INDUSTRIAL BUILDINGS
CAPABILITY STATEMENT
WWW.RAMBOLL.COM
WHAT WE DO

We are engineers, scientists and consultants who place trust in the power of design to create a better future.

At its best, good design can regenerate communities, protect natural environments, connect people across vast distances; it can provide new energy solutions and create buildings that people feel happy in.

We strive to put the best of ourselves in every solution we deliver. We do this as a matter of professional pride, but also because it is our design philosophy to always make room for the human experience. Ultimately we measure our success by how well people and communities are served by what we have done.
TRANSPORT
Mobility fuels economic and social development and with 50% of the world’s population now living in urban areas, efficient and reliable transport systems are essential.
To meet this need, Ramboll has been working on some of the world’s largest, most innovative infrastructure projects and is the leading consultancy in the Nordic market.
We create value for transport authorities, contractors and local authorities by providing multidisciplinary technical excellence and minimising resource usage.
Read more at: www.ramboll.com/transport

ENVIRONMENT & HEALTH
As a globally recognised environmental and health consultancy, we have earned a reputation for technical and scientific excellence, innovation and client service.
Advances in science and technology and evolving regulatory, legal and social pressures create increasingly complex challenges for our clients. We evolve to keep pace with these changes - by adding new services, contributing to scientific advances or expanding geographically.
Read more at: www.ramboll.com/environment

WATER
Water is essential to life and one of our most precious resources. Working with municipalities, utilities, and industrial clients Ramboll draws on proven multidisciplinary expertise to manage the most challenging water resources, wastewater, and storm water issues.
We integrate treatment process selection and engineering, operational services, and regulatory management and planning to deliver innovative solutions that benefit both industries and society.
Read more at: www.ramboll.com/water

BUILDINGS
Buildings form a fundamental part of our lives by shaping our communities and daily activities.
For these reasons, Ramboll’s design philosophy is always to make room for the human experience. As one of Europe’s top 3 buildings designers with decades of experience in the global market, we create visionary, sustainable, and award-winning buildings that improve life for users and enhance the surrounding landscape.
Read more at: www.ramboll.com/buildings
OIL & GAS
To make it in today’s fast paced and competitive oil and gas market, companies depend on advanced technical solutions that combine economic efficiency with stringent health, safety and environmental (HSE) safeguards during the production and distribution processes.

These elements form an integral part of Ramboll’s independent and multidisciplinary consultancy service, which covers the entire project cycle. We excel in onshore consultancy and have designed offshore structures for industry giants such as Maersk Oil, DONG Energy and Statoil since the 1970s.

Read more at: www.ramboll.com/oil-gas

ENERGY
Security of supplies, climate change, energy efficiency and resource scarcity are top priorities on the global agenda. The key challenge is to plan and implement a sustainable and affordable energy system that is capable of meeting the growing demand for energy.

As a consultancy, Ramboll is at the forefront of addressing these issues with world-leading competencies in offshore wind, waste-to-energy, thermal power and district energy.

Read more at: www.ramboll.com/energy

PLANNING & URBAN DESIGN
Ramboll’s holistic approach to urban development encompasses strategy, planning and world class technical design services and is based on an integrated multidisciplinary skills base.

We have an extensive track record working with a number of the world’s largest cities to create liveable, sustainable, and implementable urban development solutions that are fully adapted to the local context.

Read more at: www.ramboll.com/planning-and-urban-design

MANAGEMENT CONSULTING
National, regional and local authorities are responsible for issues that affect us all; from health care, education and day care to strategic planning of infrastructure and climate initiatives. Drawing on 500 management experts, Ramboll acts as a trusted partner to public administrations, creating the insights needed to make informed strategic decisions that promote stronger societies.

With unprecedented levels of competition in the global economy, Ramboll focuses on empowering private sector customers with expertise and powerful management tools.

Read more at: www.ramboll.com/management-consulting
We offer a full range of engineering services from structural, façade and fire engineering to building services, geotechnical, infrastructure and acoustics. Central to our approach is the return to first principles on each and every design problem we face. We test and re-test our assumptions, constantly challenging ourselves to create more relevant designs that serve our clients and their communities well.

We aim to integrate our designs across disciplines from an early stage. Our work on the Ferrari World Theme Park in Abu Dhabi is a good example of this. The Theme Park project was driven by its fast track design and construction programme. Using our network of teams and offices in both the UK and UAE, we developed a flexible approach to the engineering that enabled us to meet the programme level, where the Ferrari-themed attractions are located. Columns are set matching the challenges. Under the roof, we engineered three concrete frame levels; the undercroft at ground level, a mezzanine and the plaza piling grid below. This supporting structure takes the weight of the 19 separate steel frame buildings that house the rides.

Our building services engineers worked with both the shell and core and theme park architects to ensure that all the systems could function together for different purposes, from the strict tolerance demand on electrical supply for rides to providing comfortable conditions for attractions and large value circulation areas.

One roller coaster is F1-style and uses a winch to slingshot the cars similar to craft launch systems. The second is GT-style. Each coaster has a steel and concrete framed station building consisting of an observation deck, load/unload platform, queue corridor, maintenance structure and overhead gantry crane. Ramboll designed the coaster foundations and buildings, integrated services and high voltage design, and the perimeter and maintenance roads.

At a time when the construction industry is facing immense challenges, we bring an enthusiasm for the pure invention of engineering coupled with a long-standing reputation for unlocking project potential when no one else can.
“From a supervisory perspective, James Cubitt & Partners worked very closely with Ramboll on the Shining Towers project. The project was delivered successfully and enabled Ramboll to showcase their ability to deliver innovative and complex solutions. Ramboll's highly skilled team provided multi-disciplinary services to execute this project and their engineering expertise was evident in their response to the numerous structural challenges we faced.”

Marcin Kowalski, Senior Site Architect
– James Cubitt & Partners
Getting It Right From Everyone’s Perspective

There are multiple stakeholders and technical questions to consider before, during and after building a production facility overseas. Ramboll assists with all the difficult choices and takes full responsibility for project execution in order to get your facility right from everyone’s perspective.

What’s your challenge?
How do I get the necessary permissions from local authorities and utilities? Can my facility get funded by the EU? How do I avoid expensive delays in the building process and during the start-up phase? The stakeholders are multiple and so are the questions when you consider building a production facility overseas. Unfortunately there is no such thing as a one size fits all solution. The right answers depend on your project and context. So that’s where we start – with you.

Global knowledge - local presence
No matter the scale of your project we can assist you from the very moment the idea of building a facility overseas is conceived to handing over and commissioning of the completed plant. The strength of our concept lies in the combination of our global knowledge and local presence.

This means that we are able to handle all your stakeholders while guaranteeing a cost effective solution exacting local or European standards and quality at your choice and on time.

Taking the full responsibility
We have the full responsibility for all consultancy services, and provide therefore one point of contact to the client for all management, engineering and architecture works. When undertaking a project one of the main challenges is understanding and handling local authorities and utilities. We work with local Ramboll offices as well as partners.

Please contact us for a non-binding meeting to discuss your specific requirements.

Your benefits with Ramboll
• A tailor-made project based on specific requirements
• An economic design to obtain low construction costs
• A European or local quality level at your choice
• Fast-track project time schedule
• A concept that minimises risks
• Worldwide class and worldwide engineering expertise
• One point of contact for all services

Ramboll’s Turnkey Concept for Production Facilities Overseas
BANG & OLUFSEN
Koprivnice, Czech Republic

GRUNDFOS MANUFACTURING
Tatabanya, Hungary

How can I ensure that the contractor delivers the facility on time and comply with the agreed price and quality?

How do I ensure that the facility is put into operation as fast as possible?
An interdisciplinary design approach is an essential feature in the development and procurement of industrial buildings. The client must look towards a consultant who can provide specialist advice on all matters, from the development of complex geo-environmental solutions for brownfield sites to the design of ecological mitigation measures and sustainable drainage systems.

Ramboll have utilised our skills on a range of industrial projects across the world. These skills include:

- **Development Planning**
  Environmental impact assessments, strategic environment assessments, transport planning and logistics for industrial sites, cultural heritage development advice, contaminated land remediation advice.

- **Industrial Structures**
  The design of structural framing for industrial processes and support structure (pipe bridges etc), industrial warehousing and process buildings, ancillary buildings.

- **Balance of plant engineering**
  Mechanical and electrical design and advice associated with industrial plant infrastructure, eg: street lighting, power supply (HV & LV Systems) and telecoms as well as MEP associated with industrial buildings (heating, ventilation, energy management, environmental modelling etc).

- **Civil Engineering Infrastructure**
  Design and advice on access roads, rail access, access structures (bridges, culverts etc), site drainage, marine offloading structures and utilities infrastructure (site power, water etc).
About the project
Ramboll have a great track record of working with specialist technology providers to deliver bespoke developments tailored to their particular requirements. This includes working closely with leaders in the aero engine testing industry to develop sites and facilities across Europe and the middle east.

With our ‘one company’ approach we are able to maintain a local connection to clients and project teams but are also able to utilise our global reach to deliver schemes in relatively remote locations. We are used to working with the providers of specialist technology and equipment and are able to integrate this within a building design to deliver the technical design and engineering required.

This approach has successfully combined typical local construction methods and products whilst addressing the challenges created by the specialist activities taking place inside.

AER0 ENGINE TEST FACILITIES

CUSTOMER
Various

LOCATION
Various

SERVICES PROVIDED
• Structural Engineering
• Civil Engineering
• Building Services Engineering
• Fire Engineering
• Ground Engineering
VESTAS BLADE TECHNOLOGY CENTRE

Research and Development facility for next generation offshore wind turbine blades

About the project

Vestas are the world leader in the offshore wind industry and required an R&D facility to prototype and test its new wind turbine designs. With 80m long blades, the V164 turbine is a huge leap in wind technology.

Including site selection Ramboll led this project and provided multidisciplinary services that covered the whole spectrum of design and engineering.

Two side by side 172m long by 56m wide industrial halls provide environmentally conditioned space for manufacturing and testing. Heavy duty 35t cranes span across each hall to facilitate movement of components. The new quay wall and yard facility allows the facility to integrate with the global market in which Vestas operates.

Parallel chord roof trusses and thermally efficient materials enclose the halls. The high-tech building plant is contained in steel framed service towers along each elevation. This modular approach to structure and building services allows for future adaption as needs evolve.

The BREEAM Excellent office space utilises the thermal mass of the exposed concrete soffits, chilled beams and ground source heat pumps to provide consistent internal conditions. Wind baffles ensure air is drawn out of the ETFE roofed atrium to provide natural ventilation.

Customer
Vestas

Location
Isle of Wight

Project countries
United Kingdom

Period
2008 - 2012

Services provided
- Structural Engineering
- M&E Engineering
- Civil Engineering
- Geotechnical
- Environmental
- Sustainability
GRUNDFOS PUMP FACTORY

The pump factory, which is the first factory on Grundfos’ 100,000m² site in Istra, Moscow Region comprises a two-storey 2,200m² administration building (basement and ground floor), an 8,750m² production building and a 500m² utility building.

About the project
Besides the buildings all infrastructure on the plot as well as all necessary external utilities outside the plot were included in the project.

Ramboll’s services as general planner comprised geotechnical and environmental surveys as well as all design works including architectural works, construction works and mechanical and electrical installations as well as installations for the production lines. Ramboll was responsible for preparation of the outline proposal, obtaining of building permits, preparation of tender documents and contracting as well as construction management.

Ramboll’s services from award of contract to Grundfos’ taking-over of the completed factory were undertaken within 29 months.

CUSTOMER
Grundfos

LOCATION
Istra, Russia

COMPLETION
2005
About the project
The factory, which is the first factory on Grundfos 150,000m² site in Indjija, Serbia, comprises a production and warehouse building of total 18,000m², built in offices, canteen, kitchen and locker rooms in two floors, total area 4,000m², and a separate administration building in two floors, total area 1,300m².

Further included is a combined utility, waste and storage building located north of the production building, totaling 1,700m². Total area of the new factory is app. 25,000m². Besides the buildings all infrastructure on the plot is included in the project.

Ramboll’s services as general planner comprised geotechnical and environmental surveys, all design works including architectural works and construction works as well as mechanical and electrical installations and installations for the production lines.

Ramboll was responsible for master plan, outline proposal, obtaining of building permits and preparation of tender documents as well as contracting.
NWF CONSULTANCY FRAMEWORK

Providing engineering consultancy services to NWF Group on a framework basis for over 25 years.

About the project
Their site complex consists of a 19 hectare site which has approximately 65,000m² of high quality customs approved warehousing available together with an agricultural feed mill facility and a fuel distribution depot.

All engineering disciplines have been involved in projects for the Group, acting as lead consultant and often employing other design team professionals as necessary and as required.

The work undertaken has included a number of major redevelopments of the site together with minor improvements to the existing buildings and infrastructure and site services.

Particular projects have included:
- Construction of a new headquarters building.
- Construction of a number of new warehouses from 2000m² up to 27,000m².
- Access bridge inspections and off-site highways upgrades.
- New fuel storage facilities.
- Specification of repairs and extensions to roadways and drainage systems.

CUSTOMER
NWF Group Plc

LOCATION
Wardle, Nantwich

PROJECT COUNTRIES
United Kingdom

SERVICES PROVIDED
- Civil & structural
- Mechanical & electrical
- Geotechnical environmental
- Drainage
- Highways engineering
- Project management
About the project
The FPCZ-I factory on Faerch Plast’s 10 ha site in Liberec comprises a 2-3-storey 2,250m² support building including 650m² offices, a 150m² container building and a 11,350m² production building including storage area. Besides the buildings all infrastructure on the plot is included in the project.

Ramboll’s services as general planner comprised geotechnical and environmental surveys, all design works including architectural works and construction works as well as mechanical and electrical installations and installations for the production lines. Ramboll was responsible for master plan, outline proposal, obtaining of building permits and preparation of tender documents as well as contracting and construction management.
GREENFIELD PRODUCTION FACILITY FOR COLOPLAST

A combination of social and competitive aspects influenced Coloplast’s decision to place their fourth production facility in the city of Nyírbátor in Eastern Hungary. Ramboll was selected as General Planner for the entire project.

About the project
The high-tech medico production facility, with offices designed in cooperation with architects and interior designers and over 5,000 sq.m. of cleanroom facilities, was constructed in the least developed part of Hungary. Here unemployment is high, and the new production facility marked the starting point for the development of the city of Nyírbátor and the surrounding area.

“Due to the client’s requirements for production start-up, the project had a very tight time schedule. As a result, tender documents were prepared concurrently with the tendering and the preparation of the building permit application. During the construction phase it was decided to increase the ISO Class 7 cleanroom area from the original 2,500 sq.m. to 5,000 sq.m. Moreover, a chemical warehouse and state-of-the-art emission control technology were implemented and it was decided to modify the design of the entire facility to fulfill the stringent requirements of Coloplast’s insurance company FM Global. Despite the added challenges, the construction was completed in only nine months and Coloplast took over the facility in accordance with the original time schedule”, says Project Manager Jannick Just Hansen.

Ramboll’s Tailor-made General Planner Concept
As General Planner, Ramboll was fully responsible to Coloplast for all performed services comprising design, project management and construction management of the whole production facility, including architectural works, structural and civil works and mechanical and electrical installations as well as utility lines to and from the plot.

Ramboll has developed a General Planner concept that ensures a top quality result from A to Z, from purchase of the plot to the final handover of the completed production facility. The concept is tailor-made for industrial companies planning to build production facilities worldwide. It carefully guides the client through the planning of the building project.

Ramboll takes charge of the entire process from the start of the planning until the completed building is handed over and, within the agreed time and budget, leaves the client with a modern production facility of Western European standard that also reflects our renowned Scandinavian sense of quality and good design.
About the project
The factory, which is the first factory on Coloplast’s 101,400m² site in Zhuhai, comprises a 2-storey 5,500m² administration building and a total of 13,070m² production area, including a 2,700m² clean room and 2,720m² warehouse. A 400m² atrium has been built at the centre of the production area to ensure optimum light in the production areas.

Two small office blocks of 930m² in total for the operational staff of the production are located next to the atrium. In addition to the buildings, all infrastructure on the plot is included in the project.

Ramboll’s services as general planner comprised geotechnical and environmental surveys, all design works including architectural works and construction works as well as mechanical and electrical installations and installations for the production lines.

Ramboll was responsible for master plan, outline proposal, obtaining of building permits and preparation of tender documents as well as contracting.
REFERENCES

**EUROPE**

**HUNGARY**
- **Client**: Grundfos Manufacturing Hungary Kft.
  - **Location**: Tatabánya, Hungary
  - **Period**: 1999 - 2000
  - **Area**: 15,000 m² electromotor factory (New)
- **Client**: Grundfos Manufacturing Hungary Kft.
  - **Location**: Tatabánya, Hungary
  - **Period**: 2000 - 2001
  - **Area**: 14,000 m² pump factory (New)
- **Client**: Grundfos Manufacturing Hungary Kft.
  - **Location**: Tatabánya, Hungary
  - **Period**: 2004 - 2005
  - **Area**: 11,000 m² electromotor factory Extension to existing building
- **Client**: Grundfos Manufacturing Hungary Kft.
  - **Location**: Székesfehérvár, Hungary
  - **Period**: 2006 - 2007
  - **Area**: 26,000 m² pump factory (New)
- **Client**: Grundfos Manufacturing Hungary Kft.
  - **Location**: Tatabánya, Hungary
  - **Period**: 2007
  - **Area**: 1,500 m² administration building Extension and rebuilding
- **Client**: Grundfos Manufacturing Hungary Kft.
  - **Location**: Tatabánya, Hungary
  - **Period**: 2007
  - **Area**: 13,000 m² medico factory (New)
- **Client**: Grundfos Manufacturing Hungary Kft.
  - **Location**: Tatabánya, Hungary
  - **Period**: 2002 - 2003
  - **Area**: 10,000 m² medico factory (New)
- **Client**: Grundfos Manufacturing Hungary Kft.
  - **Location**: Tatabánya, Hungary
  - **Period**: 2004
  - **Area**: 8,000 m² medico factory (New)
- **Client**: Grundfos Manufacturing Hungary Kft.
  - **Location**: Nyírbátor, Hungary
  - **Period**: 2006 - 2007
  - **Area**: 19,100 m² medico factory (New)
- **Client**: Grundfos Manufacturing Hungary Kft.
  - **Location**: Győr, Hungary
  - **Period**: 2005
  - **Area**: 11,000 m² steel service centre (New)
- **Client**: Danagricro (Danæg A/S)
  - **Location**: Tatabánya, Hungary
  - **Period**: 2005 - 2006
  - **Area**: 5,000 m² prod. facility

**TURKEY**
- **Client**: Grundfos Turkey
  - **Location**: İstanbul, Turkey
  - **Period**: 2005
  - **Area**: 6,500 m² sales office and service centre (New)

**CZECH REPUBLIC**
- **Client**: Bang & Olufsen s.r.o.
  - **Location**: Kopřivnice, Czech Republic
  - **Period**: 2005 - 2006
  - **Area**: 14,000 m² AV factory (New)
- **Client**: Bang & Olufsen s.r.o.
  - **Location**: Kopřivnice, Czech Republic
  - **Period**: 2007
  - **Area**: 3,100 m² AV factory Extension to existing building
- **Client**: Faerch Plast s.r.o.
  - **Location**: Liberec, Czech Republic
  - **Period**: 2007 - 2008
  - **Area**: 14,400 m² thermoform factory (New)

**SERBIA**
- **Client**: Grundfos Srbija d.o.o.
  - **Location**: Indija, Serbia
  - **Period**: 2012
  - **Area**: 25,000 m² pump factory (New)

**SLOVAKIA**
- **Client**: Nissens Kalerfabrik A/S
  - **Location**: Trenčín, Slovakia
  - **Period**: 2004 - 2005
  - **Area**: 6,000 m² chiller factory (New)

**RUSSIA**
- **Client**: ZAO Prof-Media Print
  - **Location**: Moscow, Russia
  - **Period**: 2002 - 2003
  - **Area**: 4,000 m² printing house (New)
- **Client**: Grundfos Istra
  - **Location**: Istra, Moscow Region, Russia
  - **Period**: 2005 - 2005
  - **Area**: 11,000 m² pump factory (New)
- **Client**: Grundfos Istra
  - **Location**: Istra, Moscow Region, Russia
  - **Period**: 2007 - 2008
  - **Area**: 5,000 m² pump factory Extension to existing building

**MEXICO**
- **Client**: Bombas Grundfos de Mexico Manufacturing S.A. de C.V.
  - **Location**: San Luis Potosí, Mexico
  - **Period**: 2006 - 2007
  - **Area**: 17,800 m² pump factory (New)

**ASIA**

**CHINA**
- **Client**: Grundfos Pumps (Suzhou) Ltd.
  - **Location**: Suzhou, China
  - **Period**: 2004 - 2005
  - **Area**: 28,500 m² pump factory (New)
- **Client**: Grundfos Pumps (Suzhou) Ltd.
  - **Location**: Suzhou, China
  - **Period**: 2006 - 2007
  - **Area**: 18,500 m² medico factory (New)
- **Client**: Grundfos Pumps (Suzhou) Ltd.
  - **Location**: Suzhou, China
  - **Period**: 2008
  - **Area**: 20,300 m² pump factory Extension to existing building

**THAILAND**
- **Client**: Grundfos Thailand Ltd.
  - **Location**: Bangkok, Thailand
  - **Period**: 2006
  - **Area**: 4,000 m² sales office and service centre (New)

**INDIA**
- **Client**: Vestas Wind Technology (India) Co., Ltd
  - **Location**: Chennai, India
  - **Period**: 2012
  - **Area**: 2,000 m² (renovation of existing building)
- **Client**: Scania, Bangalore
  - **Location**: Bangalore, India
  - **Period**: 2012 - 2013
  - **Area**: 21,000 m², new workshops and office buildings
KEY CONTACTS

MARK TRAVERS
Executive Vice President, Global Practice Development

Mark Travers has more than 35 years of experience in applied science and engineering, with particular emphasis in multi-media site assessment and remediation; municipal and hazardous waste management; environmental and geotechnical engineering, contaminated sediment assessment and remediation; construction engineering; mine and ore-processing site development and operation; natural resources restoration; construction management; and litigation support and expert testimony. Mark’s experience includes projects with both private corporations and government organizations at various locations around the world in response to wide range of regulatory environments, including numerous projects in the Americas, Africa, Europe and Asia-Pacific.

MTRAVERS@ramboll.com
M +1 312 3758080

LARS OSTENFELD RIEmann
Global Director, Buildings

Lars Ostenfeld Riemann is the Global Director for Buildings in Ramboll. In this function he provides Strategic Leadership of Ramboll’s business in the Global Buildings Market. With 20 years of experience Lars has industrial project experience from more than 30 countries. His main focus is to ensure Ramboll stays in front in terms of its client relationships, design capabilities and the use of digital technology in the design process.

LOR@ramboll.com
M +45 5161 6897