# Abstract

NASA Control Room concept is an innovation strategy in Construction under the smart city context. By utilizing the NASA Control Room concept in Construction Industry, it can solve the long lasting problem such as ….. and fulfil the recent work from home concept by enhancing the collaboration between different stakeholders and effectively manage the data during the **design** and **construction** stage. It also provides insight to managers to set-up strategies and policy to enhance the safety during the **construction** and **operation** stage of a construction project. This dissertation is developed under the Mace Group sustainability and development concept.

With the emerging technology IoT (Internet-of-Things), the data of the environment and the human action can be captured for making effective decision. The sensor data is collected by Raspberry Pi from xx-July-2020 to xx-Aug-2020 in a local factory in Hong Kong to demonstrate the entire control room concept. This dissertation also provides different ways to visualise the data captured which can be used as a prototype for different parties in AEC industry for making decisions.

The BIM360 working platform and online view can demonstrate the real time environment and collaboration of the site in a simple way. The VR Viewer can let us identify the site constraint remotely….. And the power BI dashboard can provide insight from the sensor data to……….

Besides, this dissertation also discussed what types of sensory data should be captured to make these visualisation techniques more useful. It is found that ………. The potential development of the control room can be much further investigated.

# Introduction

-Current Nature of Construction industry

-> How big and its importance to economy?

-Industry Problem on:

-> Collaboration, Information Management

-> Safety

-Smart City Context

-> How smart city context to solve the problem:

-NASA Control Room

->can NASA control room to solve these industry problems?

-Research Objective

-Research Contribution

# Literature Review

-Smart City

->What is smart city

-Gap of Construction Industry to technology

-NASA Control Room

-> Traditional NASA Control Room

-> how control room to fill the gap

-Other Industry

->How other industry use control room concept?

-Current development on:

* Real Time Sensory Data
* BIM360 + Forge
* PowerBI Dashboard

How these things to solve the problem

# Methodology

-System Architecture of NASA Control Room in Construction **(virtual)**

-> How the ecosystem works

-Sensor Data

-> how the sensor to collect the data

-> How the microcontroller works

-Web Server

-> How the Azure database build

->How the endpoint to be build

-Infrastructure for visualisation

-> How BIM360 + Forge: Viewer

-> How PowerBI Dashboard to be built

-Field Test and Data Collection **(physical)**

->Site Description

->how sensor set up and collect data in the factory

->Revit Model Specification