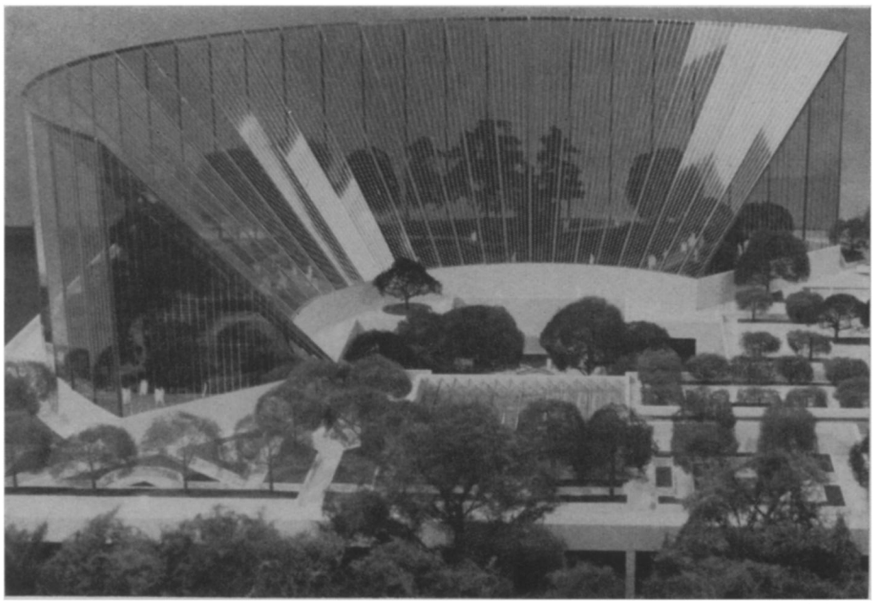

Interior

A new National Aquarium is to rise beside the Potomac River.

The nation builds an aquarium

Once bitterly attacked as a waste of money, a mecca for ecologists is beginning to take shape

The Federal Government is about to build beside the Potomac River a structure that was once debated as either a wasteful, gold-plated fishbowl or an exciting center for ecological research which will pay its own costs by charging admission.

To some citizens concerned with demands on the Federal budget, plans for the glistening National Fisheries Center and Aquarium seemed absurd—and they have said so loudly. But the scientists who will use the facility see it as an important research center that the Government will get free. And they make a good case: many erstwhile opponents have come around.

Money and authorization to build the aquarium are in hand. The selected site is in Washington, D.C.'s East Potomac Park near the Jefferson Memorial.

The planners hope to tie it in with a new monumental mall to run south of the present Mall between the Capitol and the Lincoln Memorial. The link would be a scenic bridge crossing the small Washington Channel, the "Ponte Vecchio," named after a famous span in Florence.

When the edifice is built, the traditional dark, depressing corridors lined with murky green rectangular fish tanks —standard fixtures of many existing aquariums—will never appear.

Essentially the new aquarium will be a one-floor building, 400 feet square, with a horseshoe-shaped greenhouse on the roof, holding a living, ecologically balanced tropical swamp (representing the Everglades) and two tidal pools representing the Atlantic and Pacific coasts. The first floor will house exhibits concerned with animal behavior—courtship, reproduction, perception, locomotion, mimicry and camouflage.

Aqua-research projects never before undertaken on such a scale will be under way in genetics, nutrition, fish diseases and production of antibiotics and chemicals by marine animals.

Expected to benefit are disciplines as varied as geophysics, marine biology, water pollution and eutrophication, fishery sciences, medicine, health, space and the social sciences.

For instance, studies are already under way in other marine laboratories on the central nerve fiber of squid, significant to understanding all neural behavior.

Aging tissues of salmon are similar to those of humans and research could advance geriatrics.

Other profitable fields: the dolphin's hydrodynamics and sonar systems; seals' ability to dive to great pressures without adverse effects, and algae's ability to purify air in enclosed areas.

One vital research program now under way and scheduled for expansion in the new aquarium is tackling the problem of ammonia, a main foe of aquatic creatures. In essence, the animal pollutes its own environment with toxic waste products derived from protein in the food it eats.

In nature, these poisons are carried away by free flowing water or the movements of the animals. In captivity, the poisons must be removed by artificial methods. Research experiments are now under way to convert the toxins into harmless nitrates, nitrites and other nitrogenous by-products to be removed by means of filters or bacteria, by growing tomato plants hydroponically or by bubbling the toxic products from the water into mounds of foam. The knotty problem of the nitrogen cycle in aquariums is similar to that existing in polluted streams and dying lakes.

Another basic problem aquarium scientists are tackling is the management of life-sustaining salts in artificial seawater tanks. The secret lies not so much in the complex formula of salts and trace elements but in constant surveillance and maintenance of the content.

Microbiology is another growing field of study—the biological activity of vitamin B-12 and other compounds is being studied in synthetic environments as well as in living lakes, rivers and oceans.

Advances are also being made in aquarium science with more sophisticated and faster equipment to analyze the composition of waters and tabulate research data, with improved lighting and temperature controls, with new materials for tanks and with better nutritional formulas and varieties of food for the many highly individual species.

Yet the program started under bitter fire from Senators, editors and even some conservationists who have not taken time to understand its purpose, nor its financing, Aquarium Director Warren Wisby declares. The aquarium has been called a "recreational showcase," a "fish hotel," and the "most extravagant gold-plated fishbowl in history."

But the center will be built with a $10 million Federal loan, separate from any other fund, and will repay the loan within 30 years and meet maintenance and research costs from admission fees.

Construction of the new aquarium recently got the go-ahead signal from the National Capital Planning Commission, and is set for 1969, with completion in 1971. By then some 145 staff members, including 35 permanent scientists, will operate the marine center. The researchers will include aquarium biologists, comparative animal and plant physiologists, neurophysiologists, behaviorists, geneticists, ecologists, pathologists and others.