

Model Danych i Podstawy edycji OpenStreetMap

Włodzimierz Bartczak

Organizatorzy:





W.Bartczak

.osm

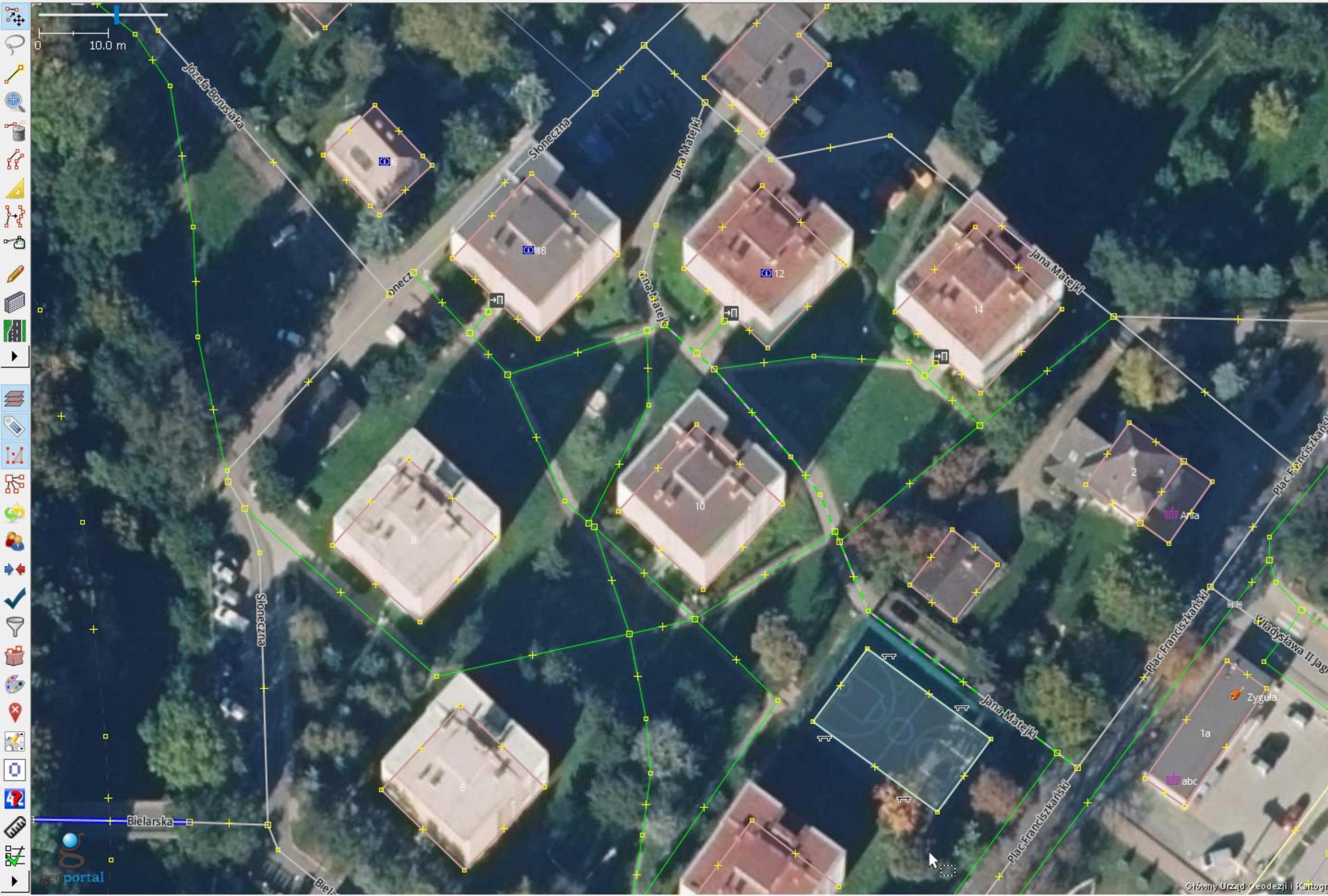
Podstawowy format danych OpenStreetMap, posiada strukturę XML.

.osm.pbf

"Protocolbuffer Binary Format" - Format danych XML w formie skompresowanej, zajmuje około 30% mniej pamięci niż XML

.bz2

Format plików skompresowanych wydajnym algorytmem stosowany najczęściej w systemach UNIX / Linux



Warstwy

- [2] Warstwa danych 1
- [1] Geoportal 2: Ortofotomapa (zdjęcia lotnicze) WMTS

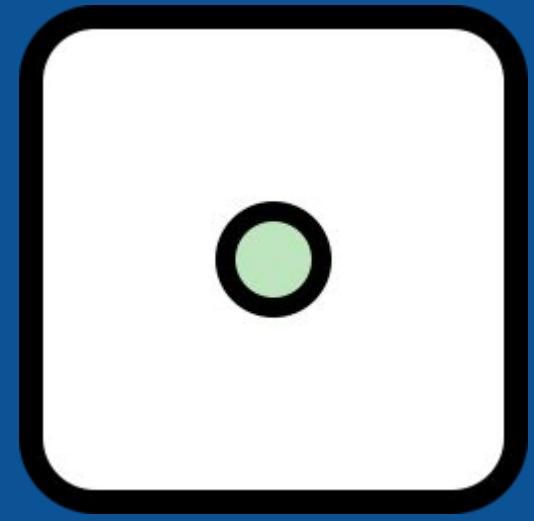
Znaczniki/członkowie

Proszę zaznaczyć obiekty, którym zmienić znaczniki

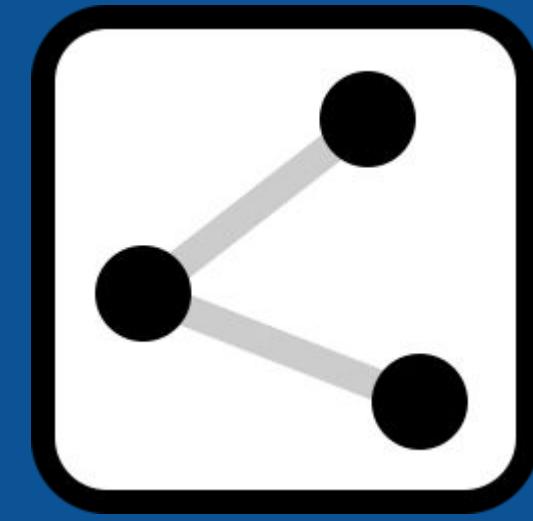
Zaznaczenie

Dodaj Edycja Usuń

Zaznaczanie Wyszukiwanie Historia



node



way



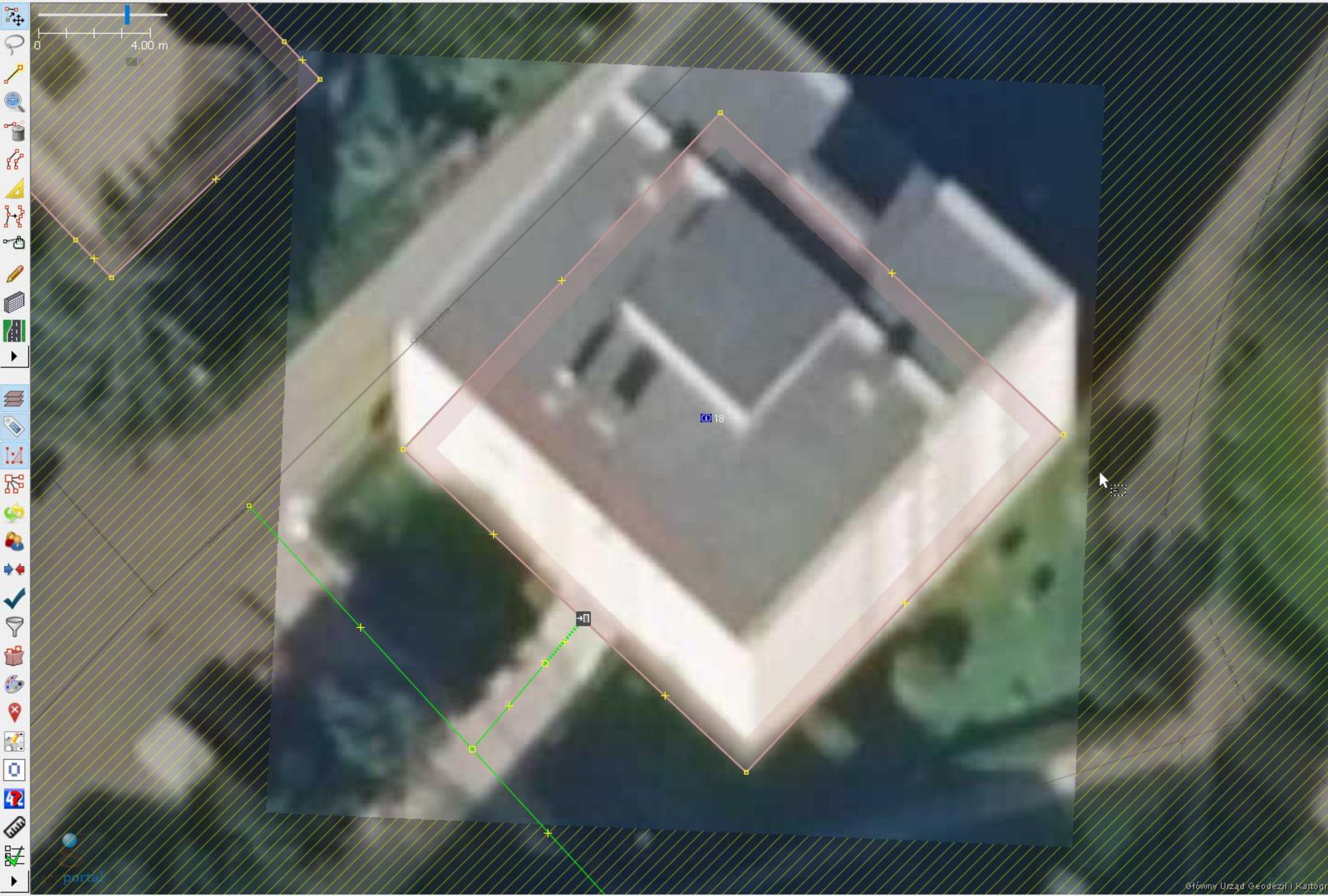
area



relation



tag



Warstwy

- [3] **budynek.osm** (Zaznaczone)
- [2] Warstwa danych 1
- [1] Geoportal 2: Ortofotomapa (zdjęcia lotnicze) WMTS

Znaczniki/członkowie

Proszę zaznaczyć obiekty, którym zmienić znaczniki

Zaznaczanie

Edycja

Usuń

Zaznaczenie

Wyszukiwanie

Historia

Edytor OpenStreetMap w Javie (@Cristoffs) - Główny Urząd Geodezji i Kartografii

50.7949251 15.8303117 42,47 ° (brak obiektu)

ty przeciągając je; Shift, aby dodać do zaznaczenia (Ctrl, aby przełączać); Shift-Ctrl aby odwracać zaznaczenie; Alt-Ctrl aby skalować zaznaczenie



budynek.osm X

C: > Users > wzbar > Desktop > josm_screens > budynek.osm

```
1  <?xml version='1.0' encoding='UTF-8'?>
2  <osm version='0.6' generator='JOSM'>
3    <bounds minlat='50.7948039' minlon='15.829896' maxlat='50.7950497' maxlon='15.8303064' origin='CGImap 0.8.6 (558585 spike-06.openstreetmap.org)' />
4    <node id='3690562331' timestamp='2021-07-30T13:12:11Z' uid='6765127' user='Cristoffss' visible='true' version='2' changeset='108893298' lat='50.7949373' lon='15.
830111'>
5      <tag k='addr:city' v='Kowary' />
6      <tag k='addr:city:simc' v='0936078' />
7      <tag k='addr:housenumber' v='18' />
8      <tag k='addr:postcode' v='58-530' />
9      <tag k='addr:street' v='Jana Matejki' />
10     <tag k='addr:street:sym_ul' v='12489' />
11     <tag k='source:addr' v='mkowary.e-mapa.net' />
12   </node>
13   <node id='4007676725' timestamp='2021-07-30T13:12:11Z' uid='6765127' user='Cristoffss' visible='true' version='2' changeset='108893298' lat='50.7948236' lon='15.
830139' />
14   <node id='4007676743' timestamp='2021-07-30T13:12:11Z' uid='6765127' user='Cristoffss' visible='true' version='2' changeset='108893298' lat='50.7949227' lon='15.
8299577' />
15   <node id='4007676748' timestamp='2021-07-30T13:12:11Z' uid='6765127' user='Cristoffss' visible='true' version='2' changeset='108893298' lat='50.7949366' lon='15.
8302927' />
16   <node id='4007676764' timestamp='2021-07-30T13:12:11Z' uid='6765127' user='Cristoffss' visible='true' version='2' changeset='108893298' lat='50.7950357' lon='15.
8301114' />
17   <node id='4007676767' timestamp='2021-07-30T13:12:11Z' uid='6765127' user='Cristoffss' visible='true' version='2' changeset='108893298' lat='50.7950525' lon='15.
8298882' />
18   <node id='4007676768' timestamp='2021-07-30T13:12:11Z' uid='6765127' user='Cristoffss' visible='true' version='2' changeset='108893298' lat='50.7950481' lon='15.
8296851' />
19   <node id='4007676775' timestamp='2021-07-30T13:12:11Z' uid='6765127' user='Cristoffss' visible='true' version='2' changeset='108893298' lat='50.795115' lon='15.
8297864' />
20   <node id='7101682730' timestamp='2021-07-30T13:12:11Z' uid='6765127' user='Cristoffss' visible='true' version='2' changeset='108893298' lat='50.7947755' lon='15.
8300801' />
21   <node id='8963242326' timestamp='2021-07-30T13:12:11Z' uid='6765127' user='Cristoffss' visible='true' version='1' changeset='108893298' lat='50.7950407' lon='15.
8299075' />
22   <node id='8963242327' timestamp='2021-07-30T13:12:11Z' uid='6765127' user='Cristoffss' visible='true' version='1' changeset='108893298' lat='50.794974' lon='15.
8298058' />
23   <node id='8963242328' timestamp='2021-07-30T13:12:11Z' uid='6765127' user='Cristoffss' visible='true' version='1' changeset='108893298' lat='50.7949858' lon='15.
8297865' />
24   <node id='8963242353' timestamp='2021-07-30T13:12:11Z' uid='6765127' user='Cristoffss' visible='true' version='1' changeset='108893298' lat='50.7949025' lon='15.
8298806' />
25   <node id='9791216909' timestamp='2022-06-02T20:31:22Z' uid='6765127' user='Cristoffss' visible='true' version='1' changeset='121867695' lat='50.7948559' lon='15.
8300346' />
26   <node id='9791230605' timestamp='2022-06-02T20:29:15Z' uid='6765127' user='Cristoffss' visible='true' version='1' changeset='121867635' lat='50.7948707' lon='15.
```



node

```
<node id='3690562331' timestamp='2021-07-30T13:12:11Z'  
uid='6765127' user='Cristoffs' visible='true' version='2'  
changeset='108893298' lat='50.7949373' lon='15.830111'>  
  <tag k='addr:city' v='Kowary' />  
  <tag k='addr:city:simc' v='0936078' />  
  <tag k='addr:housenumber' v='18' />  
  <tag k='addr:postcode' v='58-530' />  
  <tag k='addr:street' v='Jana Matejki' />  
  <tag k='addr:street:sym_ul' v='12489' />  
  <tag k='source:addr' v='mkowary.e-mapa.net' />  
</node>
```



Numer domu 18 przy Jana Matejki [id: 3 690 562 331, v2]

Warstwy

- [3] **budynek.osm**
- [2] Warstwa danych 1
- [1] Geoportal 2: Ortofotomapa (zdjęcia lotnicze) WMTS

Znaczniki: 7 / Członkowie: 0

Adnotacja/Adres ...

Klucz	Wartość
addr:city	Kowary
addr:city:simc	0936078
addr:housenumber	18
addr:postcode	58-530
addr:street	Jana Matejki
addr:street:sym_ul	12489
source:addr	mkowary.e-mapa.net

Dodaj **Edycja** **Usuń**

Zaznaczenie: Relacje:0 / Linie:0 / Węzły:1

Numer domu 18 przy Jana Matejki [id: 3 690 562 331, v2]



way



area

```
<way id='397993413' timestamp='2022-06-02T20:29:15Z'  
uid='6765127' user='Cristoffs' visible='true' version='2'  
changeset='121867635'>  
  <nd ref='4007676743' />  
  <nd ref='9791230605' />  
  <nd ref='4007676725' />  
  <nd ref='4007676748' />  
  <nd ref='4007676764' />  
  <nd ref='4007676743' />  
  <tag k='building' v='yes' />  
  <tag k='source:geometry' v='geoportal.gov.pl, GPS' />  
</way>
```



A screenshot of the Jave OSM Editor interface. The main area shows a satellite view of a building with a red outline and yellow corner points. A green line extends from the bottom left towards the building. The status bar at the bottom displays coordinates (50.7948085, 15.8302905), a bearing (42,47 °), distance (66,91 m), and a message '(brak obiektu)'.

budynek (5 węzłów) [id: 397 993 413, v2]

Warstwy

- [3] budynek.osm
- [2] Warstwa danych 1
- [1] Geoportal 2: Ortofotomapa (zdjęcia lotnicze) WMTS

Znaczniki: 2 / Członkowie: 0

- Obiekty sztuczne/Obiekty sztuczne/Budynek ...
- Obiekty sztuczne/Obiekty sztuczne/Budynek mieszkalny ...

Klucz	Wartość
building	yes
source:geometry	geoportal.gov.pl, GPS

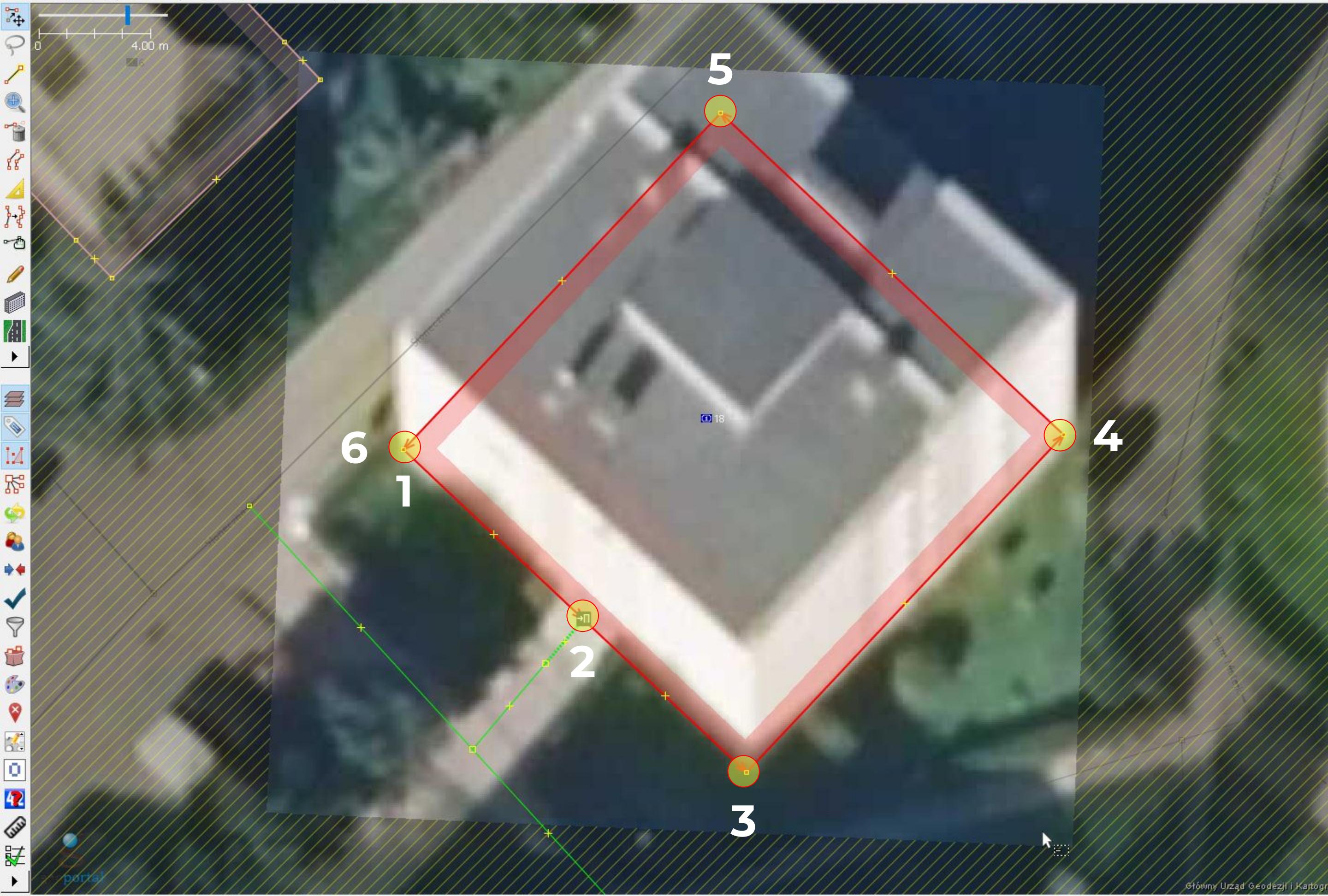
Dodaj **Edycja** **Usuń**

Zaznaczenie: Relacje:0 / Linie:1 / Węzły:0

budynek (5 węzłów) [id: 397 993 413, v2]

Zaznaczanie **Wyszukiwanie** **Historia**





Warstwy

- [3] budynek.osm
- [2] Warstwa danych 1
- [1] Geoportal 2: Ortofotomapa (zdjęcia lotnicze) WMTS

Znaczniki: 2 / Członkowie: 0

- Obiekty sztuczne/Obiekty sztuczne/Budynek ...
- Obiekty sztuczne/Obiekty sztuczne/Budynek mieszkalny ...

Klucz	Wartość
building	yes
source:geometry	geoportal.gov.pl, GPS

Dodaj **Edycja** **Usuń**

Zaznaczenie: Relacje:0 / Linie:1 / Węzły:0

budynek (5 węzłów) [id: 397 993 413, v2]

Zaznaczanie **Wyszukiwanie** **Historia**



budynek.osm X

```
C: > Users > wzbar > Desktop > josm_screens > budynek.osm
 7   <tag k='addr:housenumber' v='18' />
 8   <tag k='addr:postcode' v='58-530' />
 9   <tag k='addr:street' v='Jana Matejki' />
10   <tag k='addr:street:sym_ul' v='12489' />
11   <tag k='source:addr' v='mkowary.e-mapa.net' />
12 </node>
13 <node id='4007676725' timestamp='2021-07-30T13:12:11Z' uid='6765127' user='Cristoffs' visible='true' version='2' changeset='108893298' lat='50.7948236' lon='15.
830139' />
14 <node id='4007676743' timestamp='2021-07-30T13:12:11Z' uid='6765127' user='Cristoffs' visible='true' version='2' changeset='108893298' lat='50.7949227' lon='15.
8299577' />
15 <node id='4007676748' timestamp='2021-07-30T13:12:11Z' uid='6765127' user='Cristoffs' visible='true' version='2' changeset='108893298' lat='50.7949366' lon='15.
8302927' />
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8301114' />
17 <node id='4007676767' timestamp='2021-07-30T13:12:11Z' uid='6765127' user='Cristoffs' visible='true' version='2' changeset='108893298' lat='50.7950525' lon='15.
8298882' />
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8296851' />
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8297864' />
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8300801' />
21 <node id='8963242326' timestamp='2021-07-30T13:12:11Z' uid='6765127' user='Cristoffs' visible='true' version='1' changeset='108893298' lat='50.7950407' lon='15.
8299075' />
22 <node id='8963242327' timestamp='2021-07-30T13:12:11Z' uid='6765127' user='Cristoffs' visible='true' version='1' changeset='108893298' lat='50.794974' lon='15.
8298058' />
23 <node id='8963242328' timestamp='2021-07-30T13:12:11Z' uid='6765127' user='Cristoffs' visible='true' version='1' changeset='108893298' lat='50.7949858' lon='15.
8297865' />
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8298806' />
25 <node id='9791216909' timestamp='2022-06-02T20:31:22Z' uid='6765127' user='Cristoffs' visible='true' version='1' changeset='121867695' lat='50.7948559' lon='15.
8300346' />
26 <node id='9791230605' timestamp='2022-06-02T20:29:15Z' uid='6765127' user='Cristoffs' visible='true' version='1' changeset='121867635' lat='50.7948707' lon='15.
8300528' >
  |   <tag k='entrance' v='yes' />
27 </node>
28 <node id='9791230606' timestamp='2022-06-02T20:29:15Z' uid='6765127' user='Cristoffs' visible='true' version='1' changeset='121867635' lat='50.7948271' lon='15.
8299991' />
29 <way id='397993413' timestamp='2022-06-02T20:29:15Z' uid='6765127' user='Cristoffs' visible='true' version='2' changeset='121867635' >
```



relation

```
<relation id='6685710' timestamp='2022-03-31T18:15:10Z' uid='4325924' user='englur' visible='true' version='22' changeset='119172640'>
  <member type='way' ref='138400265' role="" />
  <member type='way' ref='450729177' role="" />
  <member type='way' ref='138400268' role="" />
  ...
  <member type='way' ref='760619515' role="" />
  <member type='way' ref='450729180' role="" />
  <member type='way' ref='138324103' role="" />
  <tag k='colour' v='blue' />
  <tag k='name' v='Karpniki - Jarkowice' />
  <tag k='network' v='rwn' />
  <tag k='operator' v='PTTK' />
  <tag k='osmc:symbol' v='blue:white:blue_bar' />
  <tag k='route' v='hiking' />
  <tag k='type' v='route' />
</relation>
```

budynek.osm • 1

```
C: > Users > wzbar > Desktop > josm_screens > budynek.osm
```

117 <member type='way' ref='606477323' role=''/>
118 <member type='way' ref='427218054' role=''/>
119 <member type='way' ref='187707649' role=''/>
120 <member type='way' ref='263148053' role=''/>
121 <member type='way' ref='263148054' role=''/>
122 <member type='way' ref='187706758' role=''/>
123 <member type='way' ref='291393342' role=''/>
124 <member type='way' ref='291393347' role=''/>
125 <member type='way' ref='760204882' role=''/>
126 <member type='way' ref='151634826' role=''/>
127 <member type='way' ref='760204886' role=''/>
128 <member type='way' ref='943888906' role=''/>
129 <member type='way' ref='120199624' role=''/>
130 <member type='way' ref='943888905' role=''/>
131 <member type='way' ref='930058029' role=''/>
132 <member type='way' ref='151636373' role=''/>
133 <member type='way' ref='151634816' role=''/>
134 <member type='way' ref='524637057' role=''/>
135 <member type='way' ref='183637874' role=''/>
136 <member type='way' ref='151636375' role=''/>
137 <member type='way' ref='260433300' role=''/>
138 <member type='way' ref='893037002' role=''/>
139 <member type='way' ref='524649516' role=''/>
140 <member type='way' ref='123031368' role=''/>
141 <member type='way' ref='760204891' role=''/>
142 <member type='way' ref='163380910' role=''/>
143 <member type='way' ref='154546270' role=''/>
144 <member type='way' ref='498660116' role=''/>
145 <member type='way' ref='410361107' role=''/>
146 <member type='way' ref='498660119' role=''/>
147 <member type='way' ref='203275044' role=''/>
148 <member type='way' ref='203275051' role=''/>
149 <member type='way' ref='1046921296' role=''/>
150 <member type='way' ref='382536828' role=''/>
151 <member type='way' ref='382536827' role=''/>
152 <member type='way' ref='761267808' role=''/>
153 <member type='way' ref='761266151' role=''/>
154 <member type='way' ref='510129704' role=''/>
155 <member type='way' ref='761266150' role=''/>
156 <member type='way' ref='761266148' role=''/>



Warstwy

- [3] budynek.osm
- [2] Warstwa danych 1
- [1] Geoportal 2: Ortofotomapa (zdjęcia lotnicze) WMTS

Znaczniki: 7 / Członkowie: 0

Relacje/Szlaki/Szlak pieszy ...

Klucz	Wartość
colour	blue
name	Karpniki - Jarkowice
network	rwn
operator	PTTK
osmc:symbol	blue:white:blue_bar
route	hiking
type	route

Dodaj **Edycja** **Usuń**

Zaznaczenie: Relacje:1 / Linie:0 / Węzły:0

trasa ("Karpniki - Jarkowice", 97 elementów) [id: 6 685 710, v22]

Zaznaczanie **Wyszukiwanie** **Historia**

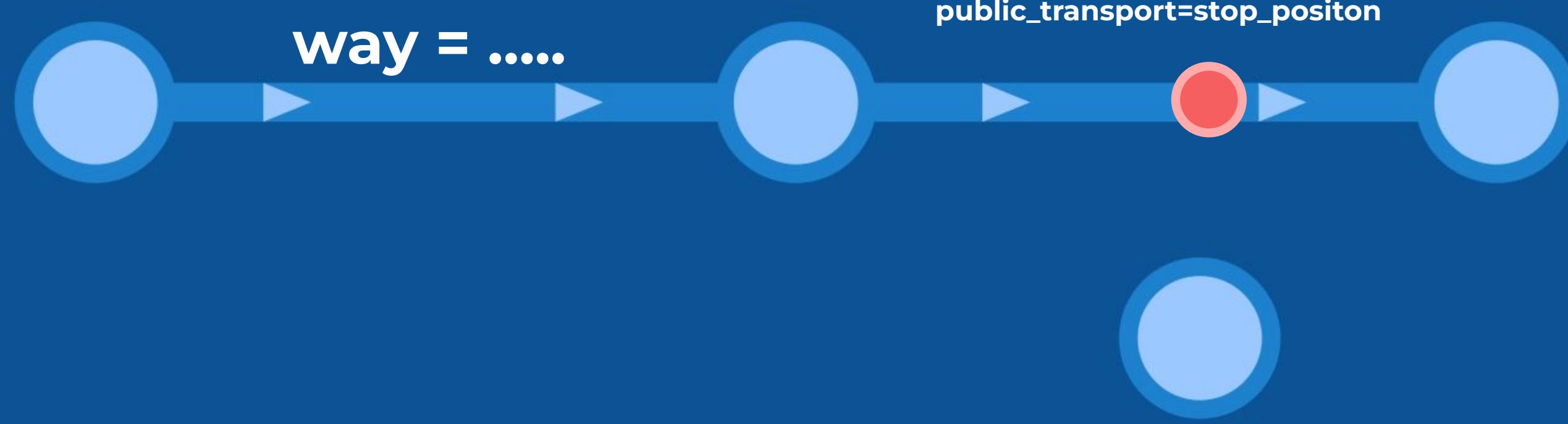


relation

“type” - typy relacji

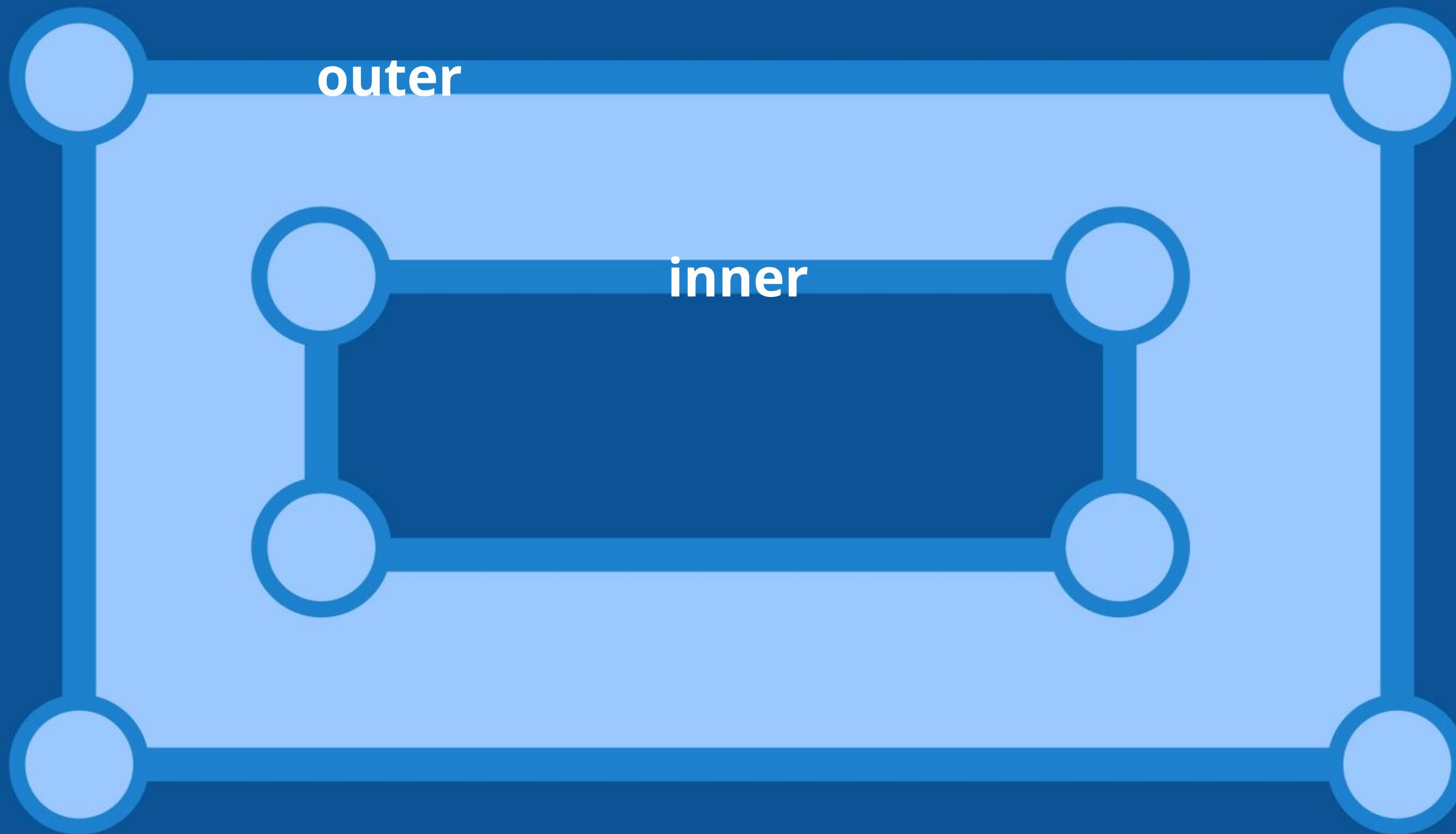
- **multipolygon**
- **route**
- **route_master**
- **restrictio**
- **boundary**
- **public_transport**
- **waterway**
- **enforcement**

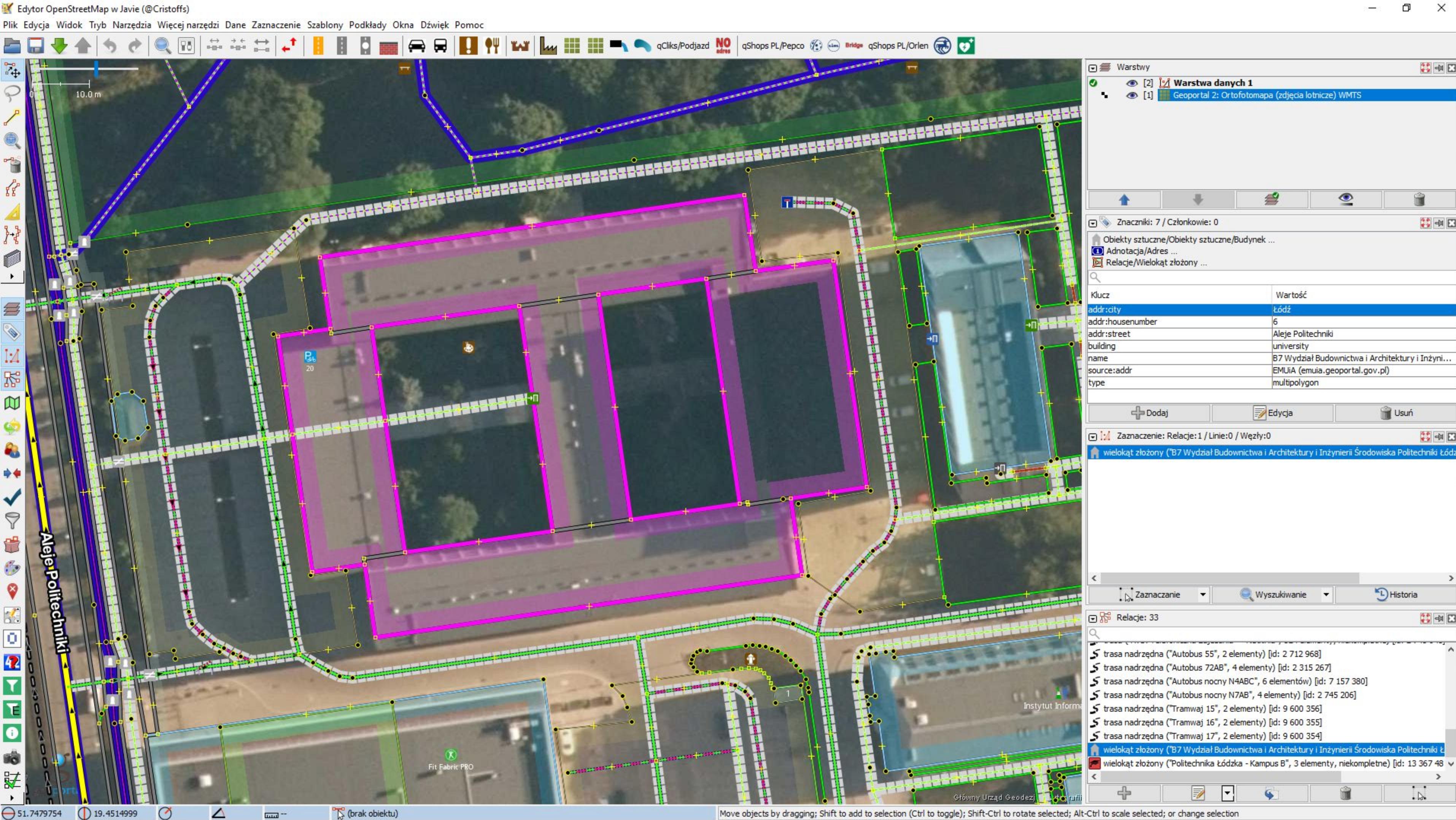
type = public_transport



public_transport=platform

type = multipolygon





Edytor OpenStreetMap w Javie (@Cristoffs)

Plik Edycja Widok Tryb Narzędzia Więcej narzędzi Dane Zaznaczenie Szablony Podkłady Okna Dźwięk Pomoc

qClicks/Podjazd NO adres qShops PL/Pepco Bridge qShops PL/Orlen

Warstwy [1] Warstwa danych 1

Znaczniki i członkowie Relacje nadzędne Relacje podzędne

Znaczniki

- Obiekty sztuczne/Obiekty sztuczne/Budynek ...
- Adnotacja/Adres ...
- Relacje/Wielokąt złożony ...

Klucz

addr:city	Wartość
addr:housenumber	Łódź
addr:street	6
building	Aleje Politechniki
name	university
	B7 Wydział Budownictwa i Architektury i Inżynierii Środowiska Politechniki Łódzkiej

Członkowie

Rola	Odniesienie
outer	370966210 (13 węzłów) [id: 370 966 210]
inner	370966214 (4 węzły) [id: 370 966 214]
inner	370966217 (6 węzłów) [id: 370 966 217]

Zaznaczenie

Zaznaczenie wielokąt złożony ("B7 Wydział Budownictwa i Architektury i Inżynierii Środowiska Politechniki Łódzkiej")

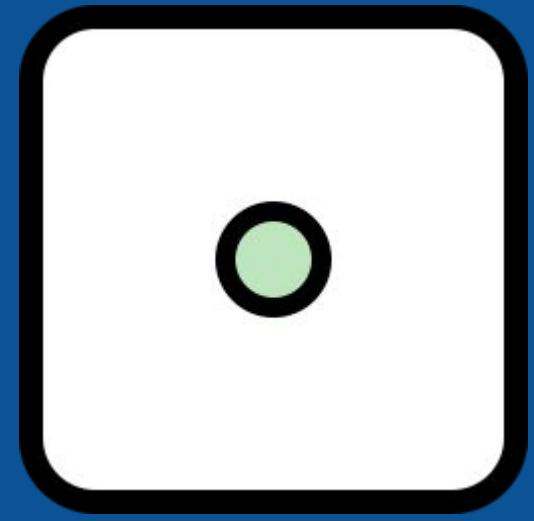
Dodaj Edycja Usuń

Zaznaczenie: Relacje:1 / Linie:0 / Węzły:0

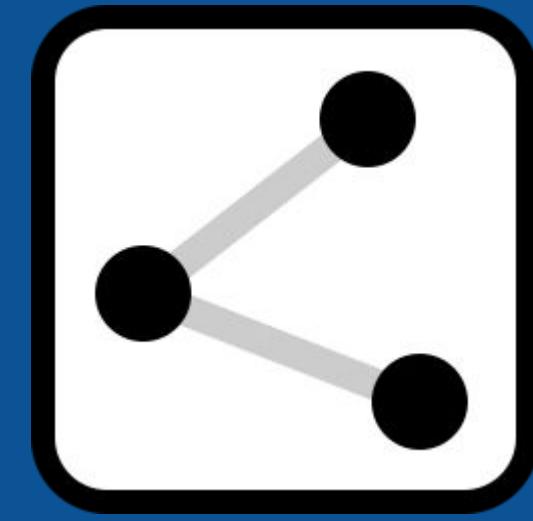
Zaznaczanie Wyszukiwanie Historia

51.747937 19.4516109 (brak obiektu)

Move objects by dragging; Shift to add to selection (Ctrl to toggle); Shift-Ctrl to rotate selected; Alt-Ctrl to scale selected; or change selection



node



way



area



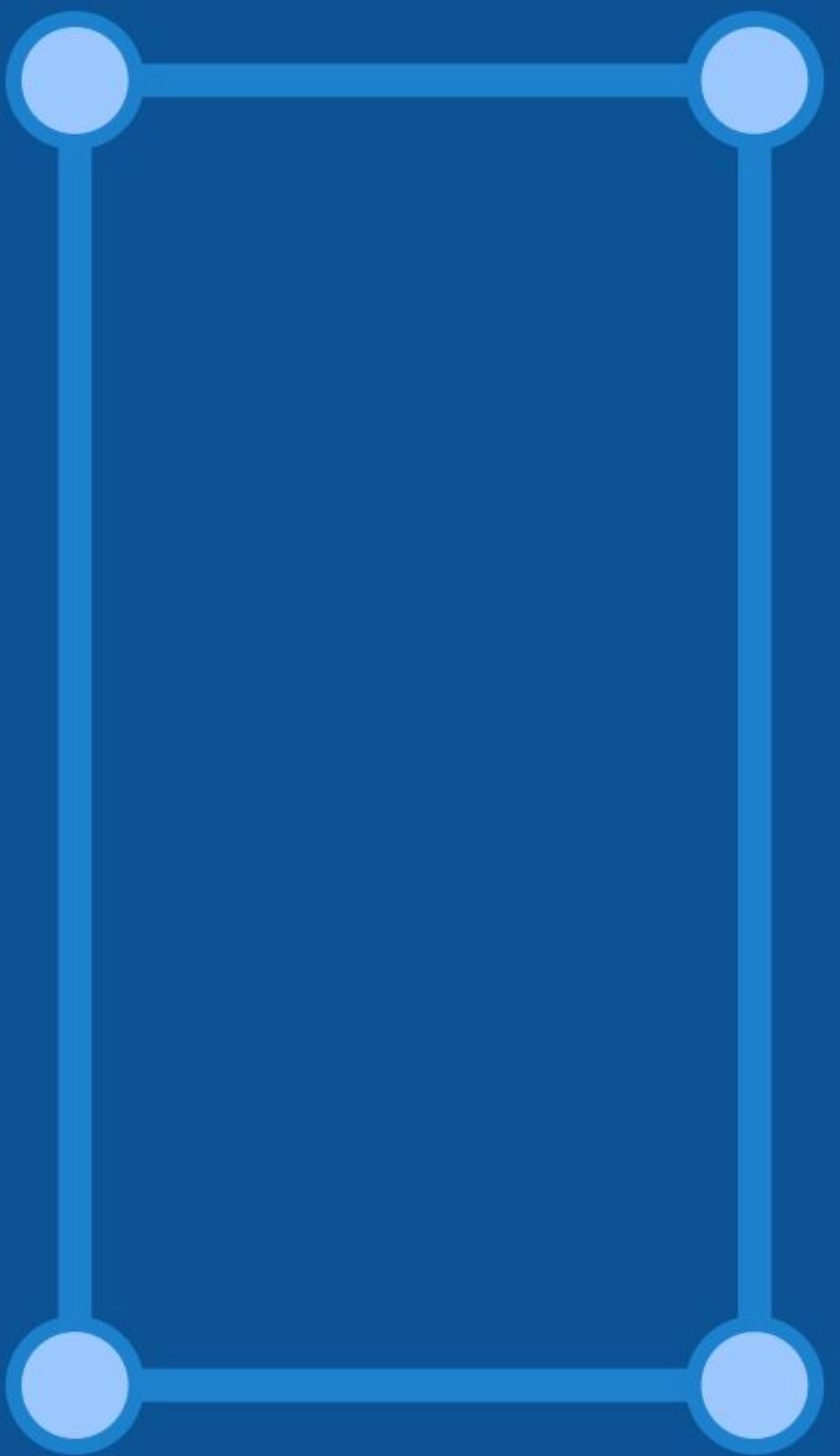
relation



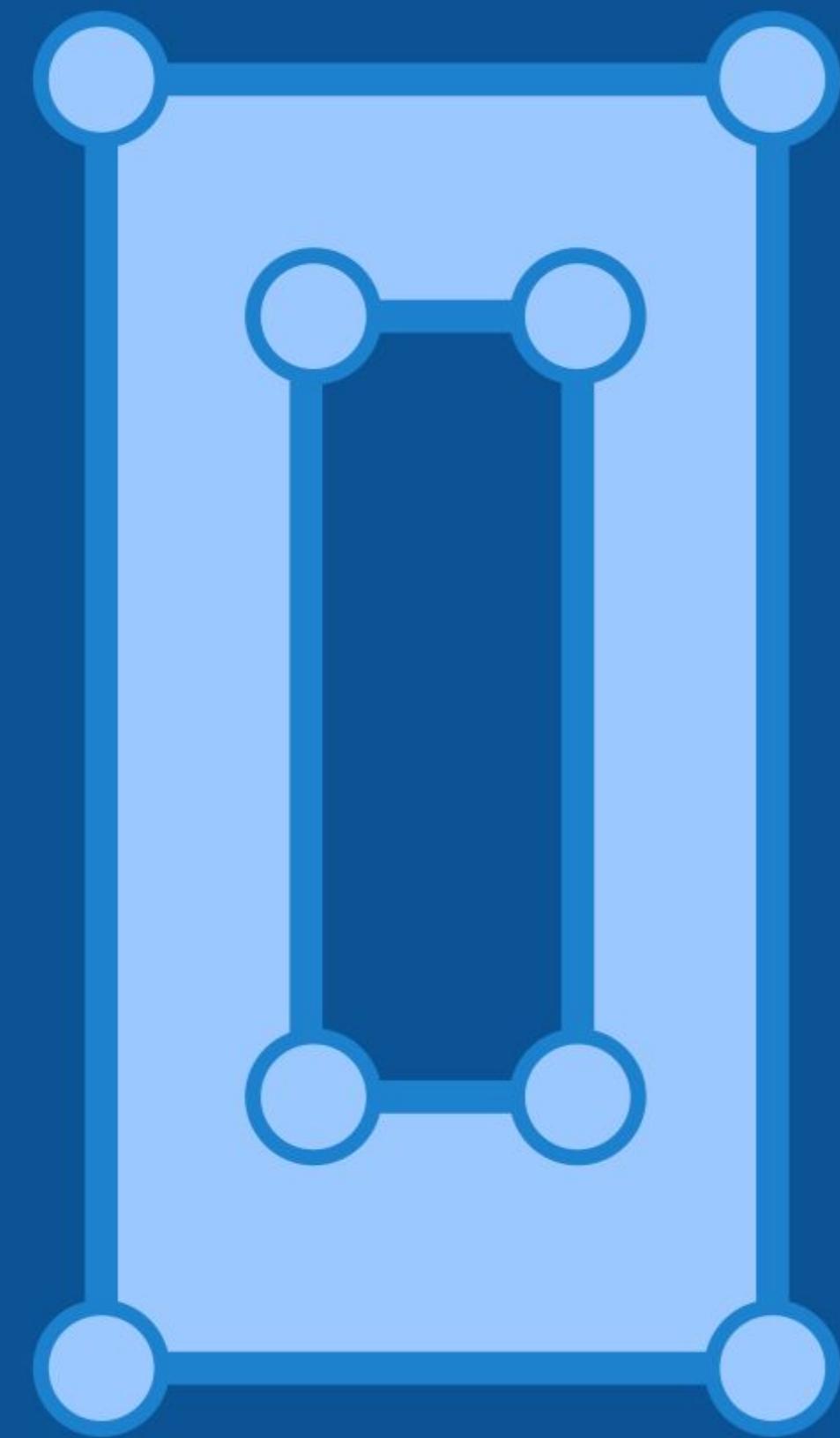
tag



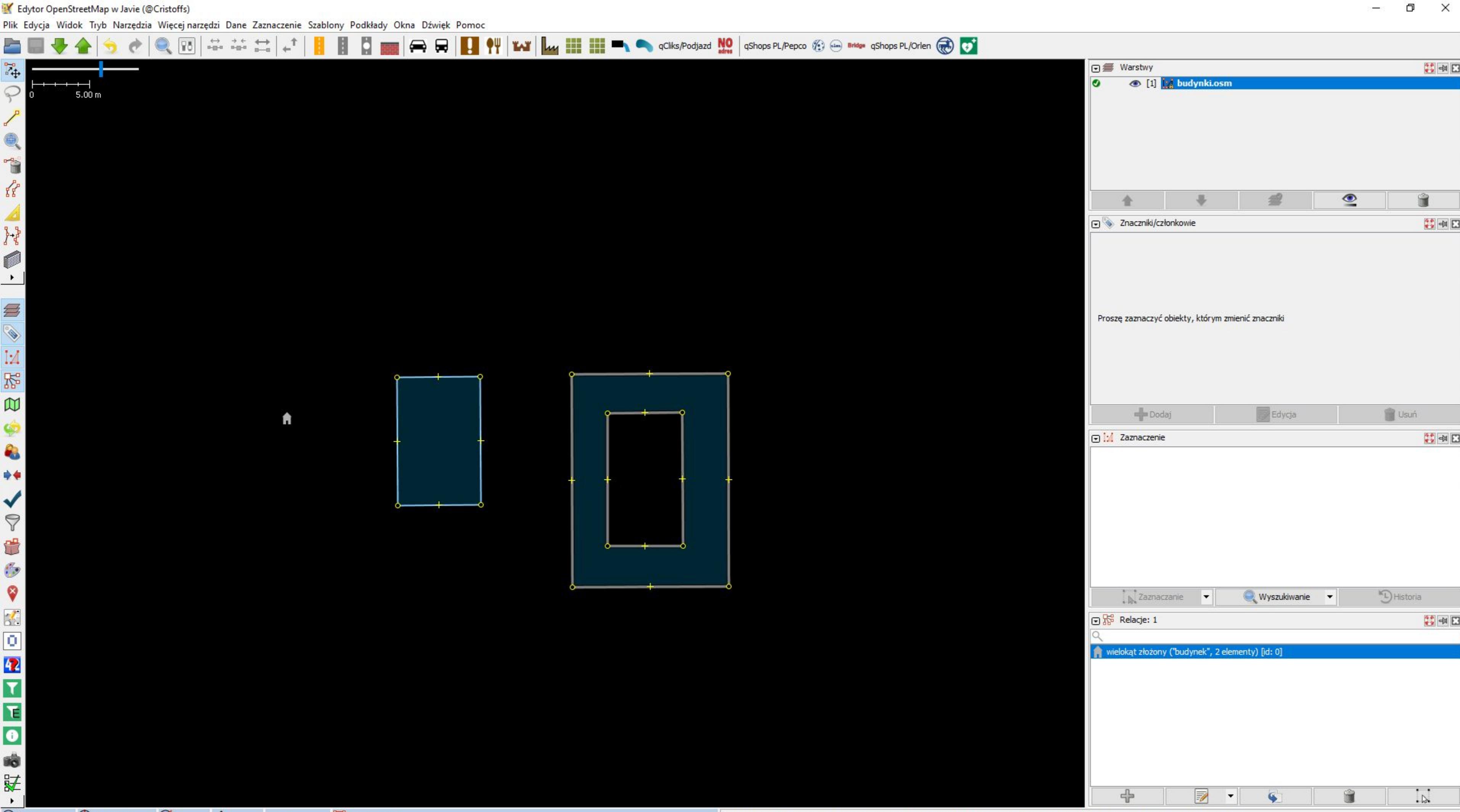
building = yes



building = yes



building = yes



Restricted Mode is intended for safe code browsing. Trust this window to enable all features. [Manage](#) [Learn More](#)



budynki.osm X

```
C: > Users > wzbar > Desktop > budynki.osm
1  <?xml version='1.0' encoding='UTF-8'?>
2  <osm version='0.6' upload='false' generator='JOSM'>
3      <node id='-101768' action='modify' lat='51.82716315844' lon='19.47113833115'>
4          <tag k='building' v='yes' />
5      </node>
6      <node id='-101769' action='modify' lat='51.82719472872' lon='19.471276918' />
7      <node id='-101770' action='modify' lat='51.82709478308' lon='19.47127683508' />
8      <node id='-101771' action='modify' lat='51.82709474965' lon='19.47138235265' />
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Main Page – Inne języki

Odśwież · Pomoc

Afrikaans · asturianu · azərbaycanca · Bahasa Indonesia · Bahasa Melayu · bosanski · brezhoneg · català · čeština · dansk · Deutsch · eesti · English · español · Esperanto · euskara · français · Frysk · galego · hrvatski · interlingua · íslenska · italiano · kréyòl gwadloupéyen · kurdi · latviešu · Lëtzebuergesch · lietuvių · magyar · Nederlands · norsk · occitan · polski · português · română · shqip · slovenčina · slovenščina · srpski (latinica) · suomi · svenska · Tiếng Việt · Türkçe · Zazaki · Ελληνικά · български · македонски · русский · српски / srpski · українська · hujerptu · العربية · ترکي · فارسي · پښتو · نپالی · मराठी · বাংলা · ສිංහල · ໄກສາ · 한국어 · 中文 (简体) · 中文 (繁體) · 日本語

Inne języki · Przetłumacz

Welcome to OpenStreetMap, the project that creates and distributes free geographic data for the world. We started it because most maps you think of as free actually have legal or technical restrictions on their use, holding back people from using them in creative, productive, or unexpected ways.



[More about OpenStreetMap](#) | [How to contribute](#) | [Where to get help](#)

Use OpenStreetMap

Using OpenStreetMap

- Browse our world map
- Check the ready-to-use products for your mobile device, your desktop computer or the web services
- ...more on using OpenStreetMap

Contribute free map data

Beginners' Guide

- Browse the map feature documentation
- Browse the Mapping projects
- ...more on contributing map data

Software Development

Develop and use the Platform

- Use OpenStreetMap for your software
- Contribute to the OpenStreetMap software

News

2022

- 11 May New mobile editor for iOS and Android: Every Door.
- 1 May OSMF employs Grant Slater as Senior Site Reliability Engineer.
- 21 Mar OSMF launches a new forum at community.openstreetmap.org.
- 19 Feb SOTM organizers announce Call for Logo designs.
- 16 Feb SOTM 2022 conference has been announced for August 19-21 in Firenze, Italy.

2021

- 19 Sep Two optional wiki gadgets for enhancing discussion pages, 1.CommentsInLocalTime and 2.ConvenientDiscussions have been installed. You can enable them in your user preferences.

2020

- 20 Apr The Local Chapters and Communities Working Group is looking for volunteer moderators.

2019

- older

Zapraszam na stronę www.wiki.OpenStreetMap.org

Upcoming events (add) – See also: Past Events Event archive 2004-2020

3rd June #MapLesotho Mapathon	Maseru, Maseru District, Lesotho
6th June OSMF Engineering Working Group meeting	
6th June Open Data Pax: OsmAnd e passegiata-mappatura OSM al Pratello	Bologna, Emilia-Romagna, Italy
7th June South Bay Map Night	San Jose, California, United States
7th June Missing Maps London Mapathon	London, England, United Kingdom
7th June OSM-Verkehrswende #36 (Online)	Berlin, Berlin, Germany
8th June Brno Missing Maps mapathon	Brno, Southeast, Czechia
8th June OSM Utah Monthly Meetup	Salt Lake City, Utah, United States
8th June 5. Virtueller OpenStreetMap Stammtisch Österreich	Großarl, Salzburg, Austria
9th June Münchner OSM-Treffen	Munich, Bavaria, Germany
10th–12th June State of the Map France 2022	Nantes, Pays de la Loire, France
10th June Mapatona de Ananindeua - Meninas da Geo	Ananindeua, Pará, Brazil
10th June 168. Berlin-Brandenburg OpenStreetMap Stammtisch	Potsdam, Brandenburg, Germany
13th June OpenStreetMap x Wikidata Taipei #41	Zhonglun, Taipei, Taiwan
14th June MappingDC Mappy Hour	Washington, District of Columbia, United States
14th June Missing Maps - GRC Online Mapathon	Berlin, Berlin, Germany
14th June Hamburger Mappertreffen	Hamburg, Germany
16th June Curso Gratuito JOSM	Guadalajara, Jalisco, Mexico
18th June La liberté numérique	Joué-lès-Tours, Centre-Loire Valley, France



W.Bartczak