**Mikkeli's building stock**

According to Statistics Finland's statistics on buildings and summer cottages, at the end of 2019, Mikkeli had a total of 16,812 buildings with a total floor area of approximately 4.1 million square metres (4,904,919 m2). The majority (37% by floor area) of the buildings are detached subdivisions. The second largest number is made up of apartment buildings (20% by floor area). As a rule, this building stock does not include summer cottages and agricultural buildings, among others. However, there is a separate table on summer cottages, according to which there were 10 558 summer cottages in Mikkeli in 2019. However, the floor area of summer cottages is not included in the statistics.

The amount of material contained in the buildings was estimated on the basis of the floor area by using the demolition material quantities calculated in the demolition of the buildings. In the demolition waste report by Raimo Lilja and Juha Kärkkäinen (https://cityloops.metabolismofcities.org/library/989983/), specific waste quantities were calculated using waste quantities from four public buildings demolished in Mikkeli.

Waste quantities per material were calculated for as many of the materials included in the SCA study. However, the quantities are most reliable for concrete and wood. Other materials may also have been mixed with other waste fractions. For example, the amount of glass is zero based on the data, because glass waste is not sorted separately at the demolition sites. The amount of soil materials does not necessarily correspond to the amount of soil used for construction. Plastic waste, paper and cardboard waste, energy waste, other hazardous waste and unsorted construction waste were excluded. Therefore, the total amount of specific waste is not exactly the same as in the demolition waste survey. On average, discarded waste fractions account for 2% of the total waste.

The floor area of buildings (Buildings and summer cottages, Statistics Finland, statistics 2019) was converted into tonnes of material using the total floor area of all buildings in Mikkeli of 4 904 919 m2. For example, the amount of concrete may be overestimated, as the amount of concrete in detached houses may be significantly lower. In the demolition waste survey, only one single-family house with a wooden structure was found with a concrete waste of 0.156 t/m2 and one summer cottage with a wooden waste of 0.054 t/m2. An attempt was also made to search for the material quantities of single-family houses on the internet, but no information could be found.

Table 1. Specific waste quantities at four demolished sites in Mikkeli and the total amount of materials in the Mikkeli building stock calculated on this basis, when the total floor area of the building stock is 4 904 919 m2 (Buildings and summer cottages, Statistics Finland, statistics 2019).

|  |  |  |
| --- | --- | --- |
|  | waste amount  t/m2 | Total amount of materials  in building stock t |
| Aluminium (metal waste) | 0,038 | 184374 |
| Bitumen/ Asphalt | 0,005 | 22607 |
| Bricks |  |  |
| Concrete ( also bricks- ja mineral tile waste + slghtly spoiled concrete) | 1,649 | 8089908 |
| Glass | 0,000 | 0 |
| Gypsum | 0,000 | 1870 |
| Insulation | 0,006 | 29653 |
| Iron (Steel) |  |  |
| Sand&gravel |  |  |
| Soil | 0,010 | 49049 |
| Timber | 0,091 | 447830 |
| Waste |  |  |
| Total | 1,799 | 8825291 |