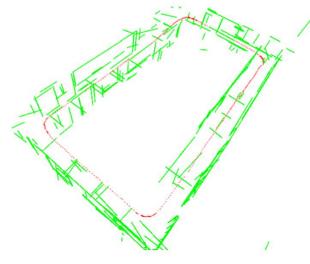(a) Line based system   (b) RPR based system