

AIA VIRGINIA PRIZE 2020: Norfolk Oyster Research Hatchery

“Virginia is for Oyster Lovers” oyster connoisseur.

According to the 2017 Aquaculture Crop Reporting Survey published by the Virginia Institute of Marine Science (VIMS), Virginia is 1st on the East Coast of the U.S. for Eastern Oyster production. Virginians have been eating Chesapeake Bay oysters since the early 17th century when Jamestown was founded. And now, this sweet and salty seafood is making a resurgence on the plates of Virginians the state over, making Virginia the new “Oyster Capital of the East Coast”.

You are to design a small oyster research hatchery on the shoreline of the Lafayette River in downtown Norfolk that will inspire the public to learn about the significance of oyster farming to the local economy and the health of the Chesapeake Bay. The site’s location in downtown Norfolk offers a distinct opportunity for public engagement. Your design solution should be accessible and inviting to school age children as well as the general public. Sustainability and flood proof measures should be considered.

A note about coastal resiliency: Norfolk is an area that is experiencing both land subsidence and rising sea levels. It is our challenge as architects to imagine sustainable solutions to these issues that don’t simply keep flood waters out, but instead reveal a new kind of landscape – a living shoreline where humans and nature gracefully coexist.

PROGRAM for a two-story commercial oyster hatchery (approximately 8,000 SF)

1. LOWER LEVEL WET LABS

spawning: 6-8 oyster spawning tanks

larvae culture: Larvae culture growing tanks

shell attachment: Shell attachment tanks

2. UPPER LEVEL

algae research lab

office

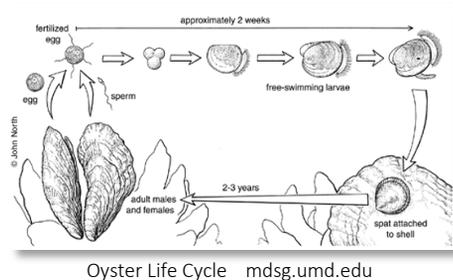
restroom

3. PUMP HOUSE + RIVER WATER COLLECTION SYSTEM

4. OUTDOOR GATHERING AREA (for presentations to school groups and visitors)

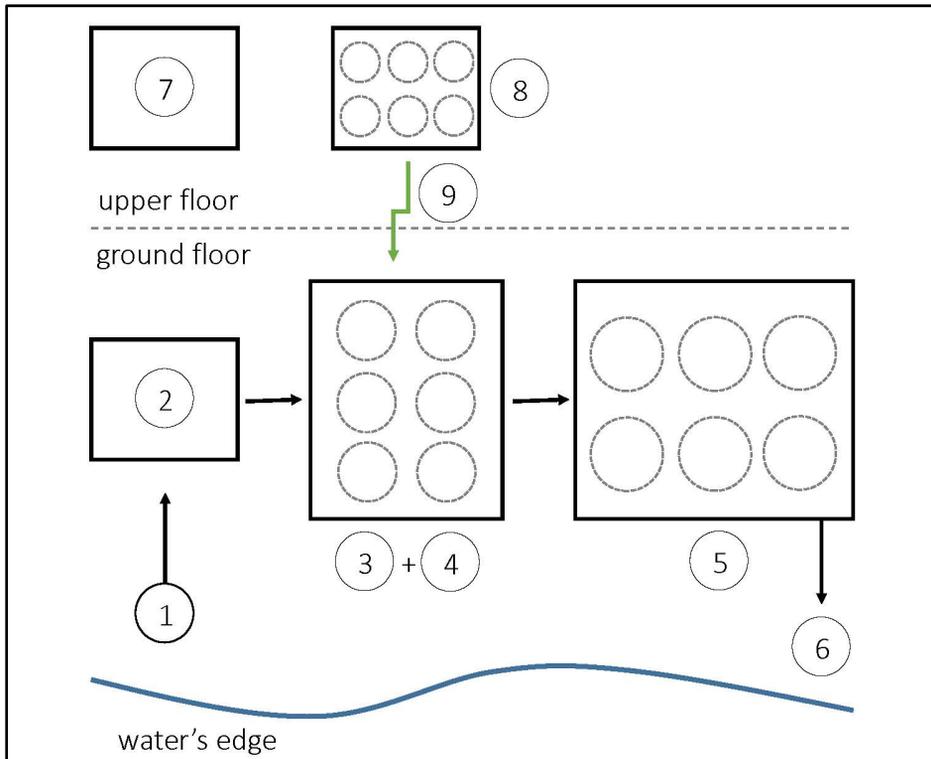
4. SHELL COLLECTION PILE (to be used for larvae attachment in Phase 5 shown in program diagram.

5. PUBLIC RESTROOM FACILITY (outdoor)



PROGRAM DIAGRAM

A hatchery provides a safe and controlled environment for oysters to spawn and larvae to grow. This simple diagram illustrates the general sequence and relative size of the primary program elements required for a small commercial oyster hatchery. Sea water is used extensively. It is pumped to the facility where it serves each stage of the oyster growing process.



GROUND FLOOR

- 1 Adult oysters (broodstock) are brought in for spawning
- 2 Oyster larvae are spawned in the conditioning lab
- 3 Larvae are moved to large culture tanks to grow and develop
(tanks are 4'-5' dia. and 10-12' tall)
- 4 Larvae examined for growth and maturity in the lab
- 5 "Eyed" larvae are moved to setting tanks, where they attach to shells to become "spat" or juvenile oysters (tanks are typically large in diameter and they can be located outside)
- 6 The spat is assessed to gauge strength, size and readiness before being shipped to prepared oyster beds in the ocean

UPPER FLOOR

- 7 Algae cultures start in small batches on racks or starter tanks with growth media
- 8 High yield mass production tanks produce algae which is the food source for oysters
9. Larvae is delivered to the culture tanks

SITE 4610 Colley Ave., Norfolk Virginia 23508

The site is located at the corner of 47th Street and Colley Ave. and is a half mile from Old Dominion University. It is adjacent to the Lafayette River in the North Colley area of Norfolk, Virginia. Primarily residential in character, the area also has some moderate and small-scale commercial development.

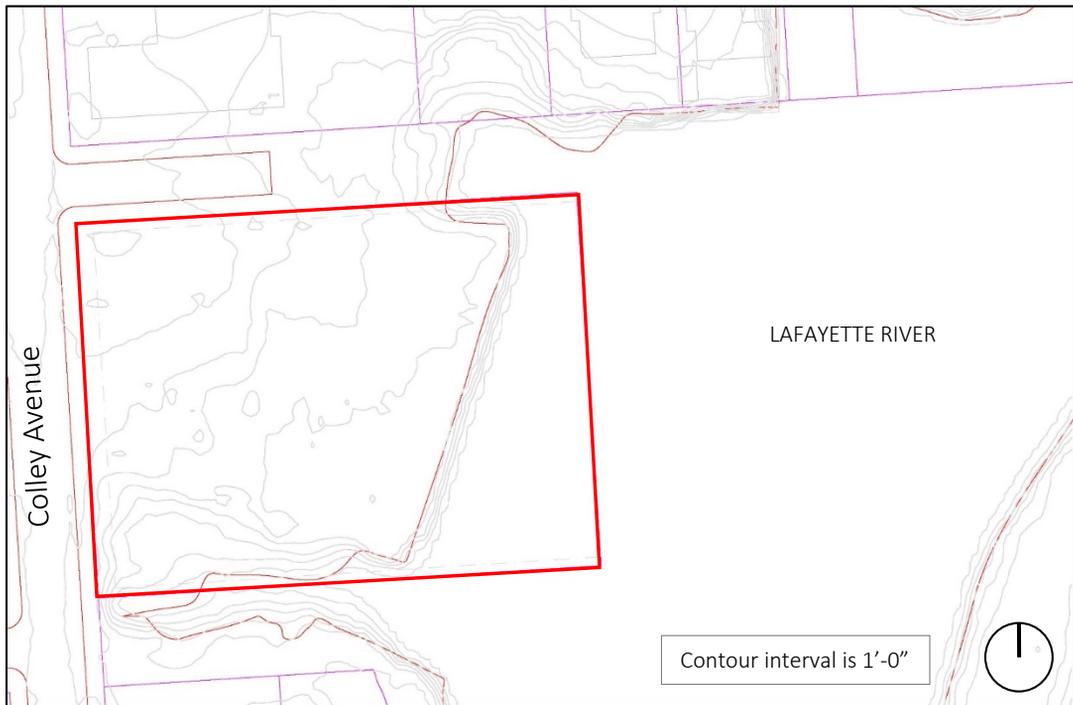
Of particular note is that the project site exists within the Resource Protection Area as described by the Chesapeake Bay Preservation Act which typically requires a setback of 100' from the shoreline. Your project proposal is considered an exception to this requirement; you may build along or beyond the shoreline. The site is also in a high risk flood zone. Although you may build at grade, it is assumed that the ground floor will be inundated on a regular basis.

Zoning: C-C (Community Commercial)

Flood Zone: AE (High Risk)

Setbacks: Front (10') Rear and sides (0') Corner Side (5')

Building Height: 60' max



SITE PLAN

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AERIAL (note: the existing building and dock are to be removed)



WETLANDS



SITE PHOTOS