SUSTAINABLE SYSTEMS OF URBAN PEDESTRIAN ROUTES

Egor Smirnov & Mikhail Gurevich | AntRoadPlanner.ru

Part 1: Problem

Walkway net drawbacks – misfortune for everyone

ANT ROAD PLANNER


PRISMA

1.5% - 5%
of the lawn is trampled down!

What’s the problem?

- **Dirt**
- **Public environment disruption**
- **Permanent restoration costs**
- **Psychological discomfort**

ANT ROAD PLANNER

If walkway is inconvenient people will trample the path themselves

ANT ROAD PLANNER

Why it appears inconvenient?

1. Network is in the logic of the plan, not in convenience for life

2. Pedestrian routs are not studied

3. Many priorities except pedestrians

4. Designers are drawing plans, not engineers

5. Lack of time and resources

ANT ROAD PLANNER

Comfortable and viable walkway net

1. All points are interconnected by logical and short paths

2. Smooth track connections

ANT ROAD PLANNER

What if people trample the net themselves?

Advantage

+ Maximum convenience for pedestrians

Disadvantages

- Take long time

- Will be dirty for some period

- Redundant network density

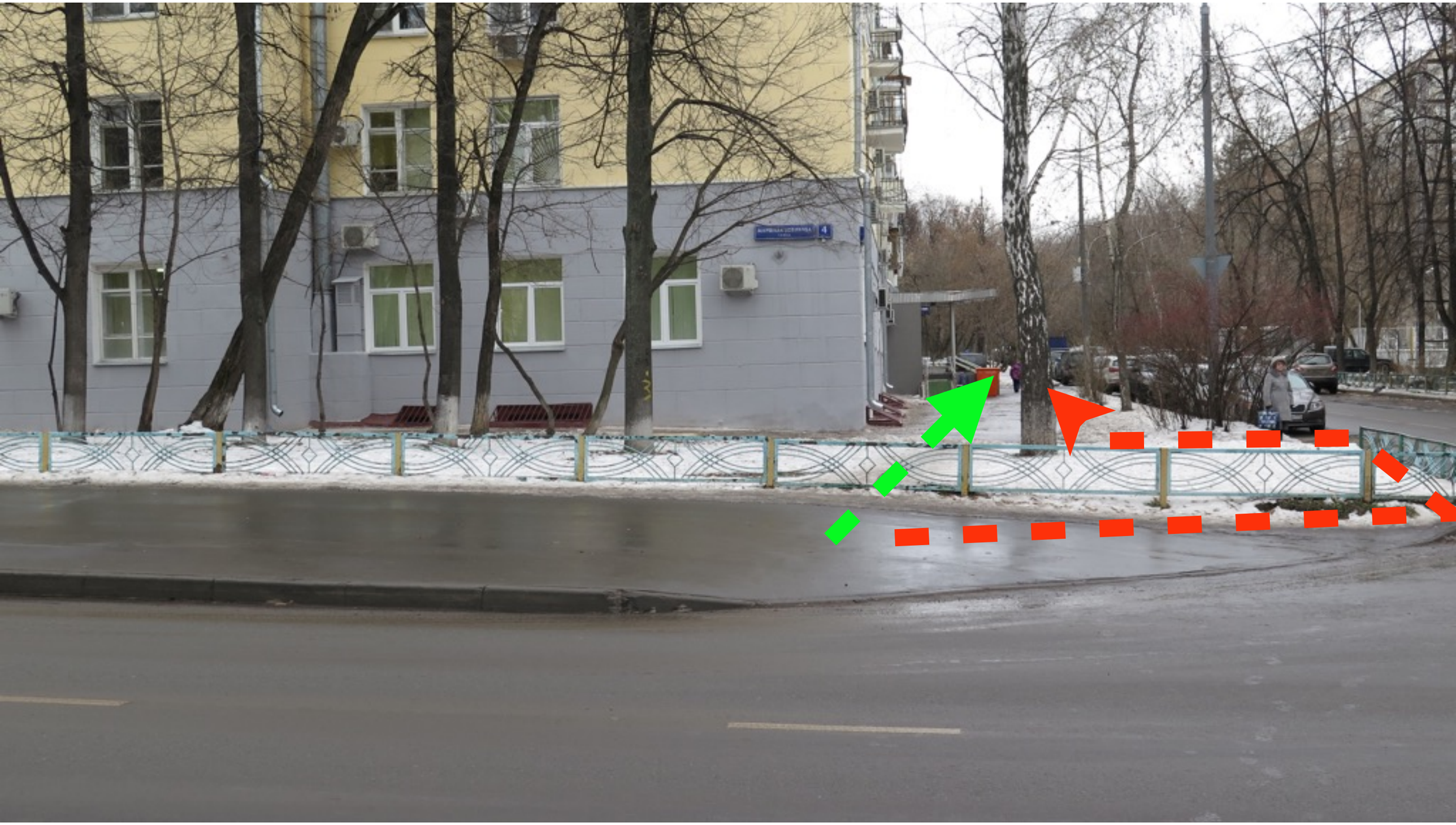
- Increased paths width

ANT ROAD PLANNER

Typical drawbacks of walkways

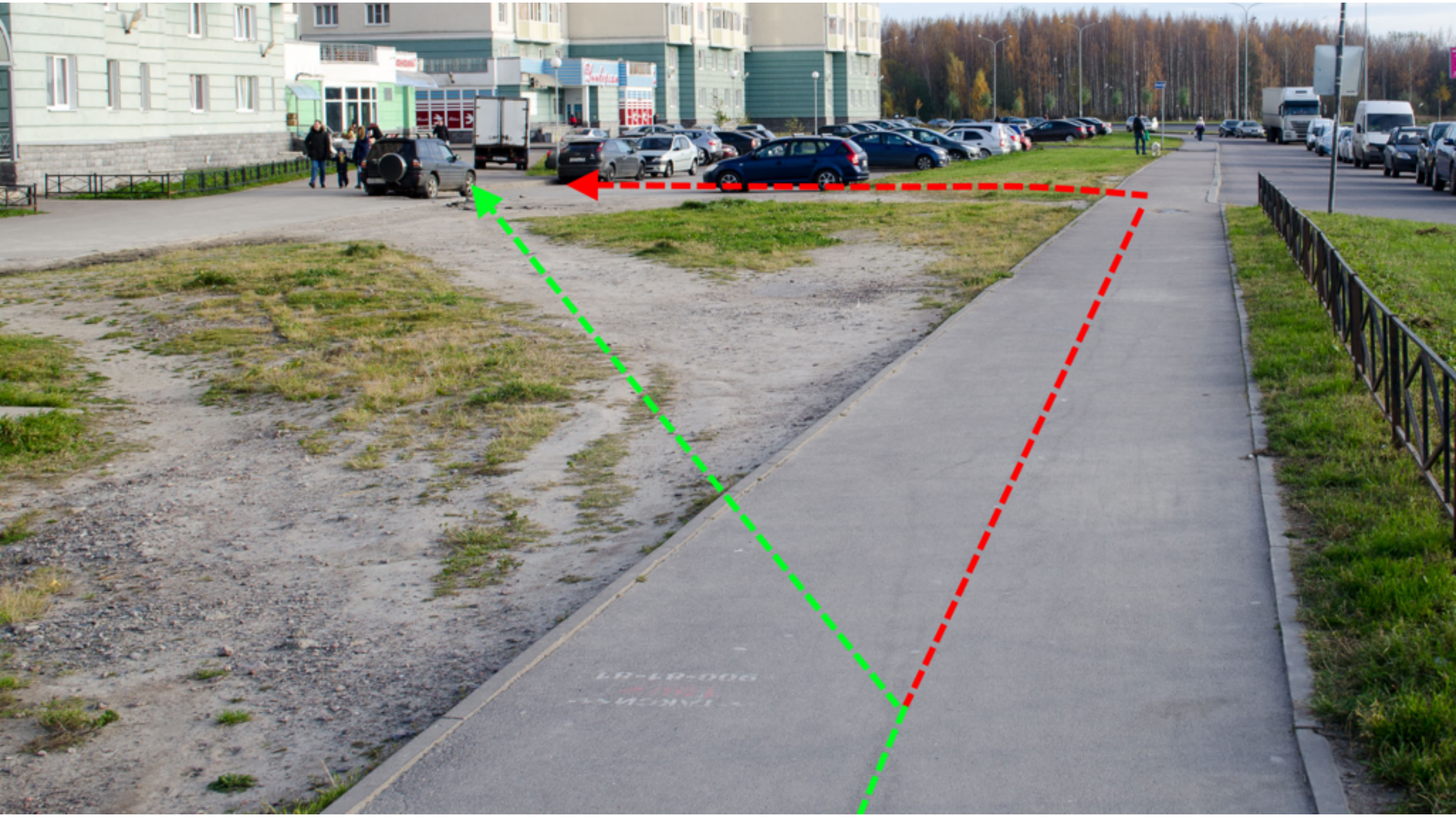
Shortest way to bus stop

Low "connectivity" of the network



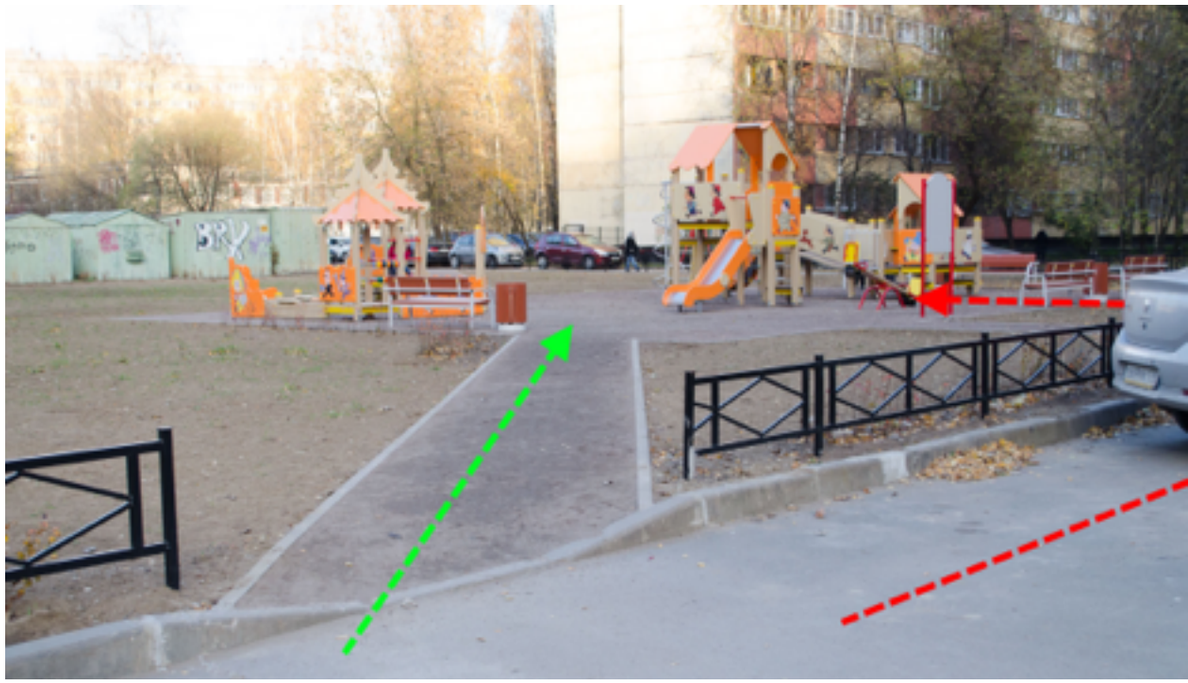
ANT ROAD PLANNER

Turn angle > 30º = path

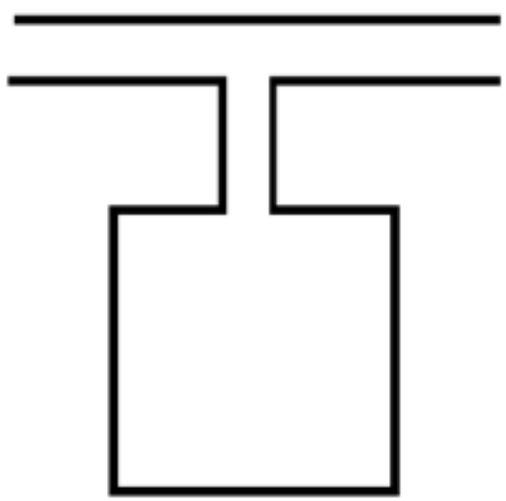


ANT ROAD PLANNER

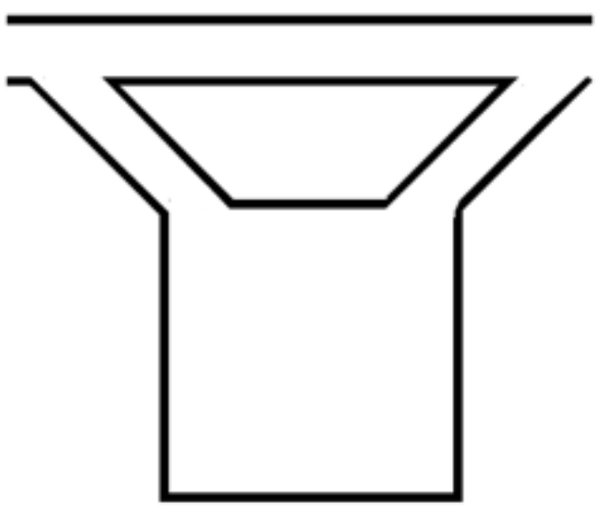
Entrance to playground



Inconvenient



OK



ANT ROAD PLANNER

Paths intersection

ANT ROAD PLANNER

All answers were here all the time

For instance **«Methodical recommendations for the design of pedestrian networks»** were published CNIIP Gradostroitelstva, 1987, Russia

ANT ROAD PLANNER

Part 3: Solution

Manually - long and costly ...

Only if we automate it?

ANT ROAD PLANNER

Algoritm

ANT ROAD PLANNER

1. User draws a terrain map or loads from CAD

2. The algorithm simulates the pedestrians traffic and indicates places where they walk on the lawn

3. Report is generated

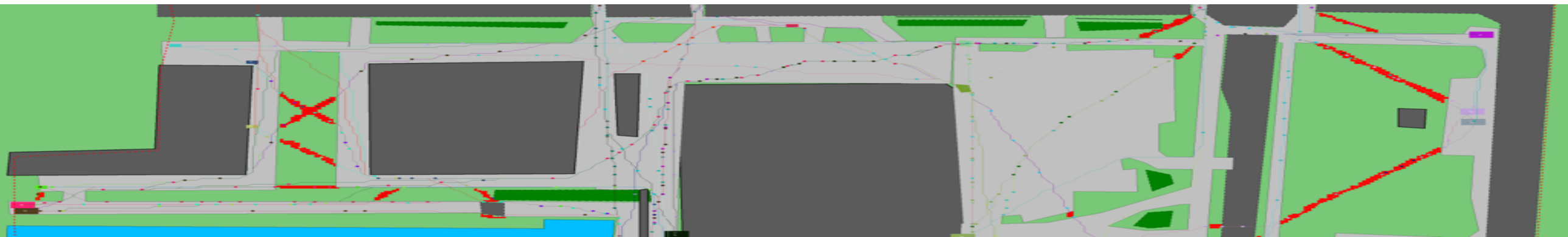
Ant Road Planner detects all flaws of the walkways network

ANT ROAD PLANNER

Result

ANT ROAD PLANNER

1. Scheme of trampled lawns
2. Calculation of trampled lawn area
3. Recommendations for arranging the necessary tracks

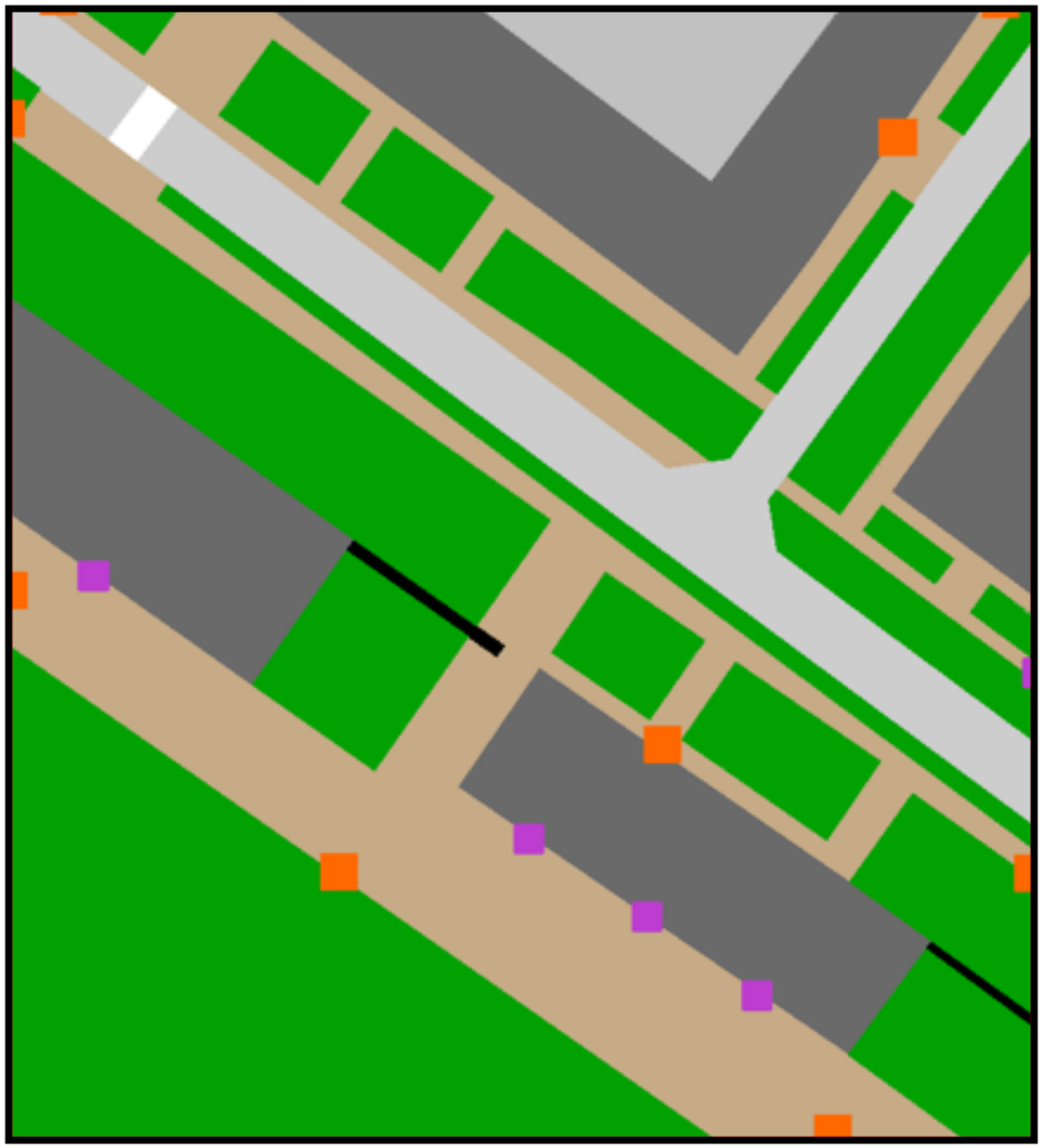


Examples

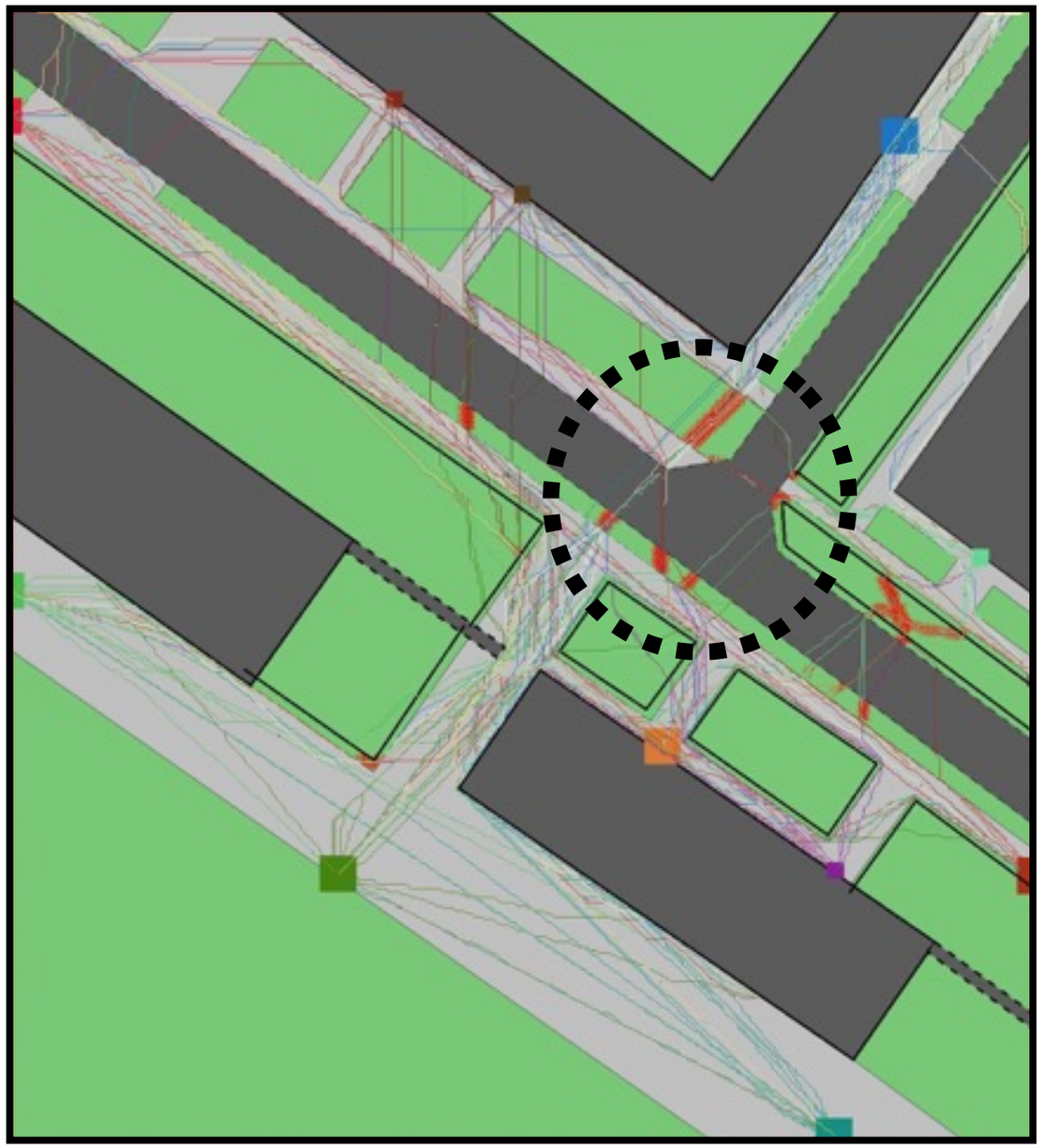
Example 1: **Existing 40-50-ties quarter**

Moscow

Map (.DXF)



Simulation result



Legend:

pedestrian generators

sidewalks and playgrounds

trampled lawn

lawn

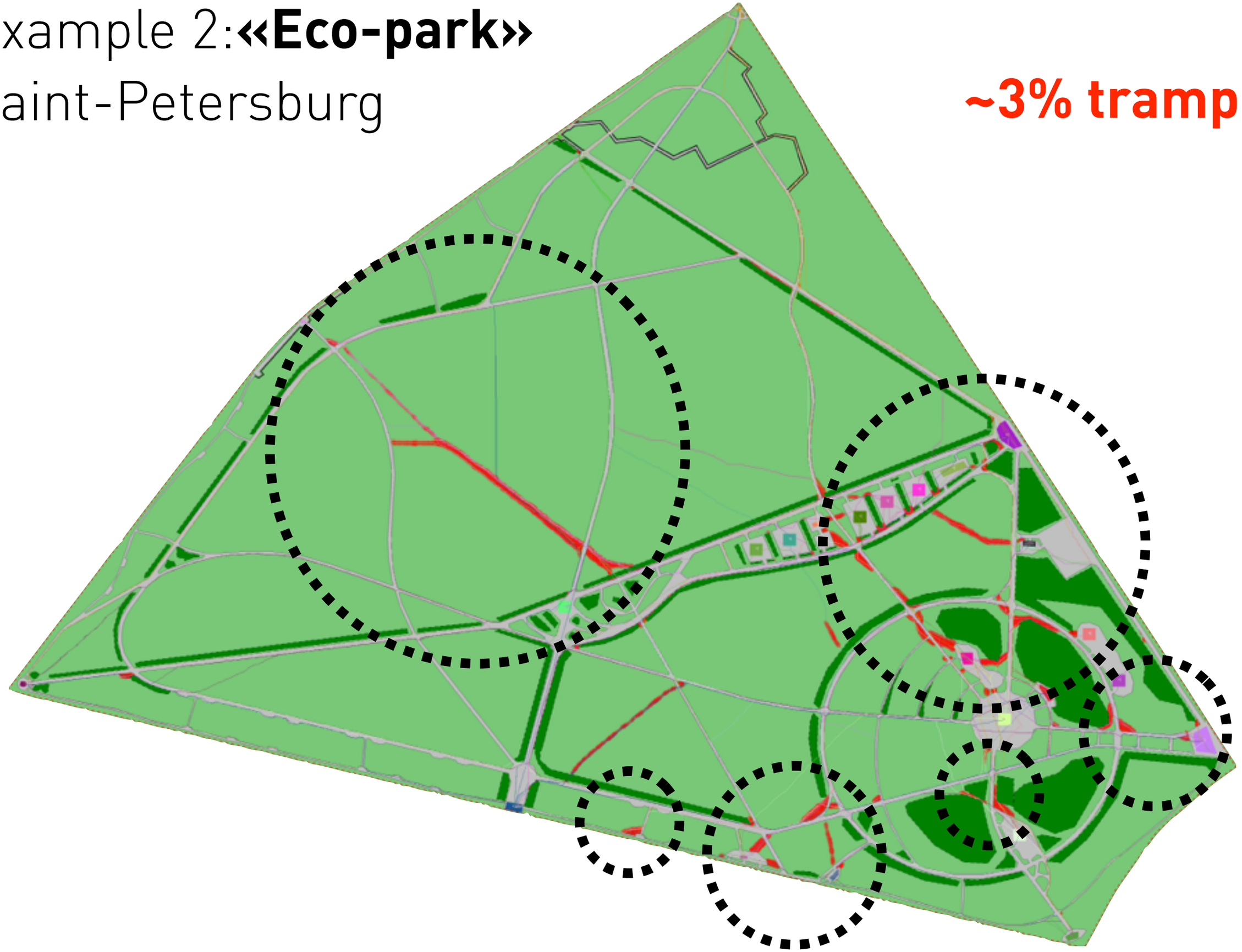
trees and bushes

buildings and fences

ANT ROAD PLANNER

Example 2:**«Eco-park»**
Saint-Petersburg

~3% trampled



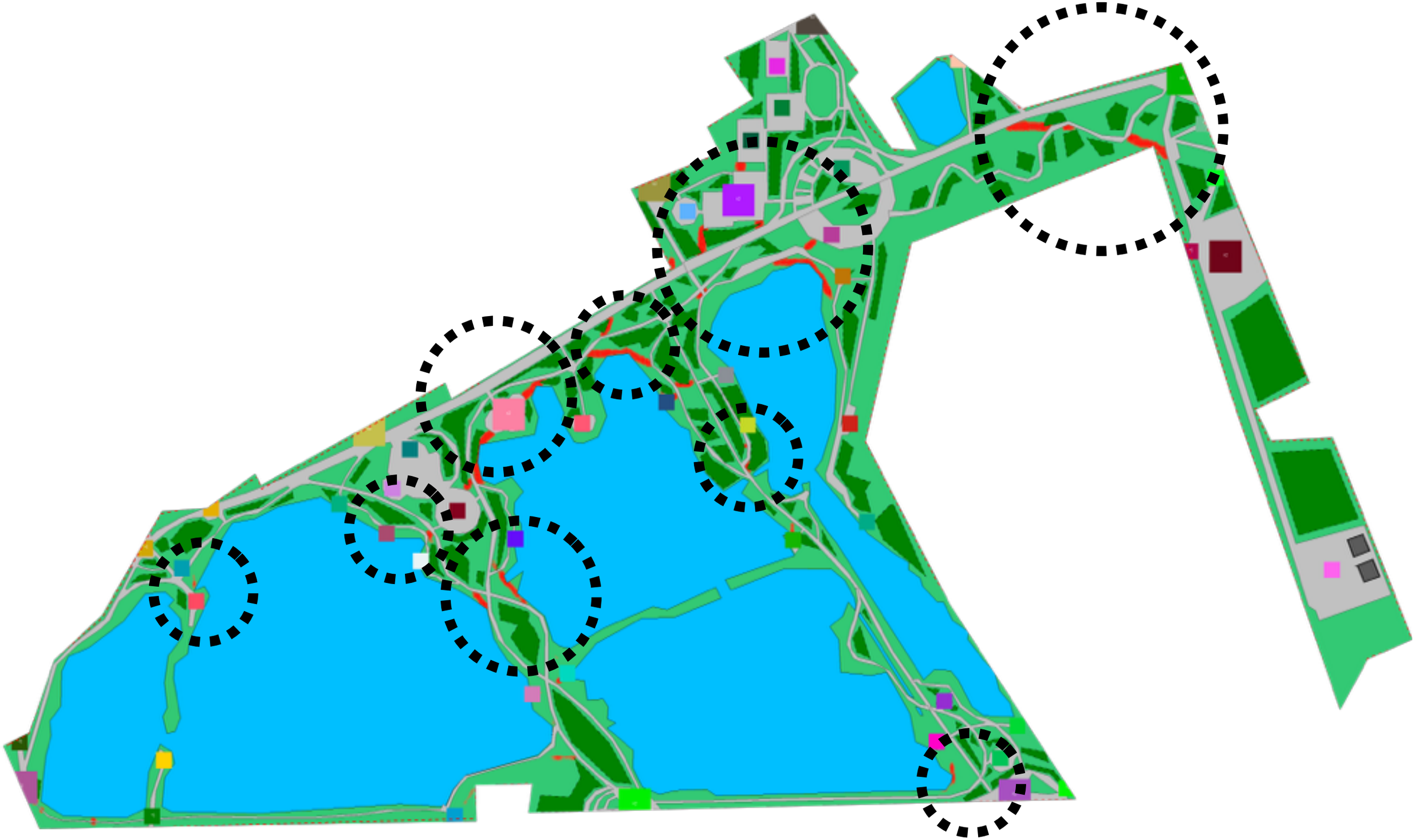
Красивый Петербург

ANT ROAD PLANNER

Example 3: **Park «Firefighters heroes»**

Saint-Petersburg

~1.7% trampled ~ 4000 м2

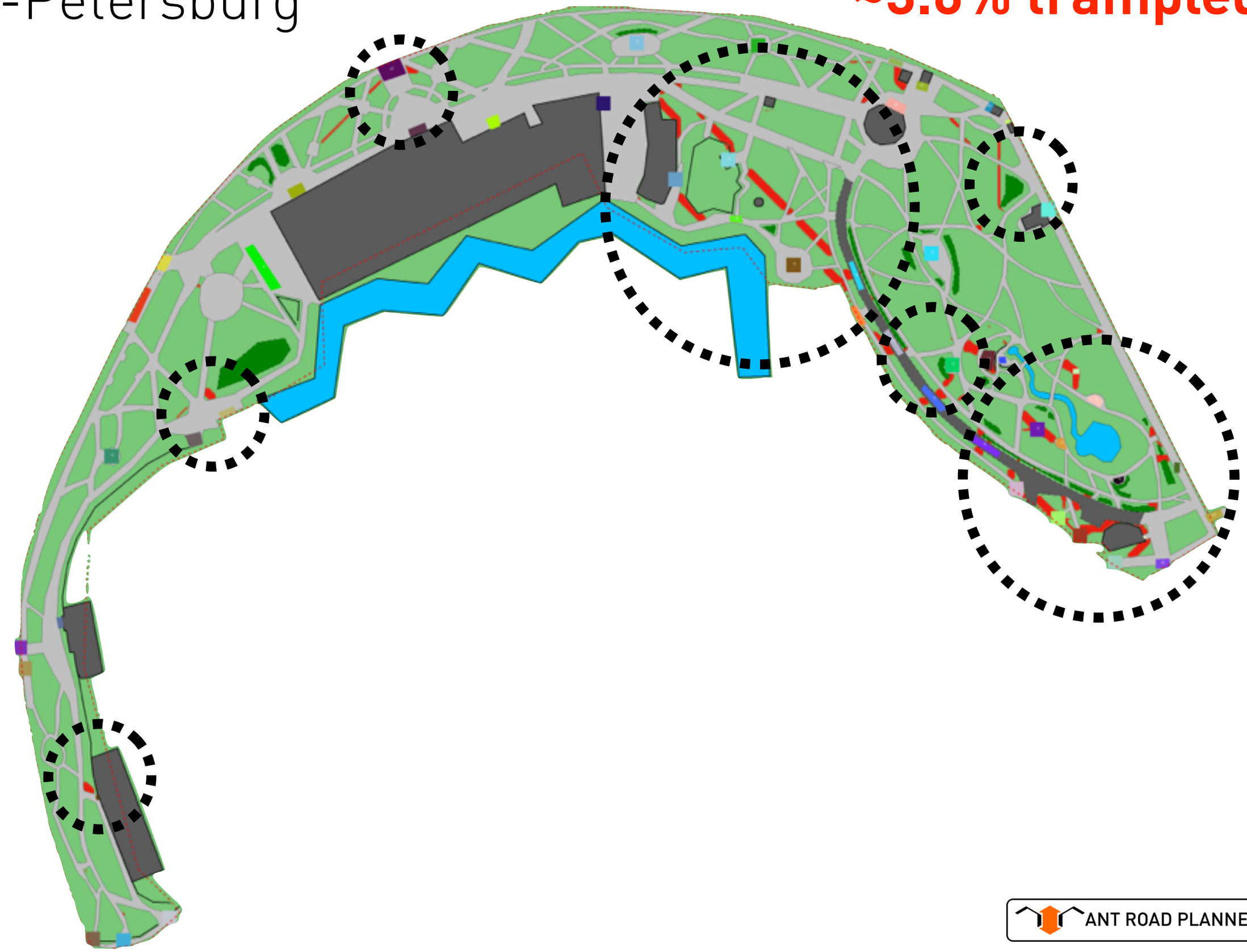


Красивый Петербург

ANT ROAD PLANNER

Example 4: **«Alexandrovsky Park»**
Saint-Petersburg

~3.6% trampled

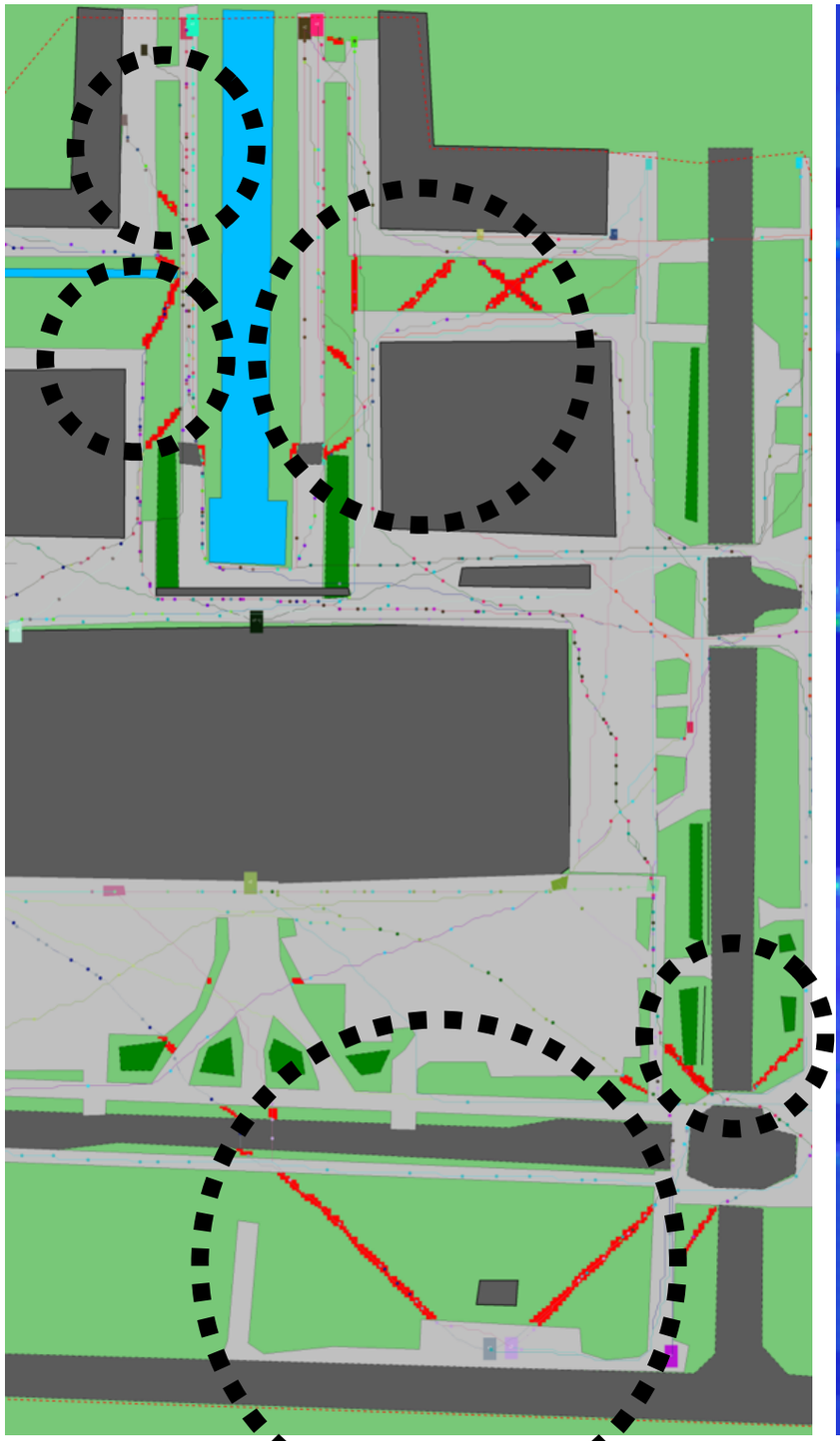


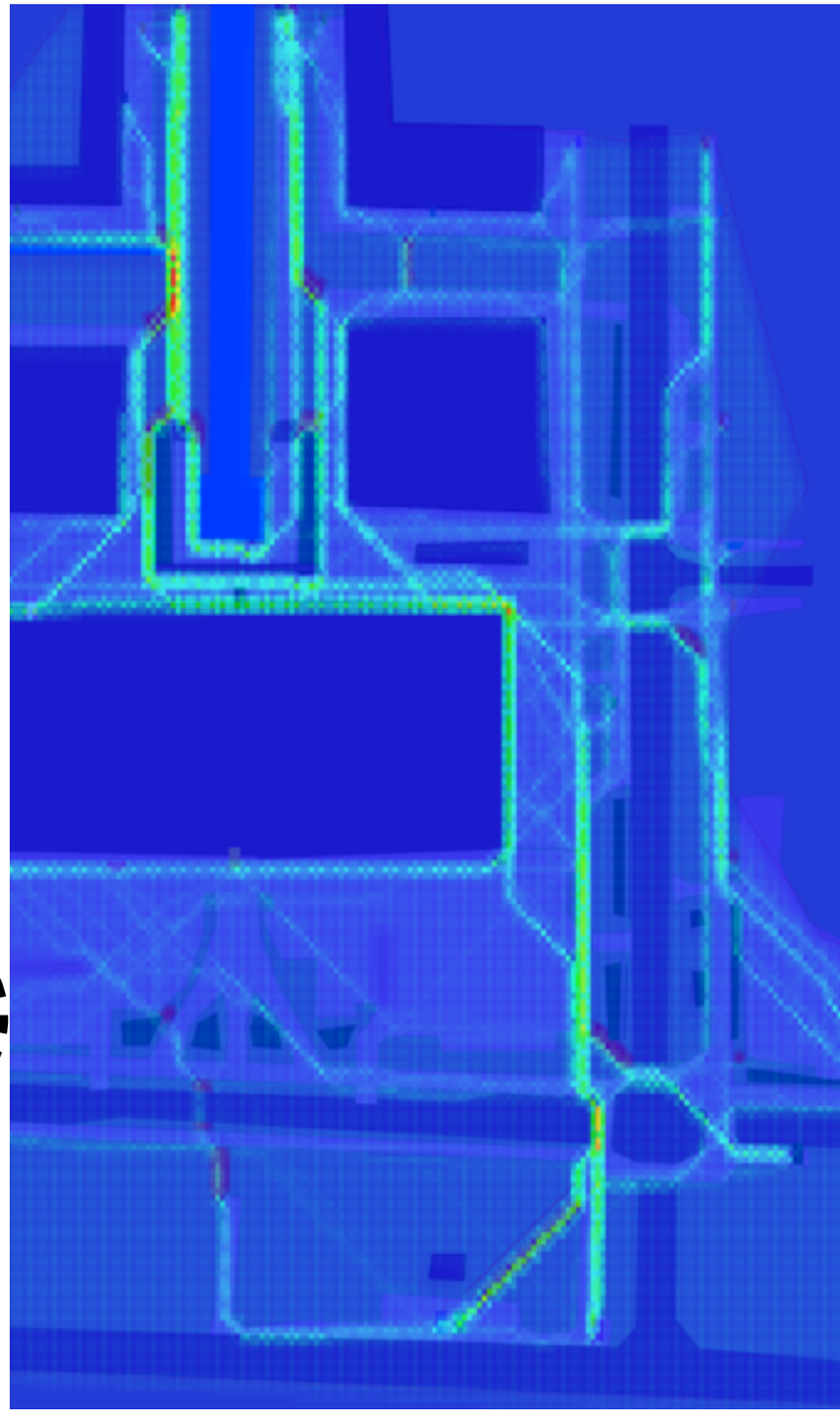
Красивый Петербург

ANT ROAD PLANNER

Example 5: **«Jemchuzhnaya Plaza»**
Saint-Petersburg

~2% trampled





ANT ROAD PLANNER

Practical benefit

ANT ROAD PLANNER

1. **Critical project errors identification**
2. **Saving budget**
3. **Improving the comfort of the pedestrian environment**

ANT ROAD PLANNER

Test your projects with our simulator

ANT ROAD PLANNER

antroadplanner.ru

Egor Smirnov & Mikhail Gurevich