaza is envisioned directly adjacent to the entry and bus drop-off area, to be used as an area for student groups to be staged prior to entering the building. This area should include a hand-sink and boot wash, as well as seating for lunchtime use by students.

The entrance lobby should be of ample size to serve as a queuing area for the adjoining lecture hall, and include a vending area as well as space for hanging jackets, storing boots and umbrellas, etc. This space is envisioned as a two-story space with abundant natural lighting.

The five classroom/lab. spaces are envisioned as flexible teaching environments, to accommodate a variety of activities and seating arrangements. The proposed design envisions perimeter cabinets with lab sinks and overhead storage, a floor trench system incorporating marine and fresh water supplies and return, and aquaria at the rear of each classroom. Power and data systems would be provided by a flexible overhead cable tray and drop system. Noise generating aquaria equipment should either be remotely located or dampened to maintain suitable classroom noise levels.

A teacher's demonstration table will be provided in some classrooms. All classrooms will include markerboards and provisions for audio/video presentations and wireless computer systems. All classrooms and the lecture hall will include rough-in conduit for the installation of distance learning equipment. One fume hood will be provided within the facility.

Directly outside of each classroom would be an outdoor instructional area which would ideally be located at the south side of the building where it would be protected from the northerly summer winds and warmed by the sun. These areas would be rain-protected with transparent or translucent canopies; either glass, acrylic, or weather resistant fabric. It may also be possible to incorporate seawater or freshwater features into these areas, to serve as an instructional and aesthetic feature. These could consist of simulated tide pools or wetland environments, for example.

The lecture hall is envisioned as accommodating an audience of 150 in a tiered seating configuration. This room would be equipped for a variety of audio/video presentations and distance learning.

The necropsy area would be equipped with an overhead door for exterior truck access and an overhead winch for handling animal carcasses. This area, and the animal holding room, should be located in a remote area of the building which is well ventilated and under negative pressure to isolate odors.

Interior materials will need to be carefully considered to resist spills of seawater, tracked in rain and sand, and anticipated wear and tear from intensive use. Exposed concrete floors with integral color or color stain may be considered for many building areas. Acoustic ceilings are envisioned in all primary instructional and office areas.

The second floor would serve as an office area for staff, with enclosed offices, flexible office cubicle spaces, a waiting and reception space, and a meeting room.

The proposed design incorporates a number of energy-efficient and sustainable design features, which are described in greater detail elsewhere in this report.

An east-west orientation of the building optimizes energy efficiency and takes advantage of northerly summer winds for natural ventilation. Those spaces which would benefit most from natural daylighting, the classrooms and office cubicles, are oriented to the south to maximize these opportunities. South facing windows would include horizontal light shelves to reflect daylight far into the depths of these spaces, which are to be equipped with electronic dimming of artificial lighting to achieve energy savings.

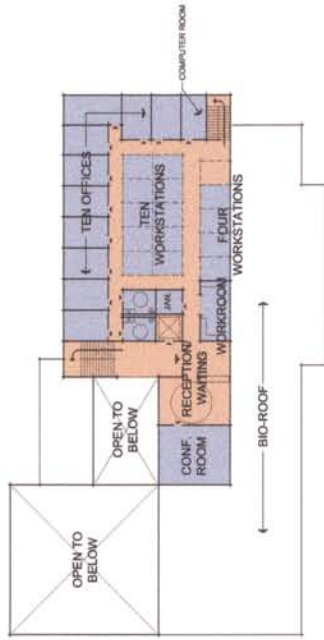
The south-facing roof would include solar collectors and/or photovoltaic cells. Wind-generation has also been suggested as a demonstration of energy efficient alternative technologies.

The two-story lobby space would include operable upper level clerestory windows to assist in achieving a chimney-effect to enhance natural cooling and ventilation, in conjunction with operable windows in all primary occupancy spaces. In the moderate climate of the Oregon Coast, it may be possible to rely solely on natural cooling for most building areas. The probable exception to this would be the lecture hall, which may need mechanical cooling to overcome the high occupant load.

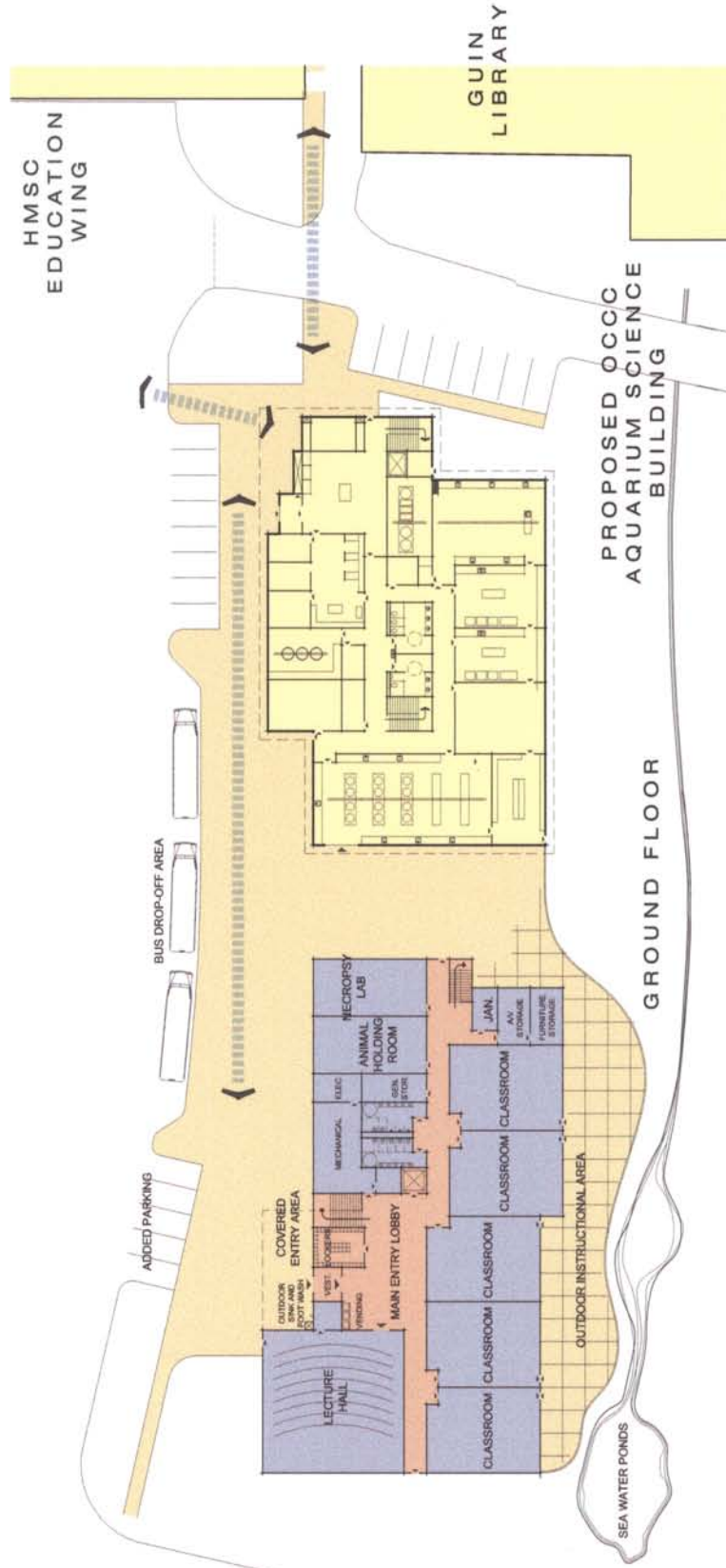
We are also proposing a vegetated bio-roof on the south-facing roof area over the classrooms. Although more appropriate to an urban setting, there is a desire to include this feature as a demonstration and educational feature. Bio-roofs typically are used to slow and filter the discharge of rainwater to reduce impacts on public storm systems. Although there would not be a great benefit to the HMSC campus because roof drainage is not discharged to a public system, the project would serve as an example of sustainable design which can be demonstrated and interpreted.

Similarly, the adjoining site areas would include bioswales to assist in the natural treatment and percolation of storm water. Permeable paving materials may also be included.

Other sustainable design features would include on-site construction waste recovery and recycling requirements, the incorporation of recycled and non-VOC emitting building materials, the use of local material resources, and other potential strategies described elsewhere in this report. Through the incorporation of strategies such as these, it will be possible to achieve at least a Silver Level LEED Certification rating, and possibly higher.



SECOND FLOOR



GROUND FLOOR

BUILDING PLANS - SITE "D" (SIMILAR AT SITES "A", "B", AND "C")

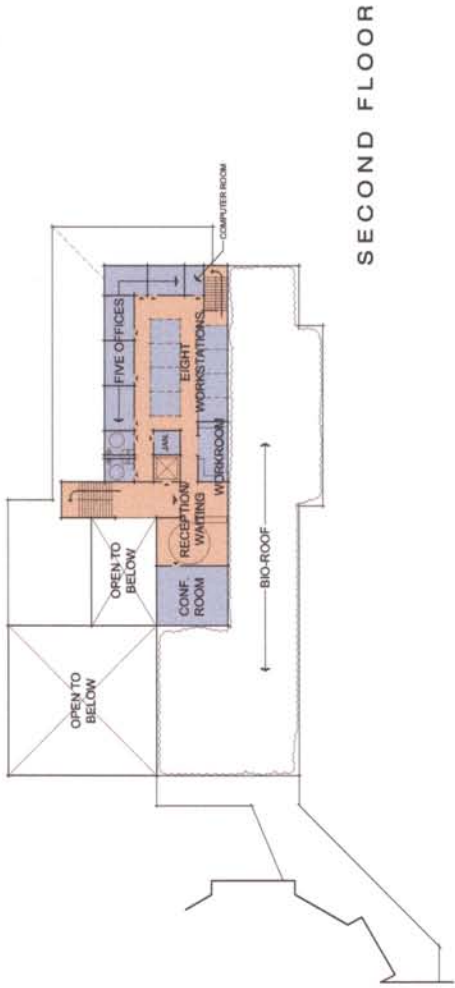
# HATFIELD MARINE SCIENCE CENTER

YOUTH AND FAMILY MARINE EDUCATION BUILDING

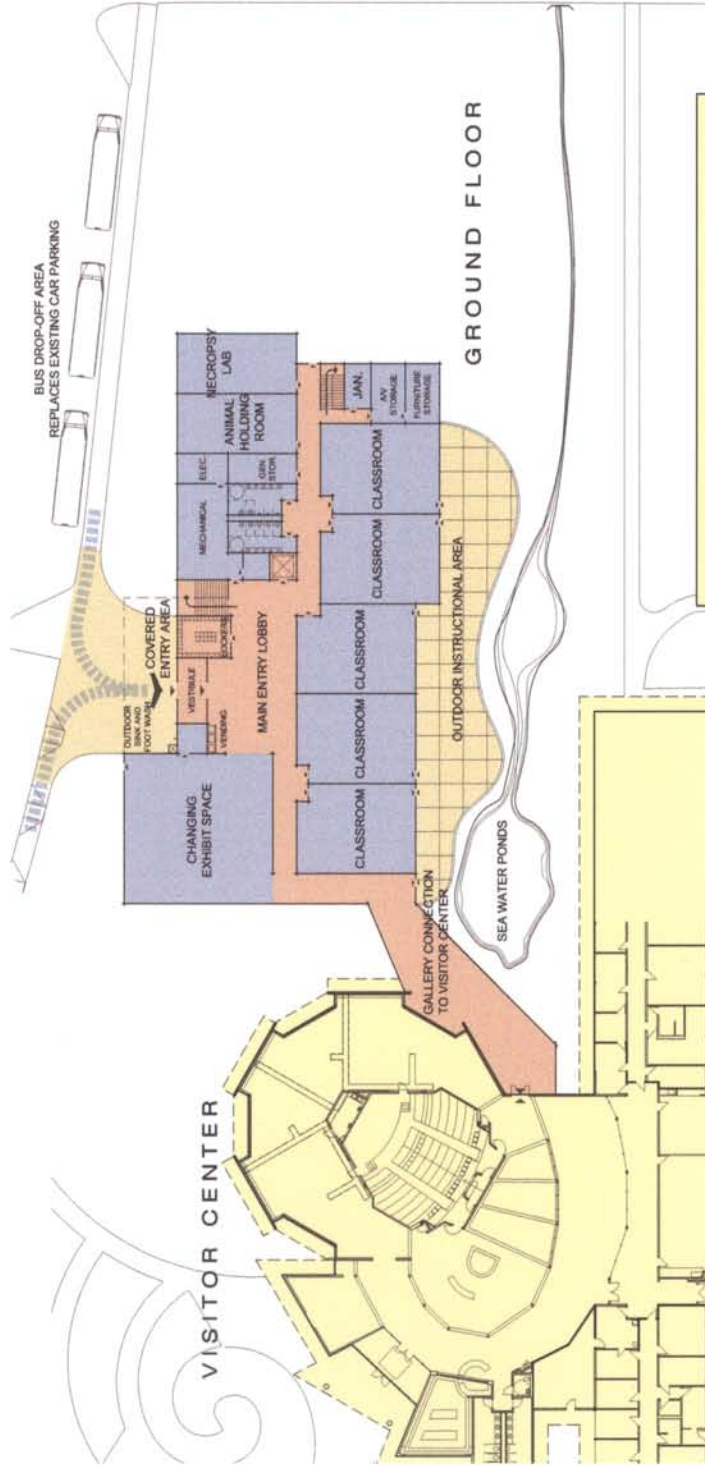
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SECOND FLOOR



GROUND FLOOR

BUILDING PLANS - SITE "E"

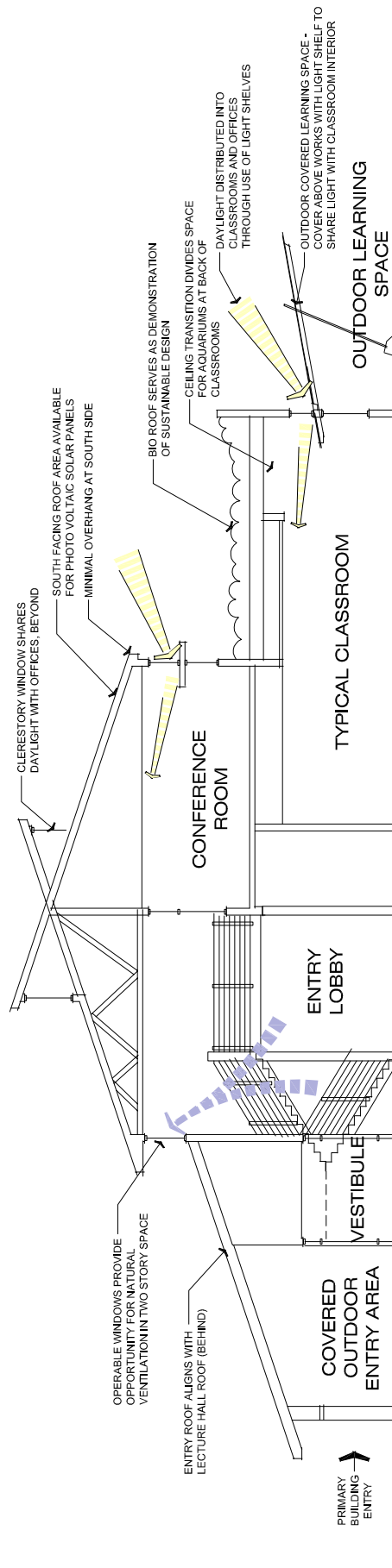
# HATFIELD MARINE SCIENCE CENTER

YOUTH AND FAMILY MARINE EDUCATION BUILDING



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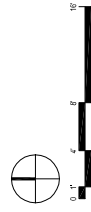
CONCEPTUAL BUILDING SECTION AT ENTRY LOBBY

# HATFIELD MARINE SCIENCE CENTER

YOUTH AND FAMILY MARINE EDUCATION BUILDING

JUNE 20, 2005

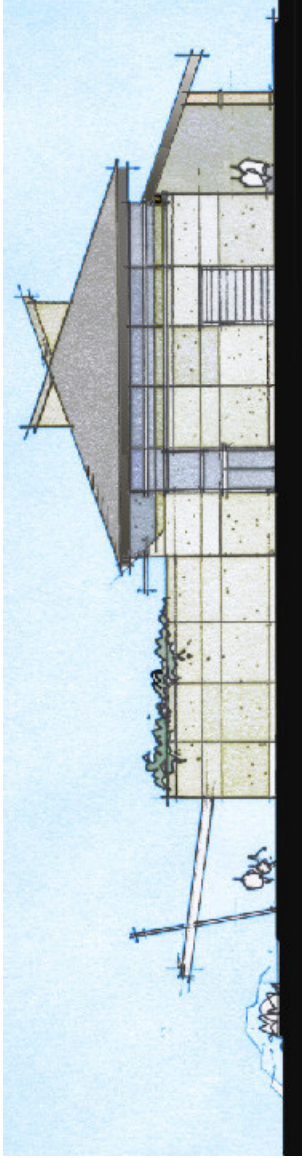
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FRONT ELEVATION



SIDE ELEVATION



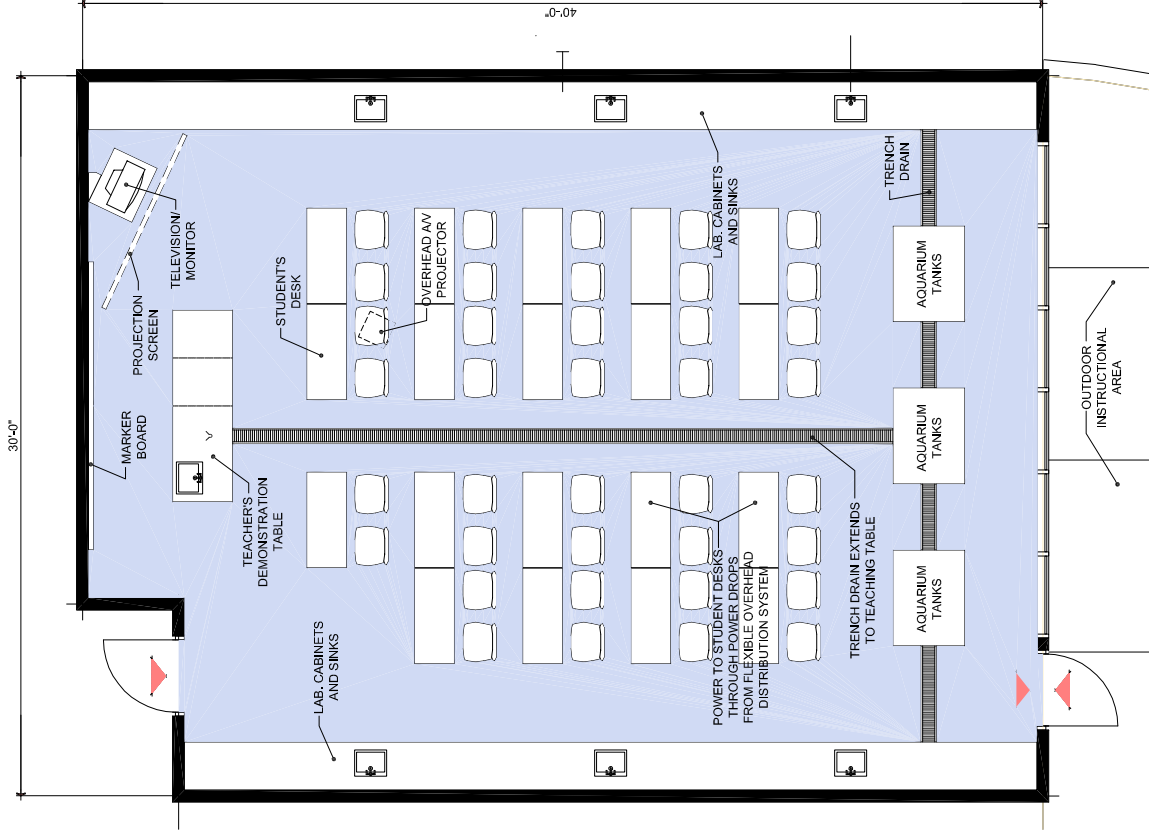
CONCEPTUAL BUILDING ELEVATIONS

# HATFIELD MARINE SCIENCE CENTER

YOUTH AND FAMILY MARINE EDUCATION BUILDING

JUNE 20, 2005

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Architectural Group



TYPICAL CLASSROOM

# HATFIELD MARINE SCIENCE CENTER

YOUTH, FAMILY, AND AQUATIC MARINE EDUCATION BUILDING

JUNE 20, 2005

gla's  
Architectural Group



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**PRELIMINARY SUSTAINABILITY STUDY  
AND LEED CHECKLIST**

# *gLas*

## **Architectural Group**

Reid O. Anderson, AIA	Principal
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## **PRELIMINARY SUSTAINABILITY STUDY**

### OBJECTIVES

- Balance environmental responsibility, resource efficiency, occupant comfort and well-being, and community sensitivity (LEED-USGBC).

### IMPLEMENTATION ITEMS

- Orient the building to allow for optimal use of available sun and prevailing breezes.
  - Cross ventilation, chimney effect for cooling purposes.
  - Possible user control (shut down of systems if users want to open windows).
  - Light shelves to direct sunlight and natural light further into building.
  - Screens to block harsher summer sunshine.
- Locate odorous functions at farther corners of the building.
- Insulate the building better.
  - More insulation at roofs, walls, floors.
  - Windows with better U values and shading coefficients.
  - Provide thermal breaks at the building shell.
    - Windows.
    - Precast composite concrete panels with integral insulation.
  - Utilize thermal mass to temper the diurnal changes.
- Utilize building materials that incorporate recycled content.
- Utilize building materials and fixtures that use less resources (water, power, light).
- Roof monitor, clerestories, or skylights at second floor.
- Integration of photo-voltaics into the glazing.
- Daylighting control - incorporate daylight dimming.
- Alternative Energy Sources - Ground-source (vertical wells, solar water pre-heating).
- Energy efficient control strategies & systems: Expanded use of economizer cycles (air side and water side), consideration of higher & lower set points, heat recovery, CO2 monitoring and control, decoupled ventilation with passive radiant heating

(slab or terminal devices), night flush for pre-cooling, system temperature reset, etc.

- Fundamental Commissioning required for LEED.
- Rainwater harvesting - can be used for irrigation, and/or for toilet flushing.
- Waterless Urinals.
- Sensor faucets and flush valves.
- Natural ventilation - does not directly result in a LEED point, but does contribute to overall energy efficiency. Can also help with maintaining better overall indoor air quality in areas where the outside air is reasonably clean (like the Coast).
- Allowing for, and facilitating, natural updrafts within the building can assist with the use of natural ventilation.
- Integration of control schemes between lighting, shading devices, and HVAC for optimal operation.
- Controllability of systems: Provide such that each perimeter space is its own control zone.
- Consider the use of wind power as an educational demonstration project. This may be affected by land use or aesthetic issues.
- Consider the use of tidal power as an educational demonstration project.

LEED SPECIFIC ITEMS – Silver Certification requires 26 points

- SS-Credit 4.2 Alternative Transportation (1 credit). Provide bicycle storage and changing rooms for 5% or more of the regular building occupants.
- SS Credit 7.2 Reduce Heat Island Effect - Roof (1 credit). Reflective surfaces and vegetated roof at least 75% of total roof area.
- SS Credit 8 Light Pollution Reduction (1 credit). Limit light overflow (cutoff at exterior fixtures, etc., shielding of light from interior to exterior).
- WE Credit 1.1 Water Efficient Landscaping (1 credit). Reduce water use to 50%.
- WE Credit 1.2 Water Efficient Landscaping (1 credit). Use no potable water.
- EA Credit 1 Optimize Energy Performance (1 to 10 credits).
- EA Credit 2.1 Renewable Energy (1 credit). 5% of total usage in on-site renewable. (Photo-voltaic.) This building will need about 2000 square feet of PV's on a roof or awning level.
- EA Credit 4 Ozone Depletion (1 credit). No Halons or HCFC's. (Watch water coolers.)
- EA Credit 5 Measurement & Verification (1 credit). Continuous metering of lighting, motor loads, vfd's, cooling load, recovery cycles, etc.
- MR Credit 2 Construction Waste Management (1 credit). Recycle or salvage at least 50% of construction, demolition and land clearing waste.
- MR Credit 4.1 Recycled Content 5% (1 credit). Use materials with recycled content so that at least 5% of the total value of materials in project is composed of recycled material.
- MR Credit 5.1 Regional materials (1 credit). Use a minimum of 20% of building materials that are manufactured within a radius of 500 miles.



- IEQ Credit 4.1 Low Emitting Materials (1 credit) - Adhesives and Sealants
- IEQ Credit 4.1 Low Emitting Materials (1 credit) - Paints and Coatings
- IEQ Credit 4.1 Low Emitting Materials (1 credit) - Carpets
- IEQ Credit 4.1 Low Emitting Materials (1 credit) - Composite Wood & Agrifiber (No Urea-Formaldehyde resins.)
- IEQ Credit 6.1 Controllability of Systems (1 credit) - Perimeter Spaces - provide at least 1 operable window and 1 lighting zone per 200SF for all regularly occupied zones within 15 feet of the perimeter wall.
- IEQ Credit 8.1 Daylight & Views (1 credit). Achieve a minimum Daylight factor of 2% in 75% of all space occupied for critical visual tasks.
- IEQ Credit 8.2 Daylight & Views (1 credit). Achieve direct line of sight to vision glazing for building occupants in 90% of all regularly occupied spaces.
- ID Credit 2 LEED Accredited Professional (1 credit).



Yes ? No

	5	8	<b>Materials &amp; Resources</b>	13 Points
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Y				Prereq 1 <b>Storage &amp; Collection of Recyclables</b>	Required
			X	Credit 1.1 <b>Building Reuse</b> , Maintain 75% of Existing Shell	1
			X	Credit 1.2 <b>Building Reuse</b> , Maintain 100% of Shell	1
			X	Credit 1.3 <b>Building Reuse</b> , Maintain 100% Shell & 50% Non-Shell	1
	1			Credit 2.1 <b>Construction Waste Management</b> , Divert 50%	1
			X	Credit 2.2 <b>Construction Waste Management</b> , Divert 75%	1
			X	Credit 3.1 <b>Resource Reuse</b> , Specify 5%	1
			X	Credit 3.2 <b>Resource Reuse</b> , Specify 10%	1
	1			Credit 4.1 <b>Recycled Content</b> , Specify 5% (post-consumer + ½ post-industrial)	1
	1			Credit 4.2 <b>Recycled Content</b> , Specify 10% (post-consumer + ½ post-industrial)	1
	1			Credit 5.1 <b>Local/Regional Materials</b> , 20% Manufactured Locally	1
	1			Credit 5.2 <b>Local/Regional Materials</b> , of 20% Above, 50% Harvested Locally	1
			X	Credit 6 <b>Rapidly Renewable Materials</b>	1
			X	Credit 7 <b>Certified Wood</b>	1

Yes ? No

	12		<b>Indoor Environmental Quality</b>	15 Points
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Y				Prereq 1 <b>Minimum IAQ Performance</b>	Required
Y				Prereq 2 <b>Environmental Tobacco Smoke (ETS) Control</b>	Required
	1			Credit 1 <b>Carbon Dioxide (CO<sub>2</sub>) Monitoring</b>	1
				Credit 2 <b>Ventilation Effectiveness</b>	1
	1			Credit 3.1 <b>Construction IAQ Management Plan</b> , During Construction	1
	1			Credit 3.2 <b>Construction IAQ Management Plan</b> , Before Occupancy	1
	1			Credit 4.1 <b>Low-Emitting Materials</b> , Adhesives & Sealants	1
	1			Credit 4.2 <b>Low-Emitting Materials</b> , Paints	1
	1			Credit 4.3 <b>Low-Emitting Materials</b> , Carpet	1
	1			Credit 4.4 <b>Low-Emitting Materials</b> , Composite Wood & Agrifiber	1
	1			Credit 5 <b>Indoor Chemical &amp; Pollutant Source Control</b>	1
	1			Credit 6.1 <b>Controllability of Systems</b> , Perimeter	1
	1			Credit 6.2 <b>Controllability of Systems</b> , Non-Perimeter	1
				Credit 7.1 <b>Thermal Comfort</b> , Comply with ASHRAE 55-1992	1
				Credit 7.2 <b>Thermal Comfort</b> , Permanent Monitoring System	1
	1			Credit 8.1 <b>Daylight &amp; Views</b> , Daylight 75% of Spaces	1
	1			Credit 8.2 <b>Daylight &amp; Views</b> , Views for 90% of Spaces	1

Yes ? No

1			<b>Innovation &amp; Design Process</b>	5 Points
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			X	Credit 1.1 <b>Innovation in Design</b> : Provide Specific Title	1
			X	Credit 1.2 <b>Innovation in Design</b> : Provide Specific Title	1
			X	Credit 1.3 <b>Innovation in Design</b> : Provide Specific Title	1
			X	Credit 1.4 <b>Innovation in Design</b> : Provide Specific Title	1
1				Credit 2 <b>LEED™ Accredited Professional</b>	1

Yes   ?   No

**4**   **33**   **13**

**Project Totals (pre-certification estimates)**

**69 Points**

**Certified** 26-32 points   **Silver** 33-38 points   **Gold** 39-51 points   **Platinum** 52-69 points

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**ANTICIPATED PROJECT COST**



January, 2006

Youth and Family Marine Education Building  
Hatfield Marine Science Center  
Newport, Oregon  
gLAs Project No. 05024

#### ANTICIPATED PROJECT COST:

Direct construction costs are anticipated to be in the range of \$250 per sq. ft., equating to a total construction cost of approximately \$5 million for a 20,000 sq. ft. facility and related site improvements. An additional 30% “soft cost” allocation for fees, furnishings, equipment and administrative costs brings the total project cost to approximately \$6.5 million in current dollars. This budgetary allocation should be adjusted to reflect future inflation in the construction market up to the projected bid date, which is currently unknown.

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## **APPENDICES**

## **The Youth, Family, and Aquatic Education building**

The Hatfield Marine Science Visitor Center, and Oregon Sea Grant's Youth Marine Education and Ornamental Fish Health Programs, Oregon Coast Community College Aquarium Science Program and the Oregon Coast Aquarium, together face a tremendous opportunity to collaboratively develop a state of the art teaching facility. This facility would both support individual program efforts and better serve our respective audiences. As the OSU Newport campus programs grow, especially in the undergraduate and graduate areas, current teaching facilities are being used beyond their capacity. The Youth, Family, and Aquatic Education building will enhance the overall experience of youth, students, families and visitors, while reducing conflicts and compatible uses of research and higher education facilities.

This new facility, designed as a green building concept, could potentially serve a variety of purposes and program needs for Oregon State University, the Oregon Coast Aquarium, and the Oregon Coast Community College.

Oregon Sea Grant has committed funds for a concept study to be completed by a selected architectural firm over the next four months.

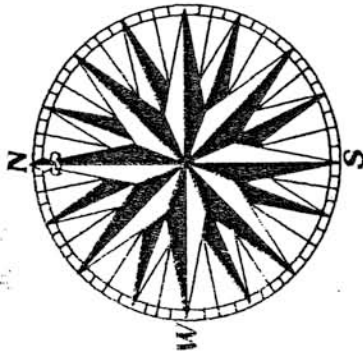
The first step will be to hold a scoping meeting to define the overall project of a new Youth, Family, and Aquatic Education building. This initial meeting is scheduled for **Friday, March 18 at 1:00 in the Barry Fisher Room.**

For more information contact:

Jon Luke  
Oregon Sea Grant Marine Education Program Associate

Phone (541) 867-0357  
Fax (541) 867-0320  
Email: [jon.luke@oregonstate.edu](mailto:jon.luke@oregonstate.edu)

# NEWS



# TIMES

123 Years  
Number 44  
Newport  
Oregon

Your information source for the Central Oregon Coast

## Marine Science Center, Aquarium ink historic partnership

*Focus on collaborative effort to boost 'ocean literacy'*

By Terry Dillman  
Of the News-Times

Most life on Earth exists in the planet's oceans, often at depths humans are just beginning to explore. Life on land intrinsically depends on what happens in and to those oceans. Yet most folks have only a super-

ficial awareness of the importance of oceans in their lives.

Officials at two world-renowned local institutions - Oregon State University Hatfield Marine Science Center and the Oregon Coast Aquarium - have signed a memorandum of understanding to collaborate on public research, education, and outreach efforts. Under the terms of the agreement, the Oregon coast's leading marine science research facility and one of its leading tourism and public outreach attractions will forge a partnership in a series of ventures designed to boost the public's "ocean literacy."

HMSC Director George Boehlert said the partnership is "long overdue."

"Given our proximity and the similarity of our missions, it is surprising that it hasn't happened before," he noted. "By working together, we can leverage additional resources and provide more opportunities for Oregonians by sharing research expertise, laboratories, classrooms, display areas, and educational programming."

Dale Schmidt, OCA's president and CEO, echoed Boehlert's comments. Although details of the fledgling collaboration must develop over

time, he said the partnership effort has already weighted anchor.

"We are working more closely with the scientists and educators at the marine science center than ever before," he noted. "We share similar missions of education and outreach, but Hatfield has much more behind-the-scenes research on ocean and estuarine dynamics and habitat, while our strength is in bringing the public's attention to the creatures that live in those environments."

They already swim in tandem with Oregon Coast Community College to offer the only two-year degree program in the nation

focused on aquarium science. By meshing even more of their areas of expertise, Boehlert and Schmidt believe both institutions can cast a wider net in catching the public's interest.

"Putting our expertise together should result in a dynamic array of educational possibilities, research projects, and outreach programs," said Schmidt.

HMSC's 49-acre campus features about 300 employees - 40 percent of them from OSU, the remainder representing several state and federal

Continued on Page A2

Friday

June 3, 2005

agencies, including the Oregon Department of Fish and Wildlife, the U.S. Fish and Wildlife Service, the National Oceanic and Atmospheric Administration, the U.S. Department of Agriculture, and the Environmental Protection Agency.

Teaching and research laboratories support investigations in marine biology and ecology, oceanography, botany, microbiology, zoology, geochemistry, genetics, marine fisheries, and aquaculture. HMSC also provides docking facilities for two OSU research ships - the "Wecoma" and the "Elakha."

Since 1965, the Oregon Sea Grant Program has provided informal activities at the facility, and currently manages the Visitor Center, which attracts more than 125,000 visitors each year.

The center celebrates its 40th anniversary this year - a focus of its 4th annual Seafest event with a "Seas of Change, 40 Years of Discovery" theme.

The aquarium, located just a few hundred yards south of HMSC, draws about 500,000 visitors each year. It houses a well-known sea otter breeding program, and researchers are conducting studies on the otters' olfactory capabilities (their sense of smell). The facility is home to several other rehabilitation and conservation programs, encompassing the western snowy plover, Oregon silverspot butterfly, and yellow-eye rockfish. OCA is the first zoological site to hatch a rhinoceros auklet in captivity.

According to Schmidt, the aquarium's touring outreach program reached more than 10,000 students last year, and another 20,000 students attended on-site classes.

Thousands of students visit both facilities each year for field trips. By collaborating on programming, exhibits, and field trips, Boehlert and Schmidt say they could greatly enhance those students' experiences during their visits to the central Oregon coast.

"It is vital that human society become knowledgeable about the importance of the sea, about why we should care, and about what actions we can take that will enable us to secure a healthy ocean and a healthy future for ourselves," notes Dr. Sylvia Earle, a pioneering oceanographer, marine biologist, Library of Congress "Living Legend," and National Geographic Society explorer-in-residence since 1998.

"Ocean literacy is the key."

Enhancing education is a prime aspect of this collaboration, and as it unfolds, Boehlert and Schmidt believe it will provide a model for others to emulate.

The idea dovetails perfectly with one of the critical actions recommended in "An Ocean Blueprint for the 21st Century" - a report issued in September 2004 by the U.S. Commission on Ocean Policy. It recommended improvements in ocean-related education as a foundation for the future.

"Strengthening the nation's awareness of the importance of the ocean requires a heightened focus on the marine environment through both formal and informal education efforts," the report stated. "While most people do not recognize the number of benefits the ocean provides, or its potential for further discovery, many do feel a positive connection with it, sensing perhaps that the vitality of the sea is directly related to human survival. This connection can be a powerful tool for increasing awareness of, interest in, and responsible action toward the marine environment, and is critical to building an ocean stewardship ethic, strengthening the nation's science literacy, and creating a new generation of ocean leaders."

According to Boehlert and Schmidt, HMSC and OCA are - with their new collaborative approach - ideally poised to become a lighthouse beacon for other institutions.

Some - especially at HMSC - view the memorandum of understanding with an attitude of cautious optimism, leery of a cooperative venture between a public non-profit entity and a private non-profit organization, especially one whose reputation began sinking after striking a financial iceberg. With a new captain at the helm, the OCA ship is steering its way out of trouble.

They argue that the aquarium has much more to gain from the partnership arrangement than HMSC, and the two facilities at-

tract widely divergent audiences - the aquarium drawing an entertainment-oriented crowd, the science center bringing in the studious types who are more open to learning.

Boehlert and Schmidt view the agreement as complimentary, with each institution "able to go beyond what we could do individually."

OSU President Ed Ray, and OCA board member Norma Paulus, a former Oregon Superintendent of Public Instruction, agree.

"I firmly believe that the Oregon Coast Aquarium's public-serving expertise, and the academic and research capabilities of OSU's Hatfield Marine Science Center can blend together to develop some exciting, far-reaching programs that bring notable focus to Oregon," said Ray, who first met with aquarium board members in autumn 2004 to initiate discussions about a cooperative effort.

"Working together on youth and family educational programs is a natural," Paulus noted. "Together, OSU and the Oregon Coast Aquarium have the potential to develop educational tools and curricula in marine science that can improve education statewide, and potentially have national impacts."

Beyond the educational aspects are the potentially profound impacts on the local economy.

Both facilities already provide an economic benefit - the science center through employment, the aquarium via tourism. Boehlert and Schmidt envision the combination as a catalyst to enhance Newport's reputation as an ecotourism destination.

"It's a natural place to learn about the marine environment and education," Boehlert concluded. "It's a real destination for people who want to learn about the natural environment."

A collaborative effort between the two facilities that arguably are most representative of the area's marine environment seemed a natural way to make it all happen.



January, 2006

Mr. Shane Sumption  
Oregon Building Codes Division  
1535 Edgewater St. NW  
Salem, OR 97309

RE: HMSC Youth & Family Aquatic Education Building  
gLAs Project No. 05024

Dear Mr. Sumption:

Thank you for getting back to me today regarding the occupancy status of the proposed Youth & Family Aquatic Education Building at the Hatfield Marine Science Center in Newport. As discussed, this area is within a tsunami inundation zone.

As I described the project to you, our proposed building would provide classroom, lecture and laboratory facilities intended for school groups, college students, and the general public; related to marine and environmental science topics. This would be a continuation of an existing program at Hatfield, which has proven to be a popular field trip destination for school groups and life-long learners of all ages.

In our phone conversation, you reported that after discussion with other members in your Division, you are satisfied that the proposed facility is not classified as a public elementary or secondary school for the purposes of IBC Table 1802.1. We therefore would not be restricted to 50 occupants for our building. In our discussion you indicated that a maximum of 500 occupants would be allowable, per the restrictions for colleges or adult education.

In my meeting yesterday with Mick Nolte, plan reviewer for the City of Newport, Mr. Nolte also agreed that our facility is not a public school, and the restrictions of IBC Table 1802.1 should not apply.

With concurrence from both you and Mr. Nolte, we are now confident in moving forward with the project.

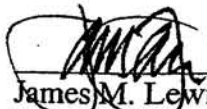
Mr. Shane Sumption

January , 2006

Page 2

Thank you for your assistance.

Sincerely,

  
James M. Lewis, AIA  
Principal

cc Greg Strombeck, OSU  
Mick Nolte

**Jim Lewis**

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**From:** Jim Lewis**Sent:** Thursday, May 26, 2005 2:19 PM**To:** 'randy.walker@oregonstate.edu'**Cc:** George W. Boehlert Ph. D. (E-mail); Greg Strombeck (E-mail 2); Pat Oconnor (E-mail)**Subject:** RE: HMSC Parking

Randy,

I spoke with James again, and he agreed to reduce the parking ratio for the Youth & Family Education Building to the high school category, which is 4.5 spaces per classroom. We would therefore need 27 spaces for the 6 classrooms. This seems very reasonable. The OCCC Aquarium Science Building would require 30 additional spaces, for a net increase of 57. We will also need to replace any spaces lost for bus parking.

Jim

-----Original Message-----

**From:** Randy Walker [mailto:randy.walker@oregonstate.edu]**Sent:** Thursday, May 26, 2005 2:00 PM**To:** Jim Lewis**Cc:** Greg Strombeck (E-mail 2); George W. Boehlert Ph. D. (E-mail)**Subject:** RE: HMSC Parking

Jim,

I agree,

From practical experience, I have observed that parking is tight in the area the proposed building may sited, still okay ,but if another building with a density of occupancy like proposed, we will need more parking. I agree that a meeting is not necessary. Thank you for including me.

Randy

-----Original Message-----

**From:** Jim Lewis [mailto:JLewis@glas-arch.com]**Sent:** Thursday, May 26, 2005 1:52 PM**To:** randy.walker@oregonstate.edu**Cc:** Greg Strombeck (E-mail 2); George W. Boehlert Ph. D. (E-mail)**Subject:** RE: HMSC Parking

Randy,

I spoke with the Newport Planning Director, James Bassingthwait, after calculating the existing parking ratio of the campus. I calculate that you have room for 398 parking spaces, and have about 243,000 s.f. of facility, for a ratio of one space per 611 s.f. (This calculation excludes the housing and ship support areas of the site, and is very approximate since it is based on an aerial photo). James said the Newport Ordinance requires one space per 600 s.f. for government buildings, so the existing facility is in approximate compliance. James said they would require a net increase in parking to support any new buildings on campus in accordance with code. The code requirement for educational buildings is 10 spaces per classroom, including the lecture room.

With this response, I see no reason to meet with James at this time, unless you are in disagreement with his interpretation.

Jim Lewis

#### ADDITIONAL COMMITTEE COMMENTS:

Other ideas considered during the design process which may be the subject of future discussion include:

- The overall size of this facility may need to be reduced as appropriate to the level of funding.
- Classroom sizes may need to vary in order to accommodate a variety of group sizes. It has been suggested that some may be sized for relatively small groups of approximately 20, others for 38, and one for 60.
- It has been suggested that the Lecture Hall should be of a flexible design which would allow for use as a dining facility with lunch tables. This degree of flexibility would necessitate a flat floor configuration, and should be carefully weighed against the advantages of tiered seating.
- It has been suggested that with Site E, it may be more appropriate to reduce the building size rather than provide an exhibit space. The proposed function of this type of space needs to be carefully considered to avoid duplication of features already provided at the existing HMSC Visitor's Center.
- The programmed requirement for a necropsy facility is based upon current overall campus needs, anticipating limited access and conflicts in the usage of current facilities. It is anticipated that this space would provide flexibility for public programming and articulation projects. It has been suggested, however, that this feature would not be essential to the K-12 teaching curriculum, and should therefore be considered to be of a lower level of priority.
- There has been some discussion of the possible incorporation of a workshop space which would serve the needs of the entire HMSC campus. This type of facility would be less useful at Sites A and B, which are more remote. The possible incorporation of a workshop into the facility program has not yet been resolved, and is omitted from the proposed building plans submitted within this report.