Lanka Hydraulic Institute Limited (LHI) was established in 1984 by the conversion of Coastal Engineering Research Center (CERC) of the Coast Conservation Department (Sri Lanka) into a Public Limited Liability Company in accordance with a Cabinet decision.

LHI has expertise that encompasses technical and engineering spheres as well as a multi-disciplinary approach to a varied project genre, gearing its thorough knowledge of socio-economic, financial and environmental components within each process.

The premise of dealing effectively with multi-faceted projects through a wide and varied network of expert individuals and renowned local and foreign organizations is enhanced by LHI proudly having the best state-of-the-art Hydraulics Laboratory in the Indian Ocean region, giving LHI the impetus to provide total solutions in the field of hydraulics. LHI has a rigorous and comprehensive Quality Assurance system and is ISO 9001:2008 certified.

LHI is geared to cater to International Consultants working in the region and elsewhere, giving them a reliable choice in outsourcing Hydraulics Laboratory services.

Lanka Hydraulic Institute Ltd
No 177, John Rodrigo Mawatha, Katubedda, Moratuwa, SRI LANKA.
Tel: + 94 11 2650471 / 2650409
Fax: + 94 11 2650470
Web: www.lhi.lk
Email: lhi@lhi.lk
AREAS OF EXPERTISE

2D and 3D Physical Model Studies

- Harbour model studies including breakwater stability, overtopping, ship motion, harbor disturbance, wave and current forces etc.
- Coastal models for erosion management and protection
- Modelling of sea outfalls (*storm water and effluent outfalls*)
- River and estuarine models
- Reservoir and hydraulic structures for irrigation, water supply and hydropower works
- Two-dimensional stability tests on breakwaters and revetments, or protection works of inland water bodies.

Numerical Model Studies

- Wave transformation and propagation
- Hydrodynamic studies
- Wave disturbance and basin resonance
- Sediment transport (in sea and inland water bodies)
- Coastal evolution
- Storm water modelling
- Waste water and heat dispersion modelling
- Modelling of dredging effects
- Oil spill analysis
- River and urban hydraulics, and hydrology
- Water resources development
Field Investigations

- Bathymetric and topographic surveys
- Directional wave measurements
- Water current measurements
- Water level measurements
- Salinity and temperature
- Wind measurements
- Sediment sampling
- Hydrographic surveys in inland water bodies
- Flow measurements and measurement of other hydraulic and hydrologic parameters of rivers and inland water bodies
- Offshore inspection and geotechnical investigations.

Consultancy and Advisory Services

- Technical pre-feasibility and feasibility studies and conceptual designs of water related engineering projects including relevant environmental considerations
- Design of coastal and harbour works with technical specifications and tender documentation
- Design of recreational beach facilities
- Coastal Zone Management and related activities.
- Coastal stability for beach oriented tourist resort development
- Construction supervision
INFRASTRUCTURE

State-of-the-Art Hydraulic Laboratory

- A wave basin of 35m (L) x 25m (W) x 0.8m (D) with four movable wave makers each 5.5m long, and three pumps capable of delivering 1.2 m$^3$/s, alongside with all other facilities to simulate regular & irregular waves and currents;
- A Two Dimensional wave flume 30m (L) x 0.8m (W) x 1.0m (D) fitted with a wave maker to produce regular or irregular waves;
- Computerized data acquisition system, electronic-measuring devices such as wave gauges, movement meters, strain gauge force meters to record model parameters, and specific driving software for model;
- Standard laboratory equipment for sediment analyses;
- Mechanical and Electronic workshops;
- Special software for data acquisition;
- Online visual access of the basin and flume with high resolution IP cams.

An outdoor area (35m x 20m) is available for testing of inland water structures.

Advanced Numerical Simulations Unit

LHI’s Numerical Modelling facility is powered by several well known modelling software developed by DHI Water and Environment in addition to software developed in-house, and many reputed tools available in the public domain. LHI possesses the exclusive licence for DHI’s MIKE softwares and conducts a wide range of numerical model studies. LHI’s present modelling capabilities include:

- MIKE 11 – rainfall/runoff model and the one-dimensional Hydrodynamic model coupled with Transport Dispersion, Sediment Transport, Urban Hydrology and Ground Water;
- MIKE 21 – two-dimensional model with modules for Hydrodynamics, Advection /Dispersion, Nearshore Waves and short waves,
- MIKE 12 – one-dimensional stratified Hydrodynamic and Transport Dispersion Model,
- MIKE 3 – three dimensional particle / spill analysis, and
- LITPACK – one-dimensional Littoral Drift Simulation model.

Instruments for Field Investigations and Sample Collections

- SonTek ADP System
- InterOcean S4DW for multiple wave parametric measurements
- Direct recording Current meters
- Salinity and Temperature meters
- DGPS Positioning Systems
- Sediment and water sampling equipment
- All ancillary hydrographic and land surveying equipment.
### CLIENTS AND PROJECTS

<table>
<thead>
<tr>
<th>Region</th>
<th>Country</th>
<th>Client</th>
<th>Project</th>
<th>End</th>
</tr>
</thead>
<tbody>
<tr>
<td>Europe</td>
<td>France</td>
<td>ACRIN</td>
<td>Coastal stabilization of French Riviera</td>
<td>2013</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>North America</td>
<td>Belize</td>
<td>DANIDA</td>
<td>Coastal Zone Management Programme- Belize</td>
<td>1994</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Africa</td>
<td>Algeria</td>
<td>HMI</td>
<td>Hydraulic Modelling of New El Kala Fishing Port</td>
<td>2007</td>
</tr>
<tr>
<td></td>
<td></td>
<td>HMI</td>
<td>Hydraulic Modelling of Old El Kala Port</td>
<td>2008</td>
</tr>
<tr>
<td></td>
<td></td>
<td>HMI</td>
<td>Development of Fishing Port at Messida; Hydraulic Model Studies</td>
<td>2014</td>
</tr>
<tr>
<td></td>
<td>Senegal</td>
<td>Industries Chimiques du Senegal</td>
<td>Development of ICS Marine Terminal at Mboro</td>
<td>2012</td>
</tr>
<tr>
<td></td>
<td>Mauritius</td>
<td>Rodrigues Regional Assembly</td>
<td>EIA Study for Widening and Deepening of Passes in Rodrigues</td>
<td>2009</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ministry of Envi. and Sustainable Development</td>
<td>Coastal Protection, Landscaping and Infrastructural Works</td>
<td>2011</td>
</tr>
<tr>
<td></td>
<td>Eritrea</td>
<td>Pöyry Energy Ltd</td>
<td>Env. and Social Impact study of Petroleum Jetty in Massawa, Eritria</td>
<td>2008</td>
</tr>
<tr>
<td>Middle East</td>
<td>Oman</td>
<td>Consulting Engineering Services</td>
<td>Mathematical Model Studies for Fishery Harbour at Duqm</td>
<td>2014</td>
</tr>
<tr>
<td></td>
<td></td>
<td>LLC</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Consulting Engineering Services</td>
<td>Mathematical Model Studies for Fishery Harbour at Nabur</td>
<td>2013</td>
</tr>
<tr>
<td></td>
<td></td>
<td>LLC</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Consulting Engineering Services</td>
<td>Mathematical Model Study for the Coastal Erosion at Wudam Al Sahil</td>
<td>2011</td>
</tr>
<tr>
<td></td>
<td></td>
<td>LLC</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ministry of Agriculture and Fisheries</td>
<td>Improvement of Gamdah Fishery Harbour in Musandam Region</td>
<td>2012</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Consulting Engineering Services</td>
<td>Improvement of Al Lakbi Fishery Harbour</td>
<td>2007</td>
</tr>
<tr>
<td></td>
<td></td>
<td>LLC</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Iran</td>
<td>Flower of the East</td>
<td>Field Investigations at Kish Island</td>
<td>2004</td>
</tr>
<tr>
<td></td>
<td>UAE</td>
<td>Halcrow International Partnership</td>
<td>Al Marjan Island Development: Physical Modelling</td>
<td>2006</td>
</tr>
<tr>
<td>Region</td>
<td>Country</td>
<td>Client</td>
<td>Project</td>
<td>End</td>
</tr>
<tr>
<td>-----------</td>
<td>-------------</td>
<td>-----------------------------------------------</td>
<td>--------------------------------------------------------------</td>
<td>-------</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Handong Global University</td>
<td>Song-Do Beach Restoration Project: Physical Modelling</td>
<td>2007</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SEIL Engineering Co</td>
<td>Busan New Port: Physical Modelling</td>
<td>2005</td>
</tr>
<tr>
<td></td>
<td>Brunei</td>
<td>Department of Public Works, Govt. of Brunei</td>
<td>Control of Erosion at Tanjong Sapo, Tutong and Belait in Brunei</td>
<td>1998</td>
</tr>
<tr>
<td>South Asia</td>
<td>India</td>
<td>Karaikal Port (P) Ltd, India</td>
<td>Physical Modelling of New Breakwaters in Karaikal Port</td>
<td>2011</td>
</tr>
<tr>
<td></td>
<td></td>
<td>WAPCOS Ltd</td>
<td>River Regulatory Measures in Hugli Estuary for Haldia Port</td>
<td>2010</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Navayuga Engineering Co Ltd</td>
<td>Numerical Model Studies for Development of Astaranga Port</td>
<td>2014</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Machilipatnam Port Ltd</td>
<td>Hydraulic Model Studies for Machilipatnam Port</td>
<td>2012</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Krishnapatnam Port Co Ltd</td>
<td>Construction of Krishnapatnam Port: Physical Modelling</td>
<td>2008</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ministry of Foreign Affairs</td>
<td>Sethusamudram Ship Channel Project</td>
<td>2006</td>
</tr>
<tr>
<td></td>
<td></td>
<td>MT Hojgaard</td>
<td>Coastal Protection in Gulhi Falhu and K. Huraa Harbour</td>
<td>2012</td>
</tr>
<tr>
<td></td>
<td></td>
<td>MT Hojgaard</td>
<td>Design and Build of Noomaraa Harbour: Design Review</td>
<td>2011</td>
</tr>
<tr>
<td></td>
<td></td>
<td>MT Hojgaard</td>
<td>Design and Build of Meedhoo Harbour: Design Review</td>
<td>2011</td>
</tr>
<tr>
<td></td>
<td></td>
<td>UNOPS</td>
<td>Flood Mitigating Measures at Fares-Maathoda Island</td>
<td>2013</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Travel Club Ltd</td>
<td>Coastal Environment Improvement of Ellaidhoo Tourist Resort</td>
<td>2007</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Land and Marine Envi. Resources Group</td>
<td>Palm Tree Island Development: Mathematical Modelling</td>
<td>2005</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Land and Marine Envi. Resources Group</td>
<td>Technical Study for Fun Island Barrier Reef System</td>
<td>2005</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Danish Port Consultancy Group AS</td>
<td>Fuah Mulaku Harbour Project, Maldives</td>
<td>1996</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ministry of Public Works, Male</td>
<td>First Wave and Tide Monitoring Programme</td>
<td>1989</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ministry of Environment, Energy and Water</td>
<td>Development of Sewerage Facilities in Four Islands</td>
<td>2009</td>
</tr>
<tr>
<td></td>
<td>Bhutan</td>
<td>Carl Bro International</td>
<td>River Training Works - Torsa River-Bhutan</td>
<td>1989</td>
</tr>
</tbody>
</table>
SRI LANKAN PROJECTS

- Unawatuna Bay Shoreline Stabilization Project – Study on Beach Erosion for CCD (2014).
- Strategic Cities Development Project: Consultancy Services for Hydrologic-Hydraulic Modelling of Meda Ela and Upstreams of Kandy Lake for UDA (2014)
- Survey at Kelani River, Biyagama for Lion Brewery (Ceylon) Plc (2014)
- Consultancy Services for Preparation of Master Plan for Storm Water Drainage System for Kallady Area, Batticaloa for Batticaloa Municipal Council (2014)
- Sea Outfall for Treated Effluent of Wastewater Treatment Plant at Base Hospital, Tangalle: Field Survey & Design or Southern Provincial Council (2014)
- Trincomalee Thermal Power Project: Thermal Dispersion Study for NTPC (2014)
- Development of a Deepwater Jetty for Heavy Industry Zone, Trincomalee for SLGI (2014)
- Upper Kotmale Hydropower Project: Flood Forecasting Program for Mitsubishi Corporation (2014)
- Proposed Sea Outfall for Treated Effluent at Saman Villas, Bentota: Field Survey & Design for Saman Villas Ltd (2014)
- Extension of Southern Highway from Matara to Hambantota: Phase I – from Matara to Beliatta - Study on the Hydrological Implications for RDA (2014)
- Extension of Southern Highway from Matara to Hambantota: Preliminary Hydrological Study for Feasibility Study for RDA (2013)
- Longitudinal Profile and Cross Sectional Survey along Sudu Ganga from Ukuwela to Bowatenna for Mahaweli Authority (2013)
- GEF-IFAD Project: Preparation of a Shoreline Status Report Covering Effectiveness of Structural / Non-Structural Solutions Adopted by the Coast Conservation Department Since 2004 for CCD (2014)
- GEF-IFAD Project: Preparation of an Information Compendium on Coastal Pollution for CCD (2014)
- Sampur Thermal Power Project: Area Drainage and Ground Water Study for NTPC (2013)
- Mahaweli River Survey at Halloluwa for York Hotels (Kandy) Ltd (2010)
- Detailed Design of Fishery Anchorages at Kalamentiya for UNOPS-LKOC (2010)
- Development of Modern City at Southern Border of the Colombo Port for Uni Consultancy Services (2010)
- Training Program on MIKE 21 for Ceylon Fishery Harbours Corporation (2010)
- Development of the Heavy Industry Zone in the BOI Licence Zone, Trincomalee – Field Investigations for Trincomax Industries (Pvt) Ltd (2009)
- Design & Construction Supervision Work of Cod Bay Fishery Harbour for Ceylon Fishery Harbour Corporation (CFHC) (2009)
- Pottuvil Stormwater Design for North East Coastal Community Development Project (2008)
- Valaichchenai Fishery Harbour – Design & Supervision for Ceylon Fishery Harbours Corporation (2007)
- Near-Shore Profile Survey at Hambantota for Penta-Ocean Construction Co Ltd, Japan (2005/2006)
- Colombo Port Directional Wave Measurements for SLPA (2005/2006)
- Bentota Beach Survey for Ministry of Fisheries and Aquatic Resources: Coastal Resources Management Project (2005)
- Coastal Investigations for GTZ
- Wave Measurements and 2D Model Studies for Kirinda Fishery Harbour for Nippon Tetrapod Ltd., Japan
- Wave Measurements Colombo for JICA
- Hikkaduwa Coastal Investigation for Erosion Management (1989/1991) for Portconsult, Denmark
- Wave Measurements and Environmental Studies for Thermal Power Project Kalpitiya (1996/1997)
- Mapping of Coastal Habitats Sri Lanka for Coastal Resources Management Project - University of Rhode Island (1988)
- Coastal Resources Management Project (TA) with Primex of Philippines (1998)
- Physical and Mathematical Model - Galle Harbour Feasibility Study - Posford Duvivier (SLPA)
- Hydraulic Studies - Colombo Drainage Improvements JICA (SLLRDC) (2001)
- Kelani River Flood Study - Department of Irrigation - Danida Funded Project
- Investigations, Model Studies and Conceptual Designs for Panadura, Chilaw, Hikkaduwa Fishery Harbour Anchorages for Ceylon Fishery Harbours Corporation (CFHC) - ADB Fisheries Sector Project
- Investigations Model Studies and complete Feasibility Study for Dikkowita Fishery Harbour - CFHC - ADB funded
- Detailed Design and Tender documents for Beruwala, Puranawella, Hikkaduwa Fishery Harbours - CFHC
- Coast Protection Works including investigations, designs and construction supervision for the following tourist resorts - Hotel Cey sands, Bentota, Hotel Sinbad, Kalutara, Hotel Dolphin, Waikkal Negombo, Robinson Club, Bentota
- Oluvil Harbour Project - Field investigations, Feasibility Studies & Detailed Designs (SLPA)
- Storm Water Drainage Projects - UDLIHP - Ministry of Housing
- EIA for Offshore Sand Dredging - CKE-RDA, CPC Tank Farm, QEQ Colombo Port
- Salinity Studies - Gin Ganga, Nilwala Ganga, Kalu Ganga (NWS & DB)
- CRMP - Coastal Stabilisation, Field Investigations, Wave Modelling
KEY PERSONNEL

H. N. R. Perera
CEO / Director
BSc Eng (SL), PG Dip (Coastal Eng) (Netherlands), CEng, FIE (SL)
Expertise: Coastal Engineering
Overall Exp : 34 yrs

Dr. K. Raveenthiran
Senior Engineering Manager
BSc Eng (Hon) (SL), MEng (Hydraulics) (Thailand), D. Eng (Coastal Eng) (Japan)
Expertise: Coastal/Water Engineering
Overall Exp : 20 yrs

Dr. S. Wickramaratne
Senior Engineering Manager (R & D)
BSc Eng (Hon) (SL), PhD (Coastal / Project Mgt) (Canada), CEng, MIE (SL)
Expertise: Coastal Engineering
Overall Exp : 11 yrs

Dr. H.A.K.S. Ariyaratne
Engineering Manager
BSc (Hons) (SL), MSc (USA), MSc (Coastal Eng) (SL), PhD (Coastal Eng) (USA)
Expertise: Coastal Engineering
Overall Exp : 12 yrs

Dr. D.P.C. Lknath
Engineering Manager
B. Sc. Eng (Hon) (SL), M.Sc. (Water Res) (Thailand), PhD (Coastal Eng) (Japan), MISOPE, MISCE, AMIESL
Expertise: Coastal Engineering
Overall Exp : 12 yrs

K. P. M. Fernando
Engineering Manager
BSc Eng (Hon) (SL), MSc (Coastal Eng) (SL), AMIE (SL)
Expertise: Coastal Engineering
Overall Exp : 11 yrs

Dr. P.L. Ranasinghe
Engineering Manager
BSc Eng (Hon) (SL), MSc. (Coastal Eng) (SL), PhD (Coastal Eng) (Japan)
Expertise: Coastal Engineering
Overall Exp : 8 yrs

S. M. C. K. Subasinghe
Engineering Manager
BSc Eng (Hon) (SL), M Eng (Water Res) (Thailand), AMIE (SL)
Expertise: Water Res. Engineering
Overall Exp : 6 yrs

M. S. L. Fernando
Engineering Manager
BSc Eng (Hon) (SL), MSc. (Coastal Eng) (SL), AMIE (SL)
Expertise: Coastal Engineering
Overall Exp : 8 yrs
<table>
<thead>
<tr>
<th>Name</th>
<th>Designation</th>
<th>Qualification</th>
<th>Overall Exp</th>
</tr>
</thead>
<tbody>
<tr>
<td>T.A.J.G. Sirisena</td>
<td>Research Engineer</td>
<td>BSc. Eng (Hon) (SL), M.Eng (Water Res) (AIT), AMIE (SL)</td>
<td>4 yrs</td>
</tr>
<tr>
<td>I. L. Abeygoonasekera</td>
<td>Research Engineer</td>
<td>BSc. Eng (Hon) (SL), AMIE (SL)</td>
<td>5 yrs</td>
</tr>
<tr>
<td>R. W. C. N. Rajapaksha</td>
<td>Research Engineer</td>
<td>BSc. Eng (Hon) (SL), AMIE (SL)</td>
<td>5 yrs</td>
</tr>
<tr>
<td>I. G. I. K. Kumara</td>
<td>Research Engineer</td>
<td>BSc. Eng (Hon) (SL), AMIE (SL)</td>
<td>4 yrs</td>
</tr>
<tr>
<td>K. B. A. Silva</td>
<td>Research Engineer</td>
<td>BSc. Eng (Hon) (SL), AMIE (SL)</td>
<td>4 yrs</td>
</tr>
<tr>
<td>D. E. N. Senarathe</td>
<td>Research Engineer</td>
<td>BSc. Eng (Hon) (SL), AMIE (SL)</td>
<td>3 yrs</td>
</tr>
<tr>
<td>K.Maiyourathaan</td>
<td>Research Engineer</td>
<td>BSc. Eng (Hon) (Cuba), AMIE (SL)</td>
<td>3 yrs</td>
</tr>
<tr>
<td>S.M. Hewavidana</td>
<td>Graduate Engineer</td>
<td>BSc. Eng (Hon) (SL)</td>
<td>1 yrs</td>
</tr>
<tr>
<td>T.M.S.B. Tennakoon</td>
<td>Graduate Engineer</td>
<td>BSc. Eng (Hon) (SL)</td>
<td>1 yrs</td>
</tr>
<tr>
<td>Y.Karunaratne</td>
<td>Hydrographic Surveyor</td>
<td>BSc. Survey. Sc. (SL)</td>
<td>2 yrs</td>
</tr>
<tr>
<td>Y.Karunaratne</td>
<td>Hydrographic Surveyor</td>
<td>BSc. Survey. Sc. (SL)</td>
<td>2 yrs</td>
</tr>
</tbody>
</table>