



RIVER ENGINEERING

Alluvium is a key national provider of river engineering services stretching from Cape York to Tasmania, and extending beyond to SE Asia. We see water in context and our design work always considers commercial, economic, environmental and social implications. We bring together our team of in-house experts in hydrology, hydraulic modelling, geomorphology and landscape design to work closely with our hydraulic engineers in developing river engineering works.

Core to our success is that we design instream assets to work with nature rather than against it. Our ability to understand the future trajectory of river systems allows us to design solutions that complement natural processes resulting in more efficient designs. Our river engineers deliver waterway diversions, river training works, scour protection, river amenity improvements, river flow gauging stations; and flow control structures.

Why Alluvium

Depth of knowledge

Our depth of knowledge and experience covers all types of river structures, including embankments, fish passage, spillways, gates, intakes, outlets, and pipelines. We are experts at river erosion management and lead the industry in our knowledge on river bank and bed protection, including pile fields, rock stabilisation and effective revegetation techniques.

National leader in river diversion design

We have been leading diversion design in Australia for over two decades. Our designs blend geomorphic understanding with river engineering to produce diversions that do not fail. Our work in diversion design has been used in the development of Queensland regulation on diversion relinquishment.

Fish passage design

Alluvium has an excellent track record in fish passage design. We have established relationships with the most experienced fish ecologists in Australia and together we design structures to that are appropriate to hydraulic conditions and local native species.



Hydrology

Specialist hydrology and hydraulic modelling skills from catchment to site scales. We provide expertise in 1D and 2D hydraulic modelling of river and floodplain systems.



Fish passage

We are experienced designers of fishways and in doing so tailor strategies to the site conditions and the target fish communities. We are experienced with vertical slot, rock ramp, and fish lock fishways.



Flow regulation structures

We design large and small instream water regulation structures including, weirs, fish ladders, gates and flow management devices, and flow gauging mechanisms.



Condition and risk assessment

Alluvium has extensive experience in designing and building instream structures and we understand their mechanisms for failure. We are experts in risk assessment of weirs, flood gates, fish passage and erosion stabilisation structures.



Aquatic health

We use waterway management techniques and instream engineering to enhance the health of fish and other instream fauna, including vegetation strategies, large wood placement and artificial log jams.



Construction supervision

We work with contractors and clients to deliver optimal on-site outcomes that align with achieving project objectives and budget constraints.



Design

Our approach to engineering design is embedded by a culture of innovation through an active learning environment. We deliver concept, functional and detail design of instream engineering projects.