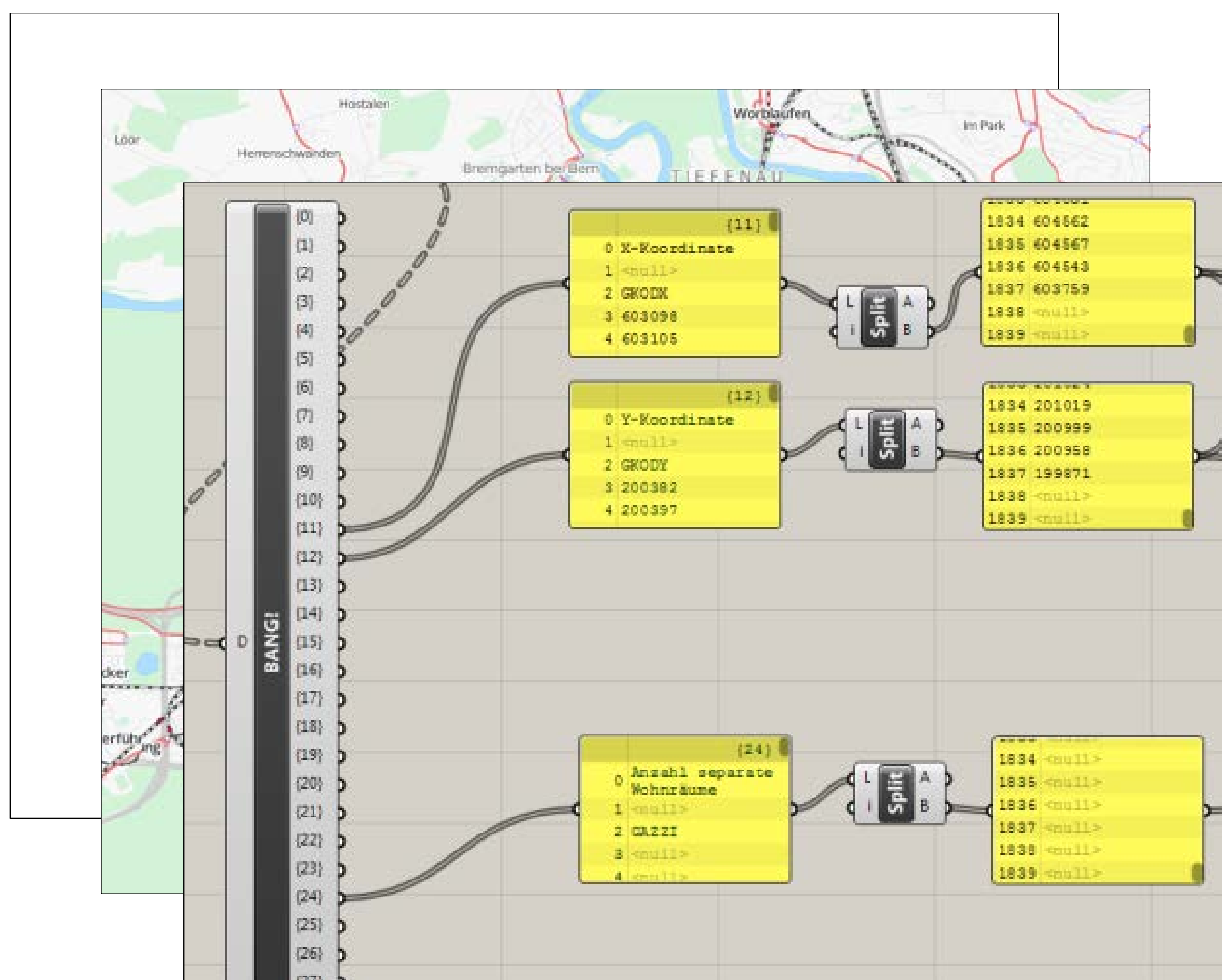


Point, Row and Block

Prof. Dr. Joachim Huber¹, Michael Walczak¹, Jonas Haldemann¹

¹ Dencity – Area of Competence for Urban Development and Mobility, Institute for Urban Development and Infrastructure,

Bern University of Applied Sciences, Architecture, Wood and Civil Engineering, Research and Development
Pestalozzistrasse 20, Postfach 1058, CH-3401 Burgdorf



1) Database:

- OpenSource Data (OpenStreetMaps) OSM
- Data from the swiss federal office of statistics (GWR, GWS)

2) Tool:

Definition of all the precise parameters to filter the three main specific architectural typologies with their subcategories:

Point

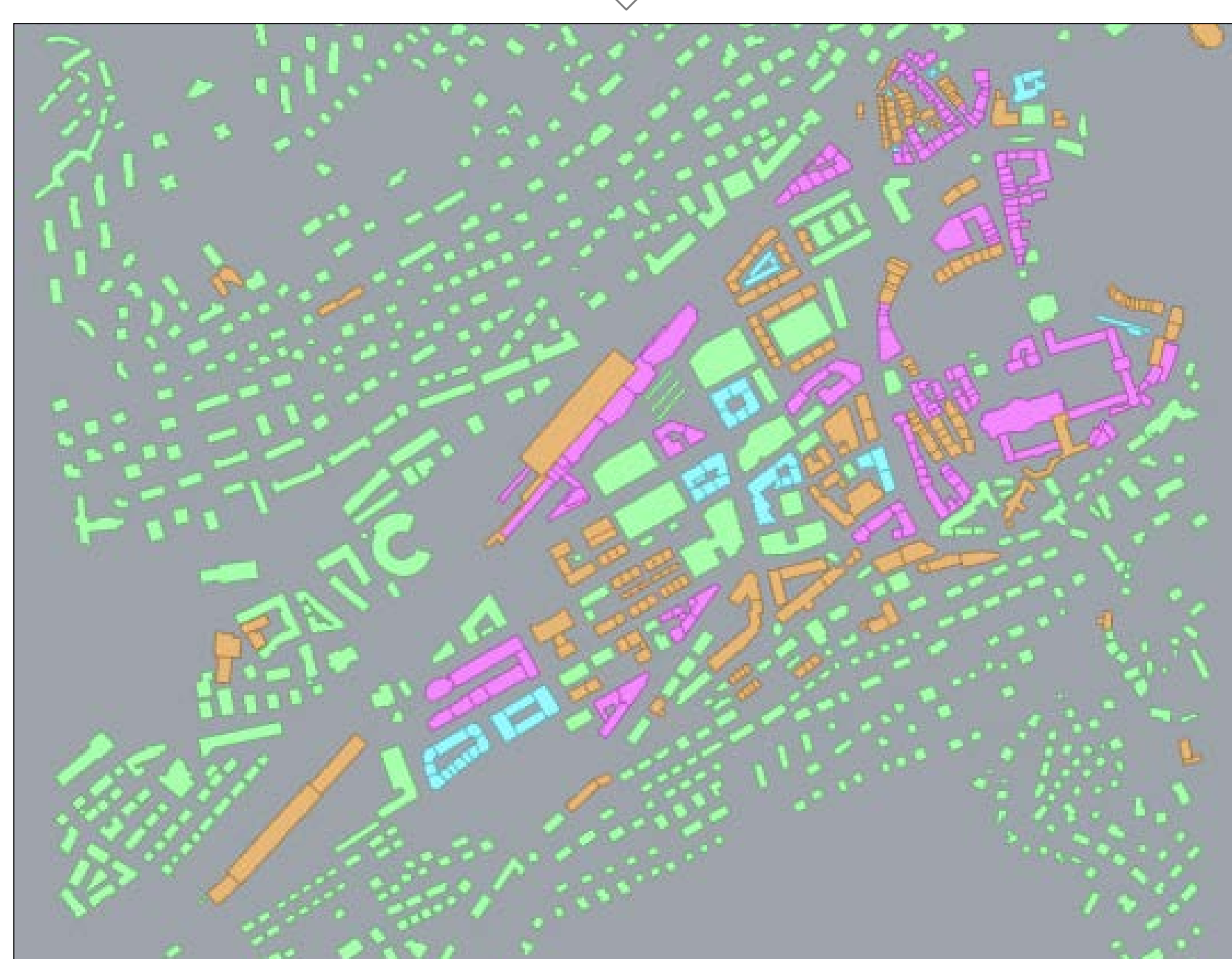
- One-family house
- Multiple-family house

Row

- One-family house
- Multiple-family house

Cityblock

- Open Cityblock
- Closed Cityblock

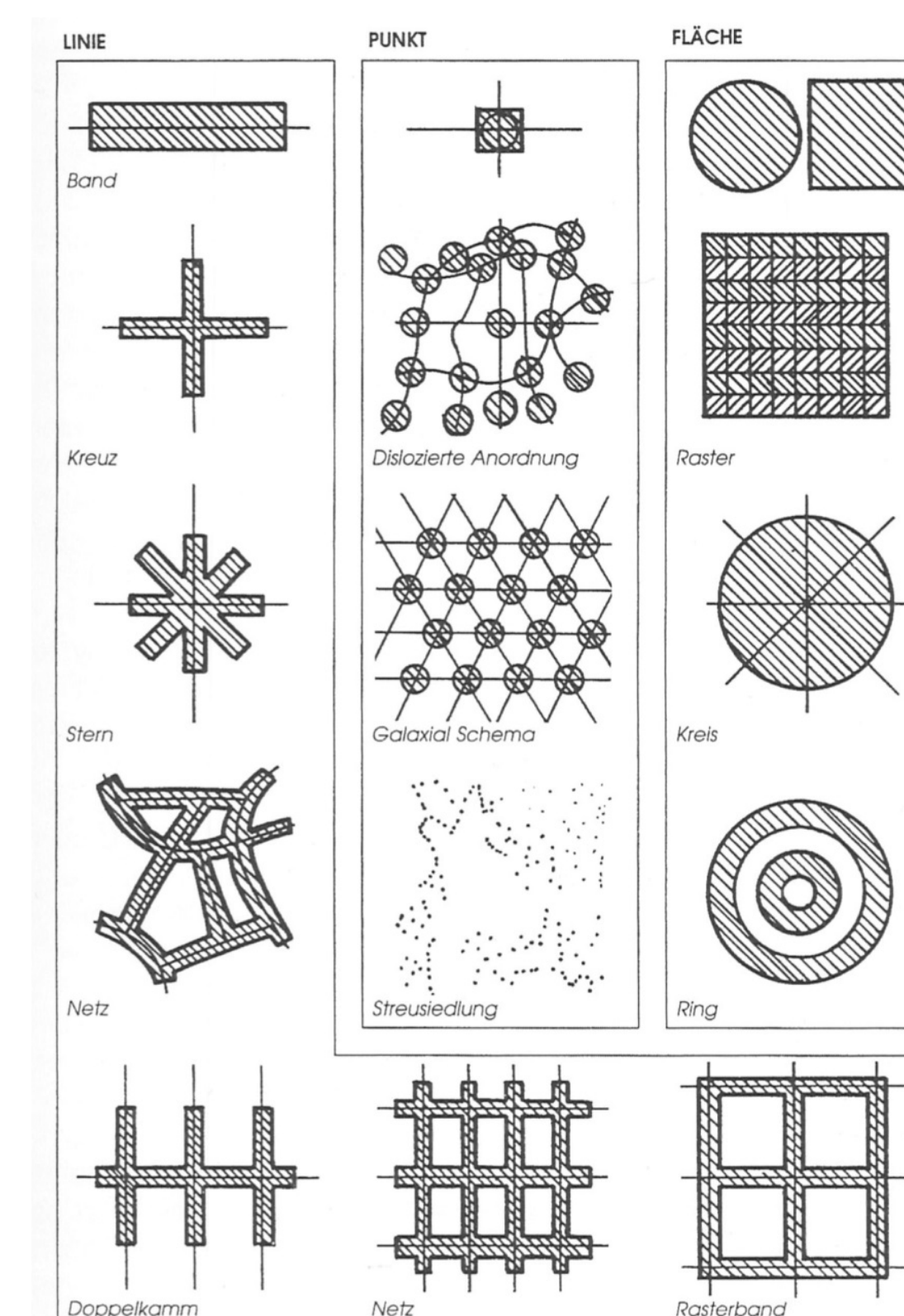


3) Analysis:

Automatic analysis of all three typologies from the field of city planning. The analysis is working for whole Switzerland and gives a graphical feedback to the locations of these typologies per household. The first step was the finalized analysis of the canton of St. Gallen.

Infobox:

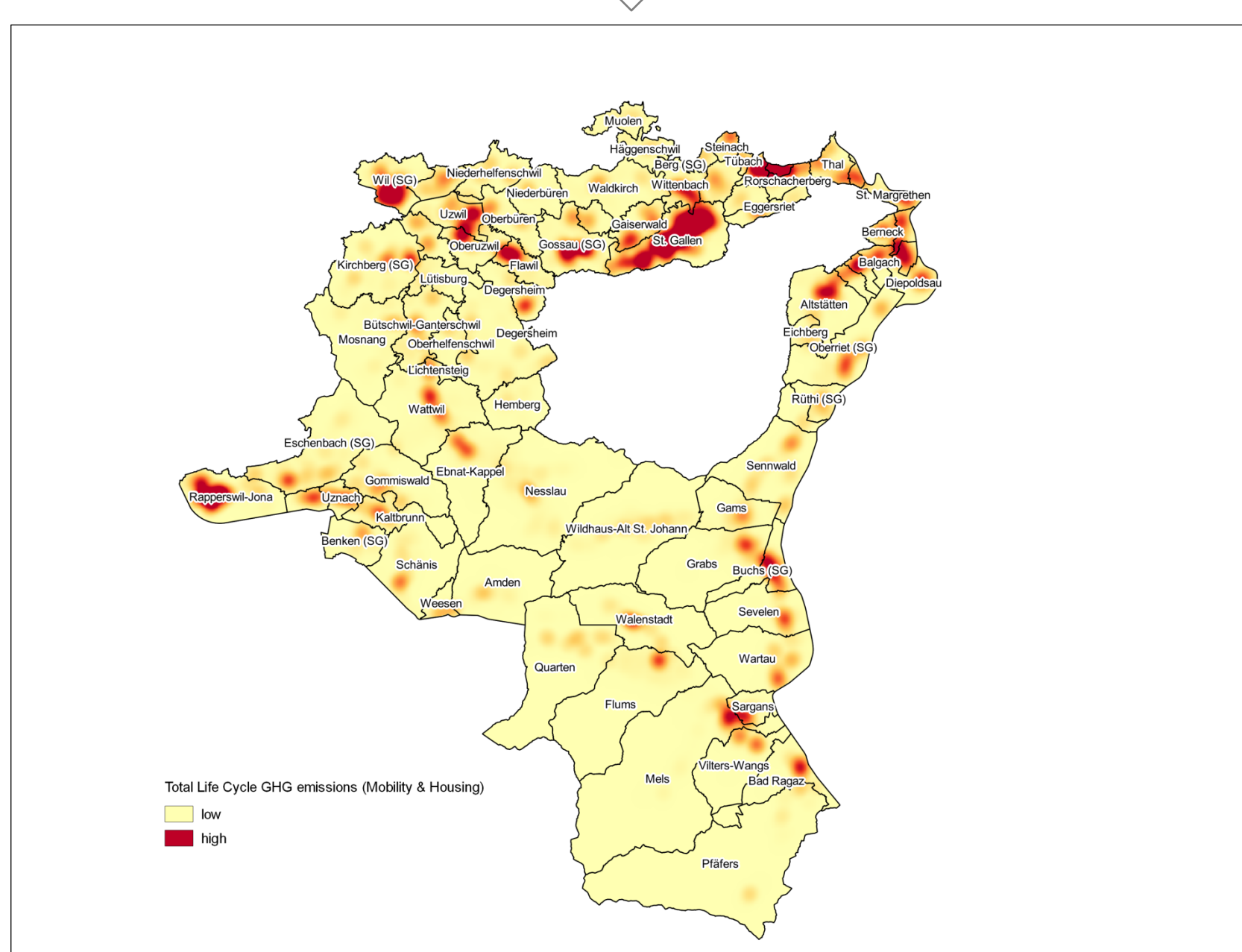
To formulate new building clusters, we first need to know the “status quo” of the area we work on. As a basis for that, we use our urban vocabulary to classify each building on our map. The challenge now is to get the right interpretation of all shapes on the map by a geometry-based software tool named Grasshopper.



742986.0, 25.742981.0, 259796.0, 0.0
743665.0, 25.743656.0, 25.743642.0, 259306.0, 0.0
742962.0, 25.742952.0, 259803.0, 0.0
743096.0, 25.743082.0, 259568.0, 0.0
739239.0, 25.739249.0, 259333.0, 0.0
739261.0, 25.739270.0, 25.739293.0, 259284.0, 0.0
738963.0, 25.738969.0, 259287.0, 0.0
739337.0, 25.739325.0, 259244.0, 0.0
739499.0, 25.739478.0, 259340.0, 0.0
739290.0, 25.739272.0, 259246.0, 0.0
737512.0, 25.737494.0, 25.737478.0, 259368.0, 0.0
736199.0, 25.736217.0, 25.736208.0, 25.736229.0, 25.736240.0, 253474.0, 0.0
736356.0, 25.736369.0, 253327.0, 0.0
736444.0, 25.736462.0, 25.736478.0, 253269.0, 0.0
736806.0, 25.736791.0, 252554.0, 0.0
736827.0, 25.736844.0, 253292.0, 0.0
736339.0, 25.736352.0, 253375.0, 0.0
736830.0, 25.736850.0, 25.736869.0, 25.736851.0, 25.736851.0, 25.736888.0, 252849.0, 0.0
736888.0, 25.736873.0, 252893.0, 0.0
736204.0, 25.736221.0, 253625.0, 0.0
736224.0, 25.736216.0, 25.736224.0, 25.736224.0, 25.736250.0, 25.736239.0, 25.736264.0, 25.736270.0, 25.736536.0, 25.736539.0, 25.736522.0, 25.736561.0, 25.736508.0, 25.736575.0, 25.736570.0, 25.736491.0, 25.736691.0, 25.736692.0, 252610.0, 0.0
736780.0, 25.736773.0, 25.736772.0, 252603.0, 0.0
736976.0, 25.736988.0, 252168.0, 0.0
736992.0, 25.737003.0, 25.737000.0, 25.736995.0, 25.736995.0, 25.736994.0, 256074.0, 0.0
736175.0, 25.736195.0, 25.736163.0, 25.736145.0, 25.736134.0, 25.736159.0, 253386.0, 0.0
738324.0, 25.738342.0, 253403.0, 0.0
738990.0, 25.738966.0, 25.739011.0, 252856.0, 0.0
736539.0, 25.736539.0, 256015.0, 0.0
738209.0, 25.738213.0, 253317.0, 0.0
736484.0, 25.736484.0, 256013.0, 0.0

4) Export:

The analyzed Data can be exported in common GIS Shapefiles or as simple tables with the specific coordinate or Building identifiers of the analyzed typologies. The data can be further integrated into the next research steps and can also create a whole database for other uses.



5) DataMatching:

Matching of the generated source of building typologies with the greenhouse gas Emissions and Mobility Consumption Data of each household. The goal is to analyze the relation of energy consumption and building typologies and formulate new building clusters for existing and further planning in urban development.

