Light Years Ahead: the Role of Design and Survey in Disaster Risk Management, Future-Proofing Adelaide

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SUMMARY

South Australia's first Surveyor-General Colonel William Light designed a remarkable spatial layout for the District of Adelaide with great resolve against trenchant opposition. Withstanding sustained attack for his site selection and separation of the City and Port of Adelaide, he applied considerable experience from his military service in the British Royal Navy and as a reconnaissance officer and Deputy Assistant Quartermaster General in Wellington's Army in the Peninsula, using state of the art equipment to pioneer an innovative, adaptive solution to the difficult task of concurrently planning the original 134 and 80-acre land division of the Adelaide Plain (approximately 60,000 acres). A few decades later his methodology was echoed by George Goyder, who advocated for improvements in surveying accuracy and discipline by using a similar processs: a topographical survey detailing features of the country, marking out of the best lines of road and other necessary reserves, keeping present and future needs in mind before deciding how the detailed survey should be conducted. Modern expert modelling indicates that Light's determination to future-proof the City of Adelaide against flood may preserve his intended built form of North and South Adelaide from combined disasters of dambreak and probable maximum flood (PMF). Providing ongoing benefit and inspiration, Light's sustainable framework for subsequent development exemplified the highest standard of disaster risk management more than one and a half centuries before South Australia's River Torrens Flood Inundation Mapping Study recommended the most effective measure to reduce future flood damage would be based on establishing effective planning and building controls to ensure that future development does not take place in flood liable areas, or is of a flood compatible nature in areas that are flood liable. This paper considers Light's disaster risk minimisation design methodology and his trigonometrical survey establishing the spatial layout for the District of Adelaide, including details of the triangulation of the Adelaide Plains, watercourses, reserves and Port Adelaide River.