

NOROO



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*the Sea*

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**NOROO**

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## The sea, embracing Planet Earth

The poet Ko Un once said, “How inappropriate is the word ‘Planet Earth?’ Our planet should be called ‘Planet Water’ or ‘Planet Sea.’” There is no choice but to sympathize with this phrase when Planet Earth, or shall I say Plant Sea, is seen from space. The first words spoken in space by Yuri Gagarin, the first astronaut to orbit the Earth, was “The Earth is blue.” The Earth appears blue because of the ocean which occupies as much as 70% of the planet. “Life derives from each and every shore where the sounds of waves can be heard 700,000 times a day,” said Ko Un. As did the poet, we should never forget that we belong to the fate of the sea.

## 大海，怀抱着地球

“地球这个名字是多么不恰当啊？与其说这里是地球，莫不如说是水球或海球。”诗人高银这样说道。如果能在宇宙中观看地球，不！应该是海球的样子，无疑会对这句话产生极大的共鸣。第一个在宇宙中看到地球的宇航员尤里·加加林赞叹般吐出的第一句话也是“地球是蓝色的”。这抹蓝色来源于占据地球表面70%面积的宽广海洋。高银说“生活始于每天70万次波涛汹涌的海洋”。我们绝对不能忘记我们属于大海的命运。



# Sea, the Everlasting Joy

Written by Kang Dae-hun (Former researcher at the Korean Institute of Ocean Science and Technology / Author of I Want to Be a Sea Expert)

## THE SEA, A PLACE OF ENCHANTING SOLACE

I rarely encounter a person who doesn't like the sea. There are people who like the sea despite being afraid of water. The sea probably means something different to everyone. It may be a place of comfort for someone who desires to relax and refresh oneself, and to another, it may be a playground for enjoying leisure activities like fishing, surfing, and diving. For some, it may be a precious workplace where they head every day to make a living. Before ships were invented, the sea was a place full of adventures and dreams. Back then, people would go out to the sea to discover a new life and find new continents. Today, there are no continents left undiscovered by man. The world has become a one-day life zone through the development of transportation and communication. Yet, the sea has not lost its charm as we still visit it again and again, like it's always been our home. The poet Ma Jong-ki illustrated a star in one of his poems as "the ongoing joy." I tend to think of the sea as the same. Today, in the 21st century, where mankind shoots off satellites into space and creates a genome map of countless creatures, the sea nevertheless provides us with joy and comfort.

## PLANET EARTH AND THE SEA

The sea offers us much more than warmth; it is an indispensable part of our planet. Although the origin of life has not yet been discovered, most scientists agree that the first life form emerged from the sea. Water, the main component of the sea,

has a great capacity for storing heat (thermal capacity) which allows the sea to maintain a stable temperature range despite changes in ambient temperature, and thus, provides an optimal environment for the survival of marine life. In addition, water is capable of dissolving numerous substances (solvency) and can store various nutrients that are necessary for the metabolism of organisms. This is probably why body fluids such as the human blood is made up of water. The sea also acts as the source of global weather phenomena and plays a key role in adjusting the climate. Today, we are faced with many climate issues such as global warming and rising sea level. If it wasn't for the sea, the Earth would have been much hotter than it is now and life would not have been able to survive. The amount of heat that the sea can store, or its specific heat, is about 3,200 times higher than that of the air. This enables the sea to absorb an immeasurable amount of heat from tropical regions and distribute it evenly in the form of wind or typhoons.

## THE VALUABLE SEA

Today, our valuable sea is suffering from pollution. Whitening phenomenon can be found on the coasts of Korea causing a significant decline in the number of marine species and their population. Although still beautiful on the outside, the sea is hurting on the inside. So instead of simply enjoying its offerings, how about we take some time to truly appreciate the sea.

# 大海，寻之不尽的喜悦

文章 • Kang Dae-hun（前韩国海洋科学技术院研究员/『我要成为海洋博士』作者）

## 大海，魅惑与安慰人心的力量

活到现在，我几乎从未见过讨厌大海的人。甚至有很多人虽然怕水但也很喜欢大海。大海所带来的意义对于每个人而言都是无穷无尽的。对于某些人而言，可能是需要休息或再充电时寻求安慰的地方；又或对于某些人而言，可能是享受垂钓、冲浪、跳水等休闲活动的游乐场所；再或，也可能是某些人赖以生存的宝贵的工作岗位。而在轮船被发明前的帆船大航海时代，大海还曾经是冒险与梦想的地方。因为在那个时代人们为了寻找新生活、新大陆，开始探索远方的未知大海。现在地球上已经不存在人类未发现的未知大陆了。随着交通和通讯日益发达，地球村已成为一日生活圈这样的说法不再陌生。即便如此，大海仍未丧失她的魅力，人们会仿若回故乡般一次又一次地去看海。诗人马钟基曾在一首诗中以“星星，寻之不尽的喜悦”这样的诗句来歌颂星星。大海难道不也是一样的吗？即便是人类向宇宙发射卫星、完成许多生物基因图谱的21世纪，大海也仍然是人类寻之不尽的喜悦与安慰。

## 地球与大海

大海不单单拥有抚慰人类心灵的感性魅力，她还是我们赖以生存的地球这颗行星不可或缺的重要部分。虽然尚未查明生命体的起源，但大部分科学家都同意最初的生命体出现在海洋中这一观点。构成大海的物质-“水”具有非常强的储热能力（

热容量），周围气温变化对它的影响并不大。因此能够提供生命体生存所必需的稳定温度范围。另外，水的溶解力也非常卓越，能够蕴含生物新陈代谢所必需的多种营养素。正因为如此，生命体的体液也像人类的血液一样由水构成。此外，大海既是全球气象现象的发源地，也对地球的气候调节起到核心作用。现在，全球变暖、海平面上升等气候问题正成为热议话题，如果没有大海，地球将比现在热很多，而且生命将无法生存。大海储存热量的能力（比热）比空气约高3200倍。所以大海在热带地区吸收极大量的热量，通过风或台风等各种气象现象将这些热量均匀散播至整个地球。宝贵的大海这般如此宝贵的大海如今正承受着各种污染的折磨。特别是韩国近海，由于仿佛撒了石灰粉般海底变白的白化现象，海洋物种和个体数正明显减少。从外表看依旧是美丽的大海，但内在已然千疮百孔。各位在阅读这篇文章时，不要一味沉醉于大海的无穷魅力，不妨也将大海的宝贵一同刻入心间吧。





## From the waves to the deep waters

People tend to think of the sea as an emotional place. Going away to sulk near the sea or yelling over the crashing sound of the waves can often be seen in soap operas or movies. However, there’s a lot we don’t know about the sea. Did you know that 97% of water on Earth belongs to the sea? Or that it takes up 99% of all space on Earth where life exists and that phytoplankton living underwater creates more oxygen than plants on land? The ocean holds endless secrets as much as outer space does.

### 从波涛到深海

我们总是率先将大海联想为感性的地方。没有倾吐感情的去处时，去看海或倾听拍打海岸的波涛声以释放压力也是电视剧中常见的场面。然而对于如此熟悉的大海，我们所不知道的事情却非常多。您知道地球上存在的水97%都在大海中吗？您知道存在生命体的地球上，有99%的空间都是大海吗？您知道大海中植物性浮游生物制造的氧气量比陆地植物更多吗？让我们前往像宇宙一样拥有无穷无尽秘密的大海去看看吧。

#### SNOW FALLING IN THE DEEP WATERS

Can you imagine snow falling in the ocean? William Beebe, the American explorer to make the first successful deep water exploration by diving 900 meters underwater in a bathysphere, witnessed a strange sight during his dive; small snowflakes falling in the deep sea. He named this ‘marine snow.’ Marine snow is made up of dead microorganisms, plankton, sea animals and plants. It is an important food source for many deep-sea creatures. Imagine the sight of white snow silently falling in the deep sea while unknown sea creatures eat them in complete darkness where light cannot reach. What a chilling yet mysterious sight!

#### 深海中飘落的雪

大海中下雪，您能想象得到吗？20世纪30年代利用潜水用具到大海里900多米深处，首次成功完成深海探测的美国探险家威廉·比布目睹了这种神奇的景观-小小的雪花飘落到大海深处。他为这种现象起名叫“海雪”。据称海雪是海洋动物、植物、微生物及浮游生物死亡后飘落导致的，是深海生物的宝贵粮食。在光线无法到达的黑暗深海中静静飘落的白色雪花，和茫茫大海中以海雪为食的未知鱼类和浮游生物，虽然有些阴森，但也令人感到无比神秘！



#### POSEIDON, GOD OF THE SEA

Poseidon, the Greek god of the sea, is known as Neptune in Roman Mythology. Neptune rules not only the sea, but also the storms and clouds. He often appears in artworks where he is charging on a chariot pulled by white horses while holding a trident called Triaina with his white hair and beard billowing in the air. As brother of Zeus, god of the sky, and Hades, god of the underworld, Poseidon dominated the sea. However, one theory interprets that he also ruled the land because his nickname was the ‘god who shakes the earth.’ This makes the connection more natural between the origin of a horse that is said to have risen from the earth and the white horse that is exemplified as a wave. Nevertheless, Poseidon loses the battle with Zeus and becomes limited to the god of the sea.

#### 海神波塞冬

希腊神话中出现的海神波塞冬，在罗马神话中被称为涅普顿，他能够控制大海、风浪和云彩。美术作品中，他经常以飘逸在风中的白头发和胡须，手持波赛顿三叉戟并坐在白马车上进攻的形象出现。波塞冬与众神之王宙斯、死神哈迪斯是兄弟，拥有大海的控制权，曾经还有一种说法是根据他的别名“撼动大地之神”，而将其解释为大地支配者。如此一来，拔地而起这句话的诞生和将波涛形象化的白马间就能自然而然地联系起来了。但他在与宙斯的较量中落败，就被限定为海神了。



#### THE MYSTERIOUS BERMUDA TRIANGLE

The Bermuda Triangle is a large triangular area of ocean between Florida, Puerto Rico, and Bermuda. It is also referred to as the ‘Devil’s Sea’, as ships and aircrafts often meet their demise in this area without bodies or wreckage ever being found, making it one of world’s unsolved mysteries. From 1609 to 2009, 17 ships and 15 aircrafts have disappeared in this area for unexplained reasons. While rumors and myths abound about the mysterious ocean, an American marine geologist, Dr. McIver, argued that these accidents were caused by massive underwater methane gas that rise up to the sea surface. Some even say that it’s natural for accidents to occur over time and that the number of disappearances and shipwrecks in this area is not surprisingly high when compared with that of other ocean areas. If these arguments are true, then wouldn’t it be safe to say that the mystery came from an unknown world that we call the ocean?

#### 神秘的百慕大三角

连接美国佛罗里达州、波多黎各和百慕大群岛的三角形海域，因经常发生飞机和船只事故，且未发现机船碎片或尸体的情况非常多，百慕大三角被称为“魔鬼之海”，是著名的世界之谜。据称，从1609年到2009年间，这里消失的船只达17艘、飞机达15架，因缺乏确凿的原因，只有各种推测众说纷纭。美国海洋地质学家麦克斐博士主张，大海中的巨大量沼气浮上水面，导致船只沉没，引起飞机爆炸。，也有一些人认为，无论在哪个海域将其经年累月发生的事故积累看来，百慕大三角的失踪或船只遇难记录也并不是那么惊人。如此说来，这谜团似乎是源自于海洋这一未知世界？





MARINE RESOURCES, THE GRATEFUL EAST SEA

The ocean contains uncountable varieties of creatures and immeasurable amounts of mineral resources compared to land. For instance, while the reserves of manganese, nickel, and cobalt are estimated to be 40 to 110 years on land, they are estimated to be 200 to 10,000 years underwater. It is also assumed that the ocean stores 10 trillion tons of gas hydrates, which are ice-like solidified natural gas formed from methane gas, amounting to 100 times that of natural gas reserves in the atmosphere. In addition, the coast from Ulleungdo Island to Dokdo Island allegedly contains 600 million tons of gas hydrates which can be used for up to 100 years. This amounts to 252 trillion won when converted into money. Whenever you sing the Korean National Anthem, “Until the day when the East Sea’s waters and Baekdusan Mountain are dry and worn away~,”always remember the importance of the East Sea!

海洋资源，值得感激的东海

海洋中生活着比陆地更难掌握的许多生物，矿物资源也非常多，是陆地资源无法与之相比的。例如，据估计锰、镍、钴等的陆地储量约为40~110年，而海洋储量约为200~1万年左右，而以沼气为主要成分，像冰一样固化的天然气-“天然气水合物”的储量据推断则是陆地天然气储量的100倍，多达10兆吨。据估计，郁陵岛-独岛近海也埋藏着可使用长达100年的6亿吨天然气水合物，换算成货币将高达252兆韩元。每当唱起“东海水和白头山~”的爱国歌时，请一定要想起如此宝贵的东海！

A NEW WAY TO VIEW THE SEA

Living in a peninsula, Koreans ponder happily on which ocean to visit for vacation. As we look at detailed images before purchasing products, wouldn’t it be nice to view the beach in real-time before deciding where to go? The Ministry of Maritime Affairs and Fisheries has installed surveillance cameras on tall buildings near beaches across the country for the purpose of preventing long-term erosion. By visiting their website at [www.coast.kr](http://www.coast.kr), anyone can view a real-time video through the Beach Video Service menu. If a surveillance camera is not enough, how about taking a look at Korea from space? You can check out a video of the ocean sent by the Communication, Ocean and Meteorological Satellite at the Korea Institute of Ocean Science and Technology website ([kosc.kordi.re.kr](http://kosc.kordi.re.kr))

看海的新方法

韩国三面临海，每到夏天，我们可以为决定去哪个海边而幸福地烦恼。正如挑选东西时要看详细照片一样，海滨浴场也边看边选怎么样呢？海洋水产部为确立海岸长期侵蚀防治对策，在全国海水浴场周围的高层建筑物上安装了监控摄像头，通过主页（海洋水产部/[www.coast.kr](http://www.coast.kr)-沿岸参与-海边视频服务），所有人都能观看实时视频。如果不满足于安装在海边的监控，那么像加加林一样在宇宙中看看韩国怎么样呢？您可以在海洋科学技术院（[kosc.kordi.re.kr](http://kosc.kordi.re.kr)）主页上观看从千里眼卫星上发回的韩国大海视频！



WAVES FROM BELOW

The wind causes waves on the surface of the ocean. However, there are also big waves which suddenly erupt by underwater earthquakes and volcanic eruptions. This is called a tsunami. Tsunami, which is regarded as an ‘earthquake tidal wave’ in Korean, is an extremely ferocious sea swell. A sea swell refers to an ocean wave which occurs in waters that are not directly affected by wind. Often, the first tsunami waves are fairly small. However, they become higher as they come closer to shallow water and by the time the tsunami arrives at the shore, the sea water rapidly goes out, bringing in a giant wave. This presents an utterly terrifying sight. The horrific image of the tsunami which engulfed parts of Japan on March 11, 2011 is still a haunting memory.

自下而上的波涛

虽然形成波涛最大的因素是风，但海底发生的地震或火山喷发也可能导致突然产生的巨大浪涛。这就是海啸，也可说是“地震海啸”，是非常汹涌的涌浪。涌浪是指在不直接受风影响的海域中产生的海浪。虽然海啸刚发生时看不到大的波涛，但越向浅水海滩推移，波涛就越高，尤其是到达海岸附近后随着海水迅速外流，巨大浪涛将再次涌来，其恐怖难以言状。2011年3月11日发生在日本的海啸其凄惨光景令人至今都无法忘怀，海啸造成的损失至今都尚未停止。



I WILL DEFINITELY VISIT SOMEDAY!

The travel site TripAdvisor announces rankings of diverse travel destinations based on places visited by its travelers. Out of these destinations, the beaches with the most user reviews are introduced in a 2015 Award List. In Asia, the Boracay White Beach in the Philippines ranked first with over 2,000 reviews. Baía do Sancho located in Fernando de Noronha, Brazil ranked first in the world with nearly 3,000 reviews and is widely heralded by users while receiving high user ratings. Meanwhile, Korea’s Haeundae Beach is ranked 20th on the list for Asia. One cannot help but feel envious that Baía do Sancho can be enjoyed all year round, since TripAdvisor specifies the best time of visit for Haeundae Beach as between June and August.

总有一天一定要去看看！

专业旅游网站Trip Advisor以游客亲自体验为基础，公布了各个旅游景点的排名。其中评论最多的沙滩便会入选2015年获奖名单并对其进行介绍，以超过2,000条评论的菲律宾长滩岛白沙滩排名亚洲第一；位于巴西费尔南多·迪诺罗尼亚的Praia do Sancho海滩以近3,000条评论获得世界第一。Praia do Sancho海滩不仅评论数量多，且大部分评分几乎都是“非常好”，备受称赞。韩国的海云台在亚洲海滩中排名第二十。网站介绍称海云台的最佳旅游时节是6月~8月，而Praia do Sancho海滩则是“全年皆佳”，有些令人羡慕呢？



Branch Chief **Kim Gwang-deok**



Manager **Lee Jang-hee**



Assistant Manager **Park Hyoung-geun**



Sales Manager **Shin Ho-won**



Assistant Manager **Moon Kang-joon**

## Ulsan branch, its leap forward to take on new challenges

### NOROO Paint & Coatings Co., Ltd., Ulsan Branch

In 1962, the government of Korea at the time designated Ulsan as the core industrial area and established the Ulsan Industrial District based on a national economic development plan. As a result, various heavy industry, automotive, and shipbuilding companies settled in Ulsan to form the largest heavy chemical industrial city in Korea, featuring a population of 1.1 million people. Since then, the city has continued its growth and played a key role in the economic development of the country. In January, NOROO Paint and Coatings Co., Ltd. opened a branch in the city and made another bold leap in the face of great challenges.

## 蔚山的前进基地，以挑战实现腾飞

### NOROO涂料股份有限公司蔚山分店

53年前的1962年，当时政府将蔚山选为韩国工业化的核心地区，根据国家经济开发计划建成了蔚山工业园区。与此同时，各种重工业、汽车、造船公司陆续植根于蔚山，蔚山作为韩国最大的重化工城市，并拥有110万人口的广域市，担负起了韩国经济发展的重担。NOROO涂料股份有限公司于今年1月在这里设立了蔚山分店，开始了又一次飞跃性的挑战。

### WE ARE ALL MEN OF THE GYEONGSANG REGION

Until last year, the Ulsan office was part of the Busan branch. The Ulsan office and the Pohang office of the Daegu branch merged in January to establish the Ulsan branch which is now in charge of the area stretching between Busan and Daegu, also encompassing Gyeongju, Yeongcheon, and Ulsan. The staff of the Ulsan branch includes Branch Chief Kim Gwang-deok, Manager Lee Jang-hee, Assistant Manager Park Hyoung-geun, previously from the Ulsan office, and Sales Manager Shin Ho-won and Assistant Manager Moon Kang-joon of the former Pohang office. The branch chief is confident that these members make up a ‘perfect team.’

“We have a load of information to share with each other as Pohang and Ulsan are both vibrant heavy-duty coating markets. All of our staff members are specialized in their own area. We create great synergy together,” says Branch Chief Kim Gwang-deok as he introduces the staff one by one. The group consists of managers and assistant managers possessing deep expertise in their field; Manager Lee Jang-hee is a certified paint inspection technician for heavy-duty coating, Assistant Manager Park Hyoung-geun is a specialist in automotive refinishing coating and skilled in uncovering new markets, Assistant Manager Moon Kang-joon oversaw industrial coating in Changwon, and Sales Manager Shin Ho-won has a great deal of insight on the Pohang market. And what’s even more interesting is that they all speak in a Gyeongsang dialect.

“We are all from the Gyeongsang region. It feels like family. Chief Park also creates a comfortable atmosphere for us to communicate with each other,” explains Assistant Manager Park Hyoung-geun as the rest of the staff quietly nod without any elaboration, just like typical Gyeongsang men. They certainly are one family!

### 我们都是庆尚道男人

直到去年，蔚山地区都是釜山分店的蔚山办事处负责。包括蔚山办事处和大邱分店的浦项办事处在内，1月份开设的蔚山分店总管内蔚山、浦项、庆州、永川、蔚珍等釜山与大邱之间的地区。蔚山的光德分店长、李荏熙课长、朴亨根代理以及浦项办事处的申昊原处长、文康准代理成了同一分店的一家人，金光德分店长自豪地称这群人为“完美组合”。

“浦项和蔚山同为拥有广大重防腐市场的地区，相互可以共享的信息非常多。各自拥有不同卓越领域的精锐要员们汇聚到一起，肯定能发挥协同效应”，金光德分店长边说边介绍。拥有重防腐涂装监理技术资格证的李荏熙课长、汽车修补漆方面的强人兼新市场开拓者朴亨根代理、一直负责昌原地区工业用产品的文康准代理、熟悉浦项市场的申昊原处长等蔚山分店的成员们全部都是精通领域业务的课长、代理。非常有趣的是他们全都是庆尚道男人呢。

“因为大家都出身庆尚道，所以家庭氛围格外浓厚呢。分店长也让大家在沟通方面感到非常舒服放松”，朴亨根代理的话语中也透露着庆尚道男人特有的憨直，还有一直不住点头的其他人，果然是一家人呢！





THERE IS NO SUCH THING AS A CHALLENGE THAT CAN'T BE OVERCOME!

The name most commonly seen in Ulsan is ‘Hyundai’. Hyundai Heavy Industries, Hyundai Ship-building, and Hyundai Motors are all situated in Ulsan and have played a large role in the city's development. The name is used in numerous places throughout Ulsan, ranging from its soccer team to schools, malls, and art centers. At this point, it’s quite understandable why Ulsan has become known as the City of Hyundai. As a result, our main competitor, which holds close relations with Hyundai, currently enjoys an exclusive share in the Ulsan paint market. This is where NOROO Paints and Coatings has thrown down the gauntlet.

“With the exception of one competitor, no other company is based here. No office, let alone, one branch. We couldn’t simply leave a market open like this. We are planning to scale up and aggressively engage this market,” says Assistant Manager Park Hyoung-geun and Manager Lee Jang-hee, sounding quite determined. The competing company in question has a local factory along with many supervisors and a strong network throughout the city. Ulsan is their own backyard and their market share seems impregnable. Nevertheless, the staff of the Ulsan branch sees hope from their past history of overcoming challenges.

“We have achieved great success in the repainting market. Just five years ago, our main competitor held 80% of the market share, but today, we now occupy up to 80%. It may take some time, but I’m confident that NOROO will also create miracles in the heavy-duty coatings market,” stated Branch Chief Kim Gwang-deok. He expects for the synergy of the branch to rise concurrently with the speed of communication once the construction of the Ulsan-Pohang Expressway has been completed. The Northeast Asian Oil Hub that is expected to be completed next year will also serve as a golden opportunity.

The staff members of the Ulsan branch are confident that their road filled with hard challenges will lead to a bright future. What these courageous men, who have willingly built their outpost in the midst of enemy territory, likely need the most is time and support. Here’s to anticipating another great achievement!

挑战面前没有坚不可摧的敌人！

蔚山最常见的名字是“现代”。因为在蔚山经济发展与增长中起到重要作用的现代重工业、现代造船、现代汽车就位于此地，所以从足球队到高中、初中、百货商场、艺术会馆等，很容易就能从中找到现代的名字。难怪会有蔚山是现代市的说法呢！正因为如此，与现代有着密切关系的竞争公司在涂料市场占据着独一无二的地位。NOROO涂料股份有限公司将在这里发出挑战书。

“除了该竞争公司以外，其他公司小得甚至连分店、办事处都没有。面对这样的广大市场，我们当然不能袖手观望！我们想要扩大规模后发动攻势”，朴亨根代理和李荏熙课长一副跃跃欲试的豪迈口气。该竞争公司不仅在当地设有工厂，还配有大量监理人员，商业网络也很稳固。这里真可谓是该竞争公司的天下，拥有着固若金汤的市场占有率。但蔚山分店在挑战的历史中看到了希望。

“因为我们曾在再涂装市场创下成功案例。大约5年前，有间竞争公司的市场占有率曾达到80%，但现在NOROO涂料股份有限公司已经打破原有格局，占据了80%的市场。即使重防腐市场需要耗费更长时间，但因为我们是NOROO，所以一定能够实现。”目前正在建设的蔚山浦项高速公路一旦完工，随着沟通联系网络加速，分店的协同效应也将进一步提高，这是金光德分店长的希望与期待。预计明年开建的东北亚石油枢纽也将是一个绝好机会。

过程越艰难结果越绚烂，他们抱着这样的信念不断挑战。对于在敌营中建设前进基地并做好艰苦奋斗思想准备的他们而言，所需要的唯有时间与声援。我们期待又一个成功案例，让我们为他们送去声援的掌声吧！





# Goodbye, heat Hello, white roof!

## WHITE ROOF COOL CITY CAMPAIGN IN COLLABORATION WITH SEOUL CITY & TEN YEARS AFTER LIFE STYLE RESEARCH & DESIGN

One day in last August, one of the countless rooftops covered in green waterproof paint in downtown Seoul was clothed in dazzling white. The white roof triumphantly reflected the hot sunlight and lowered the temperature inside the building, ultimately reducing cooling energy. Ever since Seoul City, Ten Years After Life Style Research & Design, and NOROO Paint & Coatings Co. Ltd., joined together for the White Roof Event, they have continued their collaboration through the 'White Roof Cool City' project to fend off the city's heat.

## 再见，酷热 你好！白色屋顶

### 与十年后研究所共同推进的白色屋顶凉爽城市活动

去年8月的某一天，在一片绿色防水漆覆盖的首尔城市中心的屋顶中一处显眼闪亮的白色屋顶映入眼帘。覆上新衣的屋顶立即反射炙热的太阳光，实现了降低建筑物内温度、节省冷气能源的优秀效果。首尔市与十年后研究所、NOROO涂料股份有限公司共同携手进行“白色屋顶”活动后，紧接着开展了“白色屋顶凉爽城市”项目，旨在以此告别城市酷热。

### WHITE ROOF AS AN ENERGY SAVER

The white paint used on the heated rooftops for the project is Energy Saver Polyurethane R, the isolation-heat paint of NOROO Paint & Coatings. Among the numerous companies that desire to participate in the White Roof Campaign and save energy by painting rooftops, NOROO Paint & Coatings is the one and only company with Energy Star, the international energy saving certification mark. Ten Years After Life Style Research & Design runs the project with NOROO Paint & Coatings and feels that the company possesses the most advanced specialized material and systematic construction system for white roofs. So what does Ten Years After Life Style Research & Design exactly do?

"The name sort of makes you curious, right?" smiled Ha Yeon-sun, researcher at Ten Years After Life Style Research & Design. "While futurists predict the future, we prepare for lifestyles that we can envision ten years from now by planning, empathizing, and communicating small but significant actions. The White Roof Campaign and the White Roof Cool City project, which includes painting roofs of rooftop houses and campaigning rooftop house culture are all a part of those," she said.

A roof of a rooftop house. How did they come to choose this item? According to Ha Yeon-sun, "People who live in rooftop houses in the city are usually the most exposed to the sizzling heat. Their living environment really needs urgent changes. Plus, it's easier to obtain the landlord's permission for rooftop houses than other houses since the surface area of a roof of a rooftop house is smaller than the area of the rooftop. And most of all, we can do it ourselves, together." Yeon-sun places extra emphasis on the words 'ourselves' and 'together.' Improving the living conditions of rooftop houses and helping each other to build up the strength to support oneself; this is indeed a good way to make life better, ten years from now.

### 节能小帮手之白色屋顶

成为炙热建筑物上白色盾牌的是NOROO涂料股份有限公司的隔热涂料-“节能小帮手聚氨酯R”。虽然有多家企业想要参加通过粉刷屋顶实现节能的白色屋顶活动，但NOROO涂料股份有限公司是唯一一家拥有国际标准节能认证标志-“能源之星”的公司。共同研究并进行项目的十年后研究所评价称其“关于白色屋顶项目，NOROO涂料股份有限公司拥有最先进的专业资料和体系化的施工系统。那么十年后研究所是什么机构呢？

“说到十年后研究所，大家都很好奇是什么吧？”十年后研究所的研究员河沿先面露微笑地说。“10年后，我们会生活在怎样的社会呢？当未来学者对此做出预测后，我们会以此进行企划、共感及交流许多琐碎却重要的行动，来准备10年后的衣食住生活。进行白色屋顶活动和“白色屋顶凉爽城市-再见，我的酷热”涂刷阁楼屋顶及阁楼文化活动当然也是其中之一。”

而令人好奇的是，选择比屋顶更高的阁楼屋顶“这是因为城市中最容易暴露于酷热中、最迫切需要改变的正是生活在阁楼中的人们。与整个屋顶相比，阁楼顶面积较小，更容易获得建筑物主人的同意。而且只要相互协力合作就能亲手做到”。河沿先研究员着重强调了“相互”和“亲手”。改善阁楼环境，积聚相互帮助、共同自立的力量，这无疑是令人期待10年后生活的好事。





**GOODBYE, MY HEAT**

When asked about the practical effects of a white roof, Yeon-sun described an example of a construction result: “Before construction, the temperature of the interior ceiling would go up to 58 to 60 degrees in the middle of the day when the outside temperature was only 32 degrees. But after construction, it went down to 28 to 30 degrees. The heat inside the house disappeared as well.”

Many foreign study results prove this point as well. In 2010, the U.S. Department of Energy declared that, “In contrast to a regular roof which can reach a temperature of 66 degrees in the middle of a day, a white ‘cool roof’ has a cooling effect of more than 28 degrees.” Furthermore, the Lawrence Berkeley National Laboratory conducted a cool roof test in 27 cities around the world and found that a white roof reduces cooling load by 18 to 93 percent. As a result, cool roof installations have been mandated in many parts of the U.S.

Having been promoting cool roofs since 2014, Seoul is planning to increase the number of cool roofs in the city and expand the range of services that can apply for the Building Retrofit Project (BRP) loan for roof insulation. The material that meets the same energy-saving standard as those used in studies mentioned above is Energy Saver Polyurethane R. According to the Assistant Manager of the Industry Pioneer Team at NOROO Paint & Coatings, Kim Chi-hun, this product is the most optimized functional coating product for thermal insulation of rooftops.

**再见，我的酷热**

当被问起白色屋顶的实际效果时，河沿先研究员直接举例说明了施工结果。“中午的室外空气温度为32度时，室内顶棚温度则可高达58~60度，但施工后下降到了28~30度。灼热的内部热气也消失了。”

国外的很多研究结果也证明了这一点。美国能源部于2010年发表研究结果称“与正午温度可高达66℃的普通屋顶相比，白色的“凉爽屋顶”具有28℃以上的冷却效果”，美国劳伦斯伯克利国家实验室在全世界27个城市进行了凉爽屋顶实验，其结果显示白色屋顶可减少18~93%的冷气负荷。因此，美国各地的凉爽屋顶设置正朝向义务化发展。

首尔市自2014年起开始示范推进凉爽屋顶项目，现正计划将凉爽屋顶项目范围从建筑物能源效率化（BRP：Building Retrofit Project）资金融资对象事业扩大至屋顶隔热及阻热工程。满足相同节能标准的产品正是“节能小帮手聚氨酯R”。NOROO涂料股份有限公司工业开拓组金治勳代理称该产品是“实现屋顶隔热的最佳”功能性涂料。



**COOLER AFTER TEN YEARS**

Ha Yeon-sun feels a greater sense of responsibility since the effect of a white roof is clear: “Even though the thermal insulation effect of a white roof is proven, people who are more familiar with green rooftops are not yet in favor of it. If people feel uncomfortable with the brightness of the color, we’ll suggest using gray paint and continue to strive and change people’s perceptions. We are also planning on creating a manual using the results of the first half of the year so that anyone can make a white roof on their own,” she said. The researcher also adds that a change in perception must occur so that it becomes natural to suggest white or gray paint when constructing a new building.

Turning on the air conditioner may cool you down, but it simultaneously increases the temperature outside. With a white roof, however, the heat strays away from you, the city, and the Earth. Let’s all hope that more rooftops become white and shiny with the isolation-heat paint of NOROO Paint & Coatings, giving us cooler summers after ten years. Let’s dream and act, together.

**10年后更加凉爽**

河沿先研究员说，正因为白色屋顶的效果如此明显，我们才更感觉到责任重大。“虽然隔热效果明显，但对于已经习惯绿色屋顶的人们来说可能会比较排斥。如果感到白色晃眼、有负担，那试试灰色怎么样呢，我们将通过诸如此类的方法坚持不懈地去改变人们的认知。另外我们还计划根据上半年的结果制定说明书，从而使得所有人都能打造白色屋顶。”河沿先研究员还补充道，必须从开始建设新建筑物时就实现自然推荐白色和灰色的认知变化。

如果开空调，我个人确实会感到凉爽，但从我这里排出的酷热却会导致外面更加炎热。反之，不仅只有我个人，能让城市、地球全都变得凉爽的白色屋顶，对所有人都是有益无害的。利用NOROO涂料股份有限公司的隔热涂料让更多屋顶变白、变闪耀，从而使10年后变得更加凉爽，让我们怀着这个梦想共同行动吧。



# Paints that are changing the world

## MOU on environment improvement between NOROO Paint & Coatings Co., Ltd. and Gyeonggi Provincial Government

How much further can paints go? Dazzling colors certainly brighten up the mood. Waterproof coatings protect buildings. Thermal barriers save energy. However, of particular note is NOROO Paint & Coatings Co., Ltd., who knows all about the paint that can help people. NOROO Paint & Coatings puts deep thought about putting social contribution into action through the Gyeonggi Design Sharing Project by donating paints to welfare organizations. Small actions all add up to make the world a better place. Don't you think?

## 因涂料而改变的世界

### NOROO涂料股份有限公司与京畿道厅签署环境改善MOU

涂料能做的事究竟有哪些呢？以清爽颜色改变氛围、防水功能可保护建筑物、隔热功能可节约能源，除此之外，NOROO涂料股份有限公司还用涂料来帮助弱势群体，通过与京畿道共同进行的京畿设计分享项目NOROO涂料向福利设施提供涂料支援。如果将这些行动一一汇集起来，世界会不会一点一点变得更美丽呢？

### THE WELCOMING OF SHOWERS TO END A LONG DROUGHT

On a rainy morning after a long dry spell, multiple cars were starting to appear at Eliel Dong-san, a facility for the severely disabled in Icheon City of Gyeonggi Province. Those piling out of the cars included about twenty college students who volunteered for the Gyeonggi Design Project, officers from public design and architectural design teams of the Gyeonggi Provincial Government, and employees from the Gyeonggi Welfare Foundation. This day is the first day of volunteering for environmental improvement of welfare facilities following the memorandum of understanding between NOROO Paint & Coatings Co., Ltd. and the Gyeonggi Provincial Government. In the hallways and internal facilities, Soon & Soo, NOROO Paint & Coatings' eco-friendly paint, were already neatly prepared. "I am very happy that you came all the way out to this remote area to help us. So far, those who stay here have felt uncomfortable because of water leaks, air leaks and drafts coming in through walls." said Park Chun-hwa, the head of Eliel Dongsan, as she greeted volunteers. She expressed her gratitude with great expectations of the planned work. After a brief orientation, volunteers started working with Soon & Soo which came from the Anyang factory, far from this facility. Now is the time to show off the power of Soon & Soo!

### 如久旱逢甘霖般的客人

长久干旱后下起濛濛细雨的一天，京畿道利川市的重症残疾人设施-Eliel花园从清晨开始就迎来了络绎不绝的车辆。从车上下来的是二十多名京畿道设计大学生志愿者、京畿道厅建筑设计科公共设计组以及京畿福利财团的员工们。这天正是京畿道与NOROO涂料股份有限公司签订MOU，决定改善社会福利设施环境的第一天，从NOROO安养工厂运来的绿色环保涂料“纯&秀”已经整齐的摆放在了走廊和其它内部设施中。

“大家能够来到这连公交车都很少的偏远地方帮忙，我真的非常高兴。此前墙缝一直漏风、漏雨，在这里生活的人们真的有诸多不便。” Eliel花园的Park Chun-hwa院长边说边跟学生志愿者们打招呼，Park Chun-hwa院长还表达了对本次工作的期待与谢意。简短的介绍后，就到了开始发挥“纯&秀”实力的时刻啦！涂刷工作正式开始了。







**PAINT THAT CAN WARM A HEART**

“The paint seems to be odorless and its adhesion is really great.” said Kim Seung-gi, a senior assistant officer of the provincial government's public design team, while wiping away some sweat. The public design team has thorough knowledge of paints since they have continuously worked on differing construction and interiors. On a rainy day, painting work is usually not easy because of being unable to open the window amid high humidity. However, thanks to the odorless Soon & Soo which is easy to apply, the work was completed without the need to adjust everyone's schedule. Volunteering students also put a great deal of care and affection into applying the paint as if it were a work of art. Colors selected for this work were warm light gray, powder pink, soft olive and clean white. Volunteering students majoring in design worked together with the public design and architectural design teams to select them after considering the characteristics of the space. How is it that an architectural design team, not a social welfare team, is participating in this environmental improvement project? Shin Yong-bok, a senior assistant officer of the architectural design team, said “We do this to make a place for healing through environmental design.” He added that “When it comes to welfare, design is not always the first thing that comes to your mind. However, beautiful surroundings give off healing power.”

**BEAUTIFUL SURROUNDINGS WITH COLORS**

What Mr. Shin said is in line with the context and purpose of various social contribution programs run by NOROO Paint & Coatings, which is to make housing for the economically and socially vulnerable to be a more pleasant and beautiful place through paint. Ultimately, we are spreading out the message of NOROO Paint & Coatings. The meticulous preparation of the Gyeonggi Provincial Government, the dedicated efforts of volunteers and Soon & Soo all came together to make the day even brighter. Ms. Park concluded, “Efforts to bring different people together to help made all of us happy.” After Eliel Dongsan, Somangwon in Pocheon City, and Nokhyangwon in Uiwang City are expected to be next on the list of projects. We cannot wait to see what kinds of colors from NOROO Paint & Coatings will decorate our neighbors' places and brighten up their outlook.

**浓浓的温情蕴含在涂料中**

“涂料粘着性非常好，也没有什么味道。”参加作业的京畿道厅公共设计组组长Kim Seung-gi负责人边频频擦汗边这样说着。一直以来从事建筑和室内装修的公共设计组可谓是涂料方面的专家。下雨天湿度高，还不能开窗，一般很难进行涂料作业，但因为“纯&秀”的涂抹性非常好，而且没有什么味道，志愿者们才能按照原定日程照常进行作业。学生志愿者们也都像对待作品一般专注地精心挥笔作业。

本次作业中选定的颜色是萦绕着温暖气息的灰白色、浅粉红色、浅橄榄绿以及干净整洁的白色。这些都是设计专业的学生志愿者和京畿道厅建筑设计科公共设计组考虑到空间特性共同选定的颜色。建筑设计科又不是社会福利科，为什么要参加本次福利设施环境改善项目呢？京畿道厅建筑设计科的Shin Yong-bok负责人回答说“为了通过环境设计提供给人们治愈的空间”“在福利方面，设计被边缘化了。但其实美丽的环境具有治愈的效果。”

**用颜色打造美丽的环境**

Shin Yong-bok负责人回答说，NOROO涂料股份有限公司过去开展的各种社会慈善事业的宗旨一直都是用涂料将弱势群体生活的空间打造得更加舒适、美丽，通过此举广泛传播涂料文化。

京畿道厅的精心准备和志愿者们饱含温情的劳动，以及NOROO涂料股份有限公司的“纯&秀”涂料共同带给Eliel花园绚丽多彩的一天，Park Chun-hwa院长说“看到大家从四面八方汇聚至此一起努力帮忙的样子，这里的每一个人都感到很幸福。”今后还计划把抱川市希望院、义王绿享院等列为设施改善对象。非常期待接下来NOROO涂料股份有限公司将以何种颜色装饰我们社会邻居的空间、展现心意。





emarttown × TheLife × COLOR STUDIO by NOROO

## Everyday Life with NOROO, E-Mart Town ‘The Life’ Color Studio by NOROO

On June 18, E-Mart Town opened in Ilsan KINTEX. E-Mart, through collaboration with E-Mart Traders, has created this outlet that is attracting a huge crowd with its enormous array of items ranging from small living accessories to yachts, spas, and camping caravans. At The Life, a household specialty store located in E-Mart town, a familiar name can be found; The Life Color Studio by NOROO, the first store of Colormate Design House.

### 生活中的NOROO， E-mart Town the Life Color Studio by NOROO

6月18日，E-mart Town在一山国际会展中心开业了。这里结合了E-mart和E-mart Traders，被称为“恐龙卖场”，从美丽可爱的生活小物件到游艇、沙发、露营用大篷车等商品可谓琳琅满目，吸引了众多消费者。前往E-mart Town的综合生活用品专营卖场the Life，可以见到一个亲切的名字，在Colormate Design House的首座卖场“the Life Color Studio by NOROO（NOROO涂料）”。



### THE LIFE COLOR STUDIO BY NOROO (NOROO PAINT & COATINGS CO., LTD.)

Colormate Design House, which provides beautiful and healthy color services, opened The Life Color Studio by NOROO (NOROO Paint & Coatings Co., Ltd.) inside The Life store. The Life is a Korean-style household specialty store led by E-Mart. It displays 3,305 square meters of over 5,000 various items including furniture, beddings, storage, office supplies, bath supplies, and kitchen appliances that fill up each showroom where customers can freely roam around and shop. Within the store, DIY products are displayed separately at the Design Studio so that visitors may easily access diverse wood materials and construction supplies. The Life Color Studio by NOROO (NOROO Paint & Coatings Co., Ltd.) is located in this section of the store. The Life Color Studio by NOROO (NOROO Paint & Coatings Co., Ltd.) is the first offline store of Colormate Design House. At the store, customers can try out paint products before purchasing them to see the color and feel for themselves. The store also provides color interior consulting services.

The experiment section of the store especially captures the attention of visitors as it is decorated like an art studio with various color paints filled in a wooden showcase. Product information and price tags are designed like a menu at a cafe, exhibiting a familiar look to shoppers. A must-see item at this store is Color Studio Paint, which is a PL product made in collaboration with The Life and NOROO Paint & Coatings Co. Ltd. The paint is sold per liter at a reasonable price of 18,000 KRW. It reflects the characteristics of DIY customers of E-Mart Town while carrying the environmentally-friendliness of NOROO Paint & Coatings Co., Ltd.

The fresh color of Color Studio Paint can be seen all around the store. The colors used in showrooms are all painted using Color Studio and Pantone Premium paints. Each color has a code and name written on it to catch the customer's eye. By displaying a bright and cozy atmosphere that cannot be created with mere wallpaper, this site will serve as a gateway for users to experience the advantages of paint first-hand and start their journey in color interior.

### the Life Color Studio by NOROO (NOROO涂料)

提供美丽、健康色彩服务的Colormate Design House在the Life卖场开设了“the Life Color Studio by NOROO（NOROO涂料）”。the Life作为E-mart新推出的韩国式生活用品专营卖场，规模达一千坪，按照各生活空间在展厅里放置了家具、寝具、收纳、办公、浴室、厨房等5,000多个类别的多样产品，顾客们可以自由观览、享受、购物。另外还设置有专为DIY准备的独立“设计工作室”，顾客们可以在这里轻松接触到各种木工材料和施工用品等，the Life Color Studio by NOROO（NOROO涂料）就位于这里。Colormate Design House的第一个线下卖场“the Life Color Studio by NOROO（NOROO涂料）”是可以亲自涂刷涂料、确认涂料颜色、感觉并进行采购、获得色彩装修咨询的空间。沉静的木材橱窗被整整齐齐填满的色彩斑斓涂料，和装饰得像画室一样的体验区牢牢抓住过往人们的视线。产品简介和价格表的设置仿若咖啡馆的菜单，进一步增加亲近感。该卖场不容错过的是the Life与NOROO涂料股份有限公司合作生产的PL产品-Color Studio涂料。1L仅售18,000韩元，合理实惠的价格是该产品的特点，反映欲利用E-mart Town的DIY顾客特点的同时还蕴含了NOROO涂料股份有限公司的绿色环保特性。

Color Studio涂料的清爽颜色在the Life卖场内随处可见，按照各个生活空间摆放家具、仿若开放式房屋般装饰的这个展厅里的颜色也全都由Color Studio涂料和Pantone高级涂料负责。每个颜色都写有各个涂料的编号与颜色名，唤起顾客们的好奇与兴致。在壁纸绝对无法打造的华丽或雅致氛围的空间，顾客们可以亲眼看到涂料效果、可以亲手触摸，一定会想亲自挑战居家色彩装修的乐趣。





NOROO GROUP HOLDS NEW PRODUCT AND TECHNOLOGY EXHIBITION 2015

## NOROO Holdings Co., Ltd.

NOROO控股股份有限公司

### NOROO GROUP HOLDS NEW PRODUCT AND TECHNOLOGY EXHIBITION 2015

The New Product and Technology Exhibition of the first half of 2015, organized by NOROO Group, was held at the Anyang Plant Smart Center Seminar Room for two weeks from May 18 to 31. NOROO Holdings Co., Ltd., NOROO Paint & Coatings Co., Ltd., NOROO Coil Coatings Co., Ltd., NOROO Automotive Coatings Co., Ltd., NOROO BEE Chemical Co., Ltd., and NOROO R&C Co., Ltd. (NOROO Resin & Coatings Specialties Co., Ltd.) participated in this event where they introduced and displayed 41 products and technologies that are being developed or have been launched during the first half of this year. Through this event, the companies were able to gather the thoughts of the sales team and technicians which they will actively reflect to create competitive products that fulfill user needs.

#### 举办2015 NOROO集团新产品/新技术展会

由NOROO集团主办的为期两周的“2015年上半年新产品、新技术展会”于5月18日（周一）至5月31日（周日）在安养工厂智能中心会议室举办。NOROO控股股份有限公司、NOROO涂料股份有限公司、NOROO卷钢涂料有限公司、NOROO汽车涂料有限公司、NOROO碧化学有限公司、NOROO特种树脂有限公司参加了本次展会，展会共介绍展示了2015年上半年推出的或正在进行开发的41种产品与技术。各个公司均计划通过本次展会收集营业部门及技术人员的意见，未来积极反映在消费者需求、具备竞争力的产品生产上。

### EVALUATION MEETING CONDUCTED FOR THE SHADING AGENT JOINTLY RESEARCHED BY NOROO HOLDINGS CO., LTD., AND RDA

On May 6, an evaluation meeting of the shading agent (Patent 10-2015-0061877) for greenhouses researched and developed by NOROO KIBAN, an affiliated company of NOROO Holdings, in collaboration with RDA was held at the RDA NIHHS Protected Horticulture Research Institute in Haman, Gyeongnam.

Approximately 50 people gathered from agricultural public agencies, research organizations, and nearby farmhouses and learned the results of the test that was conducted at a strawberry greenhouse. They also had an opportunity to experience the effects of the shading agent first-hand by examining the growth, sugar content, and hardness of the experimented strawberries. The harvest season for greenhouse strawberries in Korea usually ends in April or early May because the hot summer temperature causes their marketability to drop and makes distribution difficult. However, the jointly developed shading agent allows farmers to produce quality fruits, even during the summer as it decreases the temperature inside the greenhouse by 2-4℃ when applied. One container of the product can cover a 661 square meter greenhouse, which makes it 30-40% cheaper than existing imported shading agents or screens. It is also convenient to use; mix it with water and spray it using a high-pressure sprayer commonly found in farmhouses. The shading ingredient is removed over time by rain, allowing the transparency of the original greenhouse to recover naturally and thus reducing the burden on farmers. Moreover, the product does not pose a risk of environmental pollution and is harmless to the soil. Through this meeting, the outstanding effects of the shading agent were demonstrated, uncovering the possibility to increase the production time of various crops that are difficult to produce in the summer. Lee Jae-han, a researcher at RDA NIHHS Protected Horticulture Research Institute, stated that



EVALUATION MEETING CONDUCTED FOR THE SHADING AGENT JOINTLY RESEARCHED BY NOROO HOLDINGS CO., LTD., AND RDA

they will “expand the application of the shading agent in export fruits and vegetables such as tomatoes and bell peppers to improve farm incomes and increase exports”.

#### 举办NOROO控股股份有限公司、

#### 乡村振兴厅共同研究的遮光剂现场评估会

利用NOROO控股股份有限公司的子公司NOROO KIBAN与乡村振兴厅共同研究开发的塑料大棚用遮光剂（申请专利 10-2015-0061877）的技术现场评估会于5月6日在位于江南咸安的乡村振兴厅国立园艺特作科学院设施园艺研究所举行。

当日，农业相关公共机构、研究组织、临近地区的农户等中聚集的50多人听取了有关草莓栽培温室试验的结果说明，并肉眼确认了不同遮光剂透光率条件下塑料温室中直接试验栽培的草莓生长状况，了解了糖度与硬度等果实质量结果，从而亲身体验到了遮光剂的效果。

因为一旦夏季温度开始上升，草莓产量就会下降，流通运输也变得困难，所以国内现有温室设施一般在4月或5月初就开始收获草莓。但在温室设施上涂刷本次共同开发的遮光剂后，可使温室内温度降低2~4℃，确保夏季也能生产品质优良的果实。

NOROO KIBAN股份有限公司与乡村振兴厅设施园艺研究所共同开发的遮光剂1桶可涂刷200坪的塑料大棚，与现有进口产品或遮光膜相比，费用低30~40%，与水混合后使用农户的高压喷雾器喷涂即可，所有人都能轻松使用，对温室农户非常有帮助。并且经过一定时间后，遮光剂成分可随着降雨自然去除，恢复现有塑料的透明性，帮助减少农户的人手负担，对土壤无害，也无需担心环境污染。

伴随着本次评估会，遮光剂的卓越效果得到证实，得以延长夏季一度难以生产的多种作物的生产时间。乡村振兴厅设施园艺研究所李载汉研究员表示“未来遮光涂布剂将扩大应用于西红柿、红灯笼辣椒等进口果蔬类栽培温室，我们将为了提高农户收入、扩大出口而不断努力”。



MARSALA, PANTONE PREMIUM PAINTS, APPLIED IN SNU

## NOROO Paint & Coatings Co., Ltd.

NOROO涂料股份有限公司

### MARSALA, PANTONE PREMIUM PAINTS, APPLIED IN SNU

On April 26, NOROO Painting & Coatings painted the front of Seoul National University Engineering Building with Marsala, the Pantone Color of the Year 2015. A sign was also installed to promote the color and our company. The area that has been painted will be operated as a promotional space for NOROO Paint & Coatings and Pantone Premium Paint and will be painted with the color of the year, every year. It is hoped that this promotion will visually and psychologically evoke the beauty and the interior effect of the colors.

#### 应用于首尔大学的Pantone高级涂料-玛萨拉酒红色（Marsala）

4月26日，NOROO涂料股份有限公司在首尔大学新工学馆1楼正面绘上2015年美国色彩权威机构彩通（Pantone）今年的颜色-玛萨拉酒红色（Marsala），设置了能够介绍NOROO涂料股份有限公司与彩通的标志牌，以及搭配颜色内容说明进行宣传。首尔大学新工学馆本次涂绘颜色的空间未来将每年都应用该年的流行颜色，预计未来将作为运营NOROO涂料股份有限公司与Pantone高级涂料的宣传空间。我们期待每年都将改变的颜色，可从视觉上、心理上唤醒美感与最佳装修效果。

### THERMAL INSULATION GLASS PAINT IS A BIG SUMMER HIT

The Energy Saver Glass Paint launched for the first time in Korea by NOROO Painting & Coatings is a big hit. This paint, which provides an energy saving effect by blocking solar heat when it is painted on glass, uses special inorganic



THERMAL INSULATION GLASS PAINT IS A BIG SUMMER HIT

nano pigments developed by NOROO Painting & Coatings. Anyone can use it easily by applying it on a glass surface using a roller. In just 20 minutes, the product adheres to the glass, turning the surface translucent. The Energy Saver Glass Paint reduces energy consumption by 20% with its outstanding insulation performance which prevents solar heat from flowing into the room. As a DIY product, it is convenient to use for anyone willing to insulate their windows. In contrast to other film products which are difficult to remove once applied, the Energy Saver Glass can be removed easily by simply spraying water on it. It can be applied in various places that require insulation such as homes, schools, and stores and provide an energy saving effect. According to an official of NOROO Painting & Coatings, "Energy Saver Glass Paint is an innovative DIY paint developed to fulfill the needs of consumers who suffer from the strong heat at their apartments, homes, and restaurants. Our company will continue to develop paint with diverse functions that reflect user needs".

#### 夏季人气商品“隔热玻璃涂料”

NOROO涂料股份有限公司在韩国率先推出的“节能小帮手隔热玻璃涂料”获得了极高人气。这款涂料只需涂抹在玻璃面上即可产生阻隔太阳能及节能效果，由NOROO涂料股份有限公司开发，采用特殊纳米无机颜料制成，所有人都能轻松用滚子在玻璃面漆涂，20分钟左右后即可实现比贴膜更完美的紧密贴合效果，使玻璃面变得犹如半透明玻璃一般。节能小帮手隔热玻璃涂料可阻隔夏季太阳能流入室内，具有节能20%左右的划时代性隔热性能，是一款普通消费者也能亲手轻松涂刷在玻璃窗上实现隔热的DIY产品。与一旦贴上就很难撕掉的贴膜不同，想要去除时仅需用喷雾器喷洒清水，即可毫不费力地轻松撕掉，十分便利。居家、学校、卖场等，只要是夏季需要阻隔直射光线、冬季需要阳光的地方都适用，能够带来节约冷暖气能耗的效果。

NOROO涂料股份有限公司相关人士表示“节能小帮手隔热玻璃涂料是应公寓、住宅、饭店等因酷热阳光导致备受炎热之苦的消费者需求而开发的划时代性DIY涂料，未来NOROO涂料也将继续反映消费者需求，推出具有各种各样功能的涂料”。



We met this cute little lady at the NOROO Family Party.  
The caricature absolutely captured her bright innocent eyes.  
We announce her the Miss photogenic of NOROO family!

在NOROO家族大型宴会上邂逅的可爱小淑女。  
充满纯真的明亮双眸原样蕴含在画面中！  
将会成为NOROO家族的上镜焦点啦~



As Ha Yeon-sun, researcher of Ten Years After Lifestyle Research & Design Lab,  
Prepared the photo shoot for the White Roof Cool City Project,  
a furry friend appeared out of nowhere to help her out.  
How wonderful it would be if all the rooftops in Seoul  
were covered in nature and became cooler.

共同进行白色屋顶凉爽城市项目的  
十年后研究所的河沿先研究员  
刚摆好拍照姿势，不知道哪里跑来的小狗也  
过来配合拍照呢~真希望首尔的所有屋顶都像这样  
自然地被覆盖，且变得更加清爽呢~



These five men are gathered at the Ulsan Branch of NOROO Paint & Coatings Co., Ltd.  
to carry out the mission of penetrating the Ulsan market.  
Through their ambition, Ulsan will change!

为了蔚山市场攻略而担负重任的  
NOROO涂料股份有限公司蔚山分店的五战士。  
面对这些年轻人的雄心壮志，蔚山市场也定会不断改变吧！

