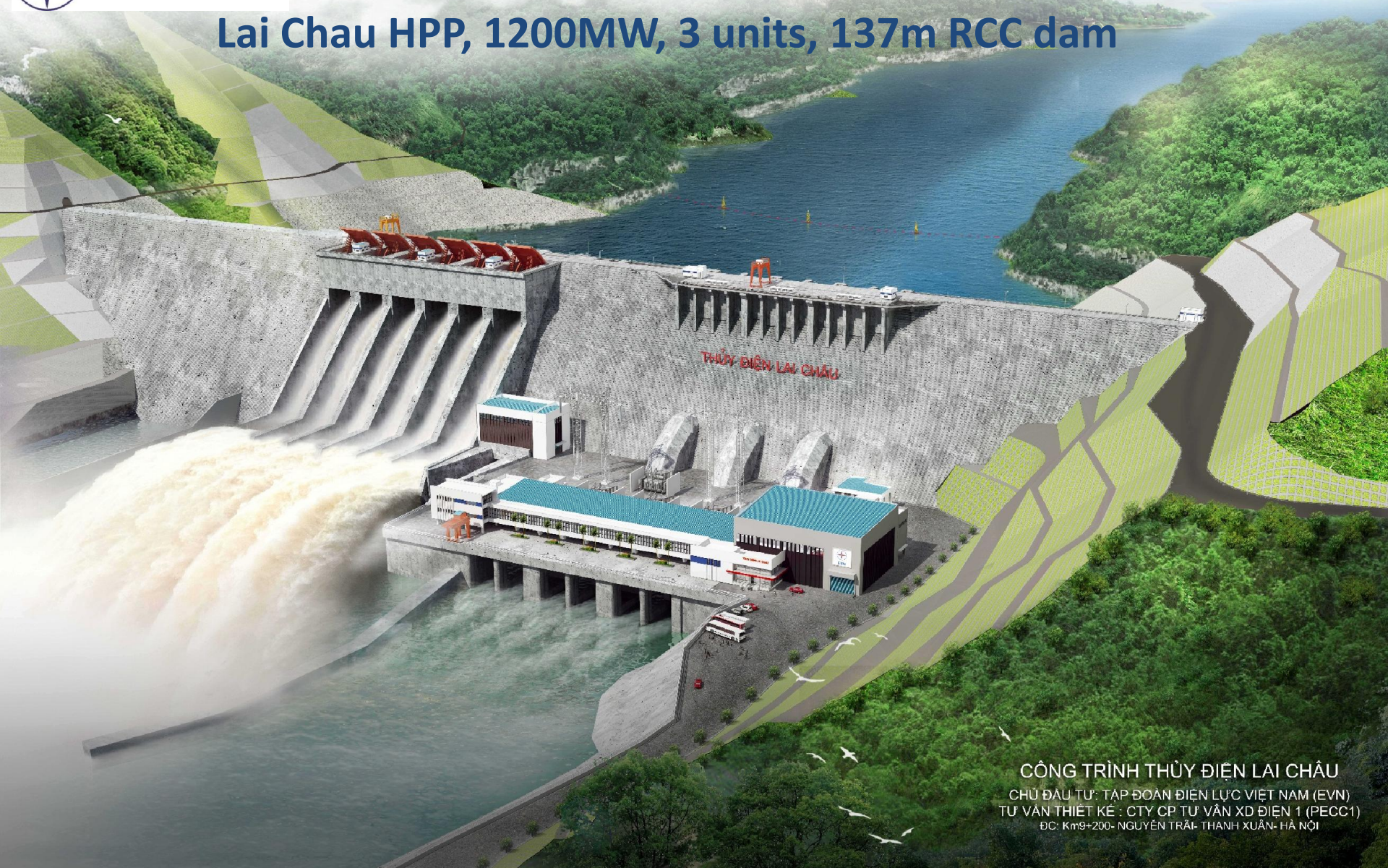




**EVNPECC1**

**POWER ENGINEERING CONSULTING JOINT STOCK COMPANY 1**

**Lai Chau HPP, 1200MW, 3 units, 137m RCC dam**



**CÔNG TRÌNH THỦY ĐIỆN LAI CHÂU**

CHỦ ĐẦU TƯ: TẬP ĐOÀN ĐIỆN LỰC VIỆT NAM (EVN)  
TƯ VẤN THIẾT KẾ: CTY CP TƯ VẤN XD ĐIỆN 1 (PECC1)  
ĐC: Km9+200- NGUYỄN TRÃI- THANH XUÂN- HÀ NỘI

**Website: <http://www.pecc1.com.vn>**

**Tel: +84 4 38544270**

**Fax: +84 4 38541208**



## LAI CHAU HPP

### Salient Features

Dam type	RCC Gravity Dam Height 137.0 m, Crest Length 611 m RCC 2 M.m <sup>3</sup>
Reservoir	Catchment Area 26,000 km <sup>2</sup> Life Storage 710.9 M.m <sup>3</sup>
Spillway & Low Level Outlets	max. Discharge 35'077 m <sup>3</sup> /s
Powerhouse	3x 400 MW Francis, total 1'200 MW





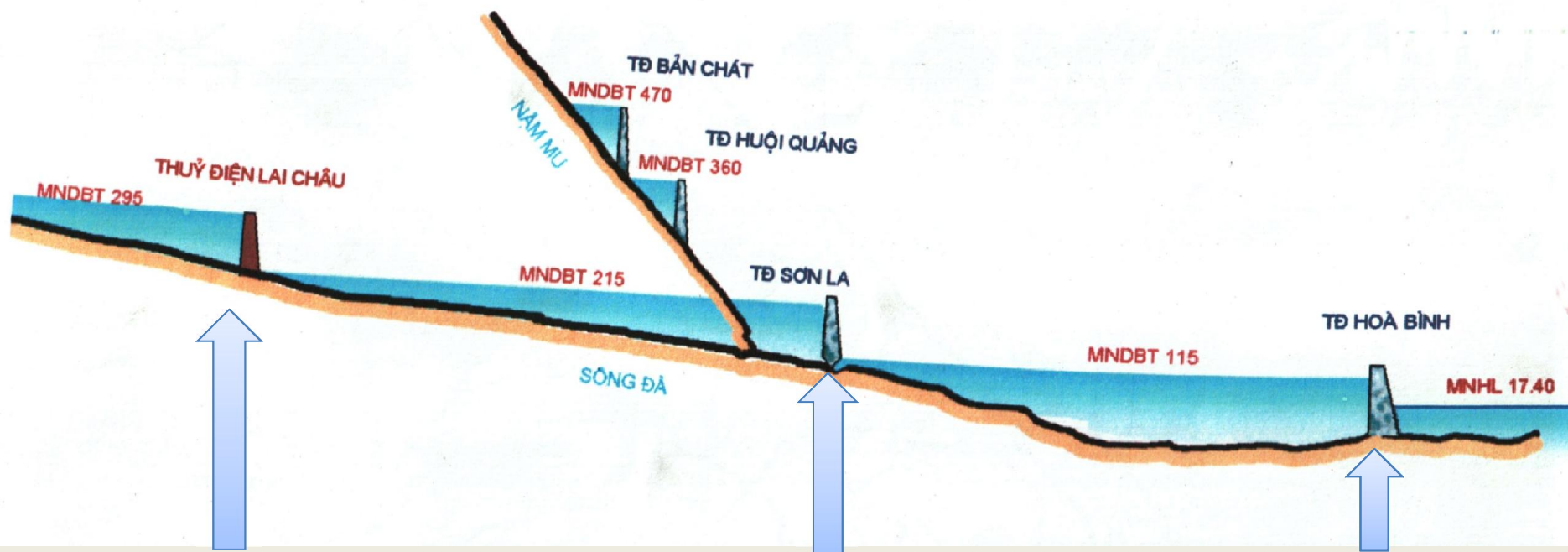
This topographic map of Northern Vietnam highlights the locations of three major hydropower projects, each marked with a red star:

- Lai Chau HPP:** Located in the far northwest, near the border with Laos, in the mountainous region of Lai Chau province.
- Sơn La HPP:** Located in the north-central region, near the border with Laos, in the mountainous region of Sơn La province.
- Hoa Binh HPP:** Located in the north-central region, near the border with Laos, in the mountainous region of Hòa Bình province.

The map also shows major cities such as Hanoi, Haiphong, and various provinces including Lào Cai, Yên Bái, Tuyên Quang, Thái Nguyên, Bắc Giang, and Hà Nội. A scale bar in the bottom right corner indicates a distance of 50km.



## **DEVELOPMENT OF DA RIVER**





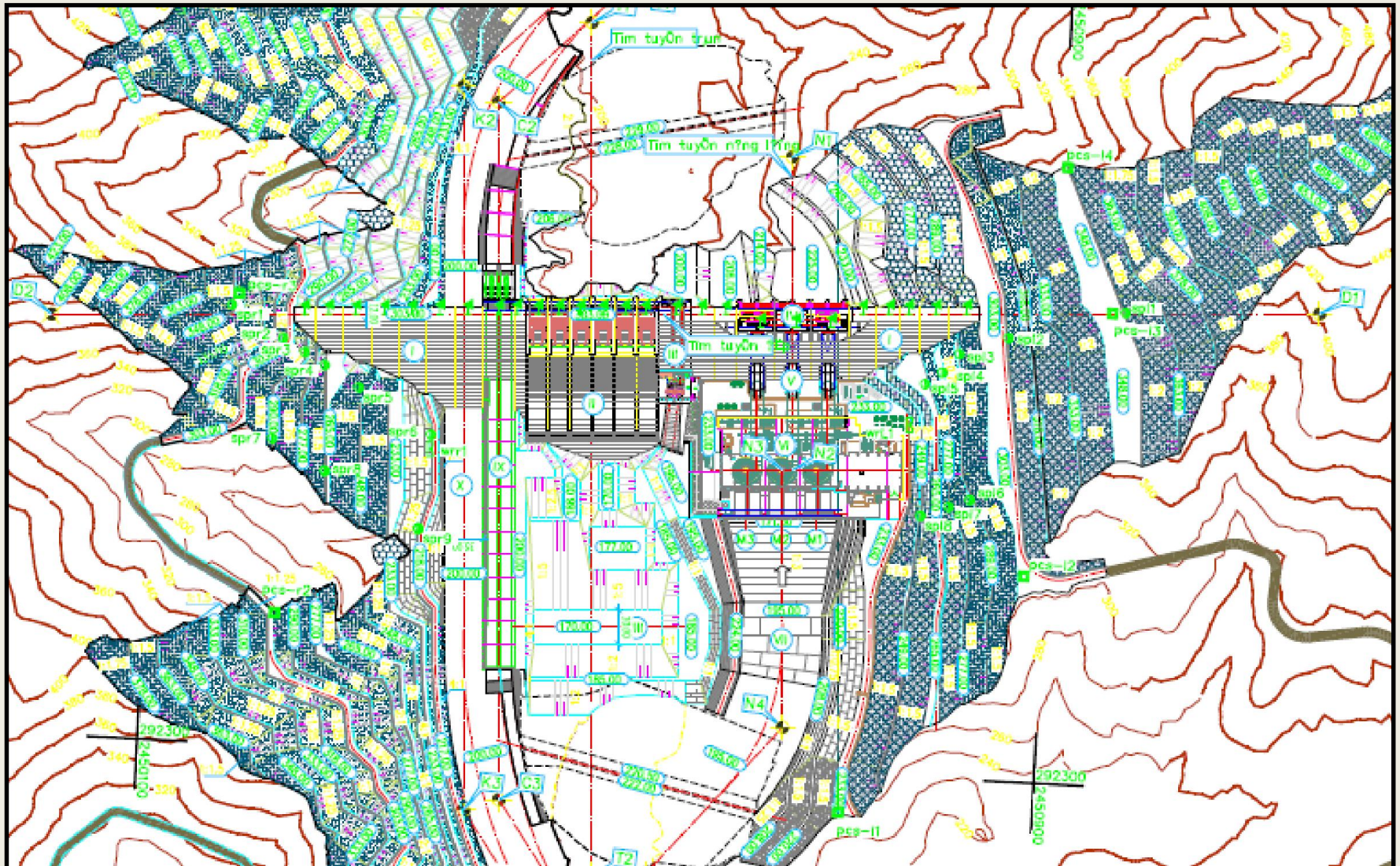
## Design Time Line

2009	2010	2011	2012	2013	2014	2015
Feasibility and Basic Design Report (PECC1)						
	Technical Design Stage (PECC1 plus RCC Dam design AF-C)					
			Approval of Technical Design by Higher Authorities			December: Unit 1 generation
		Drawing Design and Main FST				
				Start of RCC Construction 03/13		
	Start excavation 2010 - Construction of Diversion Excavation of Powerhouse etc			Construction of RCC Dam		

RCC dam is designed to the requirements of both, International Standards & Vietnamese Standards



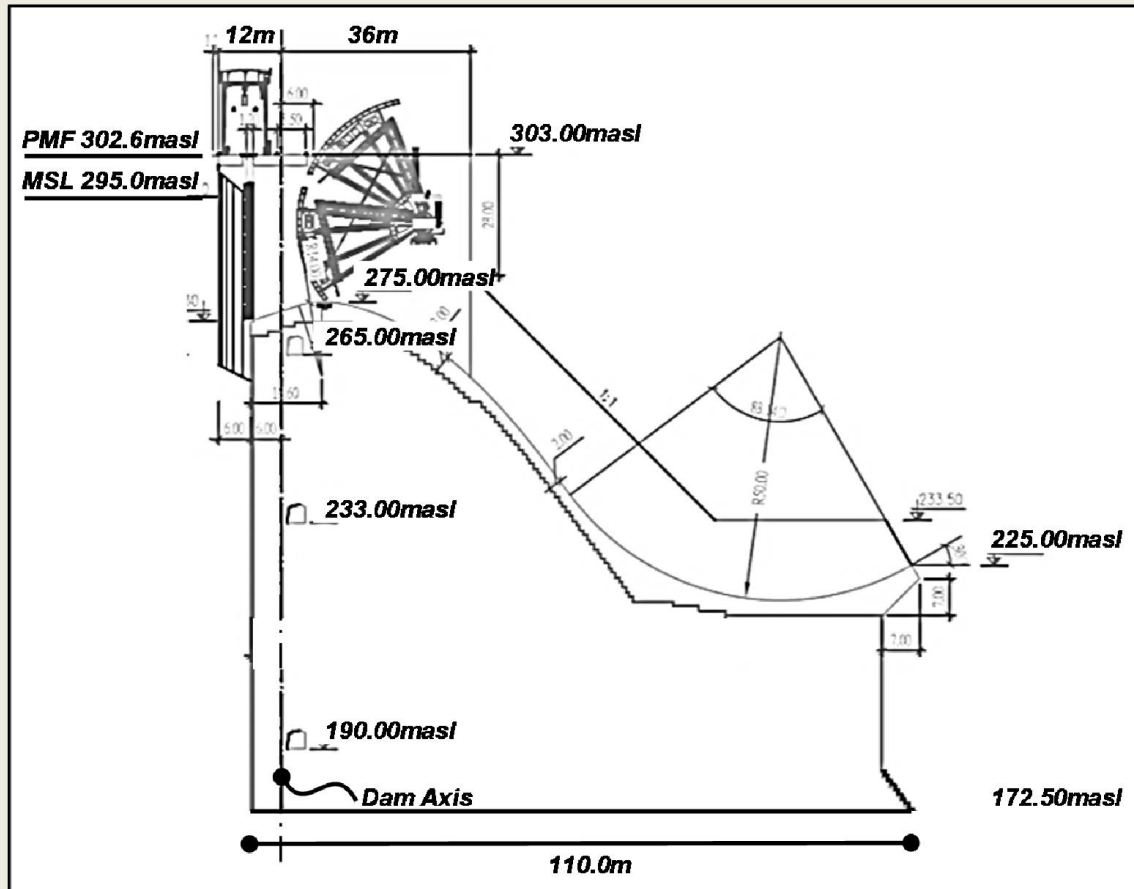
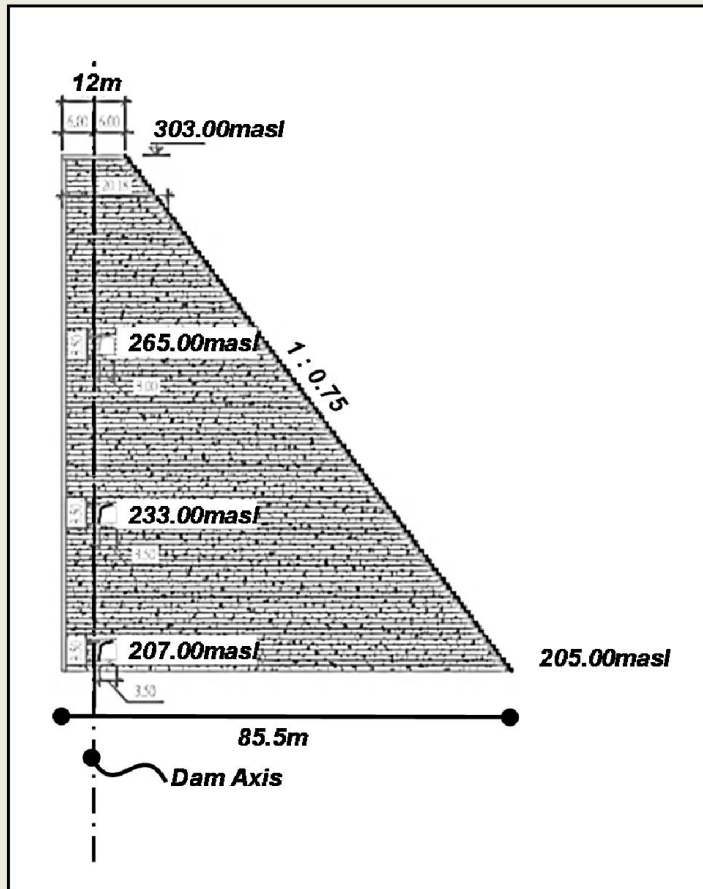
## Project design





## Introduction

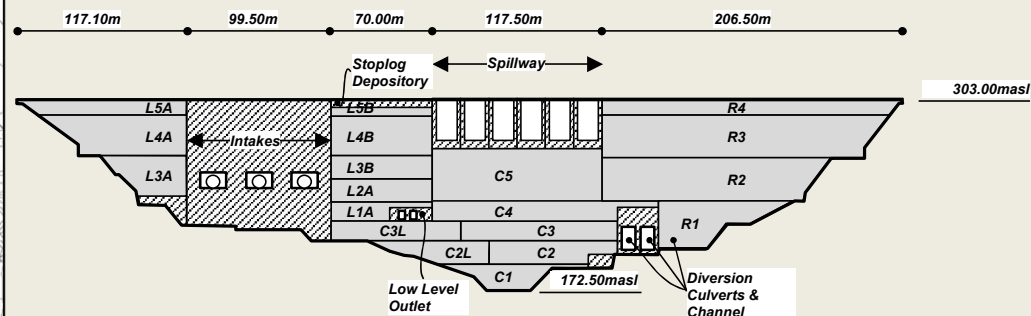
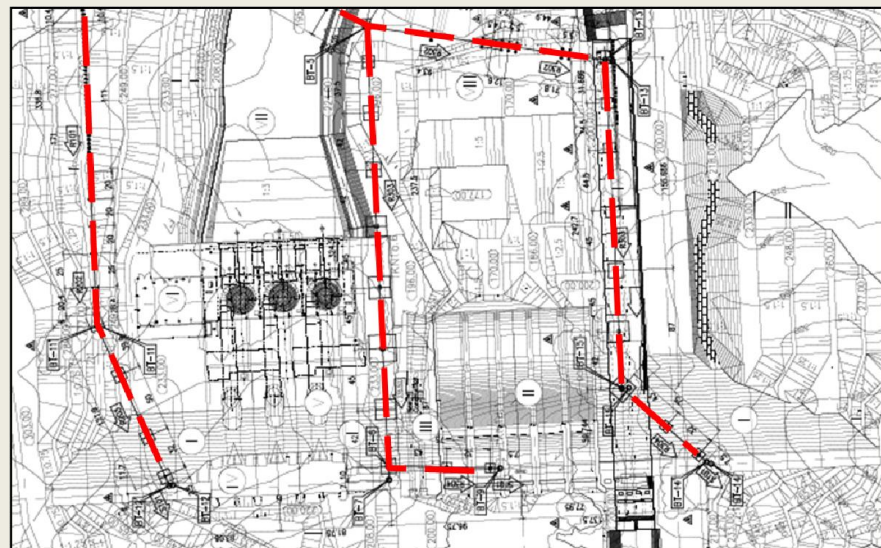
### RCC gravity dam design





# Challenges in the dam construction

Layout, block arrangement, programme



Investigation prepared by PECC1 since 2004





## RCC Testing including mix design in laboratory and full trial embankment test prepared by PECC1





**Starting construction of auxiliary works at the site since 2010**





## Completing, diversion culvert on right bank and river closure stage 1 on 24<sup>th</sup> April 2012





## RCC placement at block C1 and block C2





## Challenges in the dam construction

### Foundation & Son La reservoir



## Low Level Outlet and Intake





## Overview of the project during construction at the night in Dec 20



**Overview of the project when RCC placement is completed with maximum placement rate to lift RCC layer of 27.3m/month**





## Overview of the project before impounding reservoir in June 2015 after official construction time of 19 months





## Upstream view before impounding reservoir





## Downstream view before impounding reservoir





## Spillway operated after impounding reservoir in flood season in 2015





**Overview of the project after impounding reservoir and before generating unit 1 in Dec,. 2015. Unit 2 and 3 will be generated power and the project will be completed in 2016**





## Artist's impression



**THANK YOU FOR YOUR ATTENTION!**