

# RAPID SURVEY SOLUTIONS FOR MINIMAL DISRUPTION IN OPERATIONAL HOTEL

**PROJECT:** Karma Rottnest Lodge Development - Rottnest Island, Western Australia **CLIENT:** Place Development

## PROJECT BACKGROUND

Karma Rottnest Lodge is a luxury resort facility offering heritage style accommodation, located on Rottnest Island, an A-Class nature reserve situated 19km offshore from the city of Perth in Western Australia. Rottnest features pristine beaches and coastline and is home to the Quokka; a small, wallaby-like marsupial.

Karma Rottnest Lodge has six individual buildings, spread across 1.7ha, and supports more than 100 guests and 50 staff.

The hotel grounds and facilities required a major upgrade. 3D modelling was needed to map internal rooms and surrounding areas including courtyards, pathways and roads and Place Development – a property delivery company – engaged MNG to provide this service.

## CHALLENGES

Mapping the inside and outside of a fully operational hotel with minimal disruption to staff and guests, was a major challenge.

The client required sensitivity to guest movements, their rooms, the wellness facilities and dining rooms. With guests constantly coming and going, however, this proved difficult. Operational areas including kitchens and the reception area, required the hotel staff to work throughout the day which made working around them, also challenging.

The hotel is set amongst enormous, well-loved trees which were to be included within the 3D model. This was to ensure the trees were preserved and featured in the upgraded complex's designs. The trees and vegetation, however, created obstructions and made it difficult to survey the area.



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The hotel is located within an A-Class nature reserve with significant aboriginal heritage. Impact to the surrounding environment was to be minimised at all times.

## SOLUTIONS

MNG considered all project requirements and constraints to develop a solution and deliver a high accuracy 3D model.

The key to success lay in rapid data capture which minimised the time spent inside the hotel and its surrounding areas.

MNG utilised its mobile mapping systems (including the HALO) for indoor capture. The HALO uses Simultaneous Localisation and Mapping (SLAM) technology for rapid mapping in areas which are devoid of GPS signals

The MNG team used a terrestrial laser scanner and a mobile 360° spherical camera to record high-resolution, panoramic imagery throughout the courtyards, pathways, and roads. Using several different technologies/systems meant the information collected had to be combined to produce a highly accurate 3D model of the hotel.

## OUTCOMES

MNG produced one homogenous 3D model of all the buildings throughout the hotel, from a single survey. The level of detail in the model enabled architectural design to be undertaken for the project.

All internal rooms were mapped quickly and to a level of accuracy that would minimise repeat visits from others working on the project. The detailed, accurate 3D model of the Karma Rottnest Lodge enabled other consultants to virtually visit the hotel without travelling to Rottnest Island.

MNG's 3D model and panoramic imagery also enabled landscape architects to develop their models for the hotel grounds, without needing to visit. All trees were accurately mapped for canopy and trunk sizes, along with the limestone walls featured throughout the hotel.

The survey was completed with near zero impact to the hotel guests - a key criteria for the project.

## TALK TO US

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