Locations

Odense has many different kinds of areas with different kinds of GIS features. To be able to speak to the validity of local GIS data by area, these will have to be surveyed individually. We have, arbitrarily, picked a location to represent seven different kinds of areas in the city:

- Suburb
  - Proposed location: (55.3761308,10.3860752) https://goo.gl/maps/v6yHQbPGsoXGfG17A
  - Feature Count: Very Dense (292)

- Downtown
  - Proposed location: (55.3947509, 10.3833619) https://goo.gl/maps/YtBVX9f2QvDPQaHA7
  - Feature Count: Medium (149)

- Factory/Industry
  - No location yet.

- University parking lot
  - Proposed location: (55.3685818, 10.4317584) https://goo.gl/maps/uk2jRsrWgkVtMDWR6
  - Feature Count: Dense (208)

- Harbor
  - Proposed location: (55.4084239, 10.3813301) https://goo.gl/maps/DkUnkFjezb5v1vcx8
  - Feature Count: Sparse (66)

- Park
  - Proposed location: (55.3916561,10.3828329) https://goo.gl/maps/QgYyHeSc7P3FDicF9
  - Feature Count: Very Sparse (39)

- Railroad
  - Proposed location: (55.402438, 10.383751) https://goo.gl/maps/9tefC5urTDR5BJyc6
  - **Note**: If we should use this location, it would probably not make sense to sample from a circle with a radius of 100 meters, but rather sample from only the railroad area using a polygon filter.

A folder containing ortographic images of the areas can be found in the Onedrive project folder. The images are composed of WMTS tiles from the GeoDanmark Ortofoto WMTS. They show the area and relevant WFS features within 100 meters.
https://nextcloud.sdu.dk/index.php/s/MbrHmJWpRmiKHyw

Time

Every area will be surveyed once at the following times of day:

- Daytime (10-14)
- Evening (18-22)
- Night (23-03)

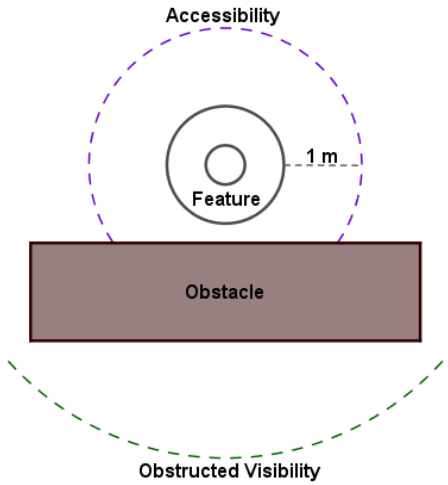
This will be done on one day of each category:

- Workday (Monday-Friday)
- Weekend (Sunday/Saturday)

Resulting in each area being surveyed 6 times. This might be reduced for some areas where no change is expected between specific times and days if deemed necessary due to lack of time.

Methodology

The methodology of the first round of measurement is establishing a rough reliability of the GIS data in different areas of Odense. The methodology establishes a measure for if the feature is present and how accessible and visible it is.



To evaluate features, several metrics are used:

- **Presence**, wether or not a certain feature is there (either true or false)
- **Accessibility** at the current time (0-360 degrees), how much of the feature is fully visible and not obstructed within 1 meter. We will measure this qualitatively by observing the feature. (see figure)
- **Obstructed visibility**, how much, of the feature is visible (0-100 %), on average, when access to the feature is obstructed. (see figure)
- **Occluded visibility**, how much of the visible part of the feature is occluded by plants, signs, etc.
- **Domain**, wether the feature is in public or private domain.

	Presence	Accessibility	Obstructed Visibility	Occluded Visibility	Domain
Point Features	X	X	X		X
Buildings	X	X		X	
Other Polygon Features	X	X	X		X
Fences & Traffic Fences	X	X		X	X
Other LineString Features	X	X			X

To validate a feature, it is first identified by matching the GIS coordinates with a feature of the same type in the real world. The feature is then judged on the appropriate metrics and the result is noted.

An important detail to be noted is that the only parameters that are expected to change are the Obstructed and Occluded visibility, as these can be caused by temporarily obstructing vehicles, signs, furniture, etc.

Each feature in the selected feature categories within 100 meters of the designated area center are judged.

If a feature is discovered, but is not present in the GIS data, this will also be noted. This will provide an idea of the quality of the data as those feaures will be false negatives of the GIS data. This is expected to happen in places where construction has been done recently, and the GIS data is out of date.

Tidsstempel	Feature ID	Feature	Is the feature on private property?	Full visibility?	Orientational Visibility	Area Visibility
11/09/2020 19.12	110	Exists		Yes		
11/09/2020 19.12	111	Exists	The feature is on private property	No	120	40
11/09/2020 19.12	113	Does not exist				
11/09/2020 19.13	114	Exists		No	220	70
11/09/2020 19.13	0	Is not on map		Yes		

Example of data spreadsheet. We will fill the sheet using google forms for ease of use.