



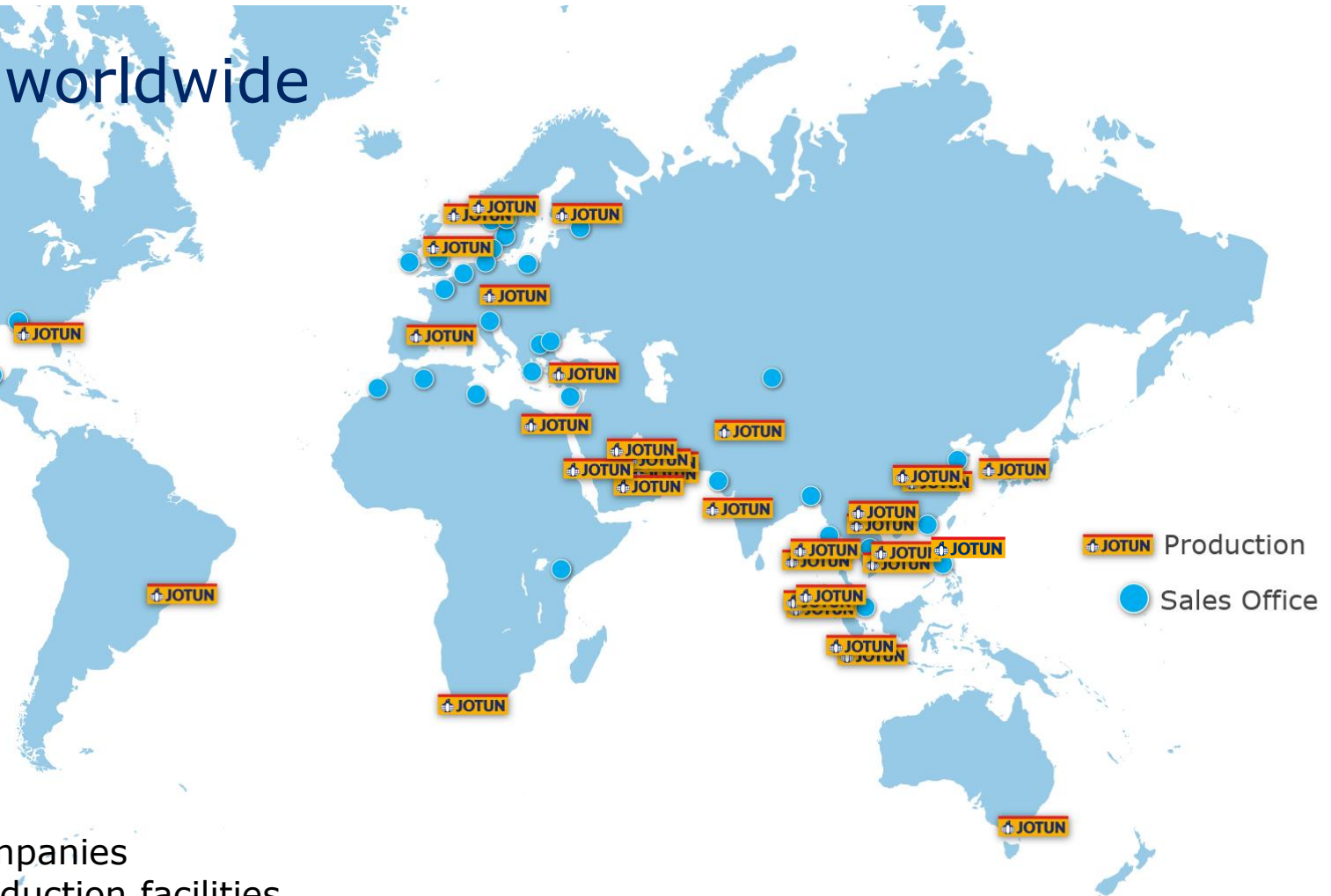
## Green Building Solutions

The global source  
The single source  
The proven source

## EPD som internasjonalt fortrinn

Anne Lill Gade  
Group Sustainability Manager

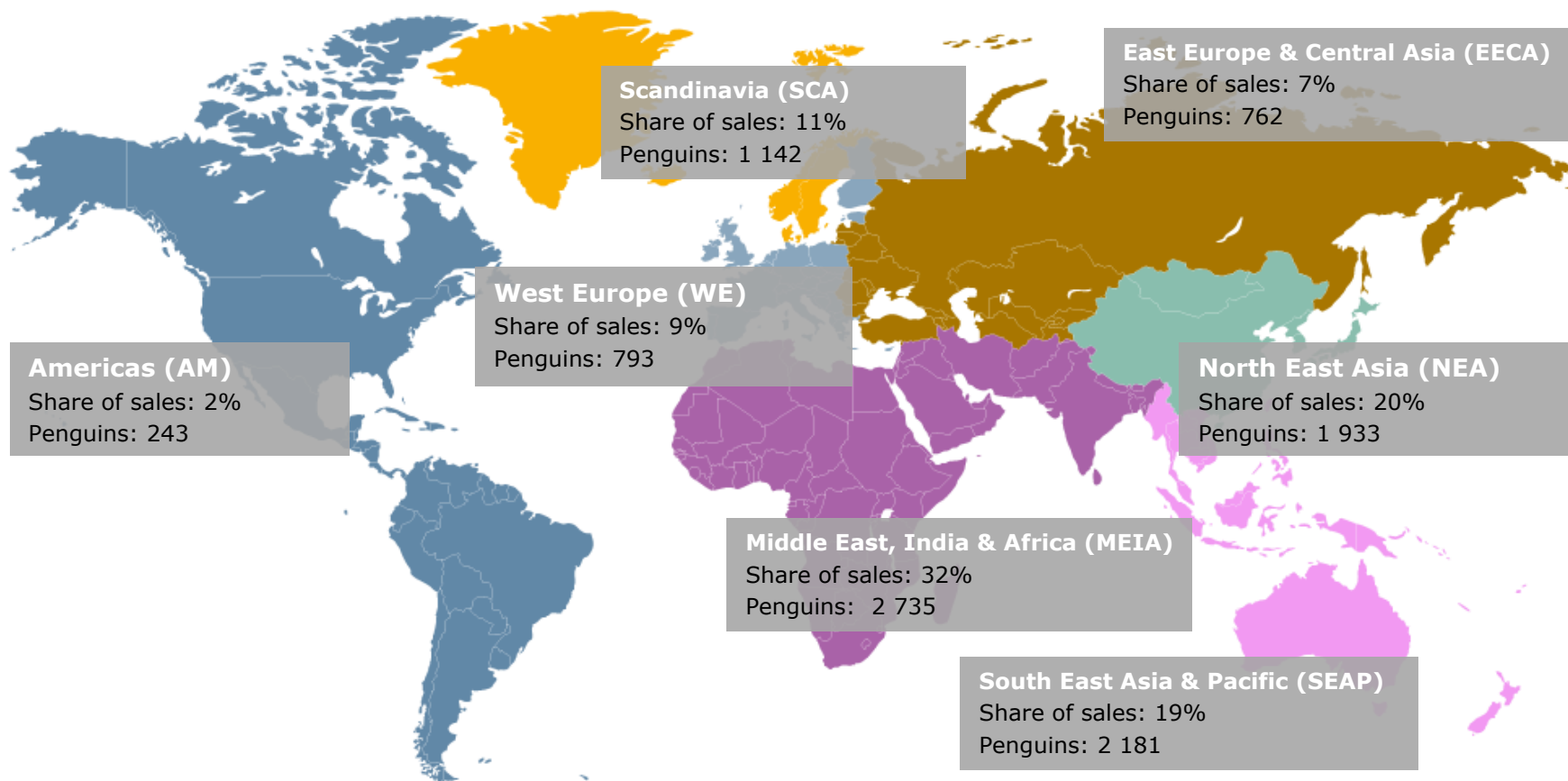
# Jotun worldwide








- 64 companies
- 40 production facilities
- Products available in more 100 countries



# The Regions



# Our segments

	DECORATIVE PAINTS	MARINE COATINGS	PROTECTIVE COATINGS	POWDER COATINGS
USE >				
APPLICATION >				
BRANDS/ PRODUCTS >				

# Jotun GreenSteps



Reducing  
VOC emissions



Reducing  
hazardous  
materials



Reducing  
energy  
consumption



Reducing  
carbon  
footprint



Reducing  
waste



Green  
Building  
Solutions



# Green Building Solutions




The global source  
The single source  
The proven source



<https://unhabitat.org/urban-themes/energy/>

**Cities consume 75% of the world's energy and produce 80% of its greenhouse gas emissions.**

# Markets & Standards

INDIA	UAE	QATAR	LIGER	CHINA	
					Strong presence of LEED
					
					

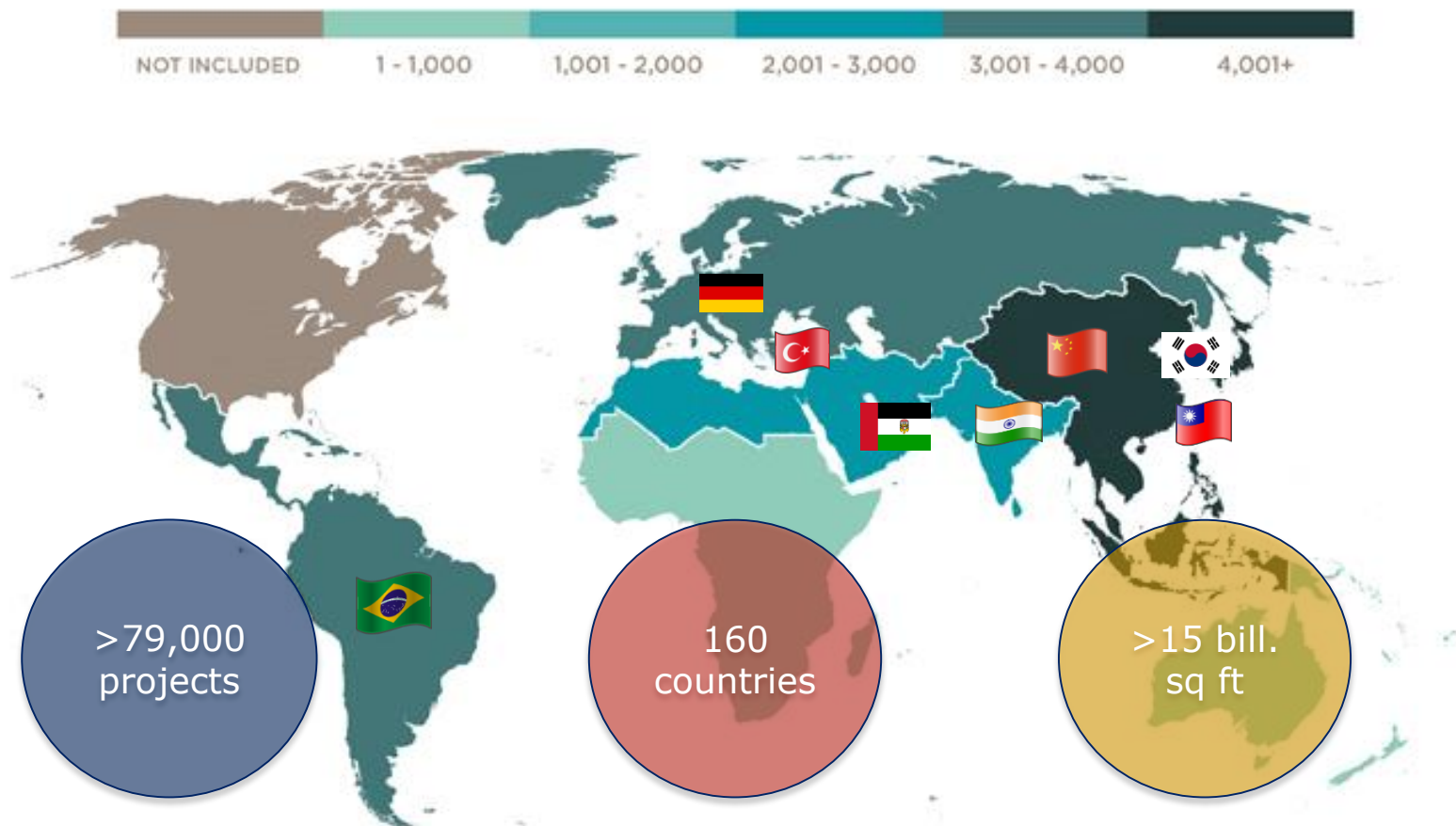




Leadership in Energy and  
Environmental Design

US Green Building Council

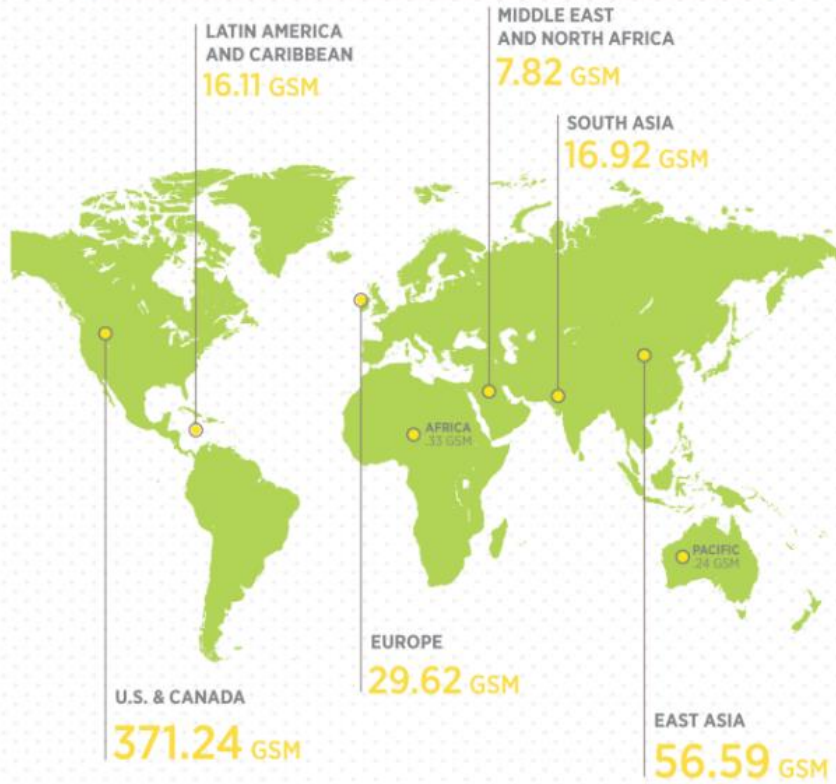
# LEED is global



Source: USGBC

# LEED-CERTIFIED SPACE BY REGION

MEASURED IN GROSS SQUARE METERS (GSM)



Gross square meters (GSM) are reported in millions.

AS OF DECEMBER 2016

# TOP 10 COUNTRIES AND REGIONS FOR LEED OUTSIDE THE U.S.





**LEED v4 for BD+C: New Construction and Major Renovation**  
Project Checklist

Credit Integrative Process 1

**LOCATION AND TRANSPORTATION 16**

Credit	LEED for Neighborhood Development Location	16
Credit	Sensitive Land Protection	1
Credit	High Priority Site	2
Credit	Surrounding Density and Diverse Uses	5
Credit	Access to Quality Transit	5
Credit	Bicycle Facilities	1
Credit	Reduced Parking Footprint	1
Credit	Green Vehicles	1

**SUSTAINABLE SITES 10**

Prereq	Construction Activity Pollution Prevention	Required
Credit	Site Assessment	1
Credit	Site Development - Protect or Restore Habitat	2
Credit	Open Space	1
Credit	Rainwater Management	3
Credit	Heat Island Reduction	2
Credit	Light Pollution Reduction	1

**WATER EFFICIENCY 11**

Prereq	Outdoor Water Use Reduction	Required
Prereq	Indoor Water Use Reduction	Required
Prereq	Building-Level Water Metering	Required
Credit	Outdoor Water Use Reduction	2
Credit	Indoor Water Use Reduction	6
Credit	Cooling Tower Water Use	2
Credit	Water Metering	1

**ENERGY AND ATMOSPHERE 33**

Prereq	Fundamental Commissioning and Verification	Required
Prereq	Minimum Energy Performance	Required
Prereq	Building-Level Energy Metering	Required
Prereq	Fundamental Refrigerant Management	Required
Credit	Enhanced Commissioning	6
Credit	Optimize Energy Performance	18
Credit	Advanced Energy Metering	1
Credit	Demand Response	2
Credit	Renewable Energy Production	3
Credit	Enhanced Refrigerant Management	1
Credit	Green Power and Carbon Offsets	2

**MATERIALS AND RESOURCES 13**

Prereq	Storage and Collection of Recyclables	Required
Prereq	Construction and Demolition Waste Management Planning	Required
Credit	Building Life-Cycle Impact Reduction	5
Credit	Building Product Disclosure and Optimization - Environmental Product	2
Credit	Building Product Disclosure and Optimization - Sourcing of Raw Materials	2
Credit	Building Product Disclosure and Optimization - Material Ingredients	2
Credit	Construction and Demolition Waste Management	2

**INDOOR ENVIRONMENTAL QUALITY 16**

Prereq	Minimum Indoor Air Quality Performance	Required
Prereq	Environmental Tobacco Smoke Control	Required
Credit	Enhanced Indoor Air Quality Strategies	2
Credit	Low-Emitting Materials	3
Credit	Construction Indoor Air Quality Management Plan	1
Credit	Indoor Air Quality Assessment	2
Credit	Thermal Comfort	1
Credit	Interior Lighting	2
Credit	Daylight	3
Credit	Quality Views	1
Credit	Acoustic Performance	1

**INNOVATION 6**

Credit	Innovation	5
Credit	LEED Accredited Professional	1

**REGIONAL PRIORITY 4**

Credit	Regional Priority: Specific Credit	1
Credit	Regional Priority: Specific Credit	1
Credit	Regional Priority: Specific Credit	1
Credit	Regional Priority: Specific Credit	1

**TOTAL** Possible Points: **110**

40-49 Points	50-59 Points	60-70 Points	80+ Points
CERTIFIED	SILVER	GOLD	PLATINUM



## MR CREDIT: BUILDING LIFE-CYCLE IMPACT REDUCTION (3)

### Option 4. Whole-Building Life-Cycle Assessment (3 points)

For new construction (buildings or portions of buildings), conduct a life-cycle assessment of the project's structure and enclosure that demonstrates a minimum of 10% reduction, compared with a baseline building, in at least three of the six impact categories listed below, one of which must be global warming potential. No impact category assessed as part of the life-cycle assessment may increase by more than 5% compared with the baseline building.

1. global warming potential (greenhouse gases), in CO<sub>2</sub>e;
2. depletion of the stratospheric ozone layer, in kg CFC-11;
3. acidification of land and water sources, in moles H<sup>+</sup> or kg SO<sub>2</sub>;
4. eutrophication, in kg nitrogen or kg phosphate;
5. formation of tropospheric ozone, in kg NO<sub>x</sub> or kg ethene; and
6. depletion of nonrenewable energy resources, in MJ



## MR CREDIT: BUILDING PRODUCT DISCLOSURE AND OPTIMIZATION—ENVIRONMENTAL PRODUCT DECLARATIONS

### Option 1. Environmental Product Declaration (EPD) (1 point)

- Products with a publicly available, critically reviewed life-cycle assessment conforming to ISO 14044 (1/4 point)
- Environmental Product Declarations which conform to ISO 14025, 14040, 14044, and EN 15804 or ISO 21930 and have at least a cradle to gate scope
  - Industry-wide (generic) EPD – 3. party certification (Type III) (1/2 point)
  - Product-specific Type III EPD -3. party certification (Type III) (1 point)



## MR CREDIT: BUILDING PRODUCT DISCLOSURE AND OPTIMIZATION—ENVIRONMENTAL PRODUCT DECLARATIONS

### Option 2. Multi-Attribute Optimization (1 point)

50%, by cost, of the total value of permanently installed products have to be 3<sup>rd</sup> party certified and demonstrate **impact reduction below industry average** in >3 of the following categories:

1. global warming potential (greenhouse gases), in CO<sub>2</sub>e;
2. depletion of the stratospheric ozone layer, in kg CFC-11;
3. acidification of land and water sources, in moles H<sup>+</sup> or kg SO<sub>2</sub>;
4. eutrophication, in kg nitrogen or kg phosphate;
5. formation of tropospheric ozone, in kg NO<sub>x</sub> or kg ethene; and
6. depletion of nonrenewable energy resources, in MJ.



- **Expo 2020** is a Universal Exposition to be hosted by Dubai on October 20, 2020.
- The main site of Expo Dubai 2020 will be located midway between Dubai and Abu Dhabi.
- The master plan is organized around a central plaza enclosed by three large pavilions.
- The target set by *Expo* is to achieve at least the *LEED Gold certification* for all permanent buildings



# LEEDv4 project in: Riyadh – Damam - Madinah



ABOUT  
RTCC

CONTRACTING  
PROJECTS

REAL  
ESTATE &  
INVESTMENT

MEDIA  
CENTER

CAREER

 Print  Email

NEWS UPDATES

## IPSO "Integrated Public Security Operation"

Employee login

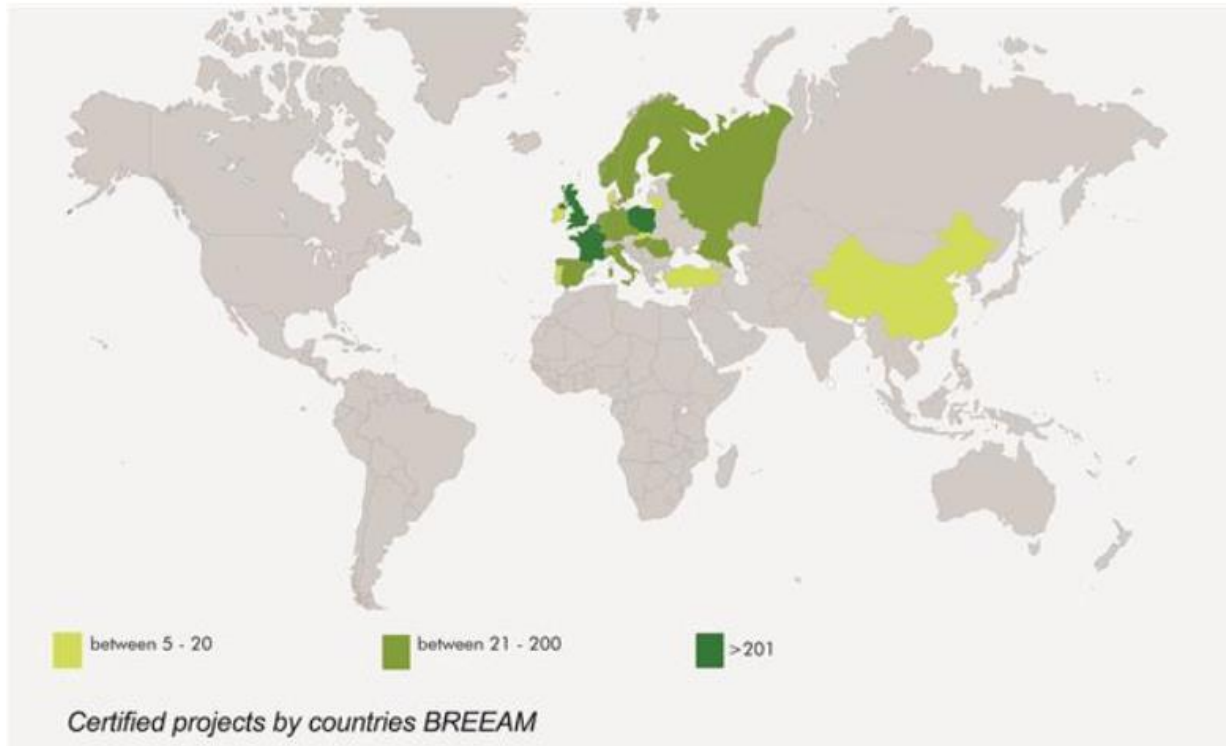
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Real Estate  
Brochure

[Download Now](#)

# BREEAM®



- Introduced in U.K. in 1990 by the British Research Establishment (BRE)
- Used in more than 60 countries
- Over 532,000 buildings certified worldwide

<http://www.ongreening.com/en/Resources/how-breem-certification-work-1294>  
02.07.2016

## Mat 01: Life cycle impacts – 1 point

At least five products specified at Design Stage and installed by Post-Construction Stage are covered by verified Environmental Product Declarations (EPD).

- An EPD is an independently verified environmental label (i.e. ISO Type III label) according to the requirements of ISO 14025.
- For construction products, the EPD must be produced to either EN 15804, ISO14025 or ISO 21930.

## BREEAM®NOR krav

### BREEAM®NOR (2016)

- Mat 01: Produkt-spesifikk Type III EPD (ISO 14025, ISO 21930, EN 15804)

### BREEAM®NOR (2012)

- Mat 1.3: Produkt-spesifikk Type III EPD (ISO 14025, ISO 21930, EN 15804)

# Jotun investerer i forskning og utvikling i Sandefjord

Pressemelding

• des 08, 2015 13:13 CET



Bygget skal miljøsertifiseres i henhold til BREEAM NOR

Sandefjord, 8. desember 2015: Styret og bedriftsforsamlingen i Jotun A/S har besluttet å investere NOK 1 115 millioner i et nytt forskningscenter og hovedkontor for konsernet på Gimle i Sandefjord. Samtidig planlegges det for 200 flere ansatte frem mot 2030, en stor andel av disse innen forskning og utvikling.



# GSAS – Middle East Region



- M.1: Regional materials
- M.2: Responsible sourcing of materials
- M.3: Recycled content
- M.6: Design for disassembly
- M.7: Life cycle assessment**
- IE.2: Low-emitting materials
- IE.8: Illumination levels
- IE.9: Acoustic quality
- IE.10: Daylight

<http://www.gord.qa/admin/Content/Link291201722416.pdf>

 Penguard WF, Jotun U.A.E. Ltd. (L.L.C.)	 Penguard Express ZP E, Jotun U.A.E. Ltd. (L.L.C.)	 Jotemastic 80 E, Jotun U.A.E. Ltd. (L.L.C.)	 Tankguard 412, Jotun U.A.E. Ltd. (L.L.C.) Markets: U.A.E., Qatar, Kuwait and Bahrain	 Penguard HSP MIG 2, Jotun U.A.E. Ltd. (L.L.C.) Markets: U.A.E., Qatar, Kuwait and Bahrain	 Acrylic Emulsion Primer, Jotun U.A.E. Ltd. (L.L.C.) Markets: U.A.E., Qatar, Kuwait and Bahrain	 Jotam/PROF Prima Air, Jotun A/S, Market: Scandinavia	 Jotam/PROF PWA 2T, Jotun A/S, Market: Scandinavia	 Jotashield Topcoat Silk, Jotun Boya San. ve Tic. A.S.	 Lady Design Gitter, Jotun U.A.E. Ltd. (L.L.C.)	 Penguard HSP ZP E, Jotun Coatings (Zhengqiang) Co. Ltd.	 Waterfine Barrier, Jotun U.A.E. Ltd. (L.L.C.)
 Pilot WF Primer, Jotun Abu Dhabi Ltd. (L.C.C.)	 Hardtop One, Jotun Abu Dhabi Ltd. (L.C.C.)	 Pilot WF Alu, Jotun Abu Dhabi Ltd. (L.C.C.)	 Vinemastic Emulsion Primer, Jotun U.A.E. Ltd. (L.L.C.) Markets: U.A.E., Qatar, Kuwait and Bahrain	 Jotafloor Non Slip Aggregate, Jotun U.A.E. Ltd. (L.L.C.) Markets: U.A.E., Qatar, Kuwait and Bahrain	 Jotafloor Filler, Jotun U.A.E. Ltd. (L.L.C.) Markets: U.A.E., Qatar, Kuwait and Bahrain	 Jotun Duraxol 4003, Jotun Powder Coatings South Arabia Co. Ltd.	 Jotun Duraxol 4003, Jotun Coatings (Zhengqiang) Co. Ltd.	 Jotun Duraxol 4003, Jotun Thailand Ltd.	 Waterfine Barrier, Jotun U.A.E. Ltd. (L.L.C.) Market China	 Jotun Super Durable 2902, Jotun Boya San. ve Tic. A.S.	
 Pilot WF LG, Jotun Abu Dhabi Ltd. (L.C.C.)	 Pilot WF, Jotun Abu Dhabi Ltd. (L.C.C.)	 Jotun Super Durable 2903, Jotun Powder Coatings U.A.E. Ltd. (L.L.C.)	 Sirelmaster 1200WV, Jotun U.A.E. Ltd. (L.L.C.)	 Penguard HSP ZP E, Jotun U.A.E. Ltd. (L.L.C.)	 Jotashield Tex Ultra, Jotun U.A.E. Ltd. (L.L.C.)	 Jotashield Super Durable Silk, Jotun Boya San. ve Tic. A.S.	 Jotashield Tex Ultra, Jotun Boya San. ve Tic. A.S.	 Vinemastic Gitter System Zengger Mat, Jotun Boya San. ve Tic. A.S.			
 Jotun Super Durable 2903, Jotun Coatings (Zhengqiang) Co. Ltd.	 Jotun Super Durable 2903, Jotun Thailand Ltd.	 Jotun Duraxol 4003, Jotun Boya San. ve Tic. A.S.	 Jotafloor PU Topcoat, Jotun U.A.E. Ltd. (L.L.C.)	 Jotafloor Topcoat E, Jotun Abu Dhabi Ltd. (L.L.C.)	 Vinemastic Wonderwall, Jotun U.A.E. Ltd. (L.L.C.)	 Sirelmaster PU Unisemat, Jotun U.A.E. Ltd. (L.L.C.) Markets: U.A.E., Qatar, Kuwait and Bahrain	 Jotafloor PU Unisemat, Jotun U.A.E. Ltd. (L.L.C.) Markets: U.A.E., Qatar, Kuwait and Bahrain	 Jotafloor Solvent Free Primer, Jotun U.A.E. Ltd. (L.L.C.) Markets: U.A.E., Qatar, Kuwait and Bahrain			
 Waterfine Barrier	 Jotam/PROF	 Jotam/PROF	 Jotafloor PU Topcoat	 Jotafloor Topcoat E	 Hardtop One	 Jotun Duraxol 4003	 Jotun Duraxol 4003	 Jotun Duraxol 4003	 Jotun Duraxol 4003	 Jotun Duraxol 4003	 Jotun Duraxol 4003

Jotun A/S:  
Juli 2017: 1 EPD  
Pr dd: 50 EPDer



# Spørsmål?