EmiratesGBC Technical Workshops

by AkzoNobel

How paints and coatings can decrease the operational and embodied carbon of building materials in the built environment

Presented by **Job Coenen,** Global Sustainability Manager

23 of May 2024

Introduction: Job Coenen

Global Sustainability Manager, AkzoNobel

Global expert on green buildings, sharing latest insights on trends and opportunities as well as the vital role of paints and coatings in the built environment

- Combined more than 20 years of work experience in the construction industry working for Sika and AkzoNobel
- Representative of AkzoNobel, serving on the Corporate Advisory Board (CAB), which guides World Green Building Council (WGBC) on its strategy and activities
- Coordinating services and solutions for the built environment globally for AkzoNobel

You'll find us everywhere

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2023 key figures:

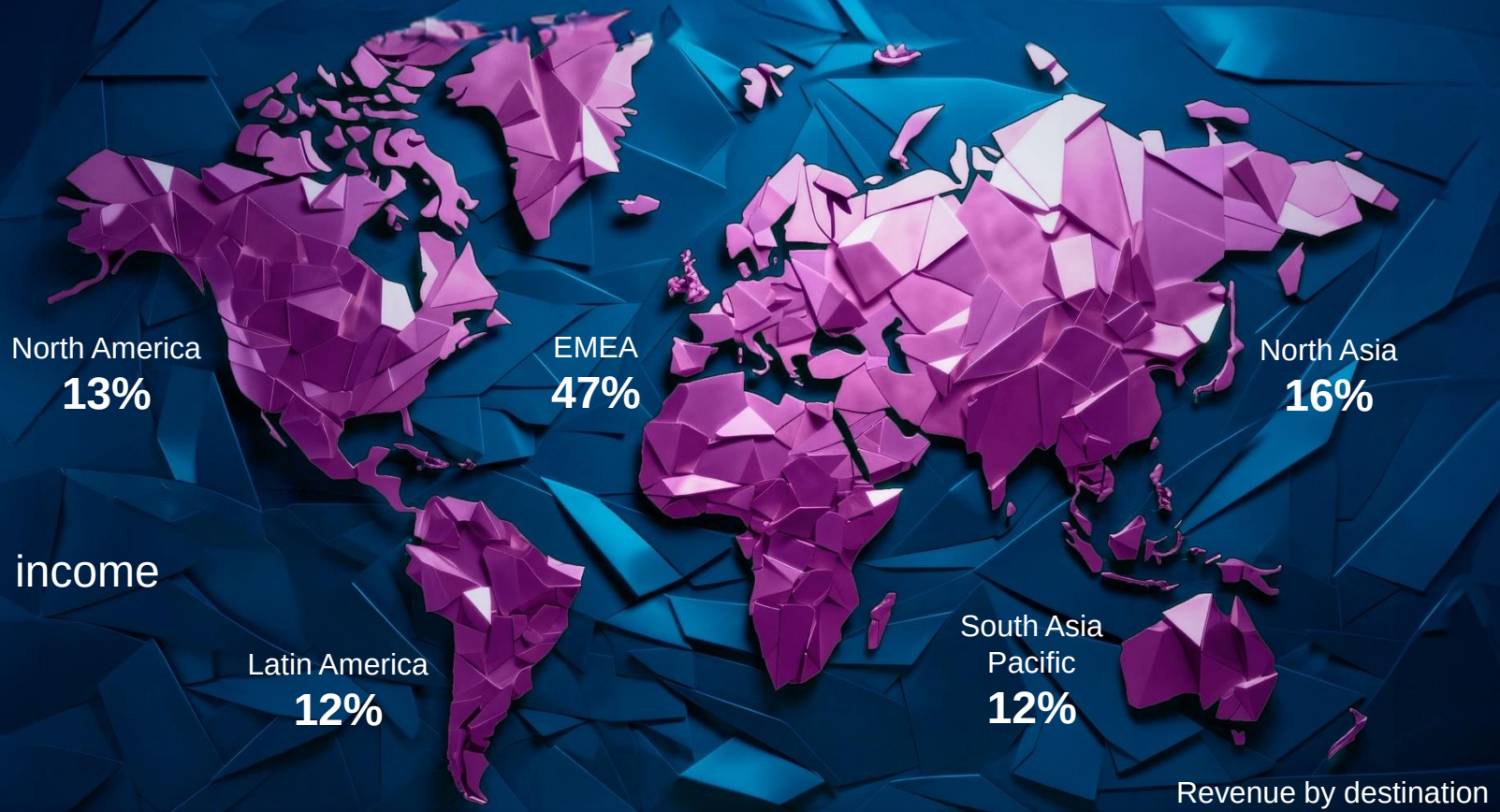
€10,668 mln revenue

€1,029 mln operating income

€1,074 mln adjusted operating income

130 manufacturing sites

35,200 employees



Revenue by destination

International

Interpon
POWDER COATINGS

Dulux
let's colour

CERAM-A-STAR®

TRINAR®

sikkens

AkzoNobel

Our organization in the Middle East

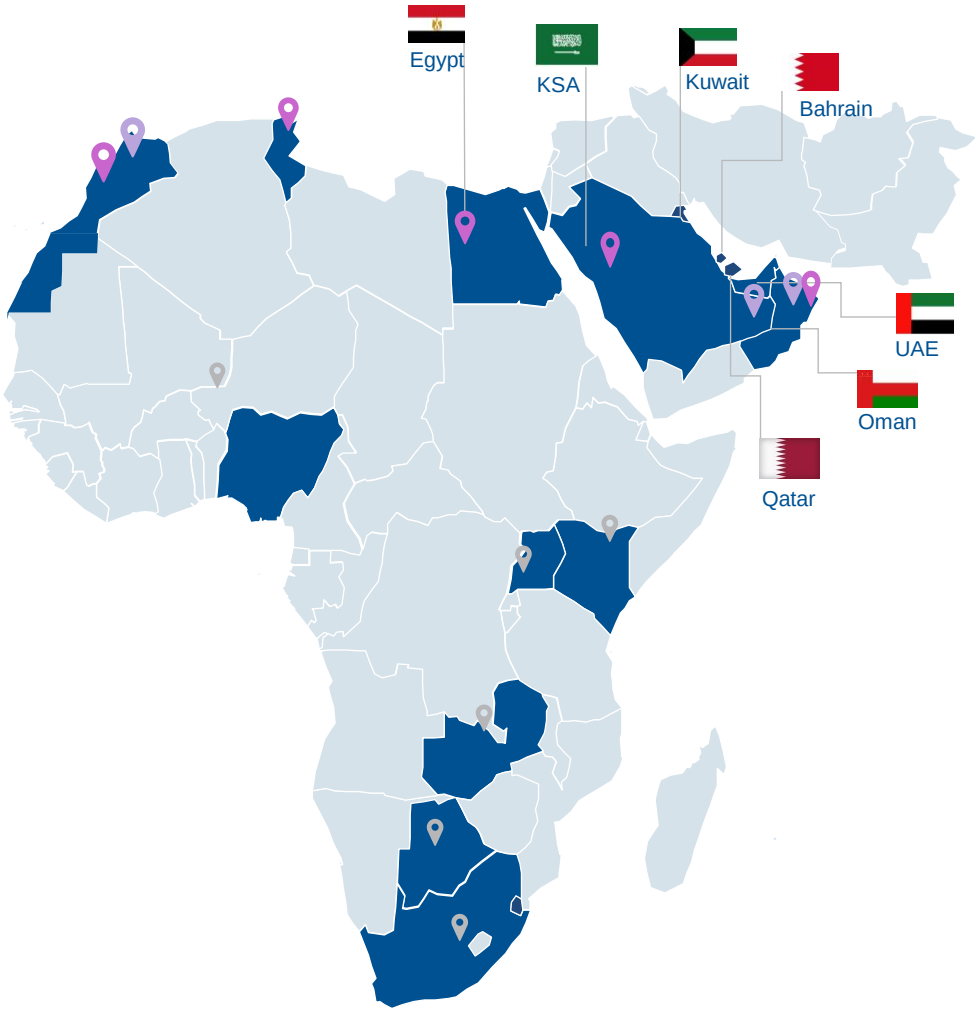
4 manufacturing sites
- UAE, Dubai, Al Quoz
- KSA, Dammam
- Oman, Muscat
- Egypt, Cairo

11 legal entities

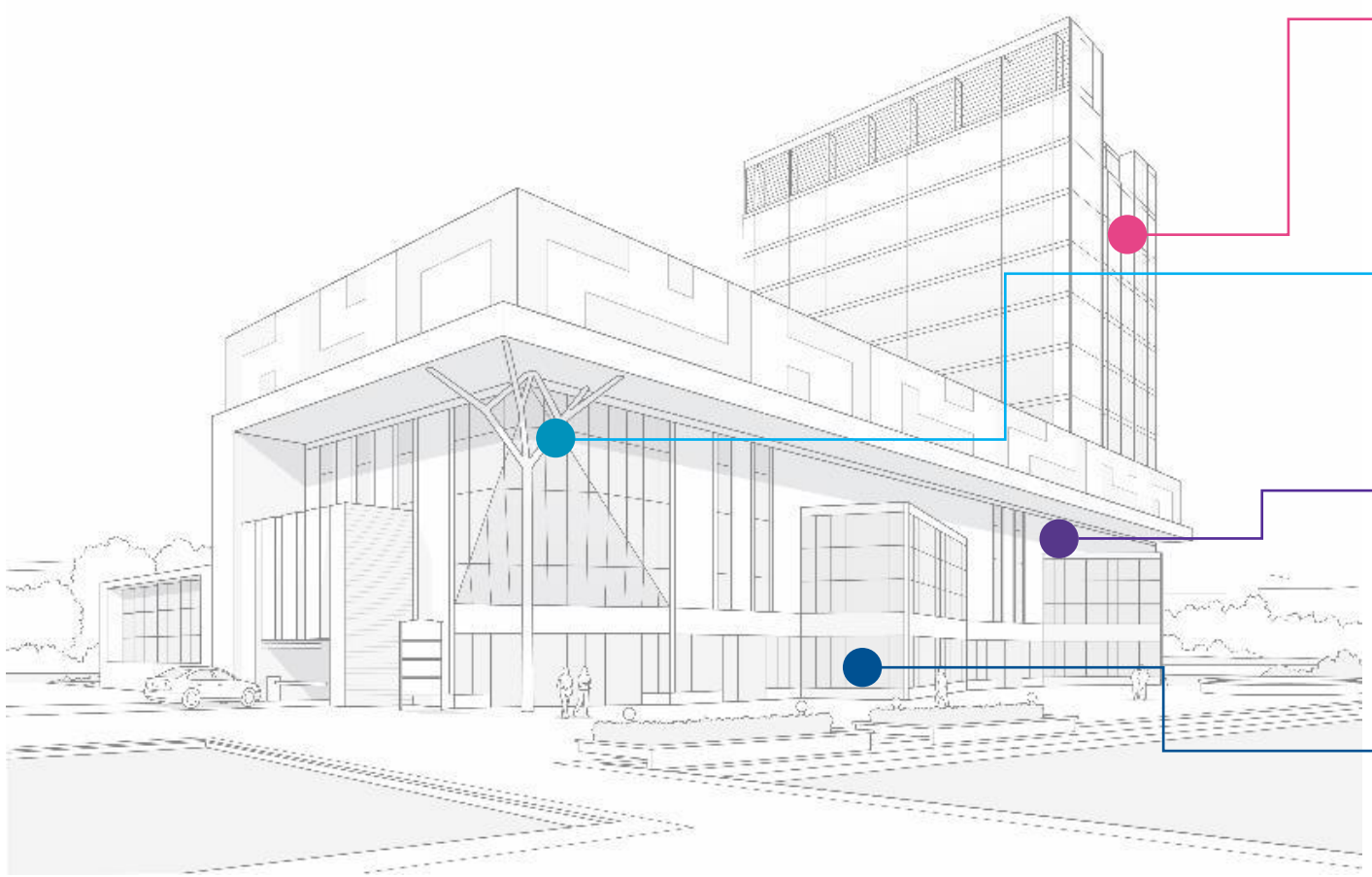
Performance Coatings

Decorative Paints

Training Center
UAE (Al Quoz site)
Qatar (open in 2024)



Solutions to help reduce carbon footprint in the build environment



Decorative Paints – Wall painting, wood and metal protection

Dulux let's colour · HAMMERITE · sikkens

Protective Coatings – Anti-corrosion, fire protection for metal and concrete and flooring

International

Powder Coatings – Curtain wall, façade panels and windows & doors

Interpon POWDER COATINGS

Industrial Coil Coatings – Roofing, curtain wall, façade panels

TRINAR® CERAM-A-STAR®

Sustainability is at the core of our identity

We produce durable solutions in a more sustainable manner

50% less carbon emissions in our **own operations**

38% 2023 → 50% 2030

100% circular use of materials in own operations driven by reduce, reuse, recycle

55% 2023 → 100% 2030

We help our customers to become more sustainable

50% less carbon emissions across our **value chain**

9% 2023 → 50% 2030

50% revenue from sustainable solutions

39% 2023 → 50% 2030

We empower our communities and employees

100,000+ members of local communities empowered with new skills

70,000 2023 → 100,000+ 2030

30% female executives

25% 2023 → 30% 2025

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A recognized sustainability leader

Only paints and coatings company **AAA in MSCI**

Top 1% of all companies assessed by EcoVadis

Only paints and coatings company **ESG** industry **top rated** by **Sustainalytics**

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Key trends and opportunities identified in the built environment

Launch of the Déclaration de Chaillot in Paris, March 2024

- Ministerial declaration, supported by 70 countries including the UAE, sets the goal of making “near-zero-emission and resilient buildings the new normal by 2030”
- Growing gap between energy and climate performance of the building and construction sector and necessary pathway to achieve decarbonization due to the following:
  - Insufficient volumes of building renovation and sustainable building construction
  - Continued investment in carbon-intensive heating and cooling systems
  - Over-exploitation of natural resources in building value chain

Demands for green buildings in the region have increased rapidly

- Due to extreme heat, buildings consume relatively more energy in the Middle East
- New construction vs new built green buildings
- Investment climate and ESG green investment geared to the build environment
- Focus will be on both operational carbon and embodied carbon

FORUM MONDIAL BÂTIMENTS ET CLIMAT
BUILDINGS AND CLIMATE GLOBAL FORUM

Ministerial Declaration

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Opportunity areas aligned with WGBC's focus areas

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Mohammed bin Rashid Al Maktoum Solar Park

Climate action

Products that provide lower energy consumption in application and use and with lower embodied carbon

Dubai Opera, UAE

Health and well-being

Products that help improve quality of life, with reduced substances of concern

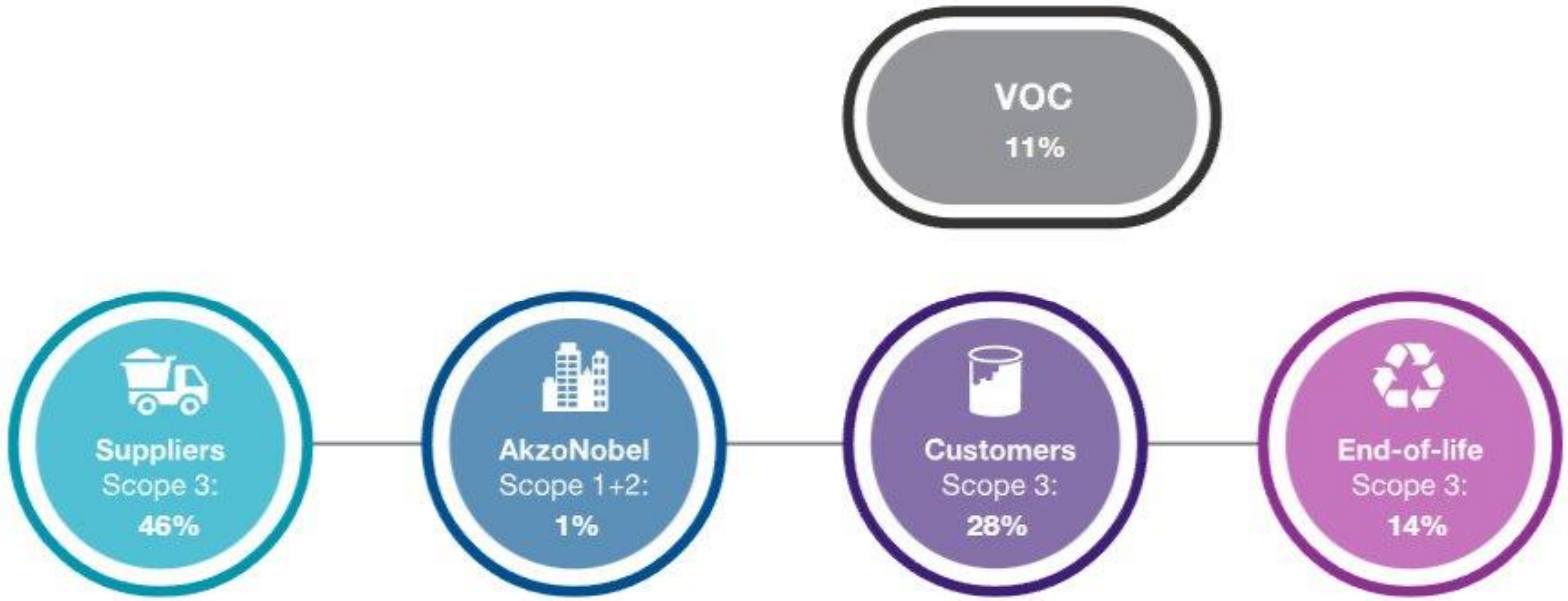
Sabic HQ, KSA

Resources and circularity

Products that enable waste reduction, use less or recycled materials and offer longer lasting performance

Reducing carbon footprint in the built environment is key

50% less carbon emissions for the full value chain by 2030 (baseline 2018)



SCIENCE BASED TARGETS

DRIVING AMBITIOUS CORPORATE CLIMATE ACTION

First

paints and coatings company to set science-based carbon reduction targets in 2021

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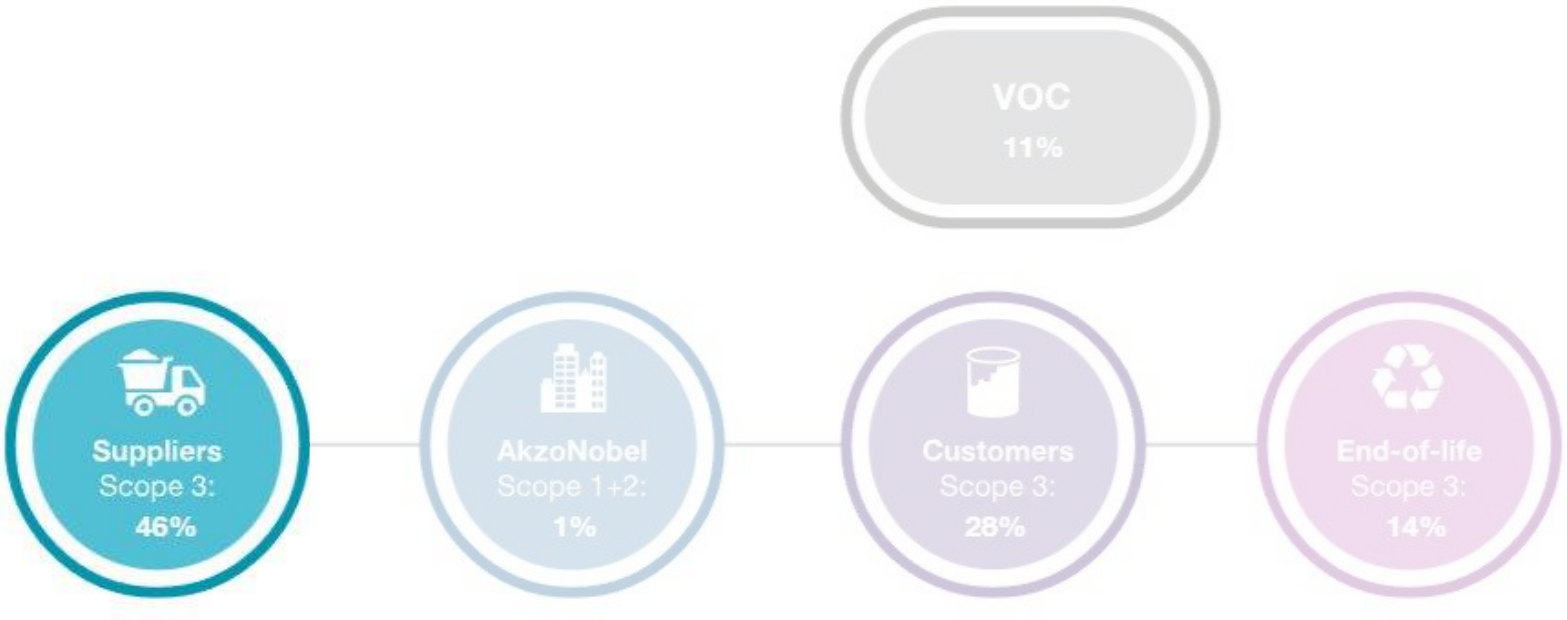

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Collaborating with suppliers to gather product carbon footprint data

We actively **engage with suppliers** to share our ambitions and encourage them to do the same

- Working with key suppliers to **exchange product carbon footprint**, waste, energy and greenhouse gas emission data to **monitor progress of our suppliers**
- **Developing new innovative solutions** as a key driver to reduce value chain carbon footprint
- Supplier specific raw material carbon footprint data used in 2023 data and reporting: 400+ raw materials equivalent to ~**12% of AkzoNobel's total carbon footprint**

TOGETHER FOR SUSTAINABILITY

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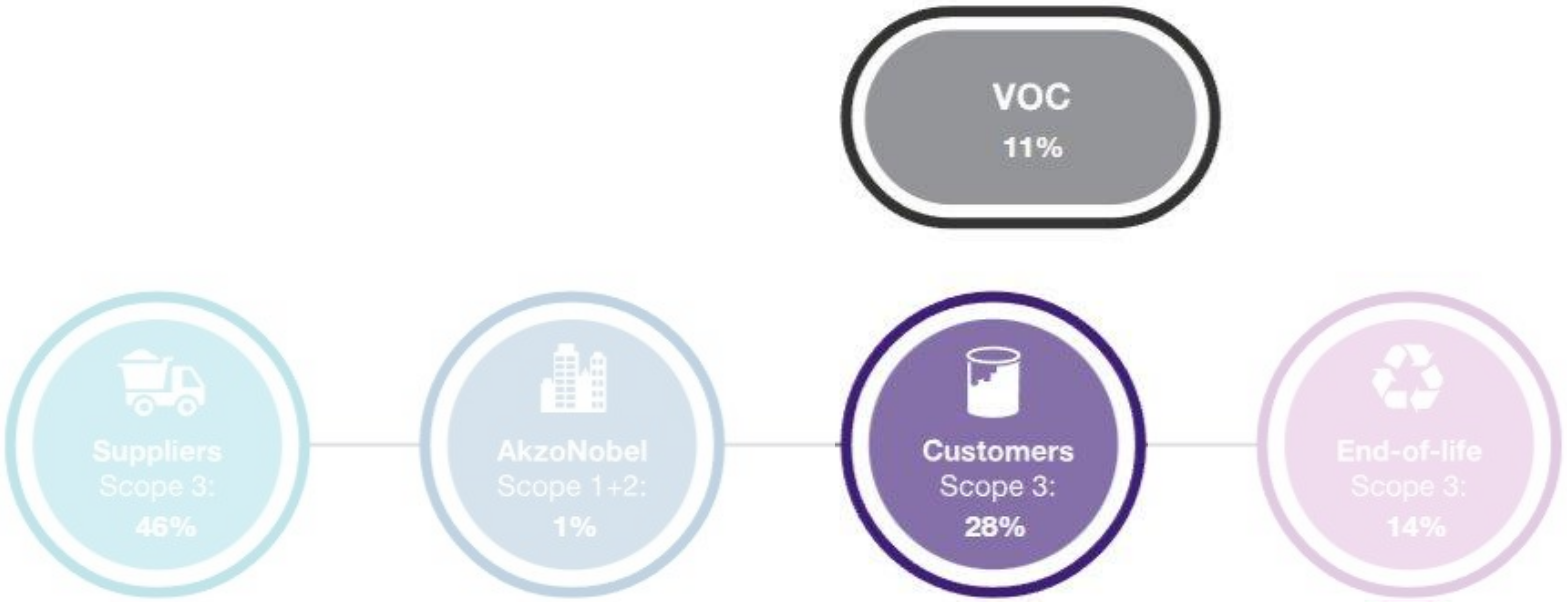

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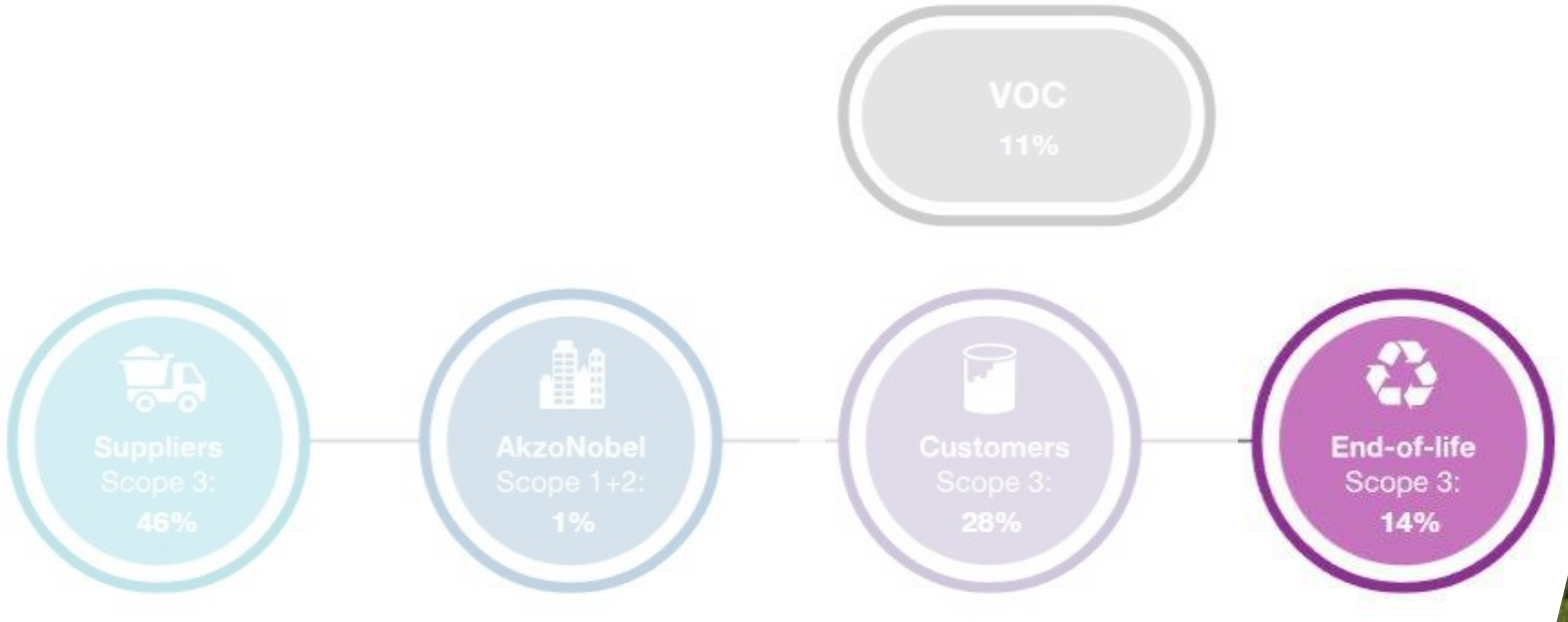

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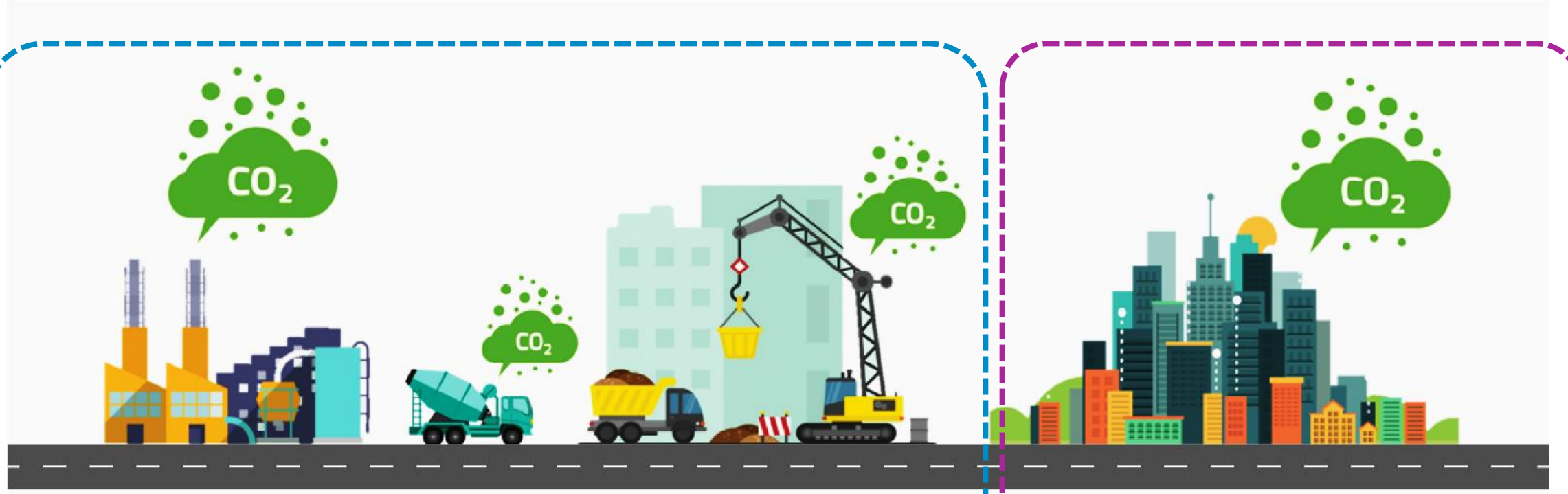
Paints and coatings' role in reducing embodied and operational carbon



"Upfront" Embodied Carbon
Manufacturing, transportation and installation of construction materials

Operational Carbon
Building energy consumption

Climate Adaptation: Embodied Carbon - Heritage BC

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Key drivers for carbon footprint reduction in paints

Examples of reduction in embodied vs operational carbon

	Drivers	Example 1	Example 2	CF reduction (%) (Cradle to grave)	CF reduction (kg CO2/L) (Cradle to grave)
Embodied carbon	Biobased content	Product without biobased binder	Product with 50% biobased binder	10% reduction for 10% biobased binder	0.4 $kgCO_2/L$
	Move from SB to WB	Product with 60gr VOC/kg	Product with <0.1gr VOC/L	14% reduction	0.6 $kgCO_2/L$
	Recycled content	Product without recycled content	Product with 35% recycled content	10-15% reduction (Dulux evolve mat claim)	0.4 $kgCO_2/L$
	Supplier specific CF (acrylic resin, 50% lower)	Product with standard PCF resin	Product with low CF resin	16% reduction	0.6 $kgCO_2/L$
Operational carbon	Material usage - Coverage (m^2/L)	Product with coverage $10m^2/L$	Product with coverage $6m^2/L$	40% reduction for product with $10m^2/L$ coverage	1.5 $kgCO_2/L$ (wall paint)
	Longer lasting	Technical lifetime 7y	Technical lifetime 5y	29% reduction for longer lasting	1.2 $kgCO_2/L$

Examples of paints and coating solutions to reduce carbon in the built environment

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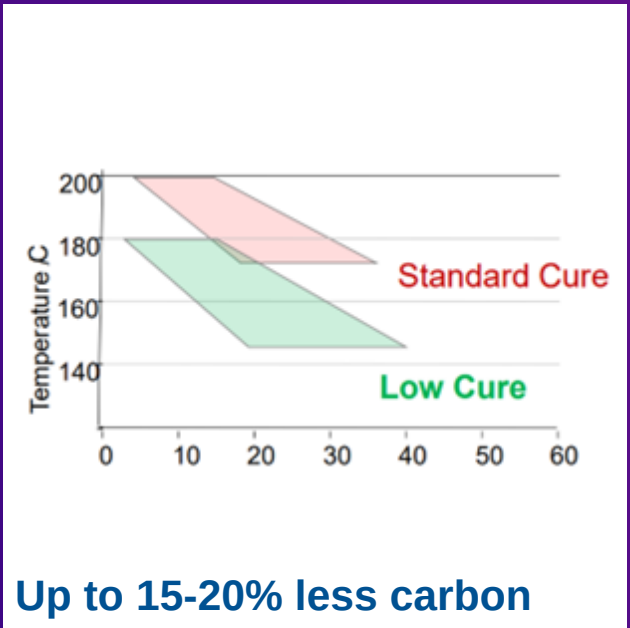


Up to 15-20% less carbon

Interpon D low-E architectural

Low bake powder coatings

Up to 25% lower carbon

Intergard 251HS

High solids protective anti-corrosion coatings

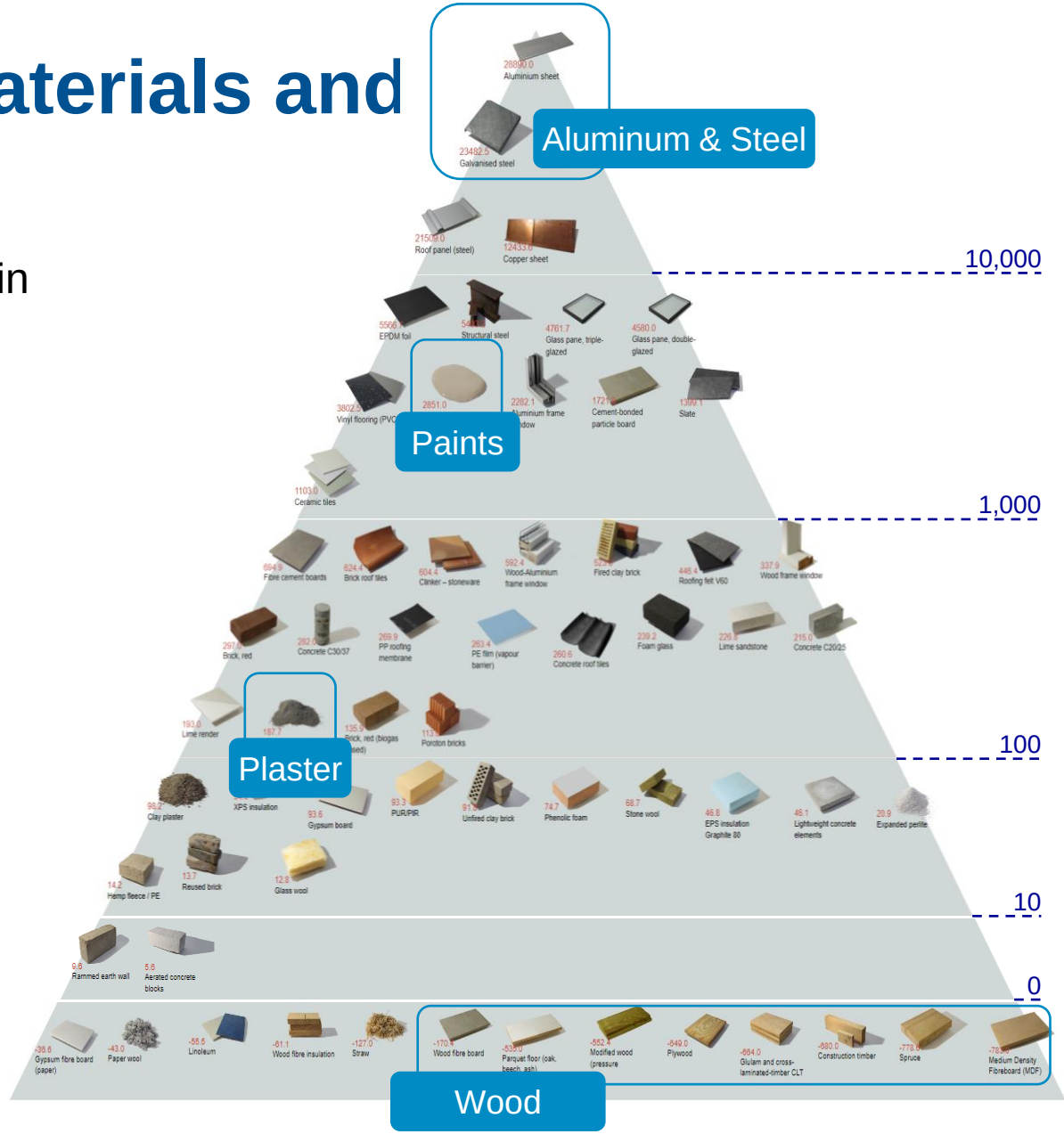
Up to 5°C cooler

Dulux Weathershield Powerflexx

Exterior wall paint

Carbon footprint of building materials and role of paints & coatings

- Coatings can help reduce embodied carbon of certain building materials (e.g. steel, aluminum, plaster, wood)
- **Manufacturers** of building materials are already **reducing their footprint (**e.g. ‘carbon neutral’ steel)
- **Upcoming harmonization** between key green building **schemes** will include reduced embodied carbon
- Paints & coatings make up a **small part of the embodied carbon footprint of coated building materials** (e.g. coil coated steel up to 15%; powder coated aluminum up to 5%)
- Paints & coatings play an **important role in reducing the operational carbon footprint** in maintenance and repair over time



[Byggeriets Materialepyramide (materialepyramiden.dk)]

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Solutions can positively impact embodied and operational CF

Key is to focus on the building's full life cycle

Cradle to gate

Cradle to grave

Product stage			Construction process stage		Use stage							End of life stage				Benefits beyond the system boundaries
Raw material supply	Transport	Manufacturing	Transport gate to site	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	Transport	Waste processing	Disposal	Reuse recovery recycling potential
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Embodied carbon: Building materials					**Operational carbon:** Use and maintenance stage											

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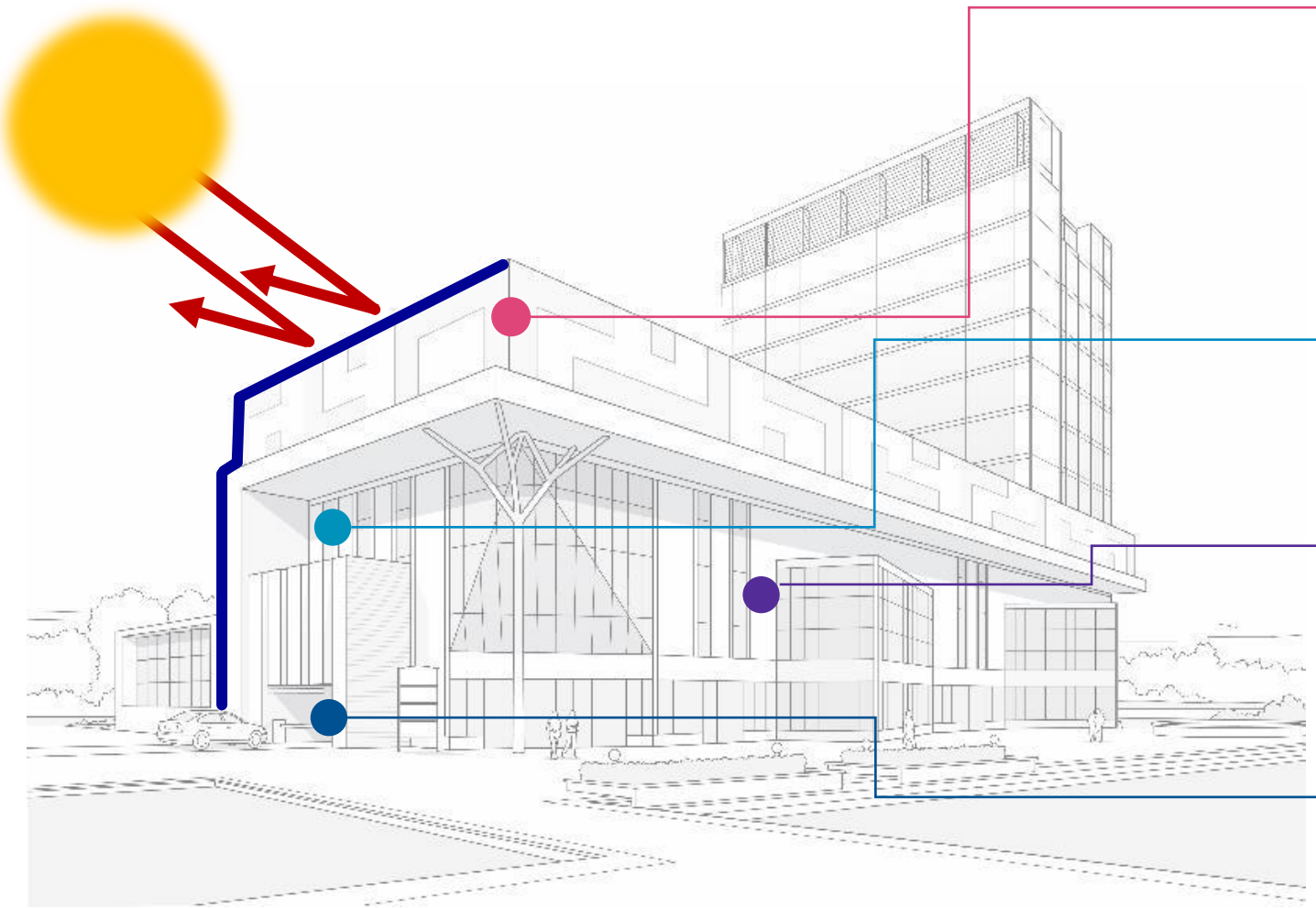
‘Handprint’ of cool chemistry paints & coatings

Reducing the operational carbon for buildings



Roofs & facades

CERAM-A-STAR 1050
(Industrial Coatings)

CERAM-A-STAR®

Intercrete 4890
(Protective Coatings)

International.

Windows

Interpon D2525 LSA
(Powder Coatings)

Interpon. POWDER COATINGS

Walls

Dulux Weathershield Powerflexx
(Decorative Paints)

Dulux let’s colour

Doors

Interpon D2525 LSA
(Powder Coatings)

Interpon. POWDER COATINGS

How can Paints & Coatings contribute to green building certifications?

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Criteria	Description	AkzoNobel solution	AkzoNobel examples	LEED**
Indoor air quality	Indoor air quality through low emitting materials	Low emission certificate	Paints, Protective Coatings	3 points
Materials & resources	Disclosure of environmental impact of building products	EPD*	Paints, Powder and Protective Coatings	1 point
Sustainable sites	Heat island reduction and thermal comfort through heat reflection	Heat reflective solutions	Paints, Coil, Protective and Powder Coatings	2 points

(*) Environmental Product Declaration
(**) Other regional specifications such as Estidama and others

The power of paints and coatings in decarbonizing the built environment

- Paints and coatings can help **decrease the embodied and operational carbon** of the building materials in the built environment
- **Collaboration in the value chain is key** to reducing scope 3 carbon footprint.
- **Longevity** is a key contribution of paints and coatings in the built environment
- By signing the Declaration de Chaillot the government of the UAE will put a **stronger focus on making buildings more sustainable**
- AkzoNobel having a wide portfolio of solutions and expertise can help designers and building owners **contribute to various green building schemes**

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Meet our expert team in the Middle East

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Vik Vithlani

Infrastructure Lead & Performance Flooring Specialist, Middle East

António Balsinha

Powder Coatings Sales Manager, Middle East and Pakistan

AshokKumar Bansal

Regional Sales Manager Coil and Wood Coatings, Middle East and Africa

Siddharth Baliga

Operational Manager Decorative Paints

AkzoNobel

Thank you

Q&A Session

International

Interpon POWDER COATINGS

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