

Beyond ^{#4 2015} CONSTRUCTION

22

*Ole's team is making
a difference in Asia*

NCC places stringent demands
on workwear.

16

Renewable
wind power at
Mombyåsen

14

4

Four quarries in
Finland creating
habitats for a variety
of animals and plants.

28

*«The safe
working
conditions
we enjoy here
don't exist in
my homeland
yet»*

Tomasz Markowski,
Carpenter

THEME:

Advancing sustainability

19





AUGUST 24, 2015, 11:18 P.M.

Empty thoroughfares in central Vantaa outside Helsinki being covered in new, black asphalt under the light of a summer night. The area is home to some 200,000 people. Paving work begins when the streets are empty at night and continues until 6:00 the next morning. Night-work must happen quickly and efficiently to ensure that it's finished before rush-hour traffic starts.



«NCC is taking a comprehensive approach to the future»

THIS ISSUE OF Beyond Construction focuses on sustainability – but what does this term actually mean? In broad and somewhat simplified terms, sustainability is about caring for our planet and managing our resources efficiently so that future generations can also live in a healthy world.

NCC's operations impact society as a whole in both the short and long term. This is why we focus on all aspects of sustainability – environmental, social and financial. On the following pages, you can read about some examples from our day-to-day business.

The Children's Construction School is a popular initiative focused on future generations, organized by NCC each year. It must be admitted that a few Band-Aids were needed during this year's summer session in Norway, where children were given the opportunity to hammer a few nails and learn about the environment, health and safety. The children were delighted with the experience and will hopefully be able to teach their parents a thing or two as well.

In Finland, we are in the process of restoring the land at four quarries to a natural environment. Step by step, new ecosystems are emerging, from which life and plants will eventually sprout. By the way, did you know that NCC has a purchasing office in Shanghai? Our colleague Ole is hard at work there, ensuring that the companies that produce our workwear meet NCC's strict requirements for sustainable manufacturing.

We are also pleased to share our eco-friendly cleaning tips for the Christmas season!

Enjoy the read and
Merry Christmas!

Liselotte

Liselotte Bergkvist
EDITOR-IN-CHIEF



IN PROGRESS...

On January 1, 2016 a new organization will take effect at NCC. The Group is being reorganized into five Nordic business areas: NCC Industry, NCC Infrastructure, NCC Building, NCC Housing and NCC Property Development. The changes are a natural consequence of NCC's transition to a new strategy period – profitable growth.



Pictured: Johanna Eriksson works as a Project Manager at NCC.
Photo: Erik Mårtensson.

Beyond Construction, NCC's Group-wide employee magazine, is published four times a year in the local language of all the NCC countries. The magazine's mission is to provide an account of NCC's business operations from an employee perspective, based on our core values: honesty, respect, trust and pioneering spirit.

Editor-in-chief and publisher: Liselotte Bergkvist

Editorial team: Maria Landelius, Matilda Praesto, Niclas Köhler, Åsa Thoft, Linda Ericsson, Jenny Gaulitz, Erik Mårtensson

Design and production: Åkesson & Curry, Linda Ericsson

Printing and distribution: Göteborgs-tryckeriet

Copies: 22,000. Published in seven languages.

Printed on environmentally labeled Arctic Paper, Munken Polar

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What do you think about the content of Beyond Construction? We are interested in hearing what you want read about. E-mail your comments and suggestions to
✉ beyondconstruction@ncc.se.



THEME

19 **SCHOOLCHILDREN BRINGING** their plans to increase biodiversity to life. During the summer, they built bumblebee nests at NCC's Children's Construction School.

«You learn that there's no time for messing around»

MAJID HUSSAIN – THEME, PAGE 27

6 **THE DOME OF VISIONS** has been in place in Stockholm since the autumn. It is a venue for new meetings and innovative thinking about a more sustainable society.



NCC'S HEROES

13 **TARA NOURI** is passionate about equality and diversity. As part of the Stella network, she supports others and inspires them to think outside the box.



LEARN MORE ABOUT WHAT'S HAPPENING AT NCC ON STARNET AND STARWAY.

06//The Mixer

Read all the latest about what's going on at NCC.

11//Heroes

Meet Ida, Stefan and Tara, who are all making a difference in their workplaces.

14//Work in progress

Biodiversity: What NCC is doing to restore nature at its discontinued quarries.

16//Project in focus

Mombyåsen Wind Farm: When building a wind farm, 80 tons of reinforcements are needed for each concrete formwork.

19//Theme: Advancing sustainability

NCC's vision is to provide superior sustainable solutions – both for the environment and with respect to social and ethical issues.

30//The Tool Box

Everyday tips for a more eco-friendly Christmas.

33//Outlook & Recon

Read more about the growing popularity of rental bikes around the world, how waste is becoming a raw material and bridges equipped with wind turbines.

35//If the man in the street should ask

NCC's methods are being used to produce asphalt that generates lower carbon emissions.



OLD BOMB FOUND ON RESIDENTIAL CONSTRUCTION SITE



Article from the German newspaper Bonner Generalanzeiger.

AN UNEXPLODED BOMB from World War II was discovered this summer at the Stadttor Bonn-Beuel construction site in Bonn, Germany, where NCC is building 200 housing units.

The 125-kilo British flash bomb, which lay two and a half meters underground, was discovered by munitions destruction experts, who were brought in to search the land before NCC began excavation.

The construction site was evacuated and it took three hours to disarm the bomb.

While it is not uncommon for bombs from World War II to be found on construction sites in Germany, this particular bomb was unusual in that it was a flash bomb, which were dropped to illuminate areas during night bombings.

The housing units to be built in Bonn.



Dome provides space for innovative thinking

WITH ITS SPECTACULAR architecture, the Dome of Visions is attracting considerable attention in Stockholm.

Since its inauguration in September, a steady stream of exhibitions, seminars and artistic events related to sustainability have been held at the dome.

The main theme during the autumn was Influenced by Space. Among other events, hundreds of astronauts from around the world gathered for a space conference hosted by Swedish astronaut Christer Fuglesang.

The Dome of Visions is a multi-dimensional meeting place and sustainability project and is a collaboration between NCC and the Royal Institute of Technology in Stockholm (KTH).

The transparent dome, which is built from wood and polycarbonate, measures 20 meters in diameter and is ten meters tall. The innovative architecture aims to stimulate creative thinking and dialog.

[www](http://www.domeofvisions.com) Read more at domeofvisions.com

ON THE PLUS SIDE

NCC IS BUILDING SWEDEN'S first plus-energy apartment blocks. The buildings will be essentially self-sufficient with respect to energy and, like passive buildings, require nearly no additional heat. Using solar cells, the properties will produce sufficient electricity to meet their own electricity requirements and generate a surplus of renewable electricity, which can be delivered to the public power grid. One residential building has already been completed in Halmstad and a similar unit is currently being built in Linköping.



4

The surplus transferred to the public power grid from the plus-energy building in Halmstad is enough to provide hot water and electricity for four people.



THE MESSENGER

Like a relay, employees answer a question, which is then passed on to the next person.

What should you do in your day-to-day work to contribute to sustainable development?

SWETLANA ARENGOLD, Development Manager at NCC in Germany:

«Sustainability is a major issue when it comes to developing new housing projects. We always consider how we can deliver the housing of the future with environmentally friendly electricity and heat using such technology as solar cells or heat pumps. Our 'Quartier Plus' project in Hamburg has also shown that sustainability can provide good value for money.»



PETER SUNDQVIST, Quality, Environment and Work Environment Manager at NCC in Sweden:

«I mostly cycle and take public transport, use cloth bags when I buy groceries, buy new technical gadgets only when my old ones stop working, sort my household waste, drink coffee from porcelain cups and teach my children to take care of our planet.»

Continues on next page...



MORE RENTAL UNITS IN LESS TIME

THANKS TO THE NCC Folkboende concept, NCC can produce highly sought-after rental units in only one year and at a reasonable price. An efficient building process and primarily proprietary production reduces construction costs and cuts construction time. Yet every square meter is carefully thought out in order to optimize the amount of usable floor space tenants receive for their rent.

Several housing units have already been completed in northern and central Sweden.



PHOTO: ERIK MÅRTENSSON

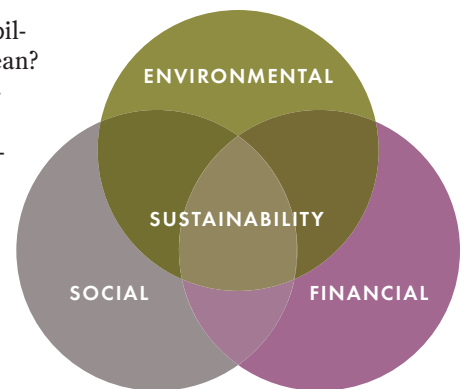
Vapelhöjden in Sundsvall.



IN PLAIN ENGLISH

ADVANCING SUSTAINABILITY

THIS ISSUE focuses on sustainability. But what does this really mean? The term, which was first introduced by the UN in 1987, comprises three areas: environmental, social and financial sustainability. These areas complement one another and together enable the long-term and sustainable development of society – for us and for future generations. NCC thus focuses on all three areas.



ENVIRONMENTAL SUSTAINABILITY

– efficient long-term management of human and material resources. This reduces the negative impact on nature and people's health, and protects our ecosystems. Emissions decrease and existing resources are reused.

SOCIAL SUSTAINABILITY

– building a long-term, stable and dynamic society where basic human needs are met. This includes protecting democracy, justice, human rights, education, health, safety, equality and diversity.

FINANCIAL SUSTAINABILITY

– financial growth cannot be allowed to result in a segregated and unequal society or the destruction of the environment. Society must be adapted to the well-being of the environment and people's health, with a long-term investment in these resources.

Source: Wikipedia, Sustainable development



THE ROYAL INSTITUTE OF TECHNOLOGY IN STOCKHOLM – THEN AND NOW

» NCC's forerunner, Nya Asfalt AB, was involved in the construction of the main buildings of the Royal Institute of Technology in 1914–1917. This year, the Dome of Visions was built on the same site.



PHOTO: KENNETH SUNDH

NOW



ILLUSTRATION: KRISTOFER TELGAARD

PRIME LOCATION FOR PEREGRINE FALCONS

NCC HAS CONVERTED two cement silos in Copenhagen into the Portland Towers office buildings. Scandinavia currently has a shortage of undisturbed breeding areas in ideal locations for birds of prey. This is why the company also built a nesting box for peregrine falcons at the top of the building – 59 meters up in the air.

Unfortunately, this year's March breeding season came and went without any falcon couples moving in. We are now crossing our fingers and hoping to hear the pitter patter of tiny falcon talons on the roof next year.



PHOTO: JOHN LANSSEN



MARJUKKA KUITTI-NEN-JUSSILA, Project

Manager at NCC in Finland:

«I am responsible for managing and structuring the heating, ventilation and sanitation planning for all of our housing projects, as well as for managing our warranty periods. I consider a project a success when we have the opportunity to develop and add sustainable solutions in the planning stage. Feedback from other experiences helps us to continuously improve our efforts in the area of sustainable development.»



LENE KLEVJER, Project Controller at NCC in Norway:



«At my workplace, we save most documents electronically. We print very little, so we don't over-consume paper, which is good for the environment.

We also collect broken signs, sort out the steel and take it to be recycled. This allows us to sort our waste while earning money for the project.»



THOMAS OLSEN, Controller at NCC in Denmark:



«At home, we sort all of our garbage and always turn off the lights. We are also renovating our house. We recently replaced our gas oven with a more energy-efficient alternative.»

WANT TO JOIN IN?

Do you have a question you want answered? Do you wonder what your colleagues in other countries think and how they resolve problems? Send your question to the editorial team.

✉ beyondconstruction@ncc.se



NCC is making a difference in the world

CHRISTMAS
GIFT
2013

CHRISTMAS GIFT SAVED LIVES IN HAITI

THE MAJORITY OF NCC's Christmas gift for 2014 went to the organization Doctors Without Borders. The SEK 750,000 donated by NCC has been used for complicated deliveries and care of children in Haiti. Much of the healthcare on the island is privatized and costly, which means that most of the population cannot afford medical help. In 2015, Doctors Without Borders performed 6,000 deliveries, most of which involved complications, and provided 9,500 people with other forms of hospital care.

CHRISTMAS
GIFT
2014



CLEAN WATER FROM ALL WATER PUMPS IN NIGER

ALL 60 WATER PUMPS donated by NCC to Niger for Christmas 2013 are now supplying clean washing and drinking water. The pumps are dramatically improving the lives of approximately 15,000 people in the country. Only 10 percent of Niger's

population has access to a working toilet. Due to a water shortage and lack of information, few people wash their hands after using the toilet. This spreads infections that mainly affect children under the age of five.

112

Over the course of 112 days, all of NCC's employees, associates and business partners had the opportunity to donate money to support refugees from the war-torn nations of Syria, Afghanistan and Iraq. The money raised is being divided evenly between the UN Refugee Agency (UNHCR) and Doctors Without Borders. On September 10, NCC donated SEK 200,000 – marking the start of the campaign, which raised an additional SEK 169,150 in its first week alone. Donations can still be made. **The campaign will continue until December 31.**

GIFT
SEPTEMBER
2015



Make a donation via Starnet or by using the above QR code.



NCC's first preschool in Russia

NCC IS BUILDING its first preschool in Russia outside St. Petersburg. The energy consumption of the three-story building will be 20 per cent lower than the Russian construction standard for new production. The preschool is being built in the Öland residential area in Murino Municipality and will be completed in the 2016 autumn term,

when 240 local children will arrive ready to laugh, play and learn. The attendees at the groundbreaking ceremony included: Juuso Hietanen, President of NCC Housing in Finland and Russia; Mikhail Moskvina, Deputy Governor for the Leningrad region; and Erik Hammarsköld, Consul General of Sweden in St. Petersburg.



PHOTO: ZHUKOVA VERONIKA



PHOTO: ERIK THOR

HELPING MORE STUDENTS WITH THEIR MATH HOMEWORK

IN THE AUTUMN, NCC signed a new, three-year sponsorship agreement with the non-profit organization Mattecentrum. This will help more volunteers help more students with their math homework in Sweden, Denmark and, now, Norway. NCC employees also act as volunteers. In the long term, the agreement may also be extended to provide free homework help in Finland and Germany.

A strong knowledge of mathematics is important for young people looking to study engineering.

However, in several Nordic countries, math skills at the compulsory school and upper-secondary school level have deteriorated in recent years. At the same time, the construction industry is predicting a major shortage of engineers in the coming decades.

NCC HAS BEEN Mattecentrum's main sponsor since 2013. Mattecentrum has more than doubled its support since then and currently assists 250,000 Swedish students with their math homework every month.

APP TO REDUCE ACCIDENTS

SYNERGI LIFE, NCC's new system for reporting occupational health and safety incidents, is now being introduced. All employees will be able to register accidents, close calls and observations using a mobile app, among other methods. By using the system, you can help improve workplace safety throughout the Group.

Among other features, Synergi Life can perform an in-depth analysis of the causes of incidents, which will be an important tool in our efforts to prevent accidents. Synergi Life was developed by the company Det Norske Veritas. More information about when the system will be rolled out in your country will be published on Starnet, Starway and Wallpaper.



ILLUSTRATION: DET NORSKE VERITAS

 starnet.ncc.se



Accident



Close call



Observation

ILLUSTRATION: KRISTER WIKSTRÖM

Text: **Matilda Praesto**
Photo: **Erik Mårtensson**

♥ **NCC'S HEROES: IDA DE NEERGAARD LÄNDIN**

11

Do you have a colleague who's a hero?
Let the editorial team know.

✉ beyondconstruction@ncc.se

Name: **IDA DE NEERGAARD LÄNDIN**

Occupation: **PROJECT MANAGER**

Workplace: **STOCKHOLM, SWEDEN**

Nominated by **MICHAEL NORELL** «Ida is responsible for developing aftermarket services that create added value for our customers and for NCC. She is also passionate about the genuine efforts being made to preserve our national treasures. Ida tackles challenges with great enthusiasm and exudes positive energy. »



WORKING FOR A LARGE

company like NCC is very exciting. No two days are the same and everything involves new challenges. In my role, I help my colleagues to develop and spark their interest. I have always been hungry for new challenges, which is why I chose to become involved in NCC's aftermarket work, in addition to project management. This work mainly focuses on customer care, since the most important thing is to keep the customer happy throughout the warranty period – this is how we maintain a strong brand. As a colleague, I'd say that I'm a good listener – understanding and personal. I also try to ensure that everyone is entitled to a healthy work environment, both physically and psychologically. For me, a hero is someone who is brave enough to stand up for people who don't have the opportunity to stand up for themselves. Perhaps I was nominated because I am dedicated to helping people. If I start something, I follow through wholeheartedly – I want NCC and my colleagues to benefit from my work.»

«For me, a hero is someone who is brave enough to stand up for people who don't have the opportunity to stand up for themselves»

Name: **STEFAN GLIENKE**

Occupation: **FOREMAN**

Workplace: **HAMBURG, GERMANY**

Nominated by **OLAF KUZNIAK** « Stefan is a highly dedicated foreman. One of his many great ideas was to designate easily accessible areas for fire extinguishers and first-aid kits. »



I OFTEN THINK about how I can improve the work processes at my worksite. But the best ideas often come spontaneously. For example, I noticed that the entrance to the building we were constructing was too high for us to enter the building normally. So I tried to think of a quick solution. Together with my team, I built a set of steps out of leftover scaffolding material. This was a simple idea that reduced the risk of tripping and made it easier when we were carrying in heavy material. My site manager suggested that I submit this idea to our Health and Safety Competition. And I actually won. I also try to motivate my colleagues to share their ideas for improvements. Particularly older colleagues who have so much experience and good practical ideas. We need to make sure to share our experience. That's why I'm such a big supporter of this competition, which can help us to improve our work environment and our way of working. I don't consider myself a hero, but I like to take responsibility and be a good role model.»



«The best ideas often come spontaneously»

Name: **TARA NOURI**
Occupation: **PROJECT ENGINEERING MAN-
AGER**
Workplace: **GOTHENBURG, SWEDEN**

Nominated by **FREDRIK JOHANSSON** «Tara's passionate commitment to equality and diversity is an inspiration to us all – to NCC and to the construction industry as a whole.»



I JOINED THE Stella women's network when I started at NCC three years ago. When people ask me about Stella, I'm careful to explain that the network is not about creating an atmosphere of 'us versus them' – women against men. On the contrary, it's about working to ensure that there is only one 'we' at NCC. I have also been a Stella coach for the past two years. We discuss various issues at our meetings, such as equality initiatives, upcoming activities and who to turn to if, for example, an unpleasant incident happens at work. Then I, as a coach, can offer support and tips, or refer them to the right person to talk to. Many people have experienced the same things and hearing this gives them strength, knowing that they're not alone. I feel very proud when we conduct our study visits – proud of NCC's projects and to see so many female employees and young supervisors. Stella is also a good way to market NCC and encourage more women to apply to the company. Equality and diversity give NCC a new perspective on its operations and the world. It's good for business. And for the company's employees, who gain a more balanced understanding of reality.»

«...it's about working to ensure that there is only one 'we' at NCC»





New life in old quarries

Dead tree trunks standing like exclamation marks at a quarry, ready to become new habitats.



«**KIELO is an abbreviation of the Finnish expression 'living nature of stone'»**

4

quarries in Finland are part of a project intended to restore nature in areas where rock has been extracted.

HUMANS DEPEND ON the functioning of the planet's ecosystems. But for these ecosystems to work, several species of animals, plants and fungi must exist and interact. NCC's quarries and gravel pits have the potential to protect species that may otherwise face a difficult situation. This is why NCC in Finland started the KIELO project in 2012 – a project designed to increase biodiversity during and after stone extraction.

Four projects are being carried out at quarries in the Finnish towns of Ohkola, Nokia, Loviisa and Tampere. The KIELO project has also compiled a biodiversity manual to inspire more people to do their part for nature. The manual is available in Finnish and English.■

Download NCC's manual here: ncc.fi/kielo

Cities: **Ohkola, Nokia, Loviisa, Tampere**
Country: **Finland**

A new ecosystem is emerging in NCC's Finnish quarries

1 Clean soil and tree trunks are placed in areas where stone extraction has been completed.

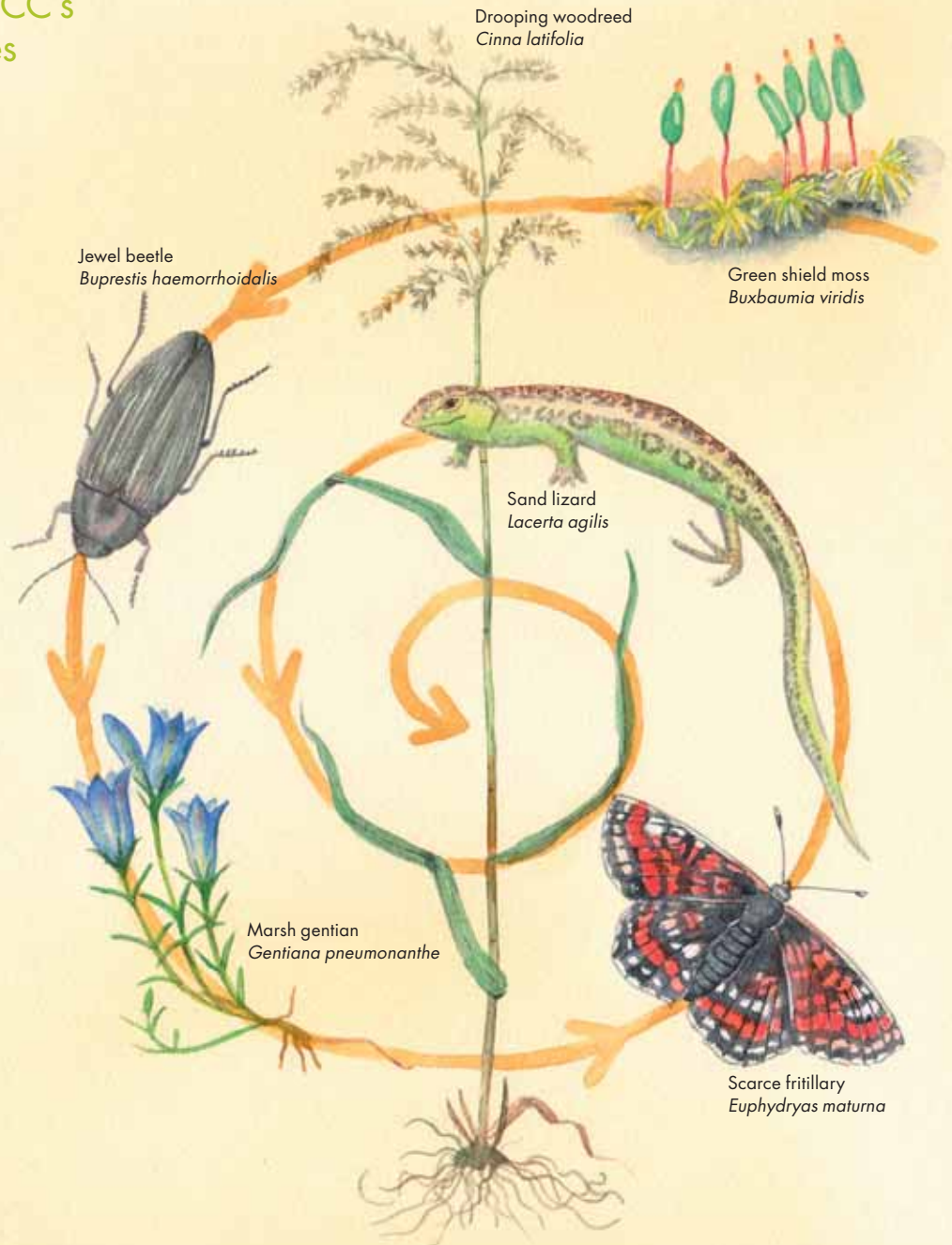
2 The dead wood provides a suitable habitat for insects, fungi, moss and lichen. Seeds and spores from the surrounding nature can grow in the bare soil.

3 From these seeds grow flowering plants that attract insects, such as wild bees and butterflies.

4 These insects are eaten by birds. The birds' droppings spread more seeds.

5 Trees and bushes grow and attract larger animals, such as hare, deer and moose.

6 The ecosystem gradually becomes more complex. Which species make up the ecosystem depends, for example, on the local climate, the lime content of the soil and the water supply.





FAIR WINDS AT MOMBYÅSEN

Wind power provides renewable electricity and Mombyåsen in Sandviken is one of many wind farms for which NCC is laying the foundation. Our role in the expansion of the farm is to construct and widen roads, dig cable trenches, pour foundations of reinforced concrete and build assembly areas. Foundation work is crucial when it comes to ensuring the stability of the nearly 130-meter-tall towers.

NCC LAYING THE FOUNDATION FOR WIND POWER

To date, we have laid the foundation and constructed roads for some 300 wind turbines. Combined, these turbines generate enough electricity to meet the annual household electricity requirements of approximately 450,000 single-family homes.

This makes NCC one of Sweden's leading suppliers of roads and foundations for renewable wind power. We mainly specialize in large farms with ten or more turbines.

Source: NCC Construction





Project: **Mombyåsen**
City: **Sandviken**
Country: **Sweden**

10

The number of wind turbines being constructed in Mombyåsen.

«To ensure an optimal workflow at the site, you need to have good long-term planning and solid work in place before you start»

JOHANNA ERIKSSON

SOCIETY IS CURRENTLY facing the biggest challenge of modern time – dealing with the threats of climate change. To contribute to sustainable social development, we must reduce our use of resources and develop new technical solutions, products and work methods. NCC is focusing firmly on this development.

Johanna Eriksson is NCC's Project Manager at the Mombyåsen Wind Farm. She is responsible for driving the project until the owner of the wind farm, the power company Arise, in turn hands over the reins to Allianz Capital Partners, a company with investments in such areas as renewable energy. Vestas is supplying ten turbine towers for the farm and Vattenfall is supplying the electricity for the switchgear and transformers.

«There are about 800 to 1,000 meters between each turbine. We are constructing new roads, as well as widening the existing ones. There are strict requirements when it comes to gradient and bends, since the roads are used to transport heavy loads. The blades of the wind turbines measure 126 meters in diameter and require special transport. A person in the vehicle behind has to maneuver the back of the tractor-trailer,» Johanna explains.

JOHANNA DESCRIBES the company's work at Mombyåsen:

First, we reinforce the roads to ensure that they can withstand the heavy loads being transported, such as a 50-ton mobile crane. Next, a 2,000-square-meter flat area is built – an operation that requires strict precision. This area is used to assemble the wind turbine tower on site. We then dig the foundation for each wind turbine tower. »



Johanna Eriksson comes from Sandviken. She is 28 years old and lives with her partner in Falun. After studying science at upper-secondary school, Johanna decided to study civil engineering at the Faculty of Engineering at Lund University, specializing in road and canal construction.

Say hello to...

Johanna Eriksson, Project Manager at NCC Construction.

WHY DID YOU CHOOSE NCC?

«After working a summer job at NCC, I became a trainee at the company. At that time, I was working as a supervisor on a large wind farm project at Jädraås. When my trainee period was over, I became a construction engineer and started working as a project engineer, and it was in that role that I landed the Mombyåsen project.»

HOW WOULD YOU DESCRIBE YOURSELF AT WORK?

«I'm a technical person and like using my skills in practical ways. I want to learn about the entire construction process and see the benefits of being involved in all stages, from submitting a tender to acting as project manager and leading the practical details of the project. It's easier to solve any problems that arise if you've been involved throughout. I'm the Project Manager at Mombyåsen.»

WHAT DO YOU DO WHEN YOU'RE NOT WORKING?

«In my spare time, I like spending time outdoors, hiking and fishing. I enjoy traveling in Europe and like both sunny beaches and big cities.»





» Some 80 tons of reinforcements are needed for each formwork, which is then filled with concrete from a mobile concrete station.

Once the form has been filled with concrete, we adjust the superstructure and restore the land surrounding each foundation. The tower supplier assembles its crane, which weighs 1,000 tons, and then lifts in the six parts that form the 128-meter tower. Each turbine has three blades. NCC's assignment also includes laying cables and tightening the bolts that hold the wind turbine in place.

«**THE CHALLENGE WITH THIS PROJECT** is the logistics. To ensure an optimal workflow at the site, you need to have good long-term planning and solid work in place before you start. You have to think several steps ahead to ensure a good production flow,» says Johanna.

The same production method is used for most projects. The foundations are usually identical, but continue to grow in size as the development of wind turbines advances quickly. To simplify the process and ensure that the work is sustainable, a mobile concrete station is moved to each turbine.

«We mix the concrete on site and pump it

directly into the formwork. This means that it doesn't need to be transported. We have a quarry in the area, where we collect the aggregate needed. We use crushed rock since natural gravel is a finite resource. For roads, ballasts and excavation, we use material from the rock we blast,» explains Johanna.

At the height of activity, some 50 people will be involved in the Mombyåsen project, including three white-collar workers. Commissioning is scheduled for the end of 2016. The ten turbines are expected to generate more than 100 gigawatt hours (GWh) on an annual basis. This is sufficient to supply about 20,000 households with electricity for one year.

Mombyåsen Wind Farm is located in Sandviken Municipality, just south of Jädraås Wind Farm, which has been in operation since 2012. Jädraås is the largest onshore wind farm in northern Europe and comprises 66 wind turbines with a total output of 570 GWh of clean and renewable electrical energy. This is sufficient to supply about 115,000 single family homes with electricity for one year. ■

Who is doing what?

Allianz Capital Partners acquired Mombyåsen Wind Farm in Sandviken Municipality from Arise Wind Farm 11 AB.

Vestas is supplying ten Vestas V126 3.3 MW wind turbines.

Vattenfall is supplying the grid connection and **Arise** is responsible for the construction and internal power grid contract, which it has subcontracted to NCC.

Source: Mannheimer Swartling



1



2



3

1 Johanna conducts an inspection round to ensure that everything is running smoothly.

2 There are about 800 to 1,000 meters between each wind turbine.

3 The ten turbines are sufficient to supply about 20,000 households with electricity for one year.



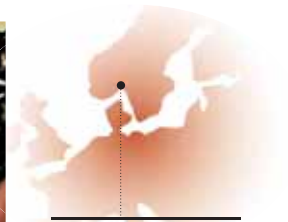
NCC has been dedicated to awakening children's curiosity and creative joy for many years. Sawing wood and hammering nails at the Children's Construction School helps children to grow.

**WHERE THE IDEAS
OF TOMORROW
ARE BORN**



This summer, the Children's Construction School in Norway opened its doors for the tenth consecutive year. The Construction School always begins by teaching the children about safety and sorting waste before they start sawing and hammering. This year, we further increased our focus on sustainability by allowing the 70 students to build their own bumblebee nests. These nests will become home to some 14,000 pollinating bees.

Children's bumblebee nests increase diversity



City: **Oslo/Asker**
Country: **Norway**

NCC HAS ORGANIZED THE CHILDREN'S CONSTRUCTION SCHOOL IN NORWAY for the past ten years – most recently in Trondheim, Oslo, Bergen, Hamar and Asker.

During this time, the Construction School has «trained» over 1,000 children, teaching them about construction and civil engineering, science, sustainability, the environment, health and safety.



1



2



3

1 Some of the children's 70 colorful bumblebee nests.

2 The students were able to draw and learn more about bees and the importance of biodiversity.

3 Bee expert Erik Wegge Bergvik shared his best decorating tips with the children.

THOUSANDS OF CHILDREN TOOK PART IN GOTHENBURG

FOR THE PAST NUMBER OF YEARS, many children in Sweden have spent an eventful week of their summer holidays at the Children's Construction School organized by NCC.

This year, school sessions were held in five locations across the country, often in cooperation with a local school. For the second year in a row, the Construction School was also held during Gothenburg's week-long culture festival – *Kulturkalaset* – held in August each year. Over the course of six days, some 2,000 children visited NCC's construction workshop in the city park each day. The event was a great success, with many children stopping by to try out their carpentry skills. Others built soapbox cars, which they later competed in.

OVER A FEW WEEKS in August, 50 children in Oslo and 20 children in Asker participated in the Children's Construction School. The children are between the ages of five and twelve. In previous years, the students had the opportunity to build nesting boxes for birds. But this year, the Construction School drew inspiration from the children's innovative ideas to find new solutions to contribute to a more sustainable society.

The world's bumblebee population has declined in recent years as it has become more difficult for the queen bee to find a suitable nest in large cities and heavily populated areas. NCC thus established the initiative to help reverse this trend and help bees to find new homes.

«The knowledge of contractors and developers when it comes to creating the ideal conditions for pollinating insects is key to helping conserve biodiversity,» says Terje Stachnik Hansen, Communication Manager at NCC Construction in Norway.

THE CHILDREN'S CONSTRUCTION SCHOOL in Oslo was also visited by bee expert Erik Wegge Bergvik, who shared his advice and

tips for decorating the bumblebee nests. Erik works for the Norwegian Biodiversity Network (SABIMA). The children then placed their nests in suitable locations, such as forests, far out in their gardens or under terraces.

INSPIRING COOPERATION

Half of the children who took part were the children of NCC employees and half were students from NCC partners schools.

«We always receive a lot of positive feedback from the principals of our partner schools. Several principals in Oslo jokingly said that there's no point in finding a new school every year and that we're more than welcome back again. It's inspiring for the teachers at the school to see their students 'grow' over the week,» says Terje.

The children also have the chance to build larger structures that can be installed at their schools. In recent years, these structures have been designed to facilitate outdoor teaching. For example, the children have built wind shelters, bleachers and other forms of teaching benches. ■



Photos from Kulturkalaset in Gothenburg.



Ole coordinates sustainable clothing purchases in Asia



A small team does a large job in making sure that 25 clothing manufacturers in Asia follow NCC's strict demands on the environment and employee well-being. Ole Kristoffersen has developed sustainable workwear on the other side of the planet for 15 years.

«**MY ASSISTANT** Nana Wang and I are the NCC team in Asia with a purchasing office in Shanghai. Over four intensive months every year, we travel around auditing all of our suppliers in Asia. We make sure that they follow our sustainability requirements. We spend many long days at the factories but our visits are important and generate results,» says Ole, NCC's Group Assortment Manager for workwear in Asia.

BLÅKLÄDER MANUFACTURES workwear and shoes in ten countries in Asia in partnership with NCC. Some 25 clothing manufacturers

are engaged in these countries, with several thousand employees. They comply with NCC's strict sustainability requirements – but this could change after only one visit.

«Sometimes we discover, for example, that employee work conditions at a manufacturer have deteriorated and then we end our partnership. But we have been working together with several of our suppliers for many years,» says Ole.

BUT HOW DO you convince emerging markets to opt for sustainable production instead of taking the easy way? »

1.8

Sustainability, function and quality are NCC priorities. Ole believes that while this may make the clothes a little more expensive, it is cheaper and better for all parties in the long run.

«15 years ago, our construction workers wore out four to five pairs of pants a year, while the current figure is only 1.8 pairs a year. This means reduced transport from Asia and thus less impact on the environment.»



Suppliers in Asia follow several sets of rules to meet NCC's sustainability requirements:

HUMAN RIGHTS

Companies are to:

- » Support and respect international conventions on human rights.
- » Ensure that they are not involved in breaches of human rights.

LABOR FORCE

Companies are to:

- » Maintain freedom to join trade unions and make an actual acknowledgment of the right to negotiate collectively.
- » Abolish all forms of forced labor, child labor and discrimination in connection with recruitment or employment.

ENVIRONMENT

Companies are requested to:

- » Support the precautionary approach regarding environmental risks
- » Take the initiative to promote greater environmental responsibility.
- » Encourage the development and spread of environmentally friendly technology.

ANTI-CORRUPTION

Companies are to:

- » Work against corruption in all its forms, including blackmail and bribery.



1



1 Seamstress in Fuzhou on the East Coast of China, one of many who sews workwear for NCC under good working conditions.

2 Clothes are made in ten countries in Asia: Pakistan, China, Taiwan, Bangladesh, Burma, Thailand, Vietnam, Cambodia, Sri Lanka and Malaysia.

» «Doing business here is not like in the Europe or the US. In Asia, you get to know your business partners and establish long-term relationships. Based on mutual trust, I can create interest in sustainable values for materials, production and employees,» explains Ole.

An increasing number of companies are looking for sustainable suppliers in Asia, particularly many leading brands of clothes, shoes and textiles. Sustainability is extremely important to them.

«I would say that NCC, together with our most important supplier Blåkläder, is one of

«Sometimes we discover that a supplier no longer meets our requirements»

OLE KRISTOFFERSEN

the global leaders in creating sustainable and functional workwear for the construction industry. But good partnerships make us even better. That's why we have built up a network of some of the very largest international brands that manufacture sustainable textiles and clothes. We advise and support each other about where this works well and where it doesn't.» ■



Heavy rocks protect exposed coastlines

11

percent heavier (at least)
– NCC's coastal protection rock compared with normal rock.



THE NEED TO PROTECT cities, coasts and rivers from torrential rain, flooding and high sea levels is expected to sharply increase due to climate change.

NCC in Norway exports large volumes of a special type of rock that protects exposed areas from being engulfed by the sea to countries including Denmark, the UK and the Netherlands.

The rock is volcanic and has a higher density than other types of rock, making it heavier. NCC shapes it into angular cubes. These properties make the rock more difficult to penetrate than other types of stone, thus offering protection from powerful waves and currents.

FIRST MENTOR FOR GREATER DIVERSITY

NCC IS THE FIRST construction company in Sweden to begin a partnership with Swedish social company Mitt Liv (My Life). Mitt Liv's mentors help increase diversity and integration in the labor market. It supports people with foreign backgrounds who have been unable to find jobs to match their qualifications.

Some ten NCC employees have participated in Mitt Liv's mentor program for a year. This year's program, with about ten new mentors, recently started. The mentorship is a mutual relationship. The trainees receive help in applying for jobs, for example, and NCC gains access to

candidates for recruitment, and competency development for its own diversity efforts.

«THIS PARTNERSHIP HAS BEEN a real eye opener. We have a completely new understanding of this issue of how difficult it is to break into the labor market. My trainee has done work experience at NCC and another has a start-up job,» says Charlotte Roempke, mentor and responsible for the partnership at NCC Construction in Sweden.

The next step is to apply know-how and lessons from the past year to setting specific targets for all NCC business areas.





TUNNEL SAVES ØSTERBRO FROM FLOODING



THE FLOODS OF RECENT years have cost billions in compensation for destroyed basements, garages and other property in Copenhagen. NCC will now drill a 600-meter tunnel at a depth of 8-13 meters under the Østerbro district to protect it from torrential rain.

The tunnel is a climate-proof solution whereby water is quickly removed from the city and released into the port at Lautrupkaj. This solution means that the traditional sewer system does not risk being overloaded since the water is rerouted through the new tunnel. Rainwater does not need to be pumped all the way to the sewage works either.

The assignment was awarded by HOFOR (Greater Copenhagen Utilities), and marks the start of the laboratory's work on climate-proofing the city center districts. The tunnel is scheduled for completion in late 2016.

Energy-efficient housing in Berlin

NCC HOUSING IS SETTING a new standard for energy efficiency in apartment blocks in Germany. The Villa Agricola building on Agricola Straße in Berlin is the first to be constructed with a highly efficient ventilation system that recycles up to 90 percent of heat energy.

The technology is installed so as not to interfere with the appearance of the facade. It also muffles disruptive fan sounds. For most of the year, the building is heated using an energy-efficient air/water heat pump. A gas-condensing boiler provides extra heat as required in the depths of winter.

Construction on the building commenced in 2015 and it is scheduled for occupancy in mid-2017.



Villa Agricola in Berlin.



Environmental certification – what's it all about?

NCC is building more and more environmentally compatible buildings. It is also becoming increasingly common for these buildings to be certified by a third party – as a guarantee to those who work or live in the buildings. Today, there are many different certification systems. We follow the most common ones. You can read more about them below.



Krøyers Plads in Denmark is Nordic Swan Ecolabeled.

BREEAM®

BREEAM is an international system and our first choice when developing proprietary commercial properties, such as offices and shopping centers, in Finland, Sweden and Norway. It is used to measure and rate a building's total environmental impact.



NORDIC SWAN ECOLABEL is a Nordic certification system for residential and school buildings and focuses on low energy requirements, healthy indoor environments and sound material choices. NCC has built Nordic Swan Ecolabeled housing units in Norway, Denmark and Sweden.



DGNB is a German system for sustainable solutions during construction and refurbishment work. It sets requirements for such factors as social, financial and environmental performance, and it is used in Denmark and Germany. NCC applies the DGNB system in Denmark.



SWEDEN GREEN BUILDING COUNCIL is a Swedish certification system that confirms that a building maintains a high level of quality with respect to low energy requirements, indoor environment and materials. It is used for all types of buildings.



LEED, like BREEAM, takes into account such factors as water use, energy consumption and a healthy indoor climate, not only during the construction period but also when a commercial property is used. LEED is an international system.



CEEQUAL is an international system developed to increase sustainability in groundworks and civil engineering projects, such as the remediation of contaminated land. The system assesses how projects manage environmental issues and social aspects.



DGNB

GLADSAXE COMPANY HOUSE RECEIVES GOLD STANDARD

NCC'S DANISH HEAD office became the first building in Denmark to achieve the top Gold level under DGNB's environmental certification system. DGNB Gold is awarded to properties with the highest level of environmental, social and financial sustainability.



FROM STEEL MILL TO TRENDY OFFICE

FOR THE FIRST time in the company's history, NCC in Finland has refurbished a listed building to be sold as office premises. The mill, which produced steel frames for railway carriages from 1919 to 2002, is located in the old Fredriksberg industrial area in Helsinki. The area is now a trendy city district, where several buildings are being given a facelift.

It is unusual for NCC to develop a refurbishment project since it is often expensive to purchase existing buildings in prime locations. But Amer Vallila is not the only listed industrial building to be reused in this way. NCC has also developed two silos in Copenhagen into office buildings.

NCC collaborated with the Finnish museum authorities to protect the



Amer Vallila is a former steel mill.

cultural-historical value of the steel mill. All exterior walls and most of the building's load-bearing walls have been left in place. New heating, ventilation and sanitation systems have been installed, as has a new district cooling system. The environmentally certified BREEAM office opened in April 2014, when the company Amer Sport moved in.

How did it go?

In Autumn 2014, Beyond Construction told the story of Aarhus Technical College, having met with students Andreas Bachmann and Morten Vestergaard. Today, Andreas has gone on to further studies at Aarhus Tech. Morten is an apprentice at the company Bravida and

plans to become an electrician. NCC's partnership with Aarhus Technical College is a long-term venture. Every time a young person finds a stable job, society becomes a little more socially sustainable – and a potential future NCC employee is created.



«SECOND CHANCE» SCHOOLS BECOMING MORE COMMON



Majid Hussain

AARHUS TECHNICAL COLLEGE in Denmark gives young people who have fallen through the cracks in the school system a second chance. The construction program has been a resounding success in its three years of existence. The program is now being expanded from one to four construction sites in Aarhus. The plan is to start a similar operation in Copenhagen.

The program is a collaboration between NCC and other construction companies. The college combines theoretical and practical instruction from day one.

«I've been trying to figure out what I want to do since I was in the eighth grade. Here, you're part of a team. And you're around adults, so it's more serious. You

learn that there's no time for messing around. They want you to learn to take responsibility and not just stand around twiddling your thumbs and waiting,» says student Majid Hussain.

THE BASIC PRINCIPLE for the college is to «learn by doing.» That's why the school's premises are located in truck trailers parked at the various construction sites. The students spend most of the day on practical work. They are given the chance to try out various trades, such as pouring concrete, forging, carpentry, painting, installing heating, ventilation and sanitation systems, and plastering.



FAIR TERMS FOR TOMASZ

NCC Montage – our internal staffing company for temporary employees – was launched in the autumn. At that time, seven carpenters and seven plasterers joined the company from Poland and started building homes in Stockholm. One of them was carpenter Tomasz Markowski, who fills in when NCC has a shortage of permanent employees. Ultimately, the company will provide extra resources in all Nordic countries.

Site Manager Dejan Stojanovski (left) and Carpenter Tomasz Markowski (right).



«I'D HEARD ABOUT NCC in Poland. The company has a good reputation there. A while later, when I was working on a construction job in Norway, I heard that NCC Montage needed people. I'm thrilled to be working here now. NCC's employees are friendly and helpful. And the secure working conditions we enjoy here don't exist in my homeland yet,» says Tomasz Markowski of NCC Montage.

OUR NEW INTERNAL company manages temporary employees during work peaks or when special skills are required. It serves as a complement to NCC's 9,500 permanent

blue-collar workers, who are the backbone of the company's operations. NCC Montage is a sustainable solution that gives us a comprehensive insight and guarantees that the employees receive appropriate salaries and terms, as well as ensuring that they comply with NCC's values. This, in turn, brings higher quality and more assignments to NCC.

The company is located in Warsaw, Poland, and serves projects in all Nordic countries. To start, the company will provide staff to projects requiring a minimum of ten blue-collar workers for a period of at least six months. ■

7+7

During its first assignment, NCC Montage supplied seven carpenters and seven plasterers.



Residents designing their new city district



City: **Sigtuna**
Country: **Sweden**



Kim Hultén

Engaging in a dialog with residents before building or renovating a housing unit is a central component of NCC's efforts to create social sustainability. In Sigtuna, Sweden, extensive discussions were held with the residents of the area when NCC was commissioned to build a brand-new city district. This dialog also generated many good ideas and a sense of security among the local residents.

«**A FULL 90 PERCENT** of the residents' ideas will be implemented. We now have a long checklist of what we will do in the municipality,» says Kim Hultén, Project Manager at NCC Boende.

Prior to beginning construction on the Sigtuna Stadsängar area, the municipality held a vote for 7,000 people living in Sigtuna city center. The vote was an example of direct democracy; if more than 50 percent had voted no, the project would have been canceled.

Knowing this, NCC decided to initiate a dialog with the local residents. A total of 60 people were invited to attend lectures and workshops held on various occasions in cooperation with consultants. During these discussions, the company learned that young people in the municipality were in need of housing. Residents over the age of 60 also required seniors' housing with ele-

vators. Building seniors' apartments allows more elderly people to sell their detached houses, into which families with children can move instead. Another item on the residents' wish list was a major grocery store in the area.

THE FUTURE CITY DISTRICT will be located on what is now an open-air recreation area with ski tracks. So NCC plans to create new ski tracks and running paths, which will lead into the planned residential area, making it possible for residents to strap on their skis directly outside their own doors.

NCC used these suggestions and many more when preparing the documentation for the project. Prior to the vote, NCC and the municipality organized exhibitions and presentations of the building plans. The project was a success. The residents felt that they were able to have an influence and participate in the process. A full 58 percent voted yes and the new Sigtuna Stadsängar city district is now becoming a reality. Construction on approximately 750 to 900 housing units will start in early 2016 and continue for a period of 10 to 15 years. The first residents will likely take up occupancy in 2017.

«This project clearly shows that establishing support for a building construction project among local residents pays off for all parties,» emphasizes Kim Hultén. ■

«...establishing support for a building construction project among local residents pays off for all parties»

KIM HULTÉN





NCC saving pieces of the Baltic Sea



60

NCC has helped to clean 60 «pieces» of the Baltic Sea since 2010.

NCC IS DOING ITS PART to clean the Baltic Sea with the help of the John Nurminen Foundation's Save a Piece of the Baltic Sea campaign. Everyone who is interested in protecting the Baltic Sea can participate – even small donations are welcome. The main purpose of the cam-

paign is to attract more private donors to the Clean Baltic Sea project, which the foundation finances through donations. As a key sponsor of the John Nurminen Foundation, NCC in Finland has helped to clean 60 «pieces» of the Baltic Sea since 2010.

CLEARED SNOW BECOMES CLEAN WATER

FOR THE FOURTH consecutive winter, the climate-smart SS Terje snow-melting facility took care of all the snow cleared in Oslo Municipality.

The facility, which NCC invented and patented, melts and treats the snow that is tipped onto a barge in Oslo Harbor. All that needs to be done to start melting the snow is to add water at a temperature of four degrees Celsius.

«The solution is now being offered throughout the Nordic region under the NCC Snow-melting brand. But decisions take time,» explains Hans Säll, Business Development Coordinator at NCC Roads.



«More municipalities are interested in how our technology contributes to more sustainable snow handling. At the same time, they are being given permits from government authorities to continue dumping snow in lakes and watercourses. In the short term, this may seem cheaper,» says Hans. NCC is now focusing on provid-

ing information and influencing municipalities and authorities to stop granting dispensations for dumping. Among other initiatives, NCC is participating in a research project concerning snow handling in major cities together with the Ports of Stockholm and the Faculty of Engineering at Lund University.



Hans Säll



Follow these eco-friendly cleaning tips for the Christmas season – be good to yourself and the environment.

Source: Greenliving.about.com, Husmodern.se

Eco-friendly cleaning for the Christmas season



NO USE CRYING OVER BURNED RICE PUDDING

CLEANING YOUR BURNED POTS:

- » Boil a couple centimeters of water in the pot mixed with a tablespoon of soap.
- » Turn off the stove and let the pot stand with the lid on, preferably over night.
- » Rinse the pot and wash it as usual.

CLEAN YOUR OVEN

BEFORE AND AFTER YOUR CHRISTMAS BAKING

Oven cleaners are some of the strongest cleaning agents on the market. Normal soap is a more gentle alternative.



WHAT TO DO:

- » Rub or spray your oven (electric) with concentrated soap.
- » Heat the oven to 100 degrees Celsius, allow the soap to work for 15 minutes and turn the oven off.
- » Let the oven cool and wipe it out with a damp sponge.

... OR CLEAN UP AFTER CHRISTMAS INSTEAD

PERHAPS THE BEST tip of all is to simply wait until after Christmas to clean. Do your windows really need to be sparkling clean, your moldings dusted and your closets organized?

If the answer is no, focus your energy on a few small jobs that will help keep mess and dirt under control.

Scientific studies have

shown that a little dirt can be healthy. This so-called hygiene hypothesis, explained in more detail on medicinenet.com, maintains that a child's environment can be *too* clean to allow the necessary immunity to illnesses and allergies to develop. One example that supports this is the prevalence of asthma in developed countries.



GO BACK TO THE GOOD OLD DAYS – NATURAL CLEANING

START WITH A NATURAL CLEANING KIT:

» SOAP

Universal cleaning agent often made from pine oil (soft soap). Can be used to clean everything from floors to toilets.

» LEMON JUICE

Disinfects and removes grease. Mix with water in a spray bottle. Good for cleaning tables and worktops.

» OLIVE OIL

Absorbs dirt and works well for polishing wood.

» BAKING POWDER

Granular substance that can be used for scrubbing. Also reacts to acidic liquids, such as lemon juice and vinegar. A thick cream of baking powder and lemon juice can be used to clean silverware.

» VINEGAR

Acetic acid has a preserving effect and keeps bacteria and mold at bay. Spray a mixture of vinegar and water into a clean garbage can to avoid unpleasant odors.

» DISTILLED VINEGAR

Disinfects and loosens dirt. Spray vinegar to remove the residue from stickers or tape on walls and other surfaces.



QUICK CLEANING

- » Put away all items that are out of place – clothes, magazines, toys, shoes.
- » Focus on the foyer and living room, since this is where your guests will spend most of their time.
- » Clean the toilet. Clean the bathroom sink. Put out fresh hand towels.
- » Vacuum the floor.
- » Wipe down the kitchen counter and table.
- » Buy fresh flowers and light candles. Why not try a scented variety?





Real tree or plastic – which is greener?

THE CHOICE OF CHRISTMAS TREE

can divide people into two camps. Some say that Christmas isn't the same without a real tree, while others prefer the convenience of a plastic tree. But which is actually best for the environment?

According to the World Wide Fund for Nature (WWF), a natural tree that has grown freely in a nearby forest is always the best alternative from an environmental

perspective. Real trees are renewable, and can be burned and replace fossil fuel once Christmas is over. If you decide to cut down a tree yourself – don't forget to ask the landowner for permission. Normal, cultivated trees that don't need to be transported very far are the second-best option. In third place are cultivated Nordmann firs and other fir trees, which require fertilizer and pesticides. And in last place

plastic trees, which – due their material, production and often long transport from such areas as Asia – have the greatest environmental impact.

Source: WWF



APP FOR SUSTAINABLE OCEANS AND FISHING

DO YOU WANT

to help protect the world's oceans and their inhabitants? WWF now has a free app that can help you make more informed decisions when buying fish and shellfish. The WWF Fish Guide is available in several languages as both an app and PDF: wwf.org.

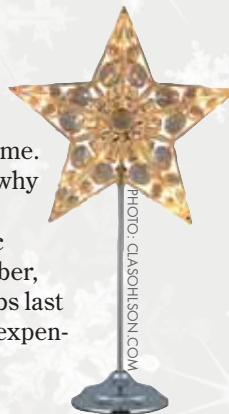
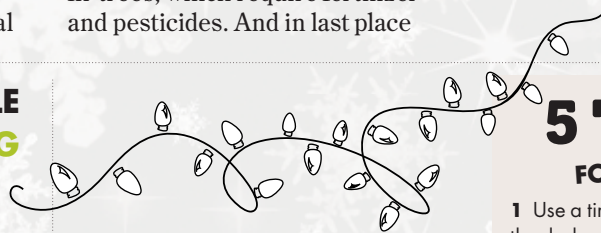
Source: WWF



DECORATE WITH LED CHRISTMAS LIGHTS

LIGHTS CAN

BRIGHTEN up an otherwise dark and depressing time. This Christmas, why not experiment a little with electric lighting? Remember, modern LED bulbs last longer and are inexpensive to use.



5 TIPS FOR CHRISTMAS LIGHTS

- 1 Use a timer and turn on your lights at the darkest times of the day. With a light on, you will always feel welcome.
- 2 Place strings of lights under your furniture to create indirect light. Make your sofa appear to float by pulling it out from the wall and placing a string of lights behind it.
- 3 If you have a balcony or garden, use a net of fairy lights for decoration.
- 4 Decorate your tree with a net of fairy lights and hang your traditional lights on top of the net. This will make your ball ornaments truly sparkle!
- 5 Place a string of lights above your kitchen cupboards with glass objects in front to reflect the dazzling light.

Source: Fortum

BUY CHRISTMAS PRESENTS ONLINE AND SAVE LIVES

ORDER BEAUTIFUL CHRISTMAS presents – jewellery, bags, clothing, home furnishings or Christmas decorations – from local producers around the world at UNICEF Market. Part of the proceeds go to the

producers and the rest is used to help save the lives of numerous children.

Buy Christmas presents here:

www.market.unicefusa.org

Source: UNICEF





This is how many rental bikes are estimated to be available through 855 different city bike programs worldwide. The first rental bikes were introduced in Amsterdam in 1965, but it wasn't until the 2000s that the trend really took off, as part of an effort to build more sustainable cities. City bikes are currently available for rent in such cities as Berlin, Helsinki, Copenhagen, Moscow, Oslo and Stockholm. However, the highest number of rental bikes are located in China.

Source: Thecityfix.com

SUSTAINABLE BUILDINGS PAY OFF ON THE STOCK MARKET

A GLOBAL research study from the University of Cambridge has successfully shown, for the first time, that it pays to invest in sustainability in the property industry. The study shows a strong correlation between how well property funds perform on the stock market and the degree to which their property portfolios are considered «sustainable.»

The study assessed the portfolios' sustainability based on a number of factors, such as energy efficiency, greenhouse gas emissions



PHOTO: THINKSTOCK

and waste management. It also looked at other sustainability issues, such as social commitment in residential areas.

Source: gresb.com

WASTE BECOMING A RAW MATERIAL

THE TERM «CIRCULAR economy» has existed since the 1970s, but is now being used more often in public debate. But what does it mean?

The term describes economic

models in a company, society or organization that focus on circular flows rather than traditional, linear processes. It is inspired by the cycle of nature. The aim is for waste not to exist, but rather be seen as a raw material. This is why products are being designed to be easy to recycle. One example is the parquet flooring produced by the Swedish company Tarkett, which is certified by the Cradle-to-Cradle approach, one of the inspirations for circular economy.

Source: Wikipedia and tarkett.com



ILLUSTRATION: STEFANO BOERI

FOREST-COVERED SKYSCRAPER RECEIVES AWARD

BOSCO VERTICALE TORRE E, a 27-story building in Milan, Italy, covered in living plants, has been awarded the distinction of Best Tall Building Europe 2015. The building's facade is home to 480 large trees, 250 small trees, 5,000 bushes and 11,000 plants – equivalent to a hectare of forestland.

The Best Tall Buildings Awards is an international competition arranged by the Council on Tall Buildings and Urban Habitat (CTBUH).

This year, the competition's ten-year award was presented to the NCC-built Turning Torso. The well-known, 57-story building in Malmö, Sweden, has been a valuable fixture of the city for many years.

Source: Skyscrapercenter.com



CONSTRUCTION WORK REQUIRES MORE ENVIRONMENTAL FOCUS

ACCORDING TO A new report from the Royal Institute of Technology in Stockholm, building materials and construction have as much impact on our climate as heating a building for its entire lifespan.

This is because buildings have become increasingly energy-efficient and use less fossil fuel, while emissions from the construction process haven't decreased nearly as much.

The researchers concluded that it is now time to focus on how to reduce the emissions linked to the building process, particularly the use of concrete, and that it may be worthwhile to renovate and preserve existing areas rather than building new ones.

Source: Extrakt.se

CITIES DOING THE MOST FOR OUR AIR

ZURICH AND COPENHAGEN were ranked number one and two in a list of the European cities doing the most to combat air pollution. The nine factors measured included how well the city supports public transport and what it is doing to promote walking and cycling.

Source: Soofreecities.eu



2.6 billion

more people have access to clean water today than in 1990. However, 663 million people worldwide still do not have clean water.

Source: UNICEF

VIADUCTS COULD BECOME WIND TURBINES



THE AREA UNDER large road bridges can be used to harness wind power. This was the result reported by a European research team after an experiment at the Juncal Viaduct on the island of Gran Canaria. The study was based on models and computer simulations, and uses wind turbines with porous discs to evaluate wind resistance and test various configurations.

According to the researchers, the concept could be applied in areas with suitable bridges but no possibilities to build traditional wind turbines.

Source: Science Daily



How is Green Asphalt made?

Here at Beyond Construction, we try to explain different industry phenomena – both large and small. What does the man in the street want to know?

✉ beyondconstruction@ncc.se

Did you know that it's possible to reduce the environmental impact of asphalt while at the same time improving its quality? NCC is gradually using less energy and resources, and thereby reducing its carbon emissions. Using its own methods, the company can produce asphalt that generates significantly fewer carbon emissions than regular asphalt.

Green Asphalt is produced at a lower temperature than usual at asphalt plants fueled with wood pellets instead of heating oil.

All types of asphalt are 100 percent recyclable. Therefore, NCC also has resources for removing and recycling old asphalt. Sometimes the asphalt is recycled in-situ on the

road itself. This technique is known as repaving or remixing.

NCC Roads also has stationary and mobile asphalt plants and can relocate its operations as needed, thus minimizing the transport of asphalt as well.



WOOD PELLETS INSTEAD OF HEATING OIL

NCC is converting more and more of its asphalt plants from fossil fuels, such as heating oil and gas, to renewable fuels, such as wood pellets and wood powder.



LOW TEMPERATURE

The temperature can be lowered already during the mixing process. This significantly reduces the amount of carbon emissions compared with traditional hot asphalt.



ASPHALT RECYCLING

NCC focuses on using and developing different methods for recycling asphalt. Examples include hot, semi-hot and cold recycling.



MOBILE ASPHALT PLANTS

NCC Roads has both stationary and mobile asphalt plants and can relocate its operations as needed. This minimizes transport and reduces emissions.





THEME:

City: **Kragerø**
Country: **Norway**
Page: **24**

1 Sea levels are rising and rainfall is increasing. Coastlines and beaches need to be secured to prevent them from being washed away. NCC delivers heavy protective rocks to several countries in Europe.



NCC'S HEROES

City: **Hamburg**
Country: **Germany**
Page: **12**

2 Stefan often comes up with new ideas and draws on the experience of his colleagues. This helps him find smart solutions that improve his workplace and make it safer.



THE MIXER

City: **Copenhagen**
Country: **Denmark**
Page: **8**

3 Prime location for a falcon family at the top of a renovated silo in Copenhagen.

THE MIXER

City: **Stockholm**
Country: **Sweden**
Page: **6**

4 NCC has built a large dome on the campus of the Royal Institute of Technology that is designed to inspire new ideas about a more sustainable future.



WORK IN PROGRESS

City: **Ohkola**
Country: **Finland**
Page: **14**

5 A Finnish project is restoring nature in areas previously used for quarrying and stone extraction. This helps the ecosystems in the area grow much quicker.



THE MIXER

City: **St. Petersburg**
Country: **Russia**
Page: **10**

6 NCC is currently building its first preschool in Russia. The energy-efficient building will accommodate 240 children.