

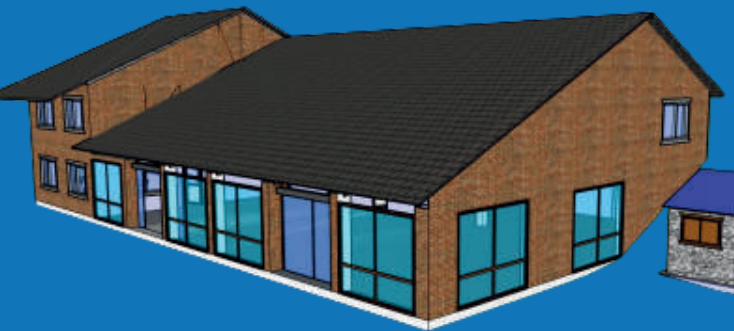
# WEIR LAB



Water and Energy Infrastructure  
Research Laboratory

Kathmandu University, Dhulikhel, Kavre

“Empowering water resources innovation  
through Integrated Hydraulic Modeling”



Located within the  
School of Engineering



Physical and Numerical Modeling  
for Water and Energy

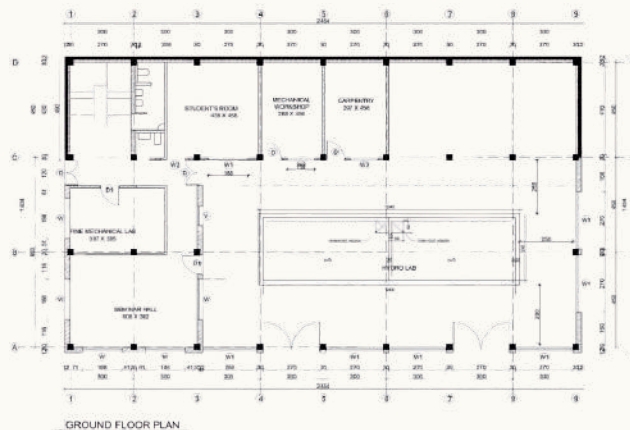


+977-9851102669  
rmaskey@ku.edu.np

## Introduction

The WEIR Lab at Kathmandu University is a cutting-edge research center under the School of Engineering, established to serve as a regional hub for hydropower and water infrastructure research. It integrates physical modeling, numerical simulations, and interdisciplinary learning.

- Physical scale modeling of hydropower
- Advanced numerical tools for simulation
- Training ground for MSc, PhD, and industry professionals



## Vision

To cultivate a community of experts in hydraulics and river engineering for national and global hydropower advancement.

## Mission

To contribute to Nepal's technological and economic growth by promoting academic and research excellence in hydropower and water resource engineering.



## Thematic Areas

- Hydrology and Watershed Modeling
- River Engineering and Morphodynamics
- Hydraulic Structures and Sediment Transport
- Hydropower System Optimization
- Irrigation and Water Supply Infrastructure
- Integrated Numerical + Physical Hydraulic Modeling
- Research Training & Industry Collaboration
- MSc and PhD in Water Resource and River Engineering
- WEIR Synergy: Student Think Tank

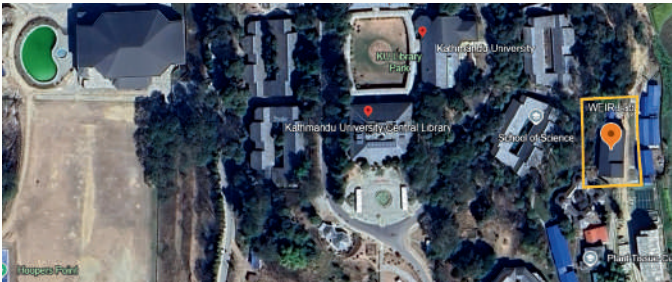
## Core Objectives

- To promote interdisciplinary research in sedimentation and hydraulics
- To provide consulting and design validation services
- To support MS/PhD research programs
- To host knowledge dissemination through workshops and seminars
- To encourage regional and international academic collaborations

# Lab Facilities

## Location:

3-storey building (East Side, KU Complex)



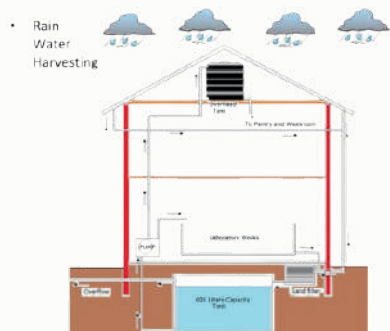
## Total Area :

700 m<sup>2</sup> (Modeling Space: 200 m<sup>2</sup>)



## Rainwater Harvesting:

50,000-liter underground + overhead tanks



## Pump Setup:

3-phase induction motor (12–15 m head)

# Ongoing Projects

## Upper Sanjen Headwork Model

1:30 scale physical model of Upper Sanjen Hydropower Project (14.8 MW).



## Inline Hydro Turbine

Evaluating impeller efficiency in in-line hydro turbine systems.



## RoDaLo

Real-time 3D sand bed profiling using robotic data logging



## Student Involvement

- Undergraduate and Post graduate Research Projects
- Weir Synergy: interdisciplinary collaboration platform
- Participation in real-world modeling and testing



## Future Plans

- Launch Msc/PhD programs in Water Resource and River Engineering
- Host technical workshops for engineers, developers, and researchers
- Expand lab capacity with digital modeling and simulation clusters.



## Call for Colaboration

We invite industry leaders, academic institutions, and development agencies to join hands in building a sustainable and research-driven hydropower future for Nepal.

### For collaborations, contact:

Dr. Ing. Ramesh Kumar Maskey  
Email: rmaskey@ku.edu.np  
Contact: +977-985110266

"From Himalayan Rivers to Global Impact  
– WEIR Lab is powering the future."