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Abstract	Based on the field investigation for secondary geological hazards induced by 5.12 Wenchuan Earthquake, the types of geological disasters during or after earthquake are analyzed in this paper. The main secondary geological hazards are rock fall and collapse, landslide, debris flow, dammed lake, sand liquefaction and so on. The development and distribution rules of secondary geo-hazards, with a long-term sustainability and a formation of hazard chains, are of relation with earthquake fault zone, and consistent with seismic intensity. The buildings located in secondary geo-hazards areas with a high risk are damaged severely, thus the site selection for post-earthquake reconstruction and related geotechnical engineering issue are discussed, which are useful in reconstruction of Wenchuan earthquake area.
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Geological Disasters Induced by Wenchuan Earthquake and Site Selection for Post-earthquake Reconstruction

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Key words: Wenchuan Earthquake; Secondary geo-hazards; Engineering construction; Site selection

Abstract. Based on the field investigation for secondary geological hazards induced by 5.12 Wenchuan Earthquake, the types of geological disasters during or after earthquake are analyzed in this paper. The main secondary geological hazards are rock fall and collapse, landslide, debris flow, dammed lake, sand liquefaction and so on. The development and distribution rules of secondary geo-hazards, with a long-term sustainability and a formation of hazard chains, are of relation with earthquake fault zone, and consistent with seismic intensity. The buildings located in secondary geo-hazards areas with a high risk are damaged severely, thus the site selection for post-earthquake reconstruction and related geotechnical engineering issue are discussed, which are useful in reconstruction of Wenchuan earthquake area.

Introduction

“5.12” Wenchuan Earthquake caused considerable damage and spread to wide scope, it not only made the collapse of buildings and substantial damage of bridge and road projects as well as casualties and property losses, but also caused a mass of secondary geo-hazards, for example: collapse, landslide, debris flow, dammed lake and so on. According to incomplete statistics, 15,000 landslides, collapses, debris flows were triggered by Wenchuan earthquake, the substantial infrastructure of railways, bridges, electric power and communications were damaged by the great landslide, collapse, debris flow, and the best emergency time was also delayed.

The extensive influence, great scale and serious damage of Wenchuan Earthquake and secondary geo-hazards put forward severe challenges to geotechnical engineering, geological engineering, seismic geology research and post-disaster reconstruction work. At present, the researches related to geological disasters of Wenchuan Earthquake have become the hot issue for relevant disciplines and studies[1-6].

The author attended the scientific investigation at Sichuan earthquake-stricken area organized by Chinese Society for Rock Mechanics and Engineering. On the basis of fieldwork investigation of many secondary geo-hazards in Sichuan earthquake-stricken area, the development and distribution characteristics of secondary geo-hazards are analysed and summarized, and the site selection for post-earthquake reconstruction and the related geotechnical engineering issues are discussed in this paper. The related basic information to geotechnical engineering for disaster prevention and reduction could be provided and the reference to post-disaster reconstruction could be offered by the research result.

Types of Secondary Geo-hazards caused by Earthquake

In Wenchuan Earthquake, types of secondary geo-hazards directly caused by earthquake are mainly rock fall and collapse, landslide, as well as large-scale debris flow formed by a large number of loose landslides and collapses under the impact of follow-up rainfall; in addition, the landslides, collapses

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