



Rockfall and debris flow mitigation : Innovative systems for a new efficient and integrated approach

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In the French Alps the latest generation of high performance systems against rockfall and debris flow has been developed by the contractor GTS taking a relatively lightweight approach, developed from decades of experience working with the more traditional catch fence systems. It allows to adapt the solution to the field rather than the opposite. Moreover it offers relevant alternates economically, in a global context of budget restrictions, and environmentally, with lower carbon emissions and impacts. The new barriers and patented systems have minimal anchoring requirements and are effective in difficult ground conditions. They are designed to be as simple, safe and rapid as possible to install in any location, including high on the slope by rope access workers. Barriers can now cost effectively be installed near the failure source, where energies are lower and where shorter fences can mitigate the hazard. System components have been kept as simple as possible to ensure maximum lifetime, minimise maintenance requirements and to facilitate repairs in the field at low cost. GTS has carried out extensive multi-scale analyses of their new systems including full scale testing to meet evolving guidelines.