**Class mappings between OSM tags and Taxomony**

Other tables, except for the leisure key (see Table 2 for the leisure key), which include the ontology class mappings with the tag values obtained from OSM and the coverage rate in all data, are given below, with a total of 7 tables.

Table A.1 Class mapping table for the building key

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No** | **Key = building** | | |  |
| **OSM Value** | **Coverage**  **(%)** | **Taxomony Class** |  |
| 1 | yes\* >> building | 81,09 | GenericBuilding | \*changed to 'building' |
| 2 | house | 9,19 | House |  |
| 3 | residential | 2,79 | House |  |
| 4 | garage | 1,03 | Accessory\_Cantilever |  |
| 5 | apartments | 0,90 | House |  |
| 6 | detached | 0,83 | House |  |
| 7 | shed | 0,46 | Accessory\_Cantilever |  |
| 8 | hut | 0,43 | Accessory\_Cantilever |  |
| 9 | industrial | 0,39 | IndustrialBuilding |  |
| 10 | roof | 0,30 | Accessory\_Cantilever |  |
| 11 | farm\_auxiliary | 0,29 | Farm |  |
| 12 | terrace | 0,23 | Accessory\_Cantilever |  |
| 13 | commercial | 0,20 | Shop |  |
| 14 | school | 0,18 | School |  |
| 15 | garages | 0,15 | Accessory\_Cantilever |  |
| 16 | retail | 0,13 | Shop |  |
| 17 | construction | 0,13 | UnderConstructionBuilding |  |
| 18 | barn | 0,12 | Accessory\_Cantilever |  |
| 19 | semidetached\_house | 0,11 | House |  |
| 20 | greenhouse | 0,11 | Greenhouse |  |
| 21 | cabin | 0,09 | Accessory\_Cantilever |  |
| 22 | church | 0,07 | Church |  |
| 23 | static\_caravan | 0,06 | Accessory\_Cantilever |  |
| 24 | warehouse | 0,06 | Warehouse |  |
| 25 | service | 0,05 | ServiceBuilding |  |
| 26 | farm | 0,05 | Farm |  |
| 27 | bungalow | 0,04 | Accessory\_Cantilever |  |
| 28 | civic | 0,03 | GenericBuilding |  |
| 29 | office | 0,03 | Office |  |
| 30 | ruins | 0,03 | RuinedBuilding |  |
| 31 | public | 0,03 | OfficialBuilding |  |
| 32 | university | 0,03 | University |  |
| 33 | hospital | 0,02 | Hospital |  |
| 34 | manufacture | 0,02 | Factory |  |
| 35 | hotel | 0,02 | Hotel\_Accomodation |  |
| 36 | carport | 0,02 | Accessory\_Cantilever |  |
| 37 | collapsed | 0,02 | RuinedBuilding |  |
| 38 | chapel | 0,02 | Church |  |
| 39 | kindergarten | 0,01 | Kindergarten |  |
| 40 | hangar | 0,01 | Hangar |  |
| 41 | semi | 0,01 | House |  |
| 42 | ger | 0,01 | Accessory\_Cantilever |  |
| 43 | boathouse | 0,01 | Boathouse |  |
| 44 | storage\_tank | 0,01 | WaterTank |  |
| 45 | mosque | 0,01 | Mosque |  |
| 46 | dormitory | 0,01 | Dormitory |  |
| 47 | allotment\_house | 0,01 | House |  |
| 48 | train\_station | 0,01 | RailwayStation |  |
| 49 | college | 0,01 | HighSchool |  |
| 50 | stable | 0,01 | Stable |  |
|  | **Total Coverage =** | **%99,87** |  |  |

Table A.2 Class mapping table for the shop key

|  |  |  |  |
| --- | --- | --- | --- |
| **No** | **Key = shop** | | |
| **OSM Value** | **Coverage**  **(%)** | **Taxomony Class** |
| 1 | convenience | 12,46 | Shop |
| 2 | supermarket | 8,58 | SuperMarket |
| 3 | clothes | 6,37 | Clothes |
| 4 | hairdresser | 5,18 | Hairdresser |
| 5 | car\_repair | 4,13 | CarRepair\_Parts |
| 6 | bakery | 4,08 | Bakery |
| 7 | Shop | 3,64 | Shop |
| 8 | car | 2,56 | CarSell |
| 9 | beauty | 1,99 | Beauty |
| 10 | kiosk | 1,75 | Kiosk |
| 11 | butcher | 1,61 | Butcher |
| 12 | hardware | 1,60 | Telecommunication\_IT |
| 13 | furniture | 1,51 | Furniture |
| 14 | mobile\_phone | 1,46 | Telecommunication\_IT |
| 15 | electronics | 1,36 | Electronics |
| 16 | car\_parts | 1,35 | CarRepair\_Parts |
| 17 | florist | 1,35 | Florist |
| 18 | alcohol | 1,32 | Liquor |
| 19 | shoes | 1,29 | Shoes |
| 20 | mall | 1,26 | ShoppingCenter |
| 21 | doityourself | 1,15 | Shop |
| 22 | variety\_store | 1,12 | Shop |
| 23 | optician | 1,10 | Optician |
| 24 | jewelry | 1,08 | Jewelry |
| 25 | gift | 1,03 | Gift |
| 26 | greengrocer | 0,97 | Greengrocer |
| 27 | department\_store | 0,96 | Clothes |
| 28 | books | 0,96 | Books |
| 29 | bicycle | 0,94 | Bicycle |
| 30 | travel\_agency | 0,83 | Agency |
| 31 | chemist | 0,76 | Chemistry |
| 32 | sports | 0,74 | Sports |
| 33 | laundry | 0,73 | Cleaning |
| 34 | confectionery | 0,68 | Food |
| 35 | stationery | 0,67 | Shop |
| 36 | pet | 0,66 | Shop |
| 37 | computer | 0,61 | Electronics |
| 38 | vacant | 0,60 | Vacant |
| 39 | beverages | 0,55 | Liquor |
| 40 | tyres | 0,55 | CarRepair\_Parts |
| 41 | newsagent | 0,53 | Agency |
| 42 | dry\_cleaning | 0,52 | Cleaning |
| 43 | cosmetics | 0,49 | Cosmetics |
| 44 | motorcycle | 0,48 | Motorcycle |
| 45 | garden\_centre | 0,46 | Shop |
| 46 | funeral\_directors | 0,45 | Office |
| 47 | copyshop | 0,45 | Shop |
| 48 | tailor | 0,43 | Clothes |
| 49 | toys | 0,40 | Toys |
| 50 | tobacco | 0,40 | Shop |
| 51 | farm | 0,39 | Farm |
| 52 | deli | 0,36 | Food |
| 53 | interior\_decoration | 0,36 | Office |
| 54 | seafood | 0,35 | Food |
| 55 | ticket | 0,34 | Ticket |
| 56 | massage | 0,34 | HealthCenter |
| 57 | storage\_rental | 0,33 | StorageRental |
| 58 | trade | 0,32 | Shop |
| 59 | houseware | 0,31 | Shop |
| 60 | photo | 0,30 | Shop |
| 61 | pastry | 0,29 | Patisserie |
| 62 | wine | 0,28 | Liquor |
|  | **Total Coverage =** | **%90,12** |  |

Table A.3 Class mapping table for the amenity key

|  |  |  |  |
| --- | --- | --- | --- |
| **No** | **Key = amenity** | | |
| **OSM Value** | **Coverage**  **(%)** | **Taxomony Class** |
| 1 | parking | 20,80 | ParkingArea |
| 2 | bench | 8,15 | Park |
| 3 | place\_of\_worship | 6,70 | Religious |
| 4 | restaurant | 6,19 | Restaurant\_Diner |
| 5 | school | 5,99 | School |
| 6 | parking\_space | 3,90 | ParkingArea |
| 7 | waste\_basket | 2,55 | Waste\_Recycle |
| 8 | fuel | 2,48 | GasStation |
| 9 | cafe | 2,39 | Cafe\_Bar |
| 10 | fast\_food | 2,31 | Restaurant\_Diner |
| 11 | bicycle\_parking | 2,03 | ParkingArea |
| 12 | bank | 1,92 | Bank\_Finance |
| 13 | shelter | 1,88 | Accessory\_Cantilever |
| 14 | toilets | 1,76 | Toilets |
| 15 | pharmacy | 1,71 | Chemistry |
| 16 | post\_box | 1,70 | Logistics |
| 17 | recycling | 1,64 | Waste\_Recycle |
| 18 | kindergarten | 1,39 | Kindergarten |
| 19 | drinking\_water | 1,25 | Fountain |
| 20 | hospital | 1,03 | Hospital |
| 21 | bar | 1,03 | Cafe\_Bar |
| 22 | atm | 0,97 | Bank\_Finance |
| 23 | vending\_machine | 0,95 | Accessory\_Cantilever |
| 24 | post\_office | 0,95 | Logistics |
| 25 | grave\_yard | 0,93 | Cemetery |
| 26 | pub | 0,91 | Cafe\_Bar |
| 27 | hunting\_stand | 0,90 | TrainingFacility |
| 28 | clinic | 0,76 | HealthCenter |
| 29 | doctors | 0,72 | HealthCenter |
| 30 | fountain | 0,71 | Fountain |
| 31 | police | 0,71 | OfficialBuilding |
| 32 | townhall | 0,70 | OfficialBuilding |
| 33 | waste\_disposal | 0,69 | Waste\_Recycle |
| 34 | community\_centre | 0,69 | CulturalCenter |
| 35 | fire\_station | 0,63 | FireStation |
| 36 | social\_facility | 0,59 | CulturalCenter |
| 37 | library | 0,47 | Library |
| 38 | car\_wash | 0,45 | CarWash |
| 39 | marketplace | 0,36 | Marketplace\_Bazaar |
| 40 | public\_building | 0,29 | CulturalCenter |
| 41 | veterinary | 0,23 | HealthCenter |
| 42 | theatre | 0,21 | Theatre |
| 43 | ice\_cream | 0,18 | Restaurant\_Diner |
| 44 | courthouse | 0,13 | OfficialBuilding |
| 45 | nightclub | 0,11 | Cafe\_Bar |
| 46 | bureau\_de\_change | 0,07 | Bureau\_de\_change |
| 47 | internet\_cafe | 0,06 | Cafe\_Bar |
| 48 | events\_venue | 0,05 | EventsVenue |
| 49 | public\_bath | 0,05 | PublicBath |
| 50 | social\_centre | 0,03 | CulturalCenter |
| 51 | language\_school | 0,02 | LanguageSchool |
| 52 | money\_transfer | 0,02 | Bank\_Finance |
|  | **Total Coverage =** | **%93,34** |  |

Table A.4 Class mapping table for the historic key

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No** | **Key = historic** | | |  |
| **OSM Value** | **Coverage**  **(%)** | **Taxomony Class** |  |
| 1 | memorial\* | 19,76 | - | \*since it does not express structure not taken |
| 2 | archaeological\_site | 10,32 | Historical |  |
| 3 | wayside\_cross | 10,22 | Historical |  |
| 4 | ruins | 9,20 | RuinedBuilding |  |
| 5 | yes\* >> historic | 8,01 | Historical | \*changed to 'historic' |
| 6 | wayside\_shrine | 6,60 | Historical |  |
| 7 | monument | 5,04 | Monument |  |
| 8 | building\* >> historic\_building | 4,06 | Historical | \*changed to 'historic\_building' |
| 9 | boundary\_stone | 3,61 | Historical |  |
| 10 | castle | 3,50 | Historical |  |
| 11 | charcoal\_pile | 3,24 | Historical |  |
| 12 | tomb | 2,29 | Historical |  |
| 13 | citywalls | 1,11 | Historical |  |
| 14 | heritage | 0,88 | Historical |  |
| 15 | railway | 0,82 | Historical |  |
| 16 | mine\_shaft | 0,73 | Historical |  |
| 17 | city\_gate | 0,35 | Historical |  |
| 18 | aqueduct | 0,20 | Historical |  |
| 19 | cistern | 0,10 | Historical |  |
|  | **Total Coverage =** | **%90,04** |  |  |

Table A.5 Class mapping table for the tourism key

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No** | **Key = tourism** | | |  |
| **OSM Value** | **Coverage**  **(%)** | **Taxomony Class** |  |
| 1 | information | 30,78 | Office |  |
| 2 | hotel | 14,30 | Hotel\_Accomodation |  |
| 3 | attraction\* | 8,06 | - | \*since it does not express structure not taken |
| 4 | viewpoint\* | 7,24 | - | \*since it does not express structure not taken |
| 5 | artwork | 6,64 | Statue\_Artwork |  |
| 6 | guest\_house | 5,97 | Hotel\_Accomodation |  |
| 7 | picnic\_site | 5,43 | PicnicArea |  |
| 8 | camp\_site | 4,68 | CampingArea |  |
| 9 | museum | 3,47 | Museum |  |
| 10 | chalet | 2,30 | House |  |
| 11 | apartment | 2,28 | House |  |
| 12 | hostel | 2,03 | Hotel\_Accomodation |  |
| 13 | motel | 1,69 | Hotel\_Accomodation |  |
| 14 | caravan\_site | 1,15 | CampingArea |  |
|  | **Total Coverage =** | **%96,02** |  |  |

Table A.6 Class mapping table for the office key

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No** | **Key = office** | | |  |
| **OSM Value** | **Coverage**  **(%)** | **Taxomony Class** |  |
| 1 | government | 22,31 | OfficialBuilding |  |
| 2 | company | 22,19 | Company |  |
| 3 | yes\* >> office | 8,53 | Office | \*changed to 'office'. |
| 4 | estate\_agent | 6,92 | EstateAgent |  |
| 5 | insurance | 5,49 | Insurance |  |
| 6 | lawyer | 3,62 | Bureau |  |
| 7 | educational\_institution | 2,99 | School |  |
| 8 | telecommunication | 2,76 | Telecommunication\_IT |  |
| 9 | association | 2,24 | Bureau |  |
| 10 | ngo | 2,10 | Bureau |  |
| 11 | diplomatic | 1,58 | OfficialBuilding |  |
| 12 | it | 1,52 | Telecommunication\_IT |  |
| 13 | administrative | 1,22 | AdministrativeUnit |  |
| 14 | employment\_agency | 1,18 | OfficialBuilding |  |
| 15 | accountant | 1,17 | Office |  |
| 16 | research | 1,11 | Office |  |
| 17 | religion | 1,09 | Religious |  |
| 18 | architect | 0,92 | Office |  |
| 19 | financial | 0,84 | Bank\_Finance |  |
| 20 | tax\_advisor | 0,79 | Bank\_Finance |  |
| 21 | advertising\_agency | 0,61 | Agency |  |
| 22 | notary | 0,60 | OfficialBuilding |  |
| 23 | political\_party | 0,58 | Bureau |  |
| 24 | logistics | 0,48 | Logistics |  |
| 25 | travel\_agent | 0,47 | Agency |  |
| 26 | foundation | 0,31 | Foundation |  |
| 27 | chamber | 0,00 | Bureau |  |
|  | **Total Coverage =** | **%93,62** |  |  |

Table A.7 Class mapping table for the healthcare key

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No** | **Key = healthcare** | | |  |
| **OSM Value** | **Coverage**  **(%)** | **Taxomony Class** |  |
| 1 | pharmacy | 28,92 | Chemistry |  |
| 2 | hospital | 13,76 | Hospital |  |
| 3 | doctor | 13,57 | HealthCenter |  |
| 4 | clinic | 11,71 | HealthCenter |  |
| 5 | centre | 9,74 | HealthCenter |  |
| 6 | dentist | 9,56 | HealthCenter |  |
| 7 | physiotherapist | 2,30 | HealthCenter |  |
| 8 | yes\* >> healthcare | 2,00 | HealthCenter | \* changed to 'healthcare' |
| 9 | alternative | 1,76 | HealthCenter |  |
| 10 | laboratory | 1,69 | HealthCenter |  |
|  | **Total Coverage =** | **%95,01** |  |  |