UPACMIC - LIFE12 ENV/FI/000592

Utilisation of by-products and alternative construction materials in new Mine Construction

LIFE Environment and Resource Efficiency Training

Budapest

10.5.2017

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Ramboll Finland

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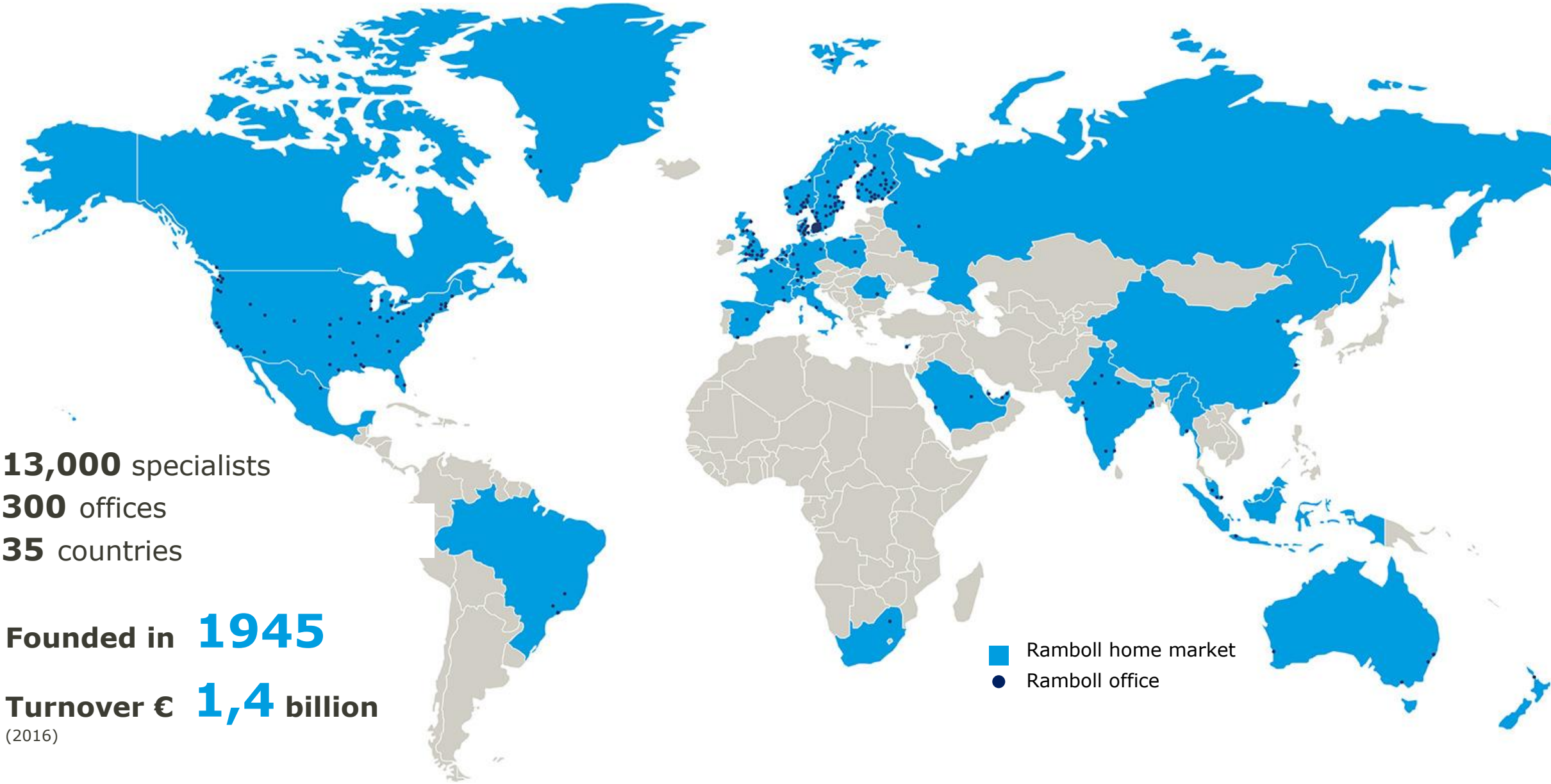

13,000 specialists
300 offices
35 countries

Founded in **1945**

Turnover € **1,4** **billion**
(2016)

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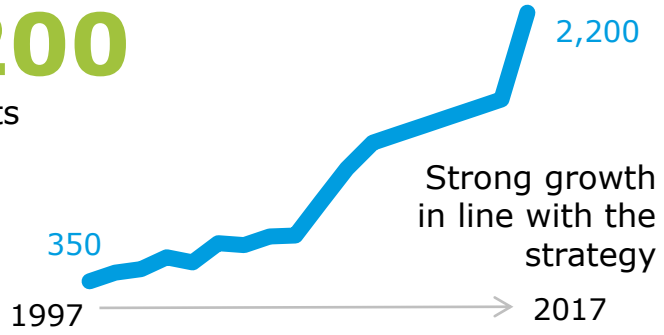
2,200
specialists



Founded in 1962

Turnover € 201 million

Infrastructure & Transport €66M
Buildings €57M
Environment and Health €30M
Water €8M
Project Management & Real Estate Consulting €38M
Management consulting €2M

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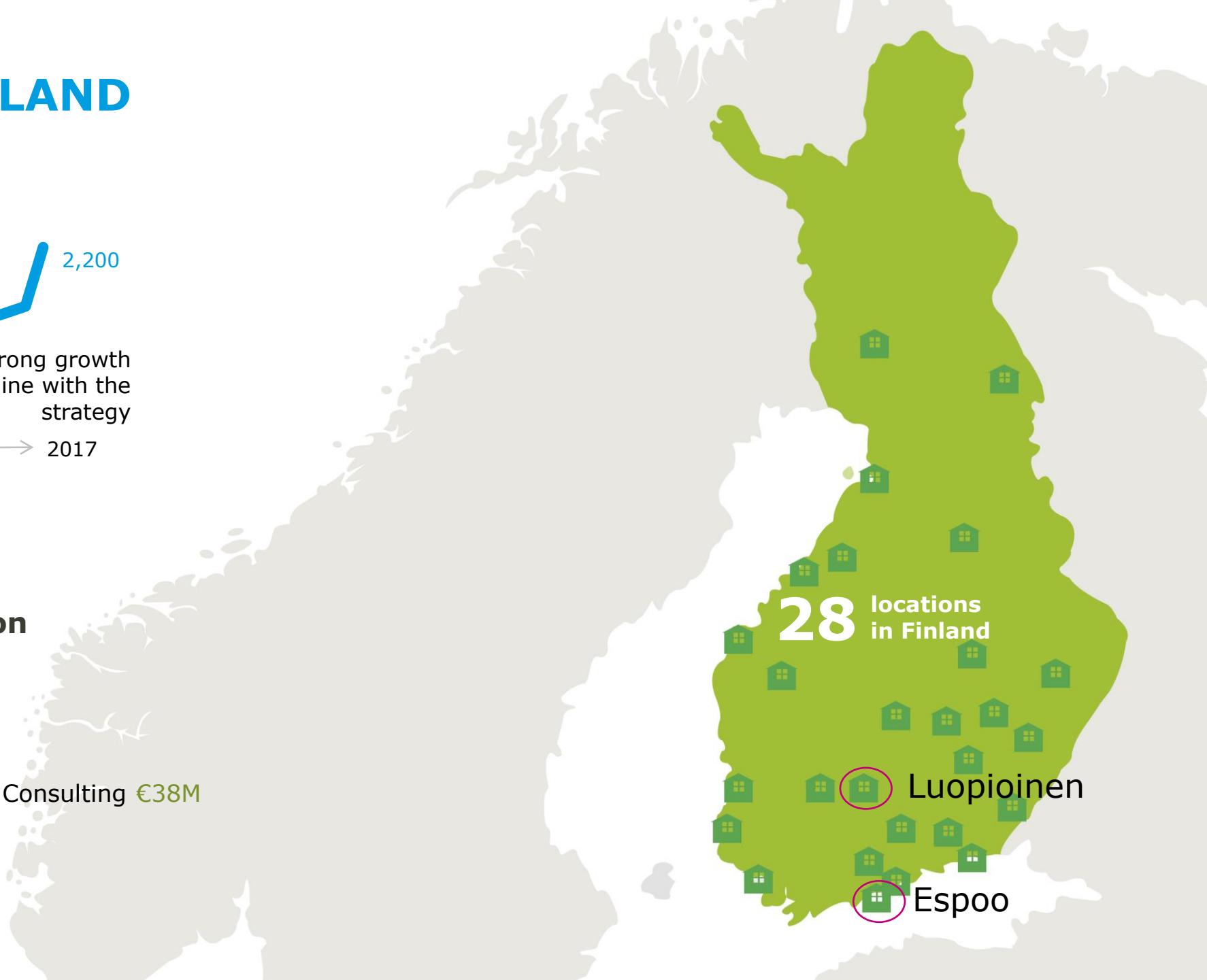
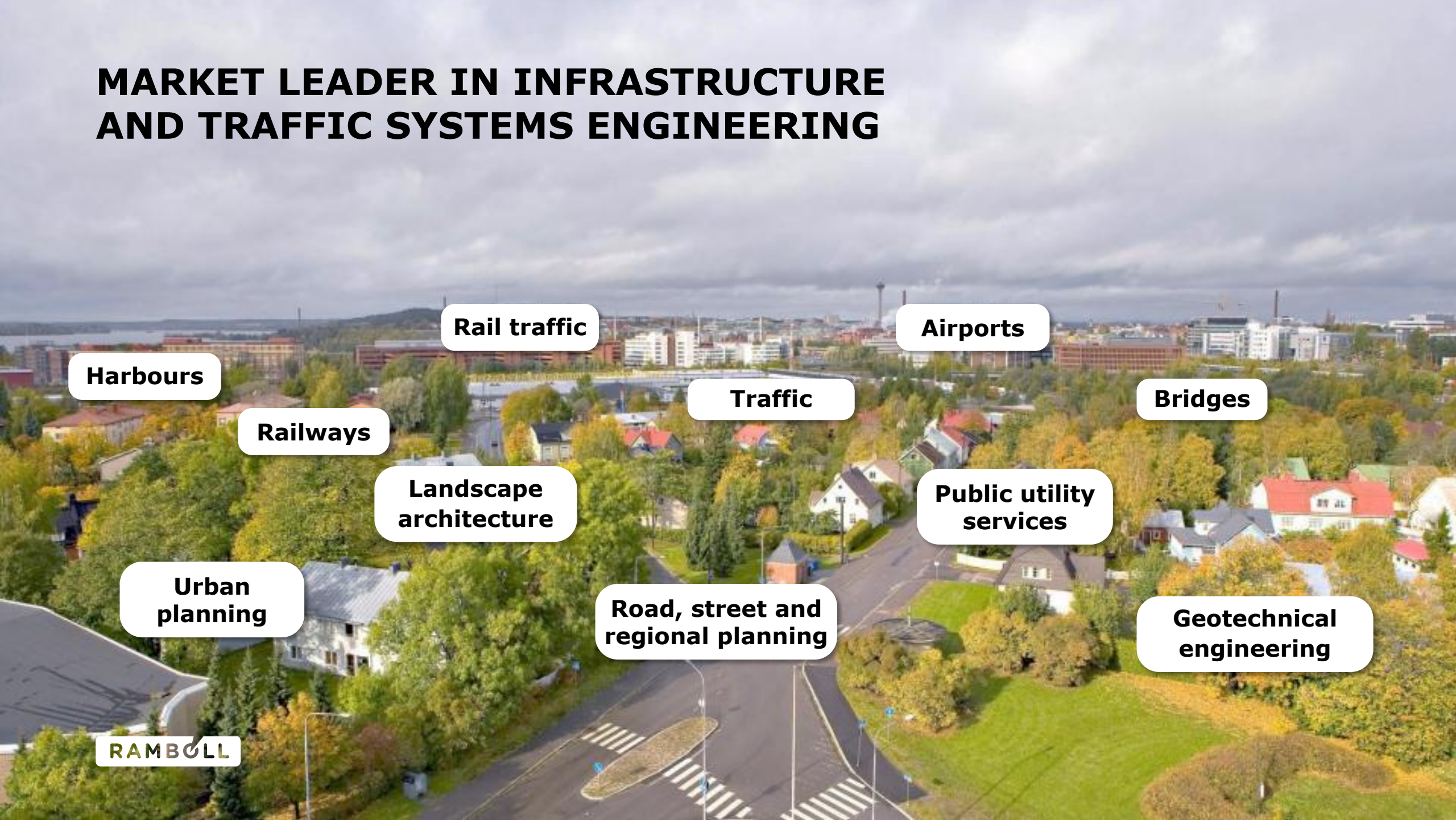


MARKET LEADER IN INFRASTRUCTURE AND TRAFFIC SYSTEMS ENGINEERING



RAMBOLL LUOPIOINEN OFFICE
ENVIRONMENTAL GEOTECHNICS R&D

Earth construction, waste and by-product utilisation expertise:

- Deep stabilizing, process stabilizing and layer stabilizing (stabilization studies and recipes)
- Geotechnical R&D laboratory (also waste and by-product material studies)
- Industrial by-product utilization for different earth constructions: roads, fields, ports, landfills
- Utilization of poor quality soils: dredged sediments, clays, silts, moraines and contaminated soils
- Utilization of industrial by-products: fly ashes, gypsum, forest/paper industry by-products, slags, furnace slags, etc.
- Product development of earth construction materials, guidance, productization and demonstrating of environmental eligibility

Geotechnical R&D projects:

- Utilization of surplus soils in the capital area (ABSOILS LIFE09 ENV/FI/000575)
- New surface materials for playing fields
- UUMA and UUMA 2, national project for promoting the use of recovered materials in groundworks, close co-operation with the authorities (www.uuma2.fi), UUMA3 is under preparation
- Productization of foamed glass (piloting, laboratory studies, guidelines and risk assessment)
- Utilisation of by-products and alternative construction materials in new Mine Construction (UPACMIC LIFE12 ENV/FI/000592)
- LIFE IP CIRCWASTE FINLAND (LIFE/IPE/004

LIFE12 ENV/FI/000592

UPACMIC PROJECT 2013-2020 (LIFE12 ENV/FI/000592)

- Start: September 2013 / End: August 2020
- Coordinated by Ramboll Finland (Luopioinen), coordinator Mr Pentti Lahtinen
- Project partners: Suomen Maastorakentajat and Ekokem
- Supported by the Finnish Ministry of the Environment and Yara
- Utilisation of by-products and alternative construction materials in new Mine Construction
- Project budjet 5 278 182 euros
- EU contribution 2 500 339 euros
- The **objective** of the UPACMIC project is to demonstrate through its pilot applications various aspects of constructing the tailings ponds' bottom and cover layers, as well as the reactive barrier layers with secondary materials with the primary purpose of preventing contaminants leaching into ground waters.

ABSOILS PROJECT 2010-2015 (LIFE09 ENV/FI/000575)

- Start: September 2010/ end: June 2015
- Coordinated by Ramboll Finland (Luopioinen), coordinator Mr Pentti Lahtinen
- Project partners: Lemminkäinen (previously Biomaa) and Rudus
- Supported by the Finnish Ministry of the Environment and the Uusimaa cities - Helsinki, Espoo and Vantaa
- Total budget 2 736 363 euros, eligible 2 625 738 euros
- EU contribution 1 312 869 euros
- Sustainable Methods and Processes to Convert Abandoned Low-Quality Soils into Construction Materials

PROJECT AIMS

- To address the challenges of the European policies and legislation concerning waste
- To promote waste recovery and sustainable recycling with a focus on life-cycle thinking and the development of recycling markets
- To tackle the challenges related to the redundant soils and their conversion into useful earth construction materials

LIFE09 ENV/FI/000575

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Lemminkäinen

Rudus

YMPÄRISTÖMINISTERIÖ
MILJÖMINISTERIET
MINISTRY OF THE ENVIRONMENT

ESPOO
ESBO

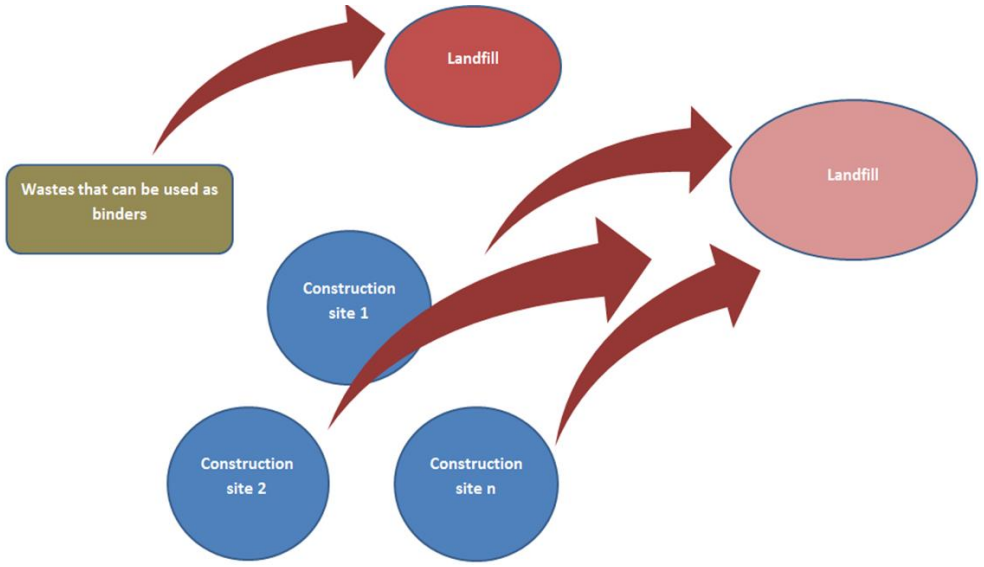
Helsingin kaupunki

VANTAAN KAUPUNKI
VANDA STAD

ABSOILS PROJECT 2010-2015 (LIFE09 ENV/FI/000575)

Linear model

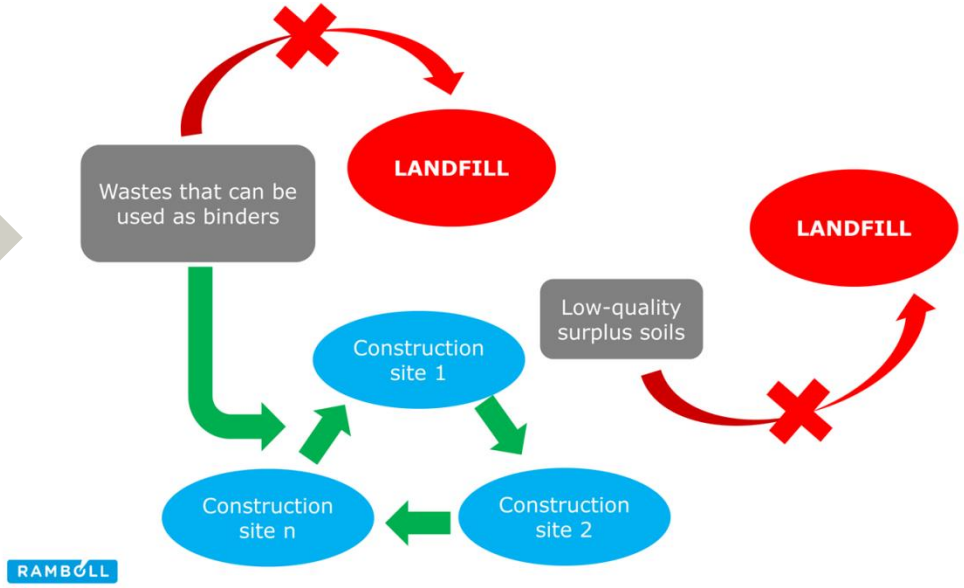
Based on the assumption that resources are abundant, available, easy to source and cheap to dispose



ABSOILS

Circular model

Surplus low-quality soils and wastes from energy production can be processed with the mass stabilisation method into construction material



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ABSOILS PROJECT 2010-2015 (LIFE09 ENV/FI/000575)

RESULTS

- The ABSOILS project has provided the stakeholders with new knowledge and guidance (European Guidelines) on the possibilities and methods of using earth construction materials based on various types of redundant, poor quality soils.

- The project has served as a successful example demonstrating environmental and economic benefits based on the utilisation of surplus soft soils for versatile engineering purposes.

- It is estimated that 4 million tons of surplus soils will be re-used in the capital region of Finland as the know-how on surplus soil utilisation possibilities improves all the time.

- As the utilization of surplus soils will eventually be an established method instead of landfilling, it is estimated that reduction of greenhouse gases (as CO_2 equiv.) may be approximately 1,2 million tons CO_2 yearly in Finland. Only in Helsinki, it is estimated that by surplus soil utilization, approximately 100-200 million euros can be saved every year.

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SUMMARY/TIPS

Planning the project:
- Take your time for the planning
- Study the programme guidelines and LIFE regulation
- Create a consortium
- Study the evaluation guide
- International collaboration
- Transferability and replicability

How to find partners / creating a consortium:
- Participate in seminars, networking events, use partner search tools, discuss openly of your plans with your network
- Beneficiary commitment to the project is important, thus it is necessary to discuss the implementation plans in good time before starting the project

Ramboll has experienced in its LIFE projects:
- Delays in schedule
- Restrictions in planned pilots due to environmental permits issues
- Change of partners
- Associated beneficiary bankrupt
- Change of the piloting site

Financial planning
- Remember to include mandatory social charges in personnel costs
- Personnel costs are based on the actual salary costs so the salary level should be known already when planning the project
- Full-day project manager
- Salaries can change during the project due to e.g. index increments, salary increments, change of job description etc.
- Be realistic with the expenses, don't underestimate or overestimate
- Remember to include seminar/conference fees and travels – important for dissemination, networking and knowledge sharing
- If major changes are required, you can always try for an Amendment (not preferred, though)

Project monitors (NEEMO) will help and guide you during the project – you are not alone!

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THANK YOU!

KIITOS!

"It is hard to fail, but it is worse never to have tried to succeed." **Theodore Roosevelt**