The development and utilization of course resources is one of the important contents of curriculum reform. Hydraulic engineering in China, with a history spanning over four millennia of development, has achieved brilliant accomplishments. The construction and use of hydraulic engineering works contain rich physics-related educational resources. These resources can be developed and integrated, and then applied to secondary school physics teaching, further reflecting the educational value of hydraulic engineering. By cultivating students' problem-solving skills through real-world scenarios, this approach enhances the core literacy of the discipline, inherits and develops the excellent traditional culture of the Chinese nation within physics education, and strengthens students' national pride.