



CopenHill, Denmark, Copenhagen

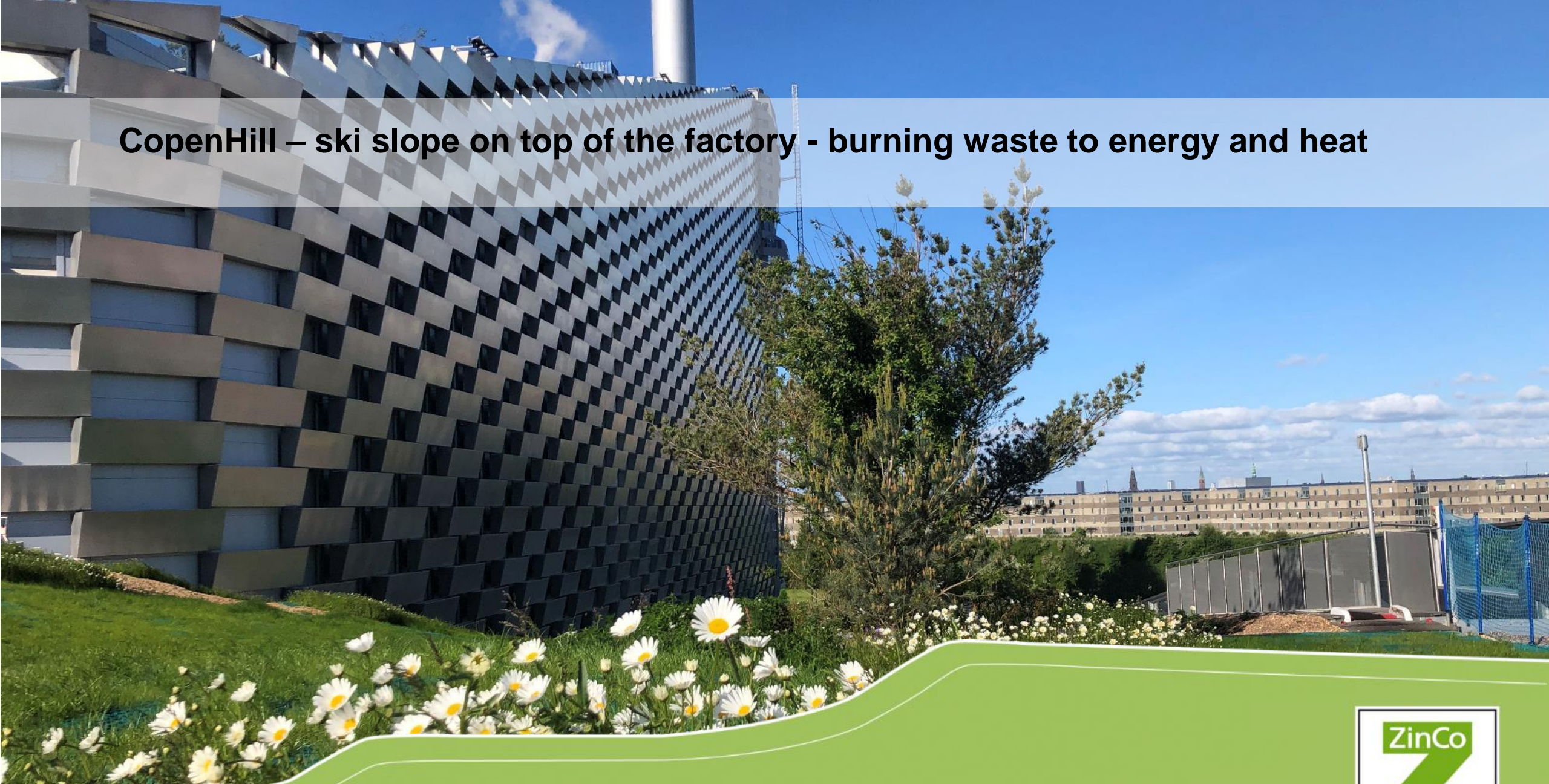
Per Malmos

salg@zinco.dk

Life on Roofs

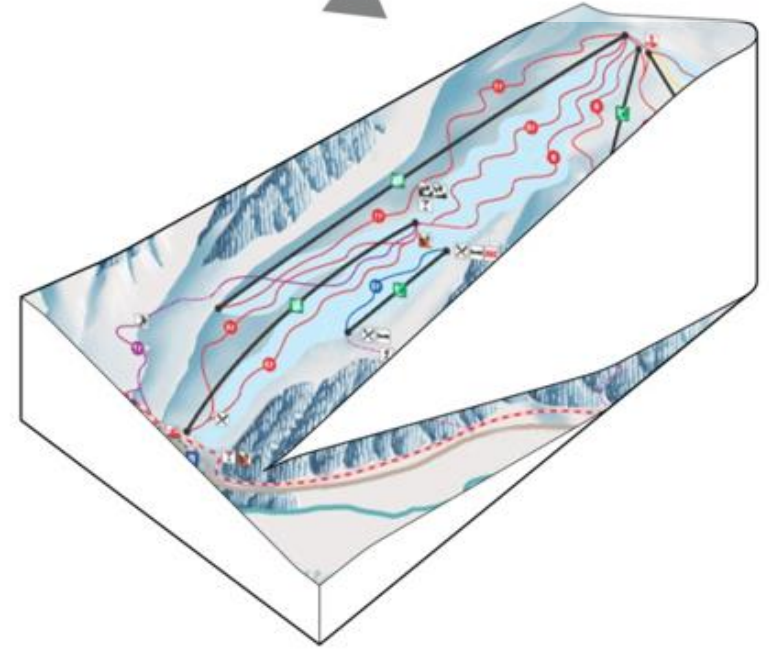
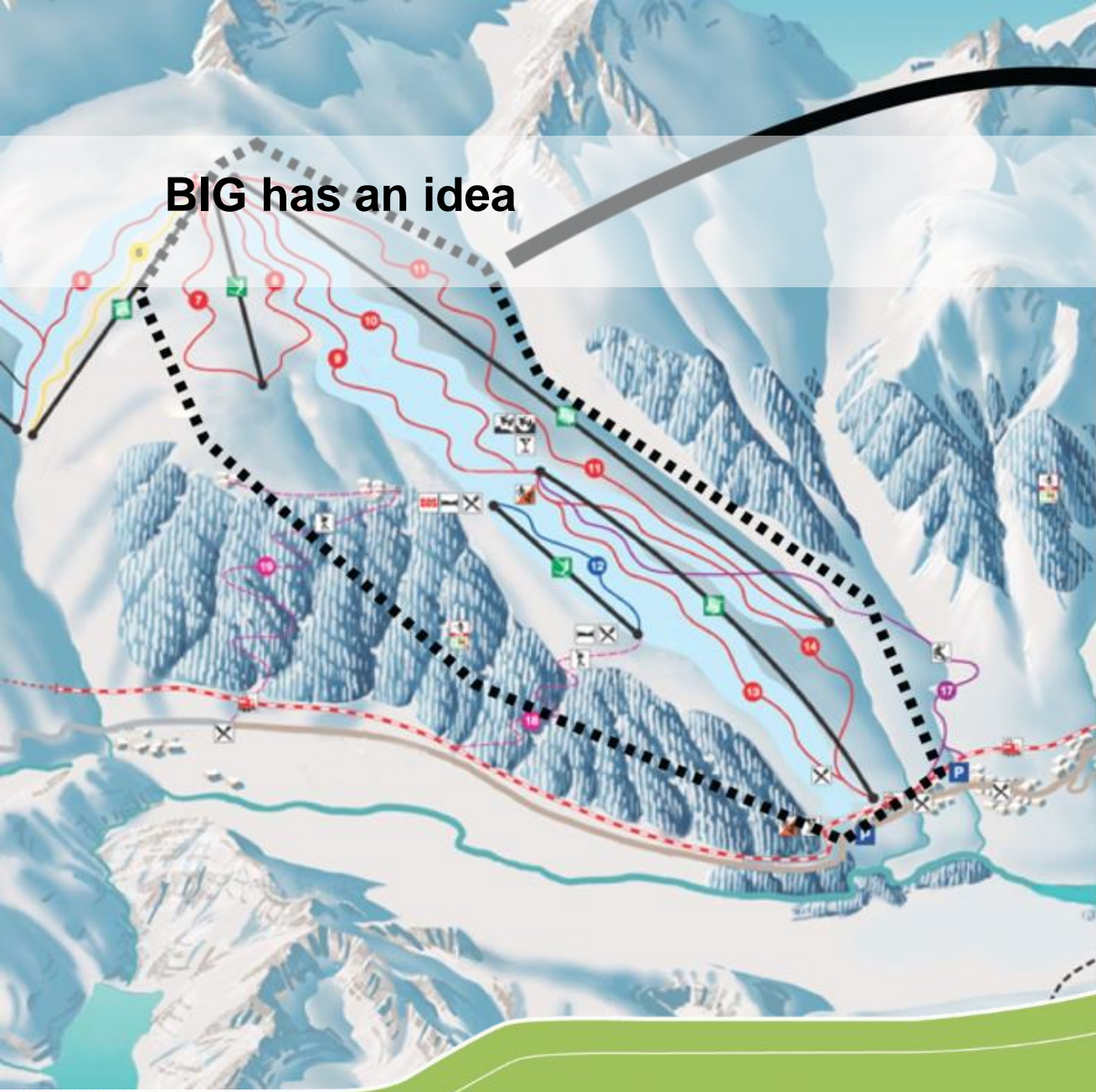


CopenHill – ski slope on top of the factory - burning waste to energy and heat



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BIG has an idea



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The Alps



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2011

First e-mail from
Architect
Can you help?



2016

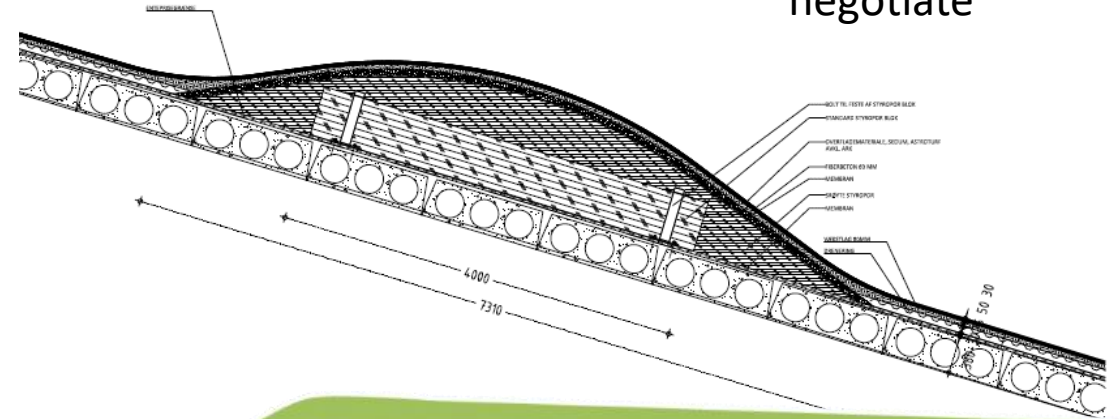
Landscape
Architect
How to grow!



2017

May

PQ



2017

December

Tender
– with a customer's rights to
negotiate

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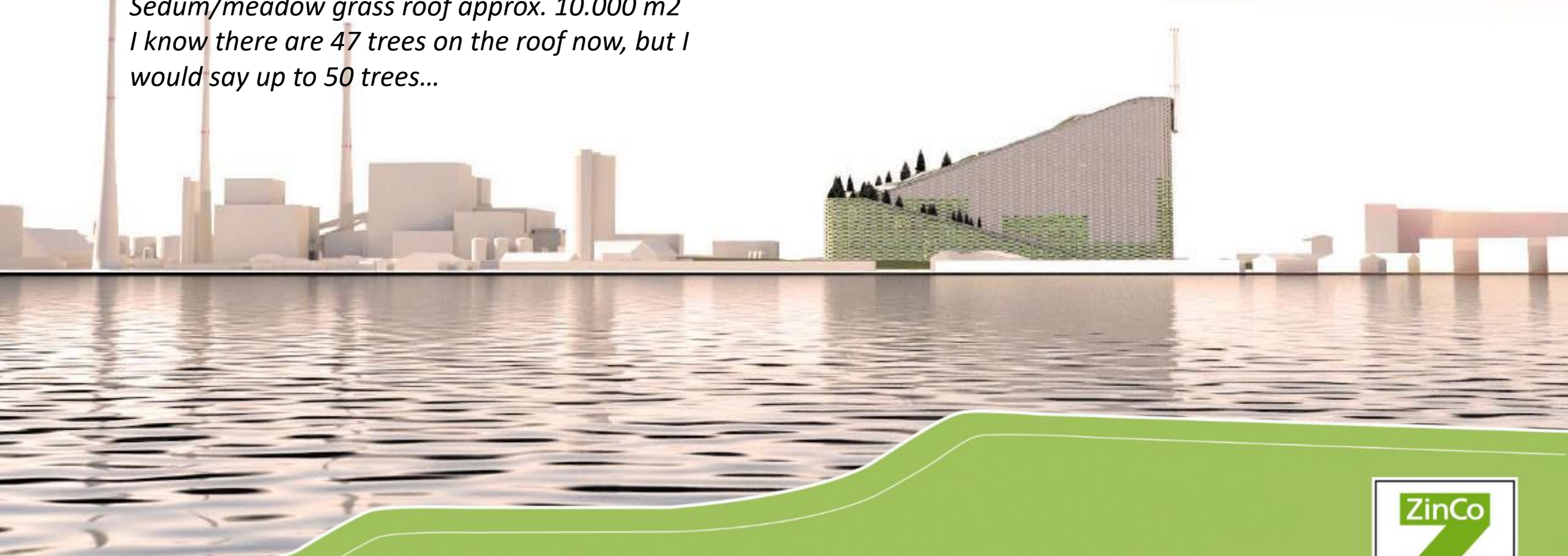
The first e-mail from the architect 2011, August 30.

The key numbers are:

...1.900 plantboxes, which = 7.600 plants

Sedum/meadow grass roof approx. 10.000 m²

I know there are 47 trees on the roof now, but I would say up to 50 trees...



The rough roof with the membrane and fall barrier for each 20 metre



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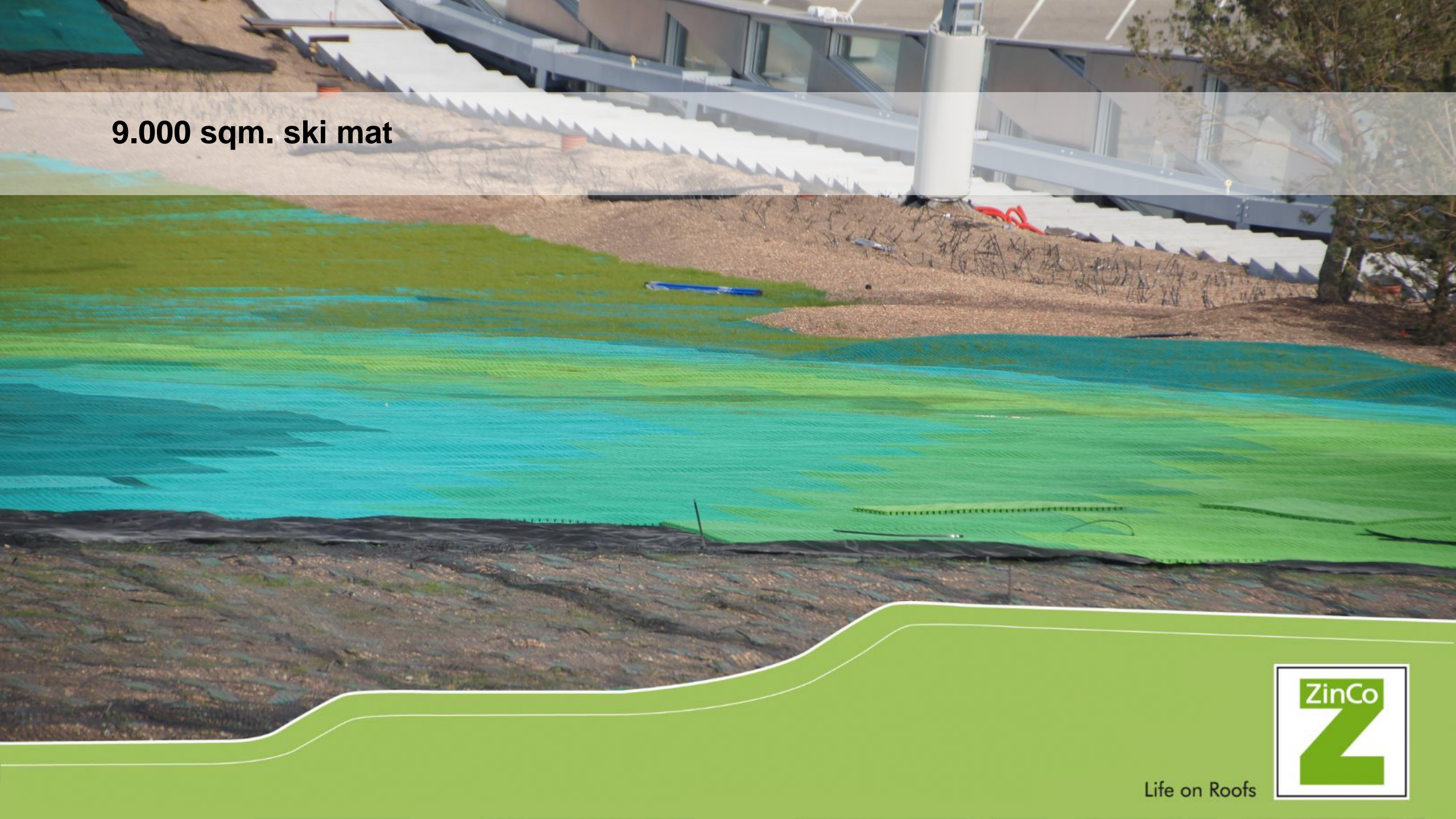
Building up the ski slope



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9.000 sqm. ski mat



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Ca. 3.000 squ. alppath are constructed by concrete with special specification - whipped cream



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Working proces concrete



Weather conditions dictate the daily work



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Trees installed by crane



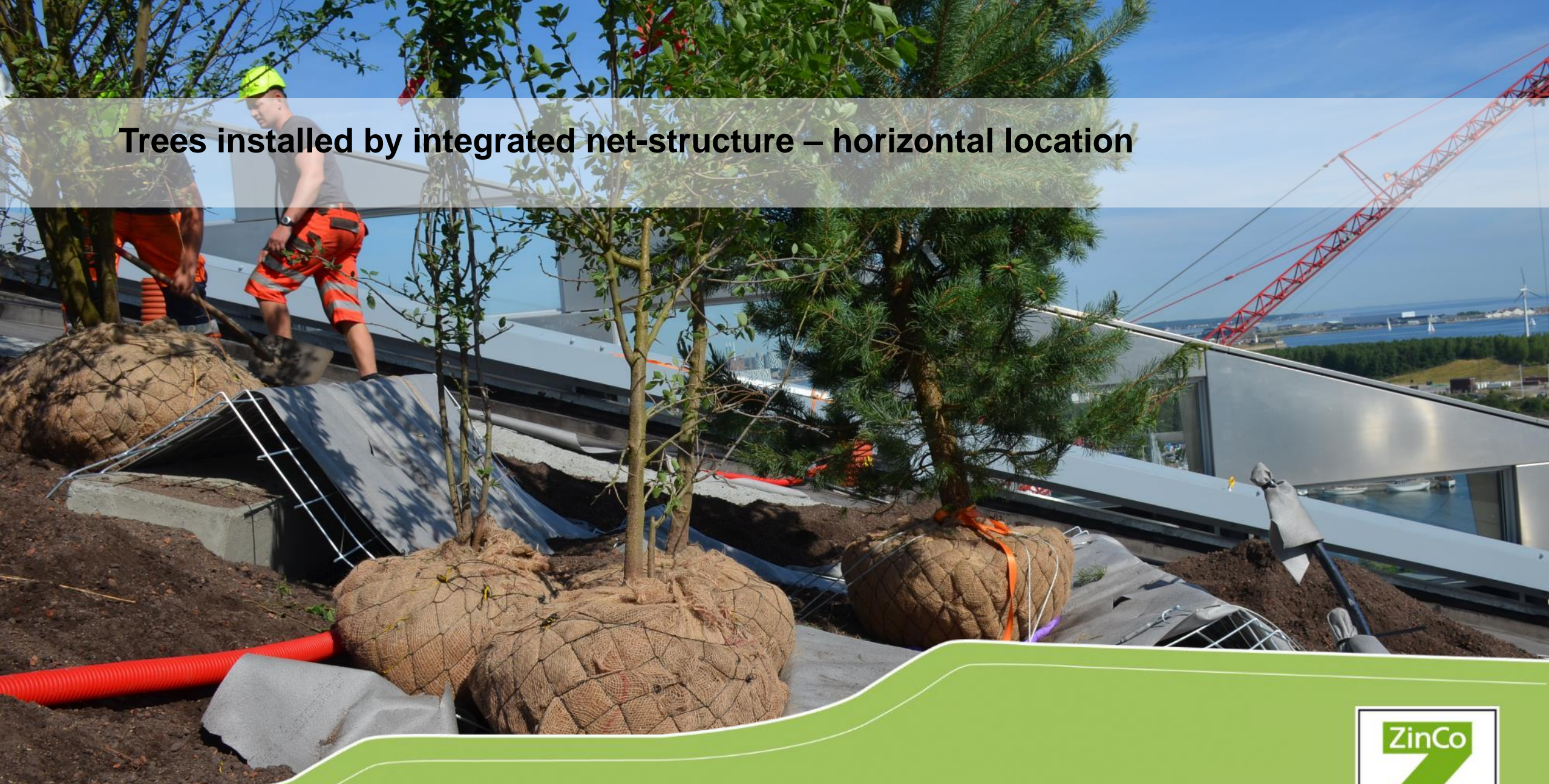
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Trees on the roof



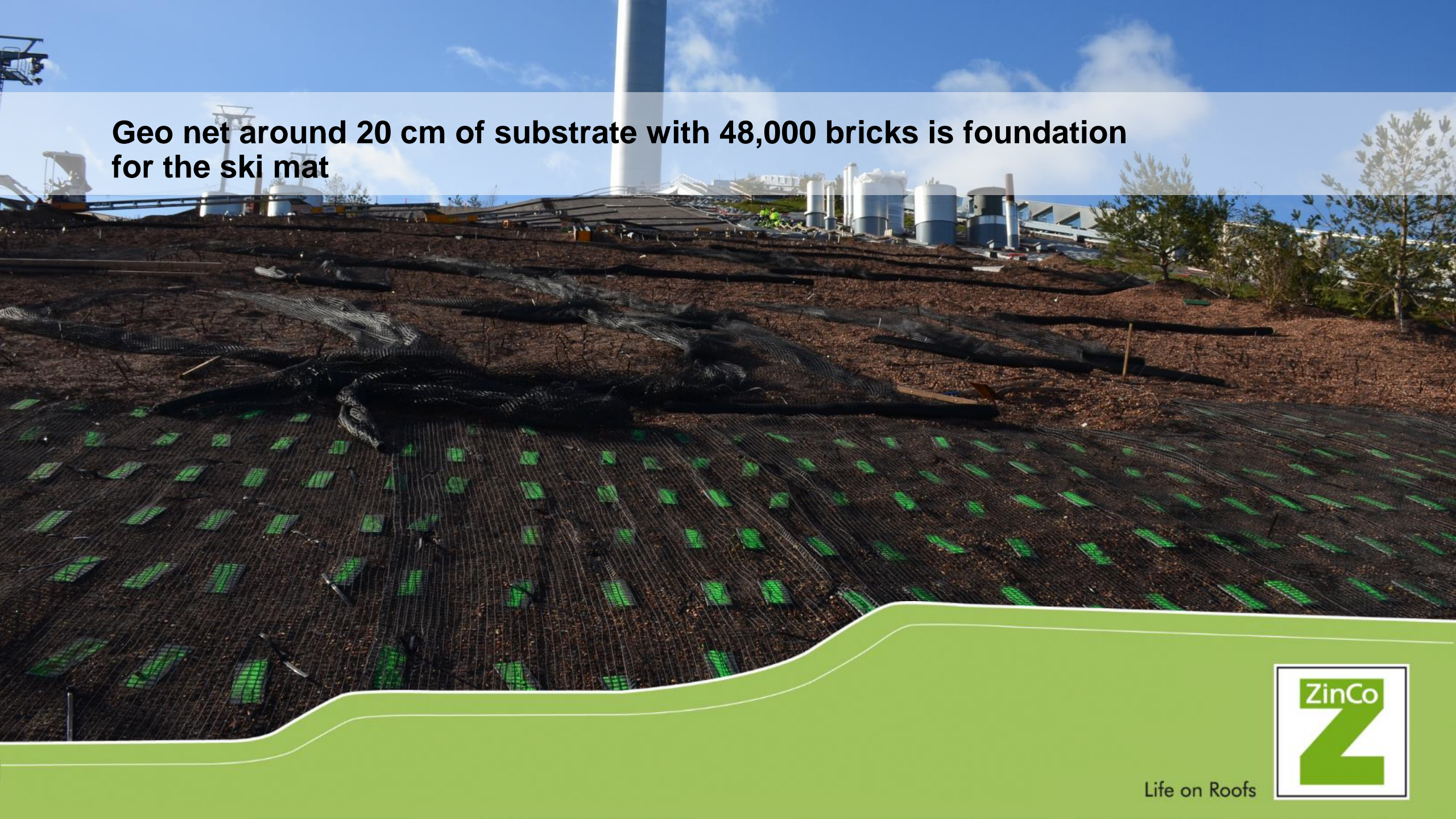
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Trees installed by integrated net-structure – horizontal location



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Geo net around 20 cm of substrate with 48,000 bricks is foundation for the ski mat



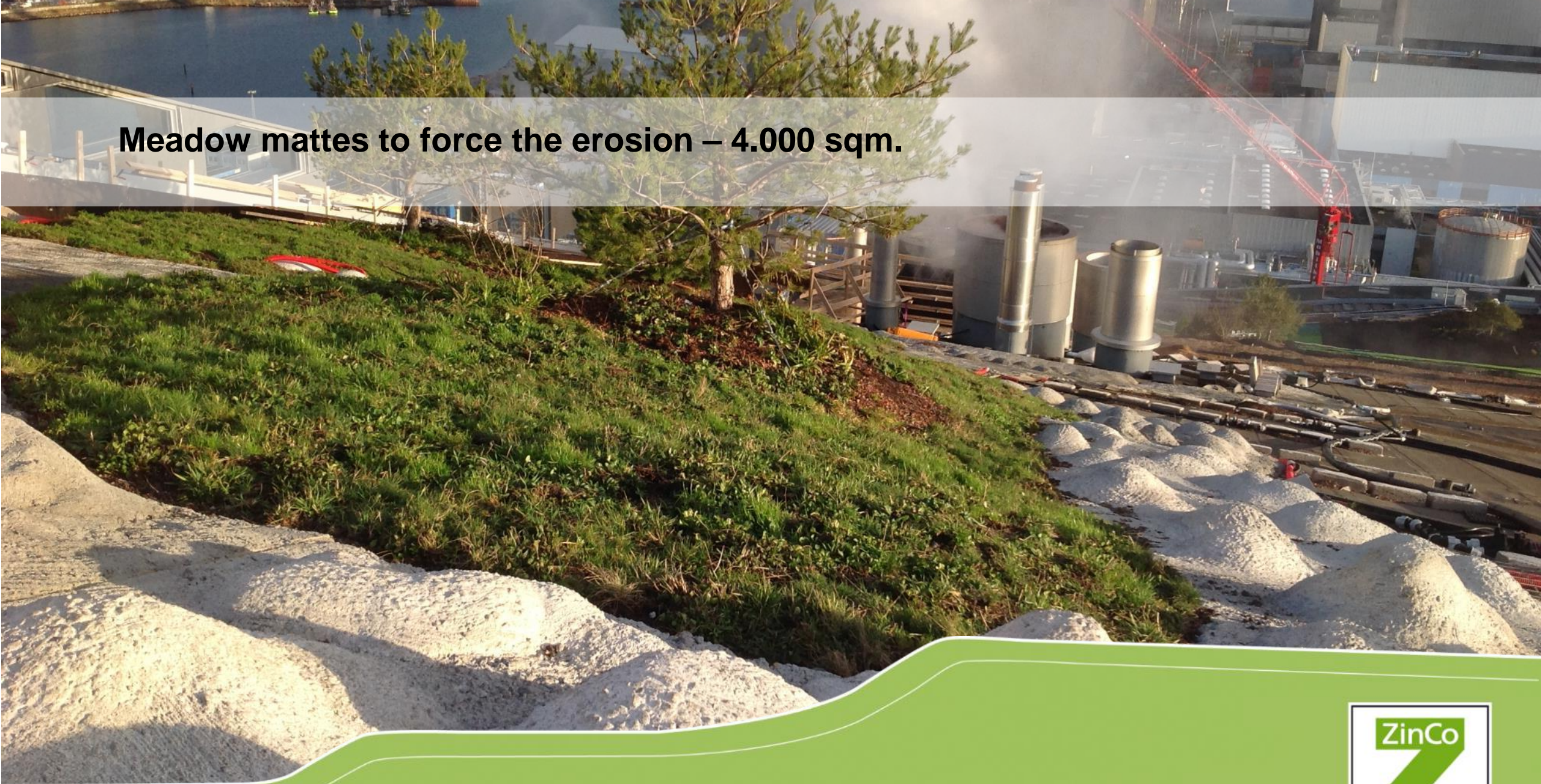
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Irrigation system on all green areas



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Meadow mattes to force the erosion – 4.000 sqm.



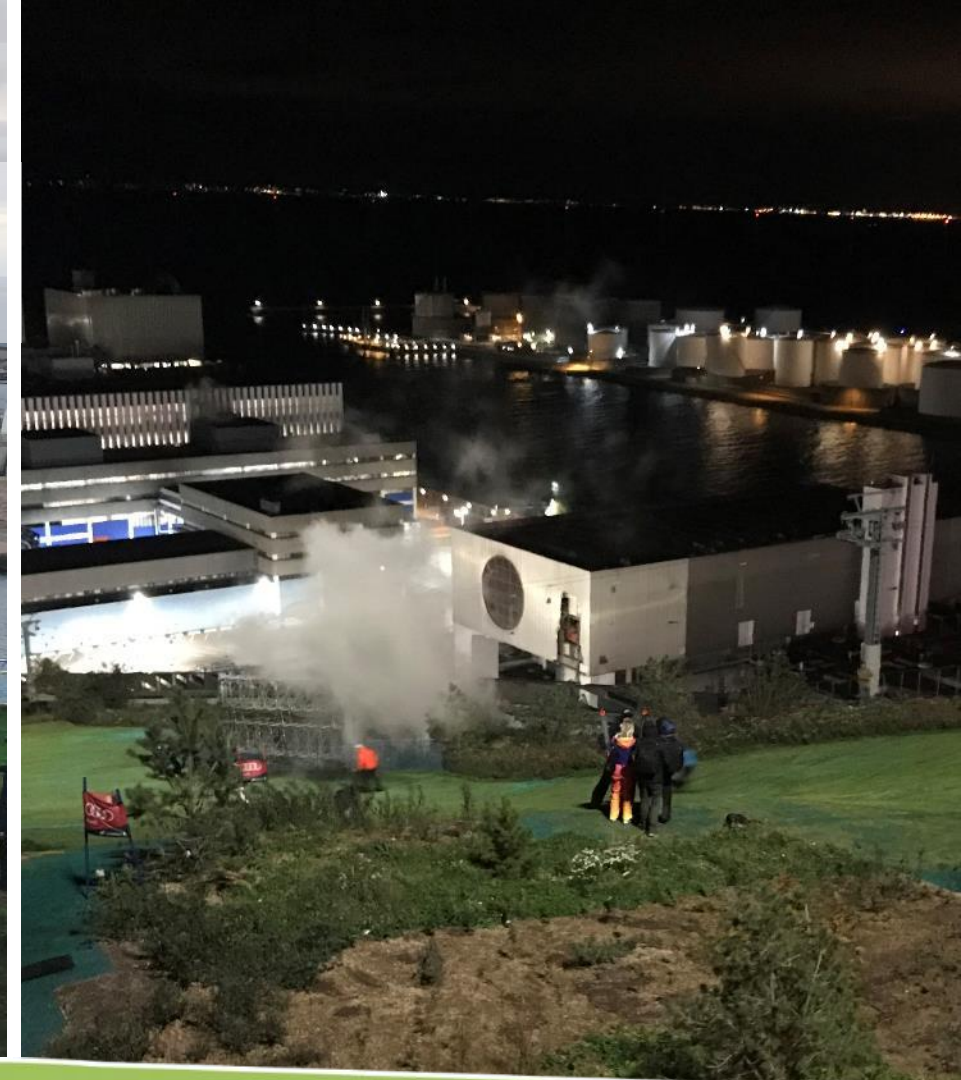
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Biodiversity – the weeds are developing around the trees



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2019 - 4th of October - Grand Opening



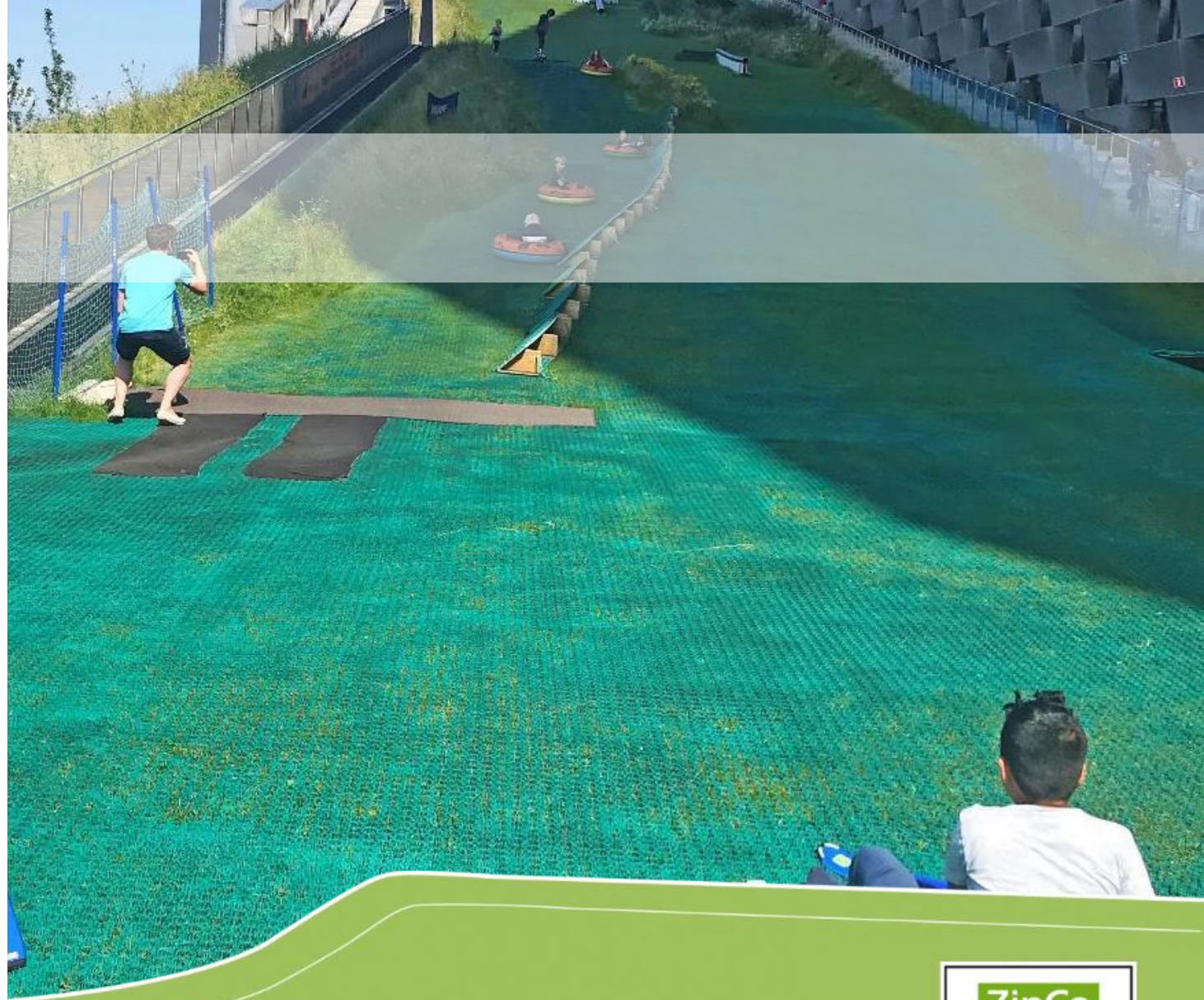
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Danish landscapers skiing



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The Kids Slope



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Project Report

Amager Ressource Center, Copenhagen



A new spectacular attraction in the city of Copenhagen: A ski slope!

Project Data

Area: in total ca. 16.000 m², 3.000 m² of which are pathways, 3.000 m² planted areas and 10.000 m² of ski slope

Construction Year: 2018/2019

Architects: BIG, Copenhagen

Landscape Architects: SLA, Copenhagen

Contractor: Malmos A/S, Roskilde

System Build-up: Special solutions with Elastodrain® EL 202 and Protectodrain® PD 250

Coordinates: 55°41'5.09" N; 12°37'13.70" E

Conception

In October 2019 Copenhagen gained a new attraction: A ski slope in the town! While the waste incineration plant "Amager Ressource Center" provides electricity for 30.000 and heating for 72.000 households, the roof of the building accommodates a 450 m vegetated long ski slope.

It is not snow visitors are skiing on, but green synthetic mats and real grass growing through the mats.

4 lifts bring visitors comfortably to a height of 87 m, where they can enjoy a panoramic view of Copenhagen. Alternatively one can take a pathway surrounded by lush greenery along the slope.

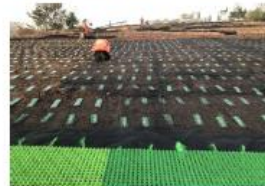
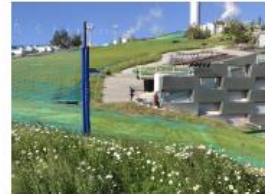
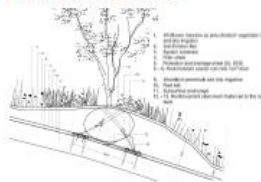
The slope flattens towards the bottom, so that even beginners can approach the sport at the foot of the building.

In order to stabilize the system build-up and prevent sliding numerous shear barriers were anchored in the concrete roof structure. At the same time they divert

exceeding water towards the edges of the roof. The root balls of the trees, weighing up to 2,5 tons, were supported by specially shaped meshes. The substrate is embedded between two layers of geogrids, connected by nearly half a million of cable binders.

The operator of "Copenhill", as the plant is also called, is expecting about 300.000 visitors a year.

Detail Shrub Anchorage



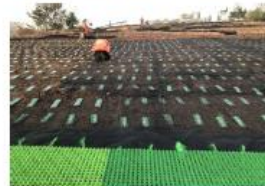
Development



Protectodrain® and Elastodrain® mats ensure the safe drainage of exceeding water on the entire surface.



The root balls of the shrubs are supported by specially shaped reinforcement steel meshes.



The substrate underneath the plastic mats lies embedded between two layers of geogrids.

CopenHill in Denmark

Find the reference on

www.zinco-greenroof.com/references

ZinCo GmbH
Lise-Meitner-Strasse 2 · 72622 Nürtingen · Germany
Phone +49 7022 6003-0
info@zinco-greenroof.com · www.zinco-greenroof.com



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Thank you for listening



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