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Energy consumption in Oulu

Seminar 3 - Findings

Feature Extraction

- List of characteristic categories

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['511 Educational building buildings', '231 Kindergartens', '214 Health Centers']
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- Average energy consumption by building

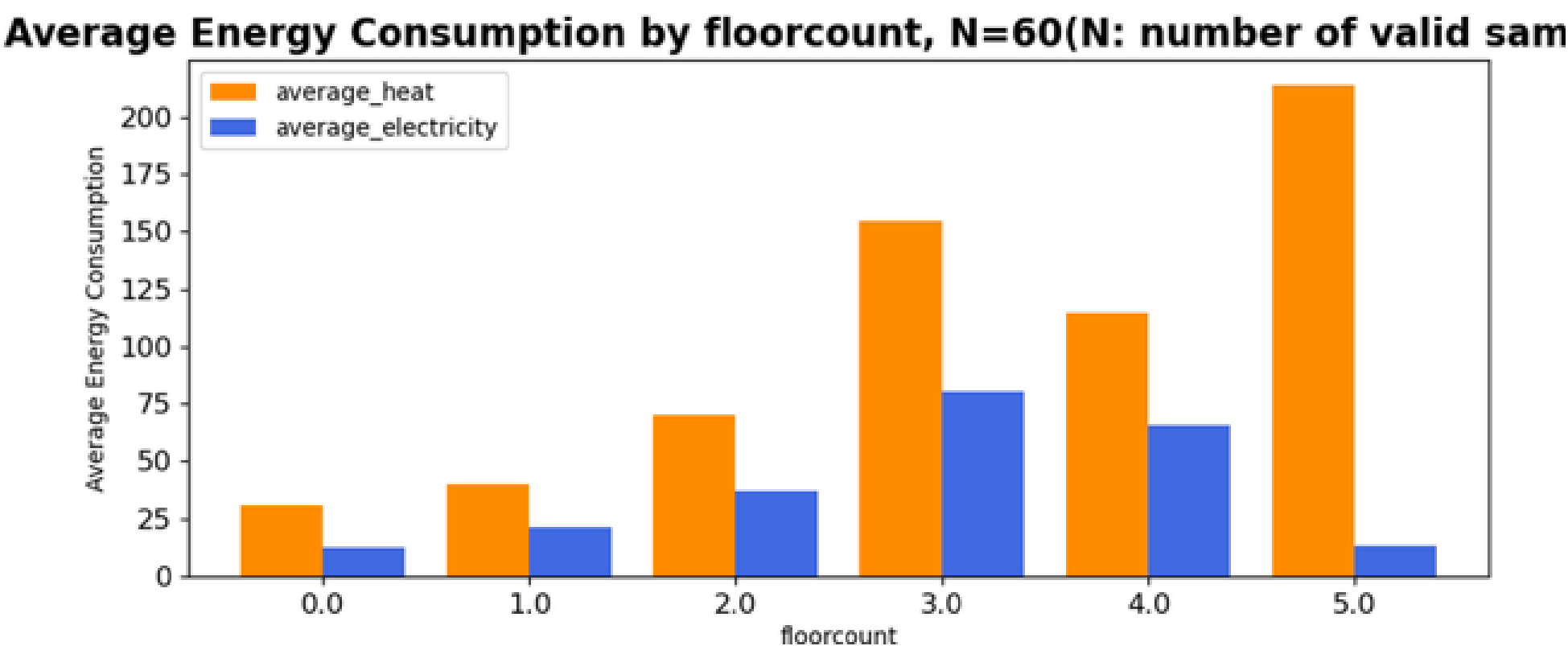
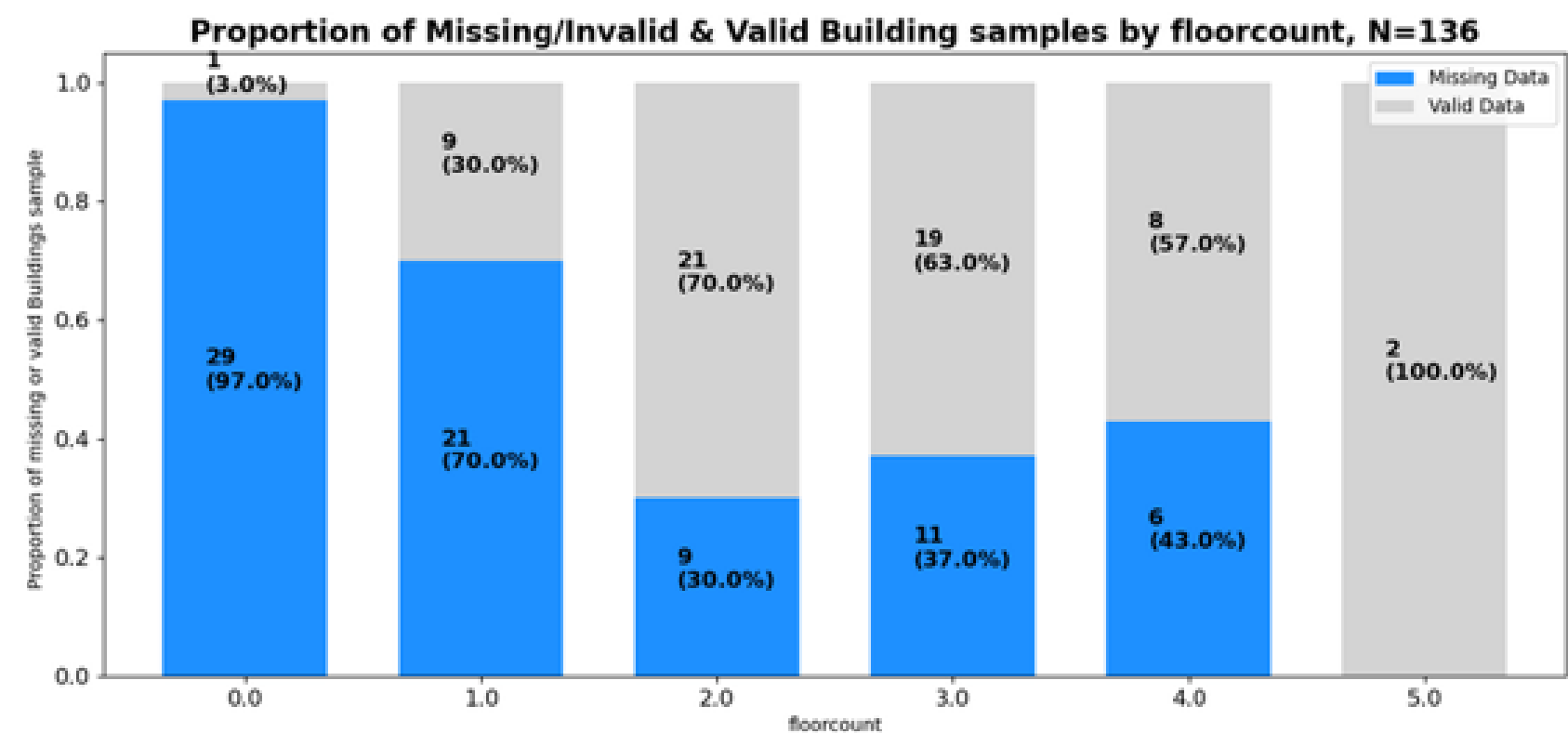
2	511 Educational building buildings	656301	NaN	26.44
3	511 Educational building buildings	677302	NaN	NaN
4	511 Educational building buildings	657302	NaN	NaN
5	231 Kindergartens	688202	NaN	NaN
6	231 Kindergartens	646101	32.77	13.63

- Average consumption group by category

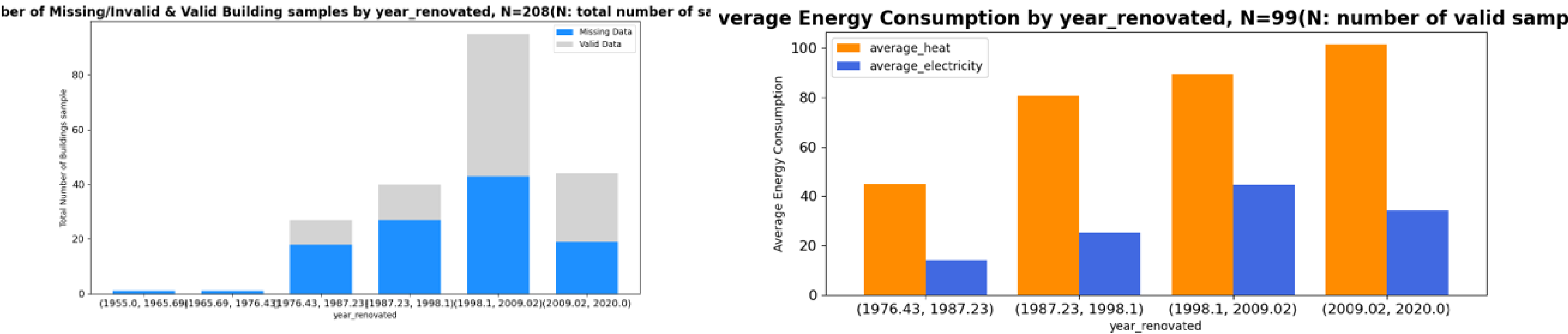
	intended_use	average_heat	average_electricity
0	231 Kindergartens	32.77	12.35
1	511 Educational building buildings	NaN	31.29
2	999 Buildings nec	30.52	12.41



Categorical Feature Graph



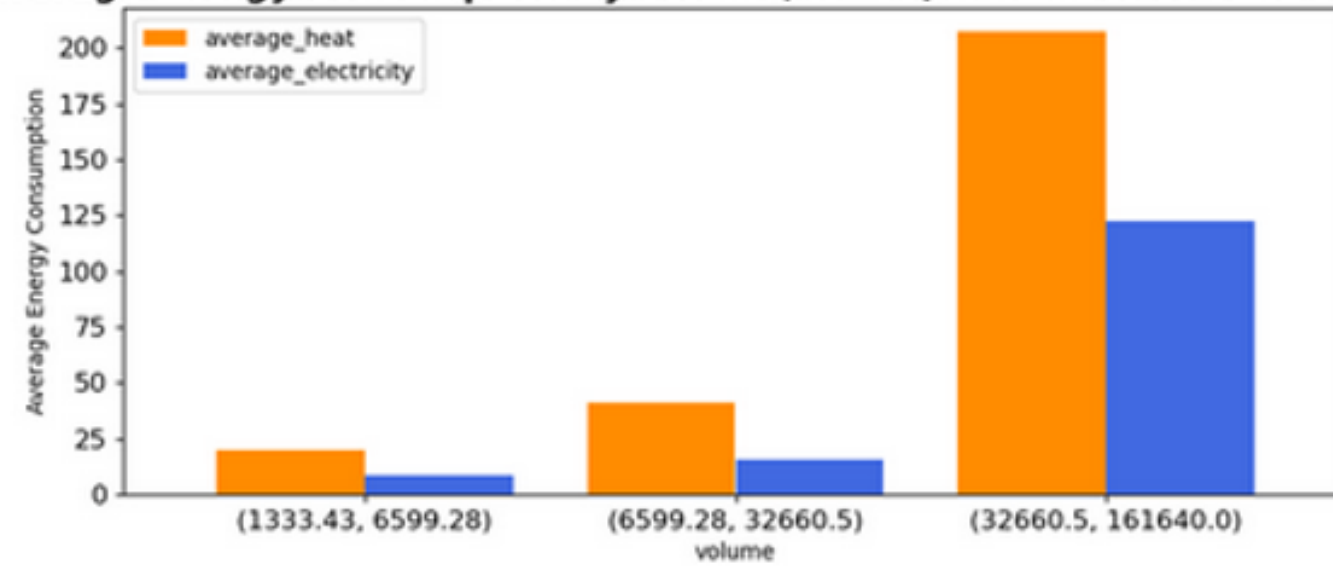
Continuous Feature Graph



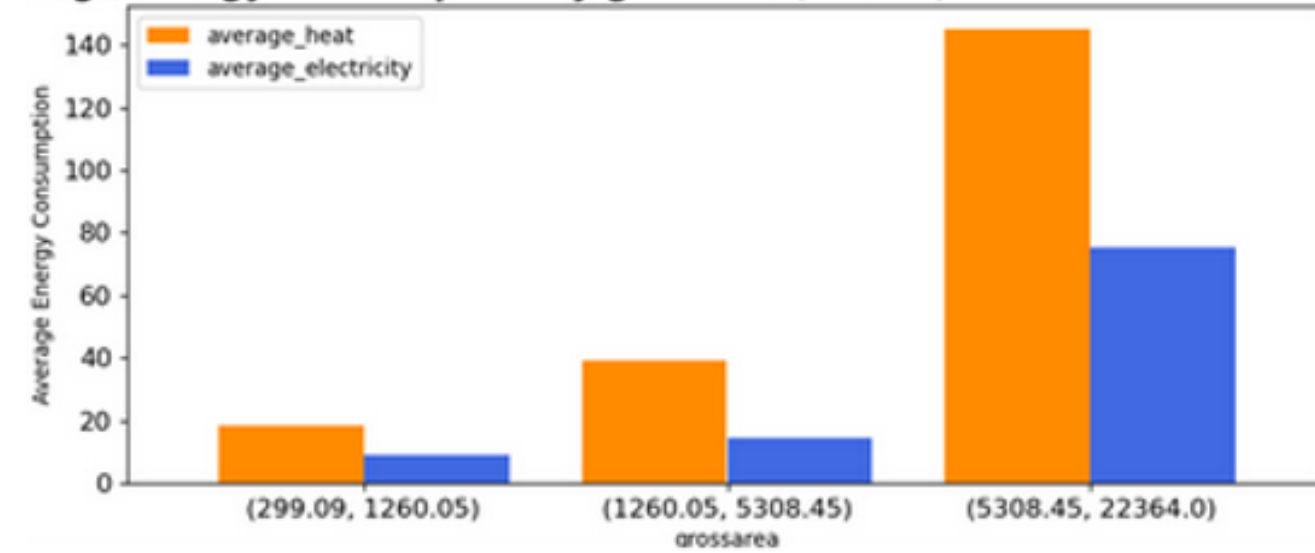
Some interesting graphs

Buildings' size

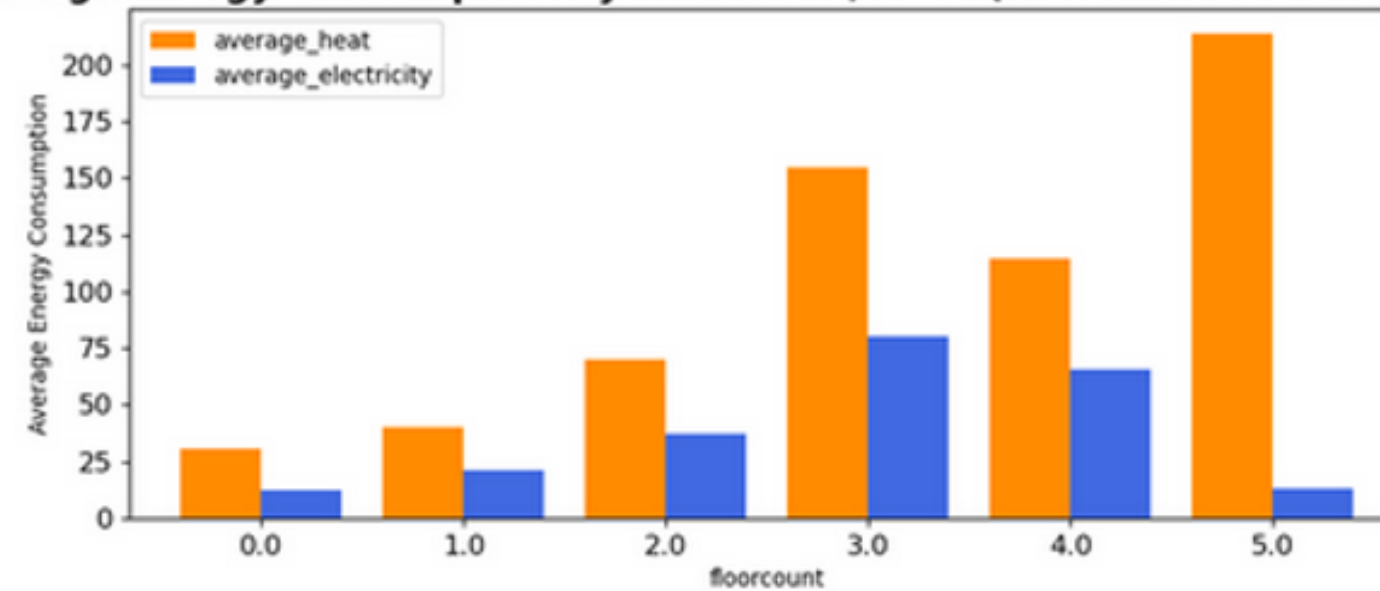
Average Energy Consumption by volume, N=44(N: number of valid samples)



Average Energy Consumption by grossarea, N=50(N: number of valid samples)



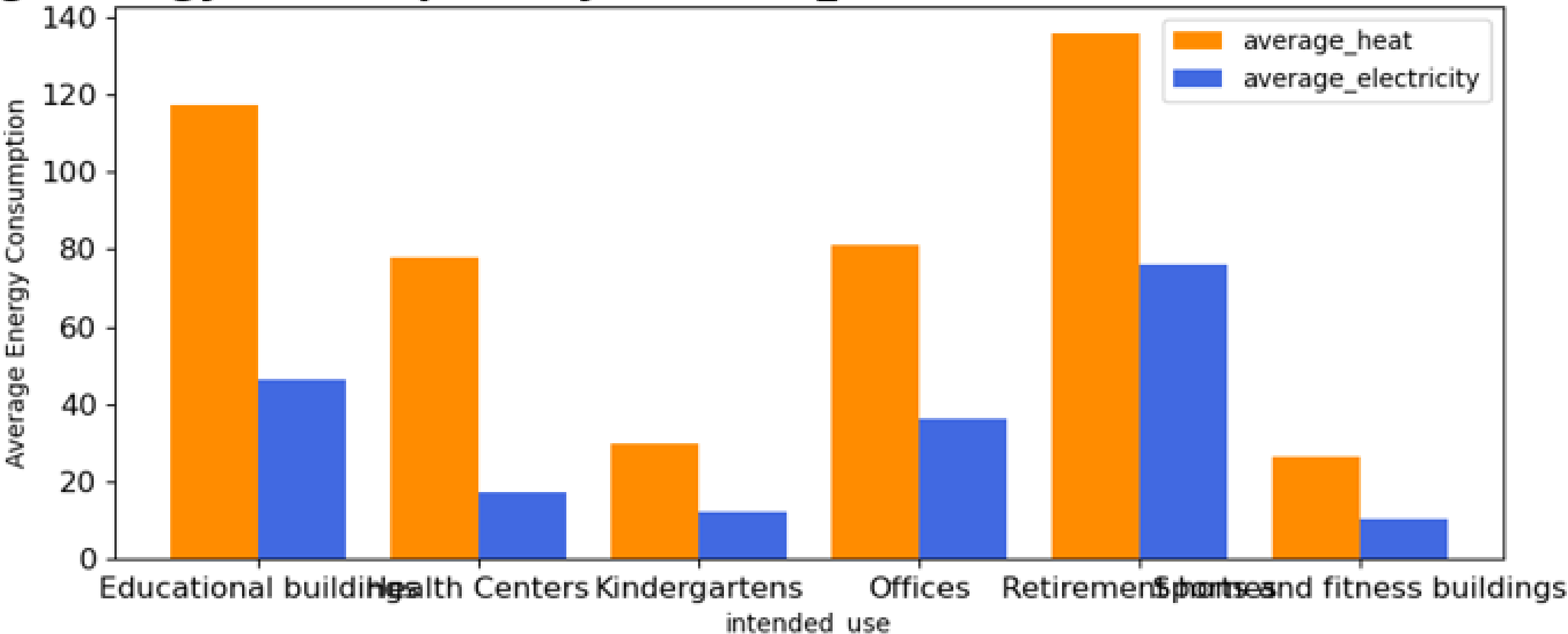
Average Energy Consumption by floorcount, N=60(N: number of valid samples)



Some interesting graphs

Buildings' intended use

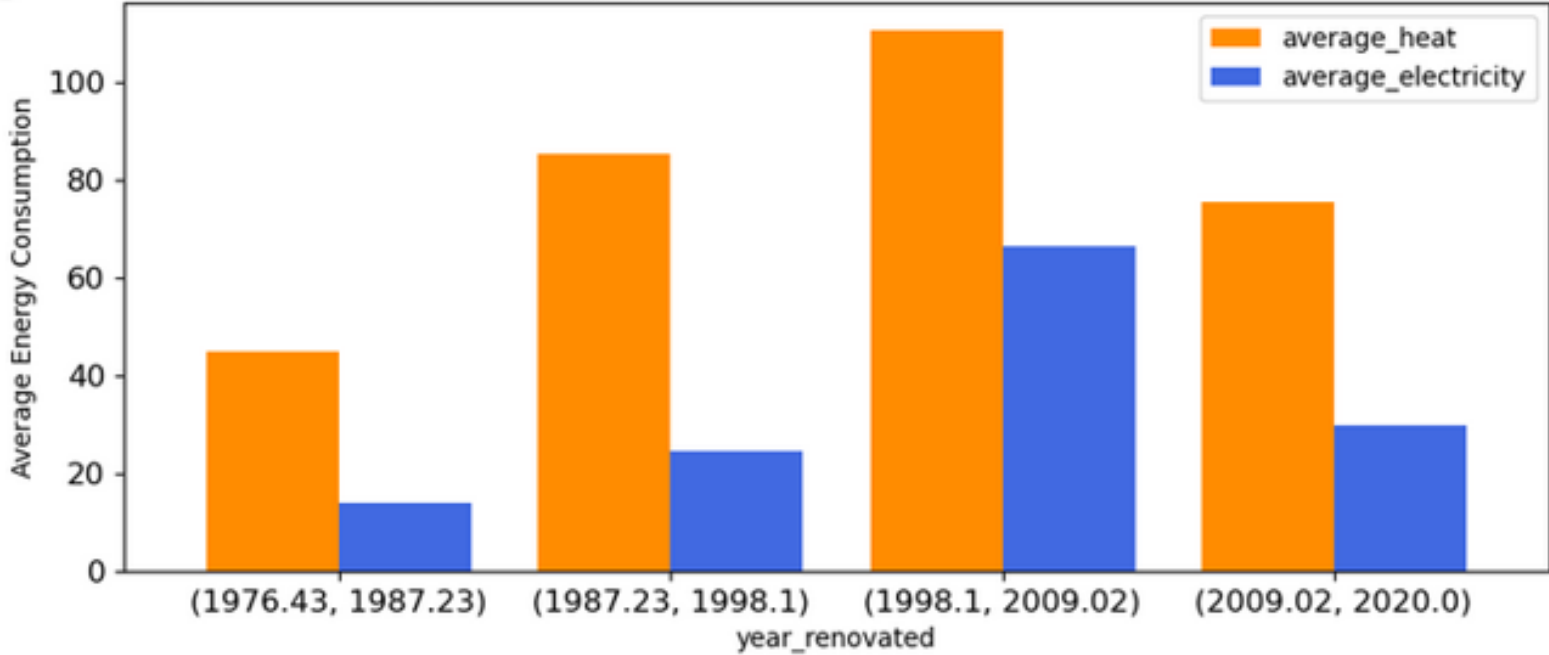
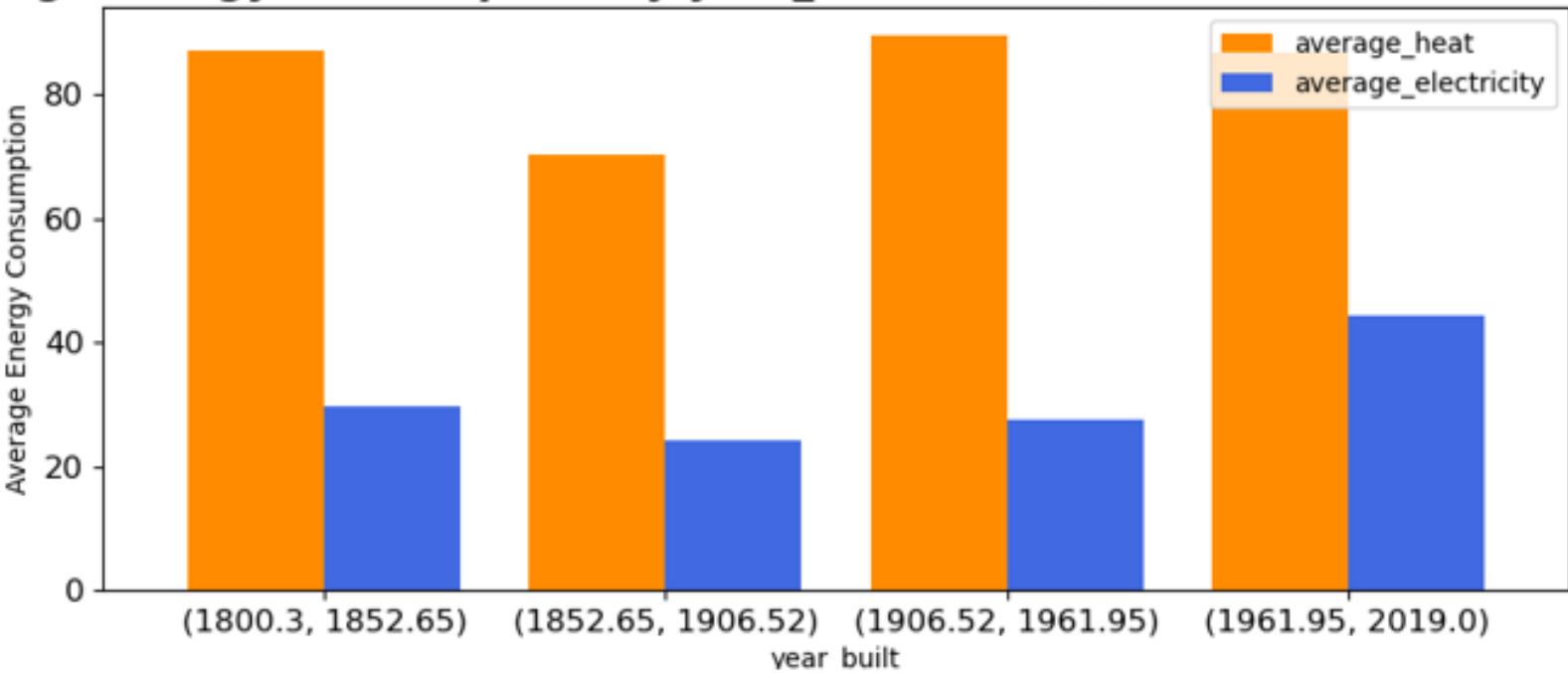
Average Energy Consumption by intended_use, N=131(N: number of valid sample)



Some interesting graphs

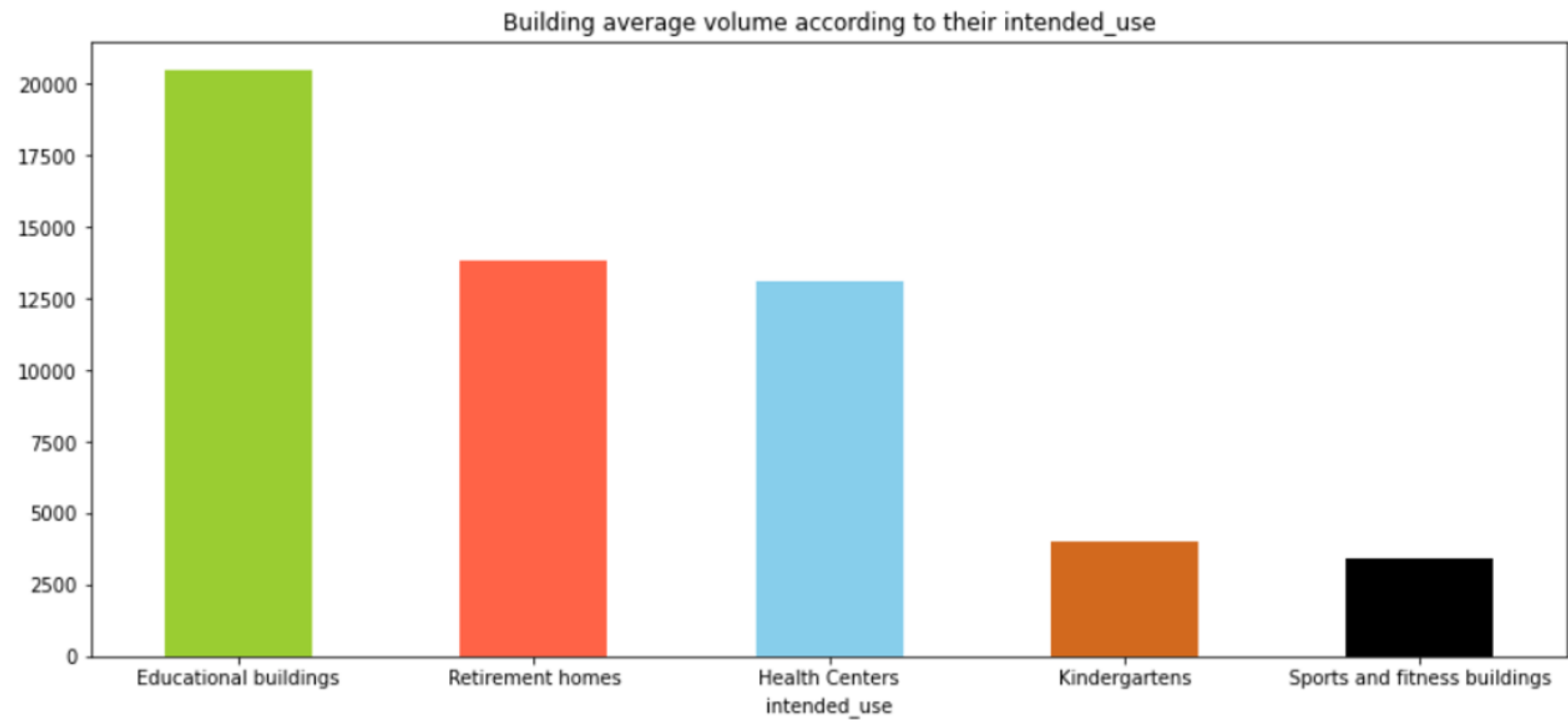
Buildings' renovation and construction date

Average Energy Consumption by year_built, N=80(N: number of valid samples) **Average Energy Consumption by year_renovated, N=56(N: number of valid samples)**



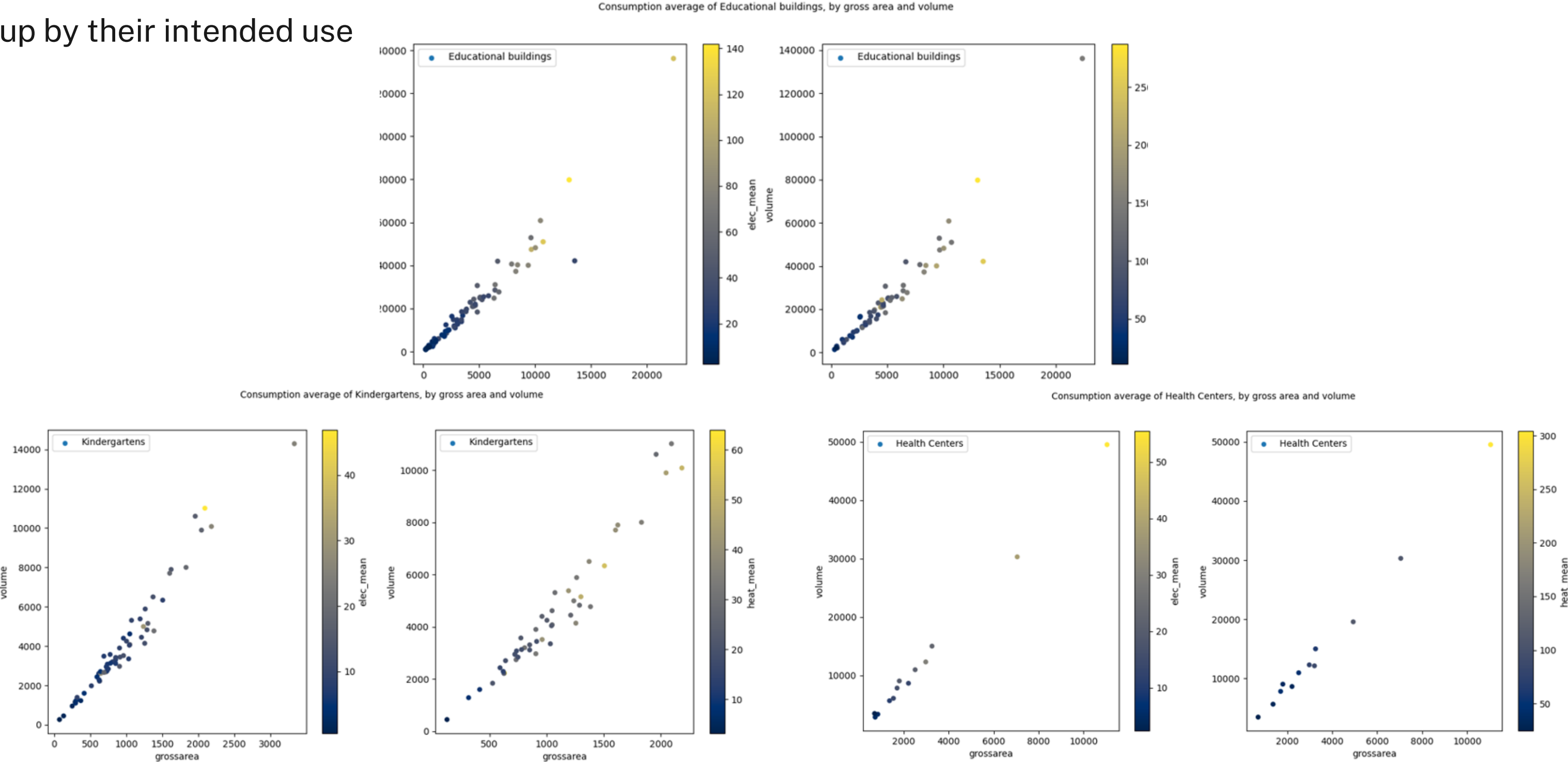
Average volume of most recorded buildings

Group by their intended use



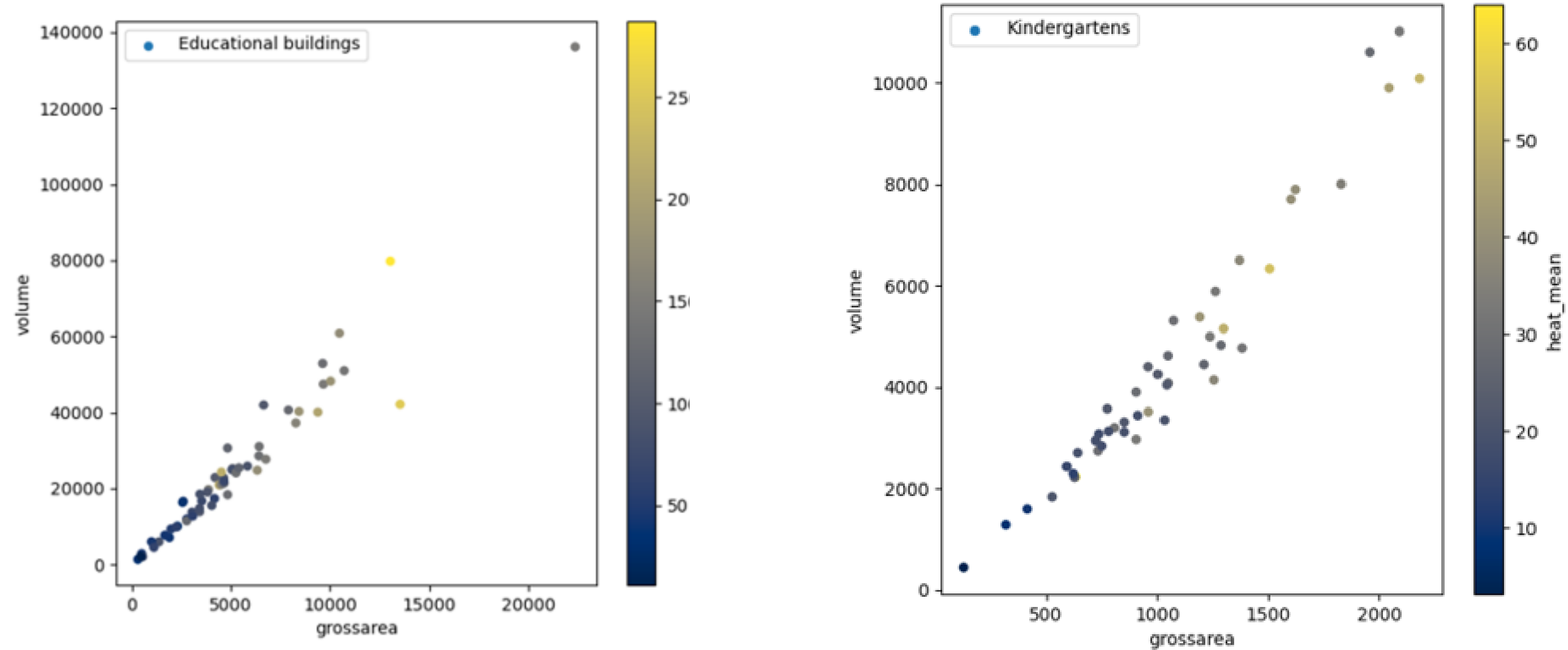
Energy consumption in function of the Volume/Gross Area ratio

Group by their intended use



Energy consumption in function of the Volume/Gross Area ratio

Group by their intended use



Energy consumption of the 3 most recorded type of buildings by their volume

