



ORCA

OHIO RIVER CHILDREN'S AQUATIC
DISCOVERY CENTER

OHIO RIVER POLLUTION



- The Ohio River is a source of drinking water for more than three million people, including West Virginians.
- More than 25 million people, almost 10 percent of the U.S. population, live in the Ohio River watershed.
- Approximately 150 species of fish have been collected from the Ohio River.
- There are 20 dams and 49 power generating facilities on the Ohio River.
- Over 230 million tons of cargo is transported on the Ohio River each year. Coal and other energy products make up approximately 70 percent of the commerce traveling by barge.
- Fish consumption advisories exist for all species of fish in the Ohio River (and all other West Virginia rivers) due to mercury pollution.
- PPG Industries, located near Natrium, W.Va., is West Virginia's largest single source of mercury pollution, including both air and water emissions.
- Airborne pollution coming from Ohio River Valley power plants and other industries deposits mercury and other harmful contaminants throughout Mid-Atlantic and New England states.
- Acid rain, caused by coal-fired power plants located throughout the Ohio River watershed, is responsible for killing trout streams throughout West Virginia (including the Potomac watershed) and Northeast.
- The Ohio River Islands National Wildlife Refuge is located largely within West Virginia and is home to hundreds of species, including endangered mussels. It is also a critical pathway for thousands of migratory birds each year.
- Over 30 million pounds of toxic pollution is dumped in the Ohio River every year - more than any other river in the United States. This pollution includes over 96,000 pounds of cancer causing toxins. Tests conducted by the Ohio River Valley Water Sanitation Commission (ORSANCO) reveal over 800 miles of the Ohio River is currently polluted for mercury, and the problem is only getting worse every year.



OBJECTIVES

To convert the Price's Landing site in Lower Price Hill, Cincinnati into a family-friendly park and discovery center.

To create a fun and educational environment where children ages 5-14 can learn about the pollution of the Ohio River and beyond.

To provide a versatile space for classes and groups to meet within the space

To teach the children of Cincinnati how they can become part of the solution to the water pollution problem.

To expose urban children to nature and give them an opportunity to get away from the busy city.

To encourage a more environmentally conscious generation of students, that they may grow up and effect change not only in Cincinnati, but the rest of the world as well.





STARTING SMALL

Riverflow: starting as a tiny stream, and growing into something much more vast and significant.

Many of the children living in Cincinnati will remain there into adulthood, and have a growing effect on their environment. These same children will be the ones to make decisions on how to use the river, and whether or not to be conscious of its pollution.

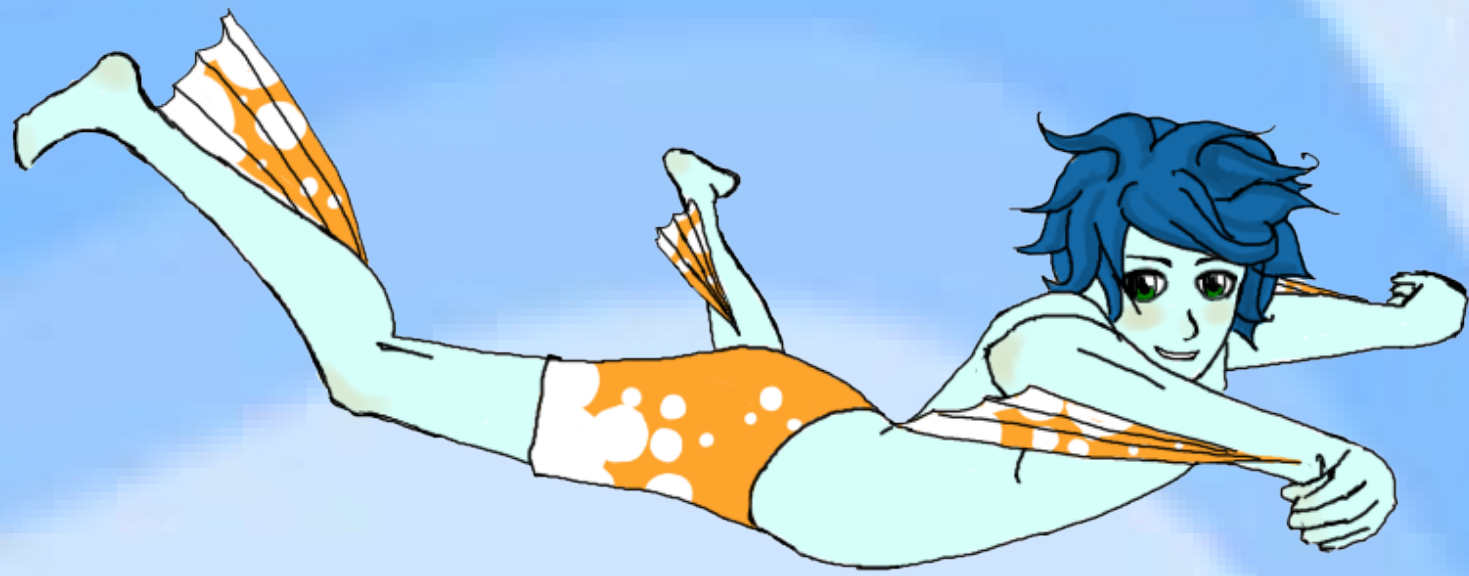
As it stands, many of Cincinnati's children have little interaction with nature, and have never been to the river flowing through their own city. ORCA aims to teach the city's youth about the value of the river in their own lives, and the impact they can have on it. By educating the young, ORCA hopes to slowly change the world's waterways for the better.

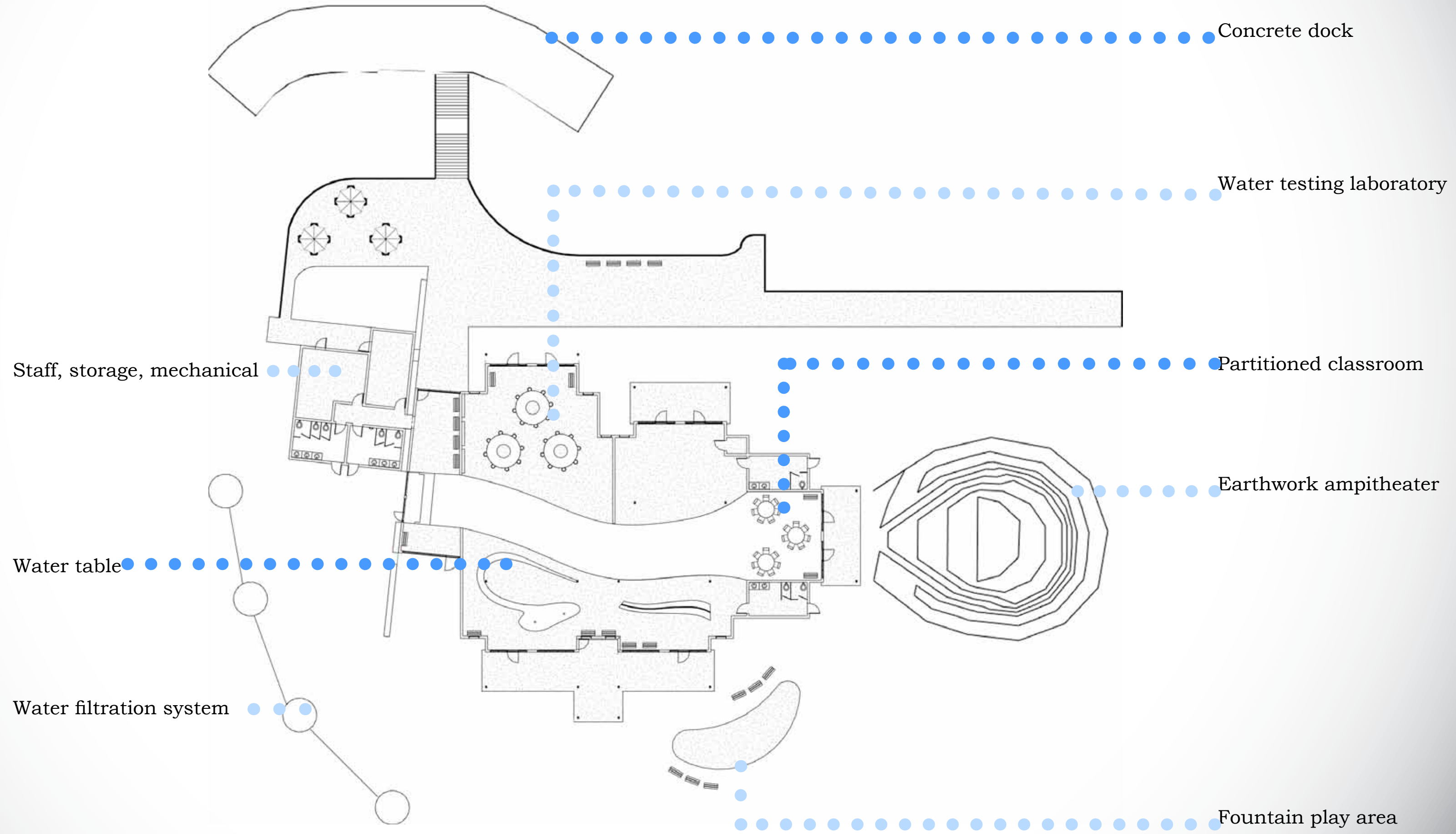
BECOMING MORE



A FUN WAY TO LEARN

ORCA's mascots, Dorien and Adra, are water spirits that reside in the river. They appear throughout the center to provide instructions and information to the users. They emphasize the importance of cleaning and protecting their aquatic home and the creatures that live there.





Concrete dock

Water testing laboratory

Staff, storage, mechanical

Partitioned classroom

Water table

Earthwork amphitheater

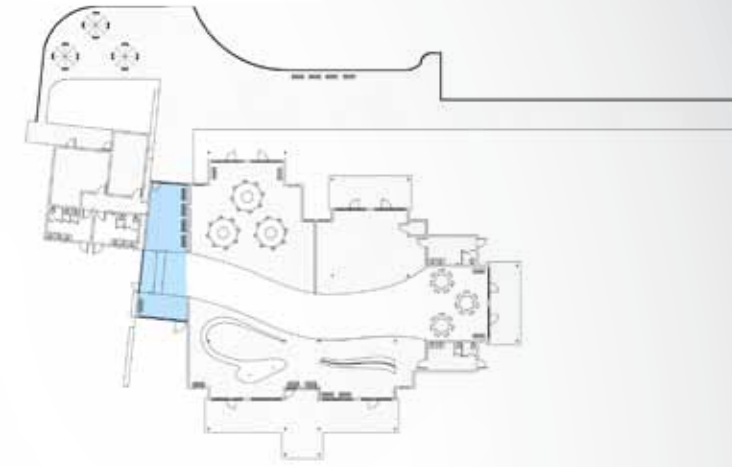
Water filtration system

Fountain play area

APPROACH



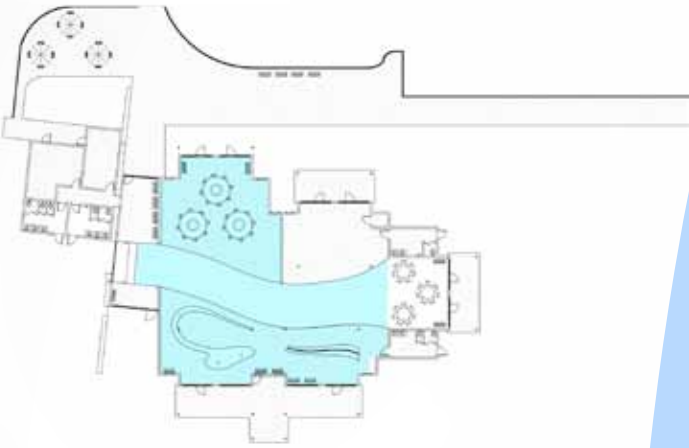
ENTRY



The entry space containing the admissions desk also serves as a pathway through to the river side of the building.



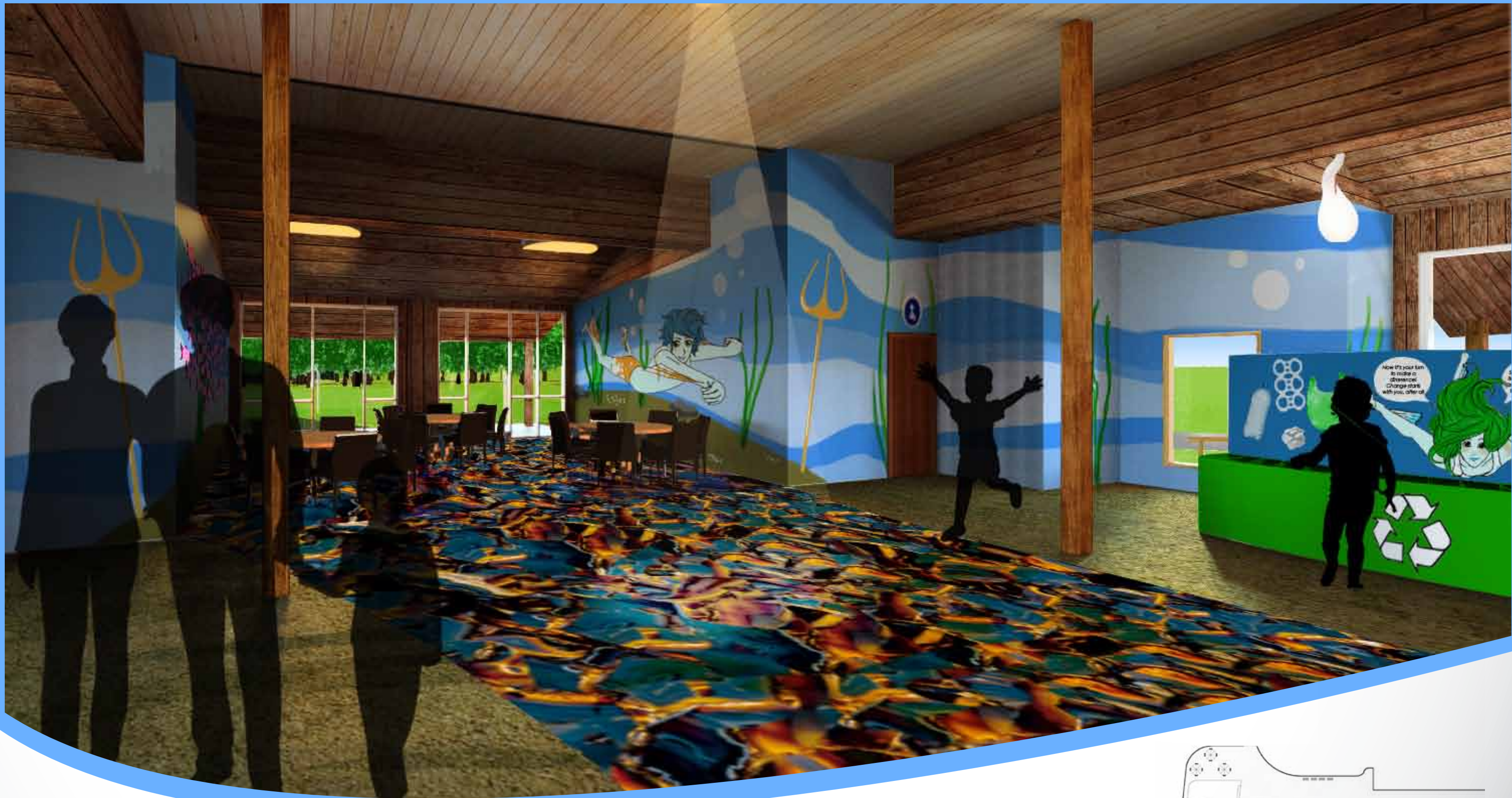
EXHIBITS



The laboratory is used to test samples taken directly from the Ohio River for pH and pollutants such as lead and mercury.

The water table is an opportunity for kids to play in the water, but it also demonstrates an important concept. By dropping a bit of debris in the small end, users can watch it dissipate and spread to larger parts of the system. This exemplifies how pollution in one part of a system affects the whole world.





ACTIVITY SPACE

The classroom can be partitioned from the rest of the space.

The waste sorting activity teaches children about recycling and what happens to the things they throw away.

