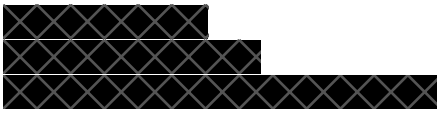
MSC Information Studies
Data Systems Project 2021-22

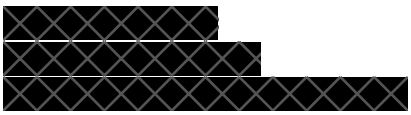
Project Title

Risk-based Fire Safety Inspections

Project Stakeholder
Onderzoek, Informatie & Statistiek
Gemeente Amsterdam
Weesperstraat 113
1018VN Amsterdam

Stakeholder contact details





Brief project description
The research department of the municipality of Amsterdam works together with the department of permits, surveillance and enforcement (Vergunningen, Toezicht en Handhaving, VTH) to generate more risk-based insights in order to be able to organize work more efficient and information based. One of the projects we work on is prioritizing the work of fire safety inspectors based on the chance of an incident, the effect of a potential incident and the chance of an observation if an inspector inspects an object. Within this project we have multiple sub-projects for you to work on:

- **Feature selection unstructured data**. In order to make accurate estimates of the mentioned chances we need features to describe the buildings. Therefore we now use structured data sources such as basis registrations, but we also would like to explore the possibilities of using unstructured data sources. For example pictures (Street View) to extract visual physical properties of a building. However, feel free to explore other (unstructured) datasets which you think of that can be helpful to extract new properties of buildings.

- **Modelling effect of an incident.** For estimating the effect of a potential fire we want to make a next step to create a model to predict / estimate this effect. The current method is a simple equation of summing a checklist, we would like to explore the possibilities of estimating / predicting the effect within different scenario's, e.g. size of fire incident and indoor/raging fire.

- **Dashboard.** In order to support the inspectors and planners of VTH optimally, the basis information on buildings, chance of an incident, effect and chance of an observation has to be accessible through a dashboard. Therefore the system should be conceived as much as possible as fitting within the IT infrastructure of the municipality, e.g. with a BI tool as Tableau or ArcGis Experience.

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Key challenge/problem or message to be communicated within the project domain

Contribute to the day-to-day work of the VTH domain by enabling the colleagues to make well informed and risk-based decisions.

Exemplar projects or additional reference materials (books, papers, products, URLS etc)

Short explanation of our current model:
https://data.amsterdam.nl/artikelen/artikel/slimmer-controleren-op-brandveiligheid-met-data/af5af923-97ac-4b05-aac8-4af8a26fdc2b/
Basisregistratie Adressen & Gebouwen:
https://data.amsterdam.nl/datasets/CxSRcN9AhiPipQ/basisregistratie-adressen-en-gebouwen-bag/
Basisregistratie Grootschalige Topografie:
https://data.amsterdam.nl/datasets/fdMzcWJaOn3feg/basisregistratie-grootschalige-topografie-bgt/
Basisbestand Gebieden Amsterdam:
https://data.amsterdam.nl/datasets/G5JpqNbhweXZSw/basisbestand-gebieden-amsterdam-bbga/?term=bbga

Goals or key criteria for an explorative project
See the project description.

Suggested key requirements or success factors for an implementation
Add value to the current model and/or the explainability of the model and be able to communicate the results to non-technical colleagues.

Challenges or constraints envisioned (if any)
When working on the described projects, a lot of ideas will emerge that need specific (and not open) datasets. At this point we are not able to follow up on potential new datasets. However, see all the available open datasets in the reference materials section and on data.amsterdam.nl and data.overheid.nl.

Any specific technical or content requirements

- Code should be preferably written in Python and conceived to be reusable (modular, well-documented, automatically testable, etc.).
- Dashboard / system should preferably fit in the technical infrastructure of the municipality as mentioned above