

# HTH Engineering & Equipment LLC

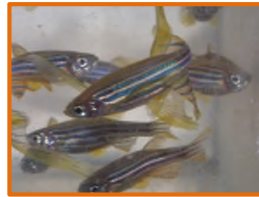
## Aquatic Animal and Marine Environmental Laboratory Planning and Design

### PROFESSIONAL AQUATIC ANIMAL AND ENVIRONMENTAL LABORATORY CONSULTING SERVICES

HTH principals bring forth more than 40 years of relevant international experience. Our associates and principals are well known for providing exceptional aquatic animal husbandry and aquatic systems engineering services. We are registered professionals in both biology and engineering and active in the Aquacultural Engineering Society, Association of Marine Laboratories of the Caribbean and World Aquaculture Society.

### PROJECT LIST:

COMB Aquatic Animal Lab  
Duke Marine Aquatic Animal Lab  
EPA Marine Estuary Mesocosm  
FWC Stock Enhancement Centers  
HHMI Aquatic Animal Lab  
MIT Hopkins Zebrafish Lab  
MSMHS Aquaculture Lab  
MCW Zebrafish Colony Relocation  
MRC Aquatic Animal Lab  
Mercer Toxicology Lab System  
NIH Building 6 Zebrafish Lab  
NOAA Fisheries Science Center  
NPS Marine Environmental Lab  
SSU Marine Science Lab  
Smithsonian Marine Ecology Lab  
Sound School Aquaculture Lab  
UBC Restoration Ecology Lab  
UGA Sapelo Seawater System  
UGA Skidaway Seawater System  
UMCES Restoration Ecology Lab  
UO Huestis Hall Zebrafish Lab  
UPenn Aquatic Animal Lab  
USFWS Freshwater Mussel Lab  
USM GCRL Toxicology Lab  
VIU Sturgeon Aquaculture Lab  
VIMS Marine Ecology Lab  
WMC Biofloc Research System  
ZF International Resource Center



### Planning and Analysis – *experience based approach to develop projects, manage costs and minimize risk.*

Our extensive experience with advanced aquatic system technologies allows HTH to provide a comprehensive range of services which includes feasibility studies, lab planning charrettes, facility assessments, and development of project cost models. Feasibility studies address aquatic habitat, biosecurity, animal welfare, water quality, logistics, ergonomics and other performance criteria. Planning and design charrettes bring researchers, operators, project leaders and designers together in facilitated workshops. In existing facilities, process and facility assessments focus on opportunities for reducing energy consumption, labor and other operating costs, and improving process flow and biosecurity. Comparative analysis techniques are used to show the effects of alternative project solutions on overall project costs and duration.

### Integrated Design & Construction – *clear, concise project solutions – on time, on budget.*

HTH provides comprehensive design services tailored to match the client's project needs and schedule. Design services include development of plans and specifications for competitive bidding by specialty suppliers and design-build-install contractors. The design effort is tailored to work with experienced, specialty construction and installation contractors to quickly deliver high quality, cost efficient systems and facilities. For existing facilities, retrofit design provides for staged construction to minimize the impact on animal husbandry, research and other ongoing operations.

### Operations and Improvement – *much more than just "operations and maintenance."*

From concept to reality, HTH becomes an integral part of the Project Team, and a powerful advocate for the mission and objectives of facility managers, researchers and operators. HTH brings forth decades of hands-on experience during on-site construction reviews and system startup, testing, adjustment and training assistance. We also offer process, cost and due diligence reviews with Life Cycle, Energy, Bio-Process and Material Condition Assessments.

# Aquatic Animal and Marine Environmental Laboratory Planning and Design

## JOHN L. HOLDER, R.P.Bio

Mr. Holder is a Registered Professional Biologist in British Columbia with a degree in Fisheries and Wildlife and Marine Biology. He has over 40 years of aquatic systems and laboratory planning, design, construction and operations experience. John has worked with numerous species, systems and facilities on six continents. This includes marine and freshwater algae, crustaceans, finfish, shellfish and zooplankton for research, development, restoration and aquaculture.

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CANADA

## PAUL L. HUNDLEY, JR. P.E., LEED AP

With degrees in Ocean and Mechanical Engineering, Mr. Hundley has 30 years of aquaculture, aquatic animal laboratory and marine environmental research facilities experience. He has worked with both marine and freshwater species in batch, flow-thru, recirculating and open-water systems. Paul has led numerous multidiscipline project teams for planning, designing and commissioning large aquatic animal research and restoration ecology facilities.

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. . . clear, concise project results!!

- **Project Management** – With extensive planning, team building and project delivery resources in North America and Europe, HTH is dedicated to providing high quality, professional aquacultural consulting services.
- **Customer Service** – HTH principals have been in the business of meeting customer needs for over 40 years.
- **Client Solutions** – In step with a dynamic aquatic animal and environmental laboratory systems and facilities sector, HTH can readily support a full range of integrated project delivery solutions.

## Aquatic Systems & Technologies

- Influent Water Treatment, Storage and Delivery
- Advanced Biofiltration and Solids Management
- Aquatic Mesocosms
- Modular Aquaria Rack Systems
- Gas Stripping and Oxygenation
- Advanced Water Reuse and Life Support
- Alkalinity, Dissolved Gas, pH, Salinity Control
- Heating, Cooling and Energy Recovery
- Ultraviolet and Ozone Disinfection
- Zooplankton and other Live Feed Production
- Quarantine and Isolated Nursery Systems
- Automated Instrumentation and Control Systems

## SERVICES AVAILABLE

Consulting & Project Management  
Feasibility Studies & Cost Estimates  
Facility & Systems Planning & Design  
Facility Assessments & Expansions  
System Design & Process Integration  
Energy Assessments & Optimization  
Commissioning & Troubleshooting  
Operations & Improvement Support

## FOR MORE INFORMATION

about our professional services,  
please visit us on the Web at:  
[www.HTHaqua.com](http://www.HTHaqua.com)

**HTH** engineering  
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