# SensorSight

A mobile app that helps Local Boroughs, Local Planning Authorities and private land-owners in London to visualise CCTV camera coverage in a specific area and determine security risks and blind spots using Augmented Reality technology.

## Objective

London is amongst [the top three surveilled cities](https://www.caldersecurity.co.uk/countries-cities-by-number-of-cctv-cameras/) in the world. As the government [provides lists](https://www.data.gov.uk/dataset/9df311f1-c11b-4bdc-a829-ba090e5ecdfd/cctv-camera-locations) of public cameras, there is no system or application that holds all of the locations in one place to accurately visualise the coverage of cameras and what that reflects on security. This applies to both government and private sectors.

Recent attack in Sutcliffe Park - 6 CCTVs cameras to be installed (Rita to include the example of the her work)

This application allows decision-makers to take more accurate steps towards knowing the least surveilled areas and where are the best places for cameras. AR technology will provide a unique experience by letting users visualise the camera range in the real world, thus saving money by selecting the correct type of camera in the right location, thus increasing security.

## Description and Scope (only for v1)

The application is composed of the following features:

* **Feature:** Camera location visualisation on a 2D map in the Olympic Park
* **Feature:** Real-world camera location visualisation using AR in the Olympic Park
* **Feature:** Camera ranges: can be visualised in 2D on the map, and in 3D in AR.
* **Feature:** Remote (static) database containing camera locations and descriptions.
* **Feature:** Cameras description which can be seen in 2D and 3D:  
  - Unique number  
  - Manufacturer  
  - Series  
  - Resolution  
  - 360 degrees on not
* **Feature:** User location is also visualised on the map (GPS is used).
* **Feature:** Camera list in application should be ordered by distance.
* **Feature**: Camera list order by (type, distance, and status).
* **Feature:** Search cameras by name.
* **Feature:** Users should log in to use the application.
* **Feature:** The user signs in using static login information embedded in the database.
* **Feature** (low priority): Users can see and edit their information.
* **Constraint:** only some cameras are to be included as a PoC in QEOP.
* **Constraint:** the application only works on Android devices in V1.
* **Constraint:** only London is targeted for now.
* **Constraint:** no signup in v1.

## Technology to be used

* Flutter with Android
* AR Core
* JavaScript

## Features to be delivered in version 1:

**Same as the scope.**

**This is considered our target, we can go further to v2 if we have time.**

## Features to be delivered in version 2:

AR filter shows security cam coverage

Live feed

## Features to be delivered in version 3:

~~historical crime data~~  (Changed after our decision to focus on private and government sectors)

~~Wayfinding~~ (Changed after our decision to focus on private and government sectors)

TBD

## Resources and references

**System Surveyor**

2D tool for showing the Area of Coverage (AoC) for a surveillance camera, wireless access point, projector, or sensor. Intelligently select the right device the first time.

<https://systemsurveyor.com/product-features/area-of-coverage>

**Visualization of CCTV coverage in public building space using BIM technology**

<https://viejournal.springeropen.com/articles/10.1186/2213-7459-1-5>

**What is BIM (Building Information Modeling)**

<https://constructible.trimble.com/construction-industry/what-is-bim-building-information-modeling>

## Questions:

* What about night vision? Only in daylight according to our business case
* What about 360 cameras? We have only two types: pointed and 360 cameras

Wireframes:

<https://www.figma.com/file/NwI4A4LXgpwrfMmc1WKZQI/SensorSight?node-id=0%3A1&t=pztH8DM1C07vLjEM-0>

Group GitHub Repo:

<https://github.com/CE-GPP/SensorSight>

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