2024

Leca®
SAINT-GOBAIN

BUILD

A MAGAZINE FROM LECA

Water Management

Housing

Infrastructures

N.° 000

BUILD is a magazine published by Leca International
Cover: Modern housing, Poland

Flash Facts

5.000 days

Occupational safety and continuous improvement are at the heart of our values. We want every employee to get home healthy. In March 2023, Leca Finland's Kuusankoski LWA plant celebrated 5,000 days without a non-lost time accident at work. Achievement is about systematic work for occupational safety and to reduce risks. According to Seppo Saarinen, Production Manager, the keys to success are the following: "Continuous learning, a good attitude of staff towards occupational safety and, above all, that we find occupational safety as a common issue."

4.195

People attended seminars, conferences and webinars during which solutions using Leca expanded clay were presented by the Leca Poland team in 2022. Presentation topics covered the entire spectrum of applications, with a particular focus on geotechnical engineering people and the environment.

15% decrease

In 2022, in diesel consumption in machines (in Liters) compared to 2021.

What was done:

- Replacement of all old wheel loaders with new machines,
- Replacement of some old diesel forklifts with electric forklifts,
- Making all operators aware of the rational use of machines.

Leca® lightweight aggregate – an excellent material for renovating ceilings.

Leca® expanded clay is a material that is appreciated and recognised by a wide array of designers and contractors, especially those involved in building renovation work. Its unique properties make it perfect for renovations of all kinds of ceilings. Taking advantage of the availability of Leca's many size fractions of lightweight aggregate, it is possible not only to level an uneven or sagging ceiling but also to reduce its load or provide adequate sound insulation. Depending on the solution adopted, the expanded clay may be used to merely fill the void inside the ceiling or, as is most often the case, it serves as a filling and base for the screed. It is worth mentioning at this point that this material is widely accepted by building conservationists.

Something old, something new

You may have noticed that our traditional logo has gotten a new look recently. With the new logo, we want to express our connection to the Saint-Gobain group and strengthen our position as part of the group's valuable and well-known brands, such as ISOVER, Weber and Gyproc. In our operations, we follow the group's values and operating principles, which is why we are proud to be able to make this change.

For our customers, the change means an even more comprehensive overall solution and getting numerous well-known building materials "under the same roof", quickly and effortlessly. Leca's expert teams around Europe are ready to help with all questions related to Leca solutions.

Leca®
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Housing

Poland

***Modern housing** estate surrounded by green forests of the Tricity Landscape Park*

MODERN HOUSING ESTATE BUILT IN LINE WITH THE SLOW LIFE PHILOSOPHY

On the border of Gdynia and Sopot, surrounded by green forests of the Tricity Landscape Park, a modern housing estate has been created, designed in accordance with the slow life philosophy.

The location of the estate and its architectural concept bring together all the advantages of the city and the convenience as well as the comfort that come with living in a quiet and peaceful environment. Low-rise, low-key buildings, wellthought-out design, high-end finishing materials inspired by nature and meticulous workmanship all create the unique atmosphere of this elegant estate. The buildings are integrated into the greenery and tranquillity of the surrounding forest, fully in harmony with the idea of slow life, which supports the thematic concept of making life as comfortable as possible.
One of the key elements of the project was the development of space around the buildings. Garage halls that are completely hidden beneath the greenery, the carefully landscaped, multi-level terrain, landscaping elements and water arrangements all create a functional and architecturally coherent whole.

Retention and Leca LWA

Leca® lightweight aggregate (LWA) was used to create a retention and drainage layer on the surface of the vegetation-covered garage ceilings and as a supporting material for landscaping. Leca LWA uniquely combines the ability to quickly drain excess rainwater with the ability to partially store it at the same time. The retained water remains readily available to the plant's root system whereas the free space between the aggregate grains facilitates air supply.

Easy and quick application

During construction, the contractor recognised the possibility of the pneumatic delivery of lightweight aggregate. Most of the aggregate was delivered by truck equipped with a pump and the material was fed directly to the site for its placement. Material was also delivered in big bags with the help of a crane. The laying of a layer of expanded clay was done without the need for internal transport or handling.

Proven solution

The investor, and at the same time contractor, has once again opted for the Leca LWA in the implementation of his project. This is a clear indication of his confidence in the product and the functionality of the solutions offered. The designers too, based on their previous experience with the Leca LWA, used it in their design study without any doubts or concerns.

PROJECT INFORMATION

Site: Sands Leisure Centre, Carlisle

Investor: Carlisle City Council

Contractor: MGL Group

Project: New 8-Lane, 25m Swimming Pool

Product: Leca® LWA 10-20mm

Quantity: 700 m³

***The material** was fed directly to the site of its placement*

***Modern housing** estate surrounded by green forests of the Tricity Landscape Park*

8 QUESTIONS TO THOM SCHONK

Thom Schonk - Procurement Manager - Nieuwkoop Europe B.V.

Thom Schonk has been with Nieuwkoop Europe B.V. for over 14 years. Starting as a Commercial Manager in 2008, he has been a Procurement Manager since January 2018 and is responsible for purchasing materials and products for resale. His main task is planning, coordinating, and dealing with buyers and purchasing departments in various organizations.

1. Give us a little introduction to your company. How big is the company, what is your focus? What range of plants do you offer?

Nieuwkoop Europe is a nursery and wholesaler of hydroponics and potted plants that offers a comprehensive range of plants and accessories for indoor greening. In addition to many different types of indoor plants, this also includes pots, planters and green walls, as well as the products needed to implement and maintain indoor greening. In short, everything you need to transform any indoor space into a fresh, green environment! Nieuwkoop Europe can deliver worldwide, but only sells to interior designers and resellers of green plants, such as florists and web shop operators. A comprehensive service is of utmost importance to us. We strive for a close relationship with our customers and are happy to support them with our advice regarding the implementation of planting projects. We use our extensive knowledge and experience to advise on plant selection, on complex logistical issues or in compiling a complete product.

2. How long have you been involved in the field of hydroponics?
We have been active in hydroponics and the distribution of plants and accessories for over 50 years, since the early 1970s. Over the decades, we have been instrumental in developing, influencing, and promoting the large market of indoor greening with hydroponics plants and hydroponics components.

3. In your opinion, how large is the plant spectrum in hydroponics?
Basically, you can grow all indoor plants in hydroponics. Even orchids or cacti, which usually prefer dry soil or substrates, are suitable. When choosing a plant, make sure that it is suitable for the intended location, i.e. that the light conditions are sufficient, and that it is well cared for. Today we offer a large selection of plants that have proven themselves over the decades in hydroponics and indoor greening and are widely used, including the well-known species such as Aglaonema, Anthurium, Dracaena, Chamaedorea, Ficus, Monstera, Philodendron, Sansevieria, Schefflera with their diverse species.

4. Why do you use Leca®ton? And when did you first encounter it?
The basis of hydroponics is the substrate, in this case expanded clay. As hydroponics is a closed system, it is important that there are no harmful interactions between the root, the fertiliser and the substrate in the cultivation vessel that could harm the plant. Based on first positive experiences and investigations with various expanded clay origins, Leca®ton emerged as an excellent substrate at German research institutions in the 1970s. Even then, the excellent raw clay properties made Leca®ton an expanded clay granulate of outstanding quality. Salt content, pH value, water absorption, air void content, weight, grain shape and colour have made it indispensable in our applications ever since.

5. What role does the quality of the expanded clay play? Which technical requirements must the product fulfil? (e.g. grain size, water absorption, chemical composition)
As already mentioned, the quality of the expanded clay plays a special role. For this purpose, very clear specifications were drawn up 50 years ago, which an expanded clay had to fulfil - it must not exceed or fall below certain values for salt content, bulk density, water level, pH value, sodium, chlorine, or fluorine. Today, there is an RAL certification procedure in Germany by the independent Gütegemeinschaft Substrate (Quality Association for Substrates), which expanded clays can undergo. In this procedure, the expanded clay is externally monitored and must, amongst other things, fulfil the above-mentioned criteria. Currently, Leca®ton is the only RAL-certified expanded clay in Europe. This is the reason for us to continue working with Leca®ton.

6. In your opinion, what are the advantages of hydroponics with expanded clay?
The big advantage is the optimal supply of the plant with water, air, and fertiliser. The water level indicator allows me to see at any time whether the plant is too dry or too wet. By using a slow-release fertiliser, I can fertilise the plant optimally for periods of 3-4 months. By checking the water level in the planter with the water level indicator, I ensure an optimal supply of air to the plant at all times, as the oxygen can circulate well in the porous expanded clay and its interstices above the water level and supply the roots with oxygen.

7. What are the current trends in hydroponics from your point of view?
The current trend is towards “green walls” which can also be implemented by means of expanded clay. There are complete hydroponic greening systems with Leca®ton; here, the nutrient solution circulates through the planters of the green wall with the help of a pump and gravity. This can significantly increase the humidity in rooms and enhance people’s well-being.

8. How do you see the future of hydroponics?
We are very positive about the future of hydroponics. In our eyes, it continues to be irreplaceable in professional indoor greening and represents the absolute standard due to its easy maintenance.

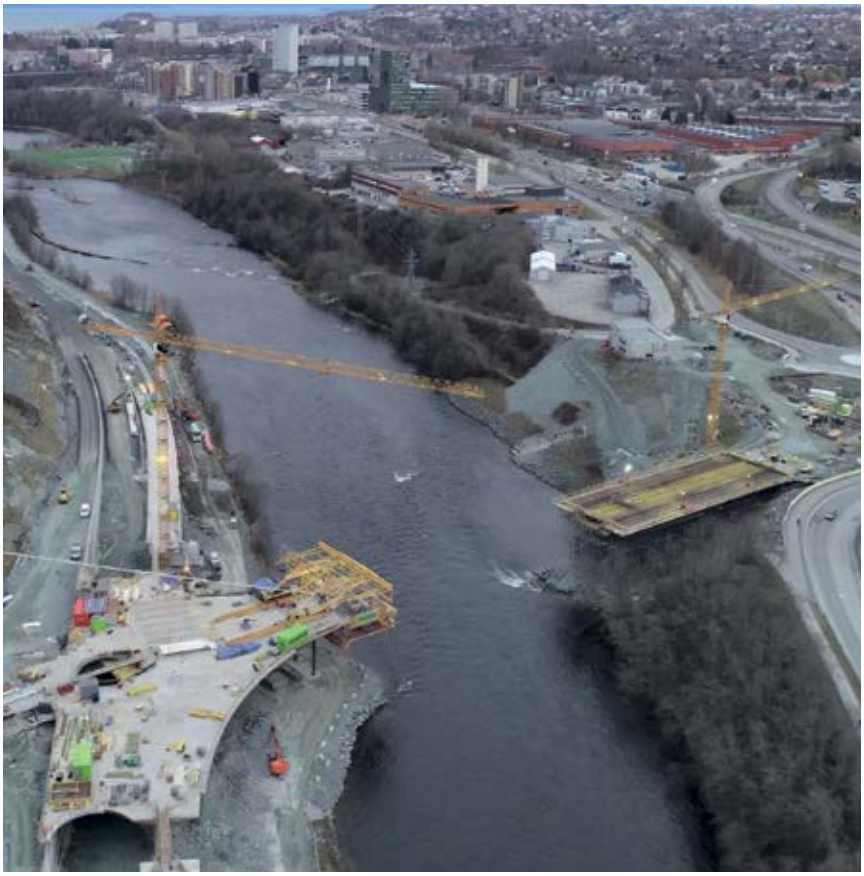
Photo: *Asplan Viak drone services.* ***LANDMARK:*** *Nydalsbrua will become a landmark in Trondheim*

LECA NORWAY IS AN IMPORTANT CONTRIBUTOR TO A NEW LANDMARK IN TRONDHEIM

Has delivered 1,200 m³ of lightweight clay as aggregate for the production of high-strength lightweight concrete.

In October, Nydalsbrua at Sluppen in Trondheim will be open to traffic. With a span of 111 meters over Nidelva and a bridge tower of 55 metres, the bridge will become a landmark in the main city of Trøndelag.
Nydalsbrua will help to ensure that rush hour traffic on the south side of the city will flow significantly more easily. The existing Sluppen bridge, which for many years has been a notorious bottleneck, will be converted into a pedestrian and bicycle bridge. Nydalsbrua, which will have a total length of 184 metres, is being built as a combined cable-stayed box bridge and cable-stayed bridge where steel cables from a massive concrete tower on the west side of the Nidelva will carry the main span of the bridge.
The tower itself is again anchored to the tunnel inserts of the future Byåsen tunnel (construction is due to commence in 2027 at the earliest) While the first part of the bridge was cast from the ground, the rest of the bridge is now being cast using the free-build method. The bridge is cast in eight different stages from the Byåsen side towards the Sluppen side, where each stage is 8.5 metres.

SELF-WEIGHT: Bridges built according to the free-build method depend on a low weight so that the bridge can support itself during the construction phase. Leca Norge delivered the aggregates for the production of lightweight concrete for the Nydalsbrua in Trondheim.



PROJECT INFORMATION

Site: Bridge in Trondheim

Investor: Statens Veivesen

Contractor: Skanska

Project: Nydalsbrua (combined cable-stayed box bridge and cable-stayed bridge)

Product: Leca 800, 4-12 mm

Quantity: 1,200 m³

Lightweight concrete

In order to be able to build a bridge according to the free-build method, it is dependent on the bridge being able to fully or partially support itself in an unfinished state. And the greater the span of the bridge, the greater the challenge with self-weight.

By replacing conventional concrete with lightweight concrete, the specific weight of the bridge will be significantly reduced. Where normal concrete has a density of 2350 kg/m³, the density for lightweight concrete is only 1950 kg/m³.

A lower specific weight means that the span of the bridge can be longer, which in turn makes the placement of the foundations more flexible. Lightweight concrete will also be able to provide both lower construction costs and less CO2 emissions.

The first bridge to be built with highstrength lightweight concrete in Norway was the Endrestø bridge in Rogaland in 1987. Since then, more and more bridges in the Nordics have been built with concrete of a lower density.

In this context, Leca lightweight aggregate has become an increasingly popular aggregate in the production of lightweight concrete. Challenges related to pumping have been solved by pre-watering the aggregate before production itself. In regards to Nydalsbrua in Trondheim, Leca Norge has delivered 1,200 m³ of lightweight aggregate (Leca 800, 4-12 mm), which has generated the concrete quality LB55 MF40.

Unicon AS has been responsible for the actual production of the lightweight concrete. The company is Norway's leading concrete supplier with 150 employees and 24 permanent factories.

SKÅKABELBRU: *Nydalsbrua is built according to the free-build method. The bridge is cast in eight different stages from the Byåsen side towards the Sluppen side, where each stage is 8.5 metres.*

MEET THE GLOBAL SUSTAINABILITY DIRECTOR AT RAMBOLL TRANSPORT

ELINA KALLIALA

Sustainable development requires broad-based collaboration and the courage to experiment. Elina Kalliala from Ramboll encourages construction operators to develop new things – and share their setbacks. Working together creatively and boldly helps tackle common challenges.

Elina Kalliala is the Global Sustainability Director at Ramboll Transport. With around 3,600 colleagues, her job is to lead and develop sustainable development in the mobility, infrastructure, and land use sector.

"I have been with Ramboll Finland for 16 years. When I started, I was a graduate student of landscape architecture with a particular interest in sustainability and internationality. In my current role, I have had the opportunity to learn and promote sustainability practices in various countries and on different continents. Even if the cultures and practices vary, the goals are the same for everyone," says Kalliala.

Sustainability has always been at the core of Ramboll's operations.

"Our mission is to create sustainable societies where nature and people flourish. Sustainability is an integral part of Ramboll's business, as was ensured by professors Ramboll and Hannemann, who founded the company in 1945," says Kalliala.

Ramboll's strategy focuses on sustainability and the four related unifying themes, which are directly linked to challenging global goals: biodiversity & ecosystems, decarbonise for net zero, resource management & circularity and resilient societies & liveability.

"Regarding these unifying themes, we want to increase our staff's awareness and skills through concrete actions and develop practices and solutions with our customers in all our projects. It is no

longer enough to focus on minimising negative impacts. Instead, we must also be able to increase the positive impacts of our projects holistically and in line with the principles of regenerative design."

***Sustainable** and interesting solutions are created by recycling and utilizing old structures and materials, Kings Cross, UK*

Lightweight concrete

Environmentally friendly products are of great value to the entire construction sector.
"We are all facing the same problem: we must find sustainable construction methods, and sustainable materials play a key role in that," says Kalliala.

When it comes to development, much is expected of material producers, which is why Kalliala encourages all operators to be bold in developing and experimenting with new solutions and, where possible, to work with designers and contractors.
"We, as an industry, should experiment and develop resource-efficient materials that support the circular economy and can offer multiple benefits. This is a shared challenge, so it is important for all actors to work actively together. All open and purposeful activity will accelerate change."

The whole sector aims to reduce the use of virgin raw materials and materials with a high emission intensity.
"The use of recycled materials and the potential for the reuse of materials should already be considered carefully in the design phase. Awareness of the properties of materials should be increased to facilitate reuse by knowing exactly what materials are used in construction and how they can be reused," says Kalliala.

ONE SINGLE CLAY PELLET DOESN'T REPRESENT A LOT
BUT MANY CLAY PELLETS CREATE A BETTER FUTURE

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