



Nature Inspiration



TEHOMET
A **valmont**  COMPANY

Skills at the Heart of Nature



Preamble

Materials for an Industrial Logic



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The Group Objective

Work with specialised production units

- Maarheeze for **Steel**
- Rive de Gier for **Aluminium**
- Parikkala for **Wood**

Further materials tomorrow...



Preamble

Why Choose Scotch Pine?

Pinus Sylvestris





Our products are in a Class **3** risk category
because of their exposure to inclement
weather

Requirements:

- Availability in terms of volume
- Mechanical strength of square-edged timber (Geographical growth area near the Arctic Circle)
- Ease of gluing
- Constant quality (standardised size and number of knots...)
- Reliability of its environmental traceability



Scotch Pine, an obvious choice...



Our factory...

...at the Heart of the Resource



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Considering the species selected (Scotch pine) and its harvesting area, the Finnish know-how can definitely be trusted.

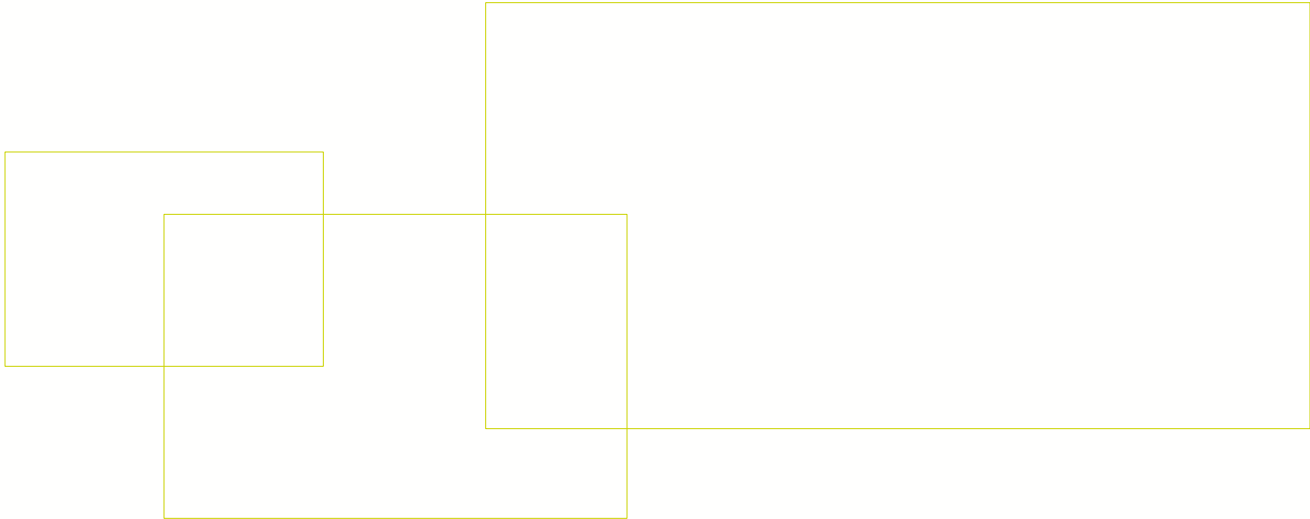


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Standards

Regulatory Framework





The **Calculation** and **Sizing** of lighting supports (all materials included) must guarantee a minimum product lifetime of **25 years**.

In the absence of an EN40 product standard (currently in preparation) for **wood/metal** combined products,

the calculation for these supports must be based on **existing standards** such as:

- Eurocodes 5,
- EN 40 standards for metal supports
- CUAP 01-06/07 “Combined wood/metal urban lighting”



Valmont's **8** key points

for sustainability



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Point n° **1**

Simple Glued-Laminated Untreated Scotch Pine



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The choice of a simple glued-laminated technology

The geometry of all our products is directly obtained from a **beam of glued-laminated wood**:

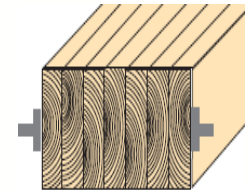


A square section is worked as is.



A round section is machined to acquire its shape.

The two external planks are turned **heart side outwards** in order to prevent surface cracks due to wood aging



Intended aim: offer an attractive solution without compromising on Quality and on Environmental Protection



Characteristics of glued-laminated timber:

- Service class (1;2;**3**;4)
in compliance with standard EN350
- a GL strength class
in compliance with standard EN386
- Type I or II adhesive (glue)
in compliance with standards EN301 & 302




Constraints due to the use of our products

The **En 350** standard provides a classification according to the product location and the potential risks of biological attack.

Class 1 - Timber off the ground and protected (dry)

Class 2 - Timber off the ground and protected (sometimes damp)

 **Class 3 – Timber off the ground and unprotected (frequently subjected to moisture)**

Class 4 – Timber in permanent contact with the ground or fresh water

Therefore:

All our products have a **suitable ventilation space**, including low bases, for which there is a minimum gap of 200 mm off the ground.

We comply with the **maximum thickness of 33 mm for the planks** as required by Class 3.



Point n° **2**

Gulam GL28h:

A Certified High Grade
Glued-Laminated Timber



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Why choose a GL28h quality?

The **EN386** standard provides a classification according to strength characteristics: GL*
(*Deflection, Tension, Compression and Density)

There are various glulam strengths: GL22, GL24, GL28 and GL32 (in order of increasing strength).

The planks used for manufacturing this glued-laminated timber are:

- of equivalent quality, these glulams are then named GL22h, GL24h, GL28h and GL32h
- of two different qualities: GL22c, GL24c, GL28c and GL32c

Given the structural nature of our products
and the simplicity of our construction principles
we have chosen a **GL28h glued-laminated timber**,
which is of higher quality than the usual GL24h.



...why choose this plank quality?

The **EN 338** strength class is, amongst others, conditional to the quality of the planks making up the Glulam.

These qualities are classified in C18, C24, C30 and C40 in order of increasing strength.

Each class is defined by mechanical characteristics (widths of growth rings, diameters of knots, seams, waness...)

Strength classes for wood planks according to EN 338

Homogeneous
glued-laminated
timber*

C 24

C 30

C40

BLC classes

GL 24

GL 28

GL 32

* All planks have the same quality – ie are homogeneous



Point n° **3**

White Glue



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Selecting a white glue

Standards **EN 301 & EN 302** classify glues into two categories (I and II) according to different criteria* (outside temperature and maximum moisture content for the wood during use...)

Given our **category 3 service class**, only **type I** glues are suitable.

- Resorcinol (2 types available - brown seals)
- **Melamine-Urea-Formaldehyde (MUF – translucent seals)**

Benefit:

- **Aesthetics / invisible seals**





Point n° **4**

Minimized knotting

Premium wood selection



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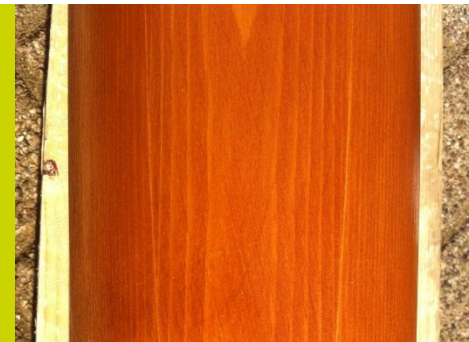
Minimized knotting

Premium wood selection with minimized knotting to **stop possible seepage**

Our premium selection makes it possible to obtain wood parts GluLAM28h with the as less as possible knots



- **Aesthetics / less maintenance / better quality**





Point n° **5**

Five Coats of Water-Based Wood Stain



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A wood stain* for long-lasting aesthetics...

(*smooth and harmonious)

5 successive coats are applied

(*Teknol Aqua 1410, Teknol Aqua Primer 2900 and Teknol Aquatop 2920 from Teknos Gori)

They provide: Required thickness for ultimate wood protection

They prevent: Micro-cracks on the surface
Uneven greying of the wood



The top coat must be **checked** and **maintained** every **5 to 8 years** of exposure.



...and environmental protection

In compliance with European Directive 2004-42-CE on water-based paints containing Volatile Organic Products:

VOCs from this wood stain are **lower than 100 g/l**

In future regulations, the use of solvent-based paints will be prohibited outdoors as they now are for indoor use.

By choosing this water-based wood stain:

- we are ahead of future directives
- we are lowering VOCs emissions

(VOCs for solvent-based wood stains are generally between 300 and 400g/l)



Point n° **6**

Urban Lighting

100% PEFC certified



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PEFC certified products

This final product certificate is issued by Inspecta.

It guarantees that **100%** of the wood used for manufacturing our products is provided by **Sustainably Managed Forests**.

For each of its poles, Valmont is therefore able to provide the geographical area from which the wood was felled.





Point n° **7**

CO₂ Neutralization Contract



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Towards sustainable development...



Environmental Degradation Factors

Each product has an impact on the environment during manufacturing.

These degradation factors can be measured as part of a study called a product Life Cycle Analysis

There are many different impacts (intensification of greenhouse gases otherwise called CO2 balance, production of hazardous waste, toxicity to air, to water, etc....)

First and in response to the Kyoto requirements, Valmont has focused on the
Carbon Balance

The group has already initiated a comprehensive approach but it is still incomplete.

In the future, our group will be able to display the overall carbon balance for its production.

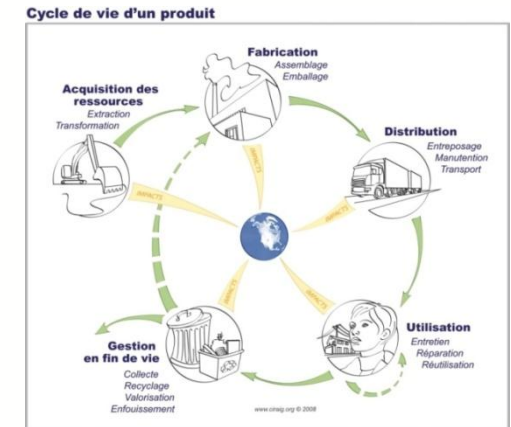
Towards sustainable development...



What is a Carbon Balance?

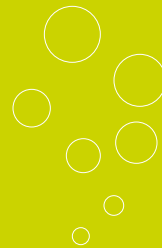
A study for quantifying the production of greenhouse gases over the entire Life Cycle of a product, from extraction of raw material to its recycle at the End of its Life.

Certifying body: REJLERS
(guarantees the Valmont approach)



Main greenhouse gases (GHG):

- Water vapour (H₂O)
- Carbon dioxide (CO₂)
- Methane (CH₄)
- Nitrous oxide (or N₂O)
- Ozone (O₃)



These gases are converted into CO₂ equivalents for an overall value

Towards sustainable development...



Continuous improvement policy

Objective:

- Minimise the carbon footprint of a product from its manufacture
- Reduce the carbon footprint as technology improves

However, any production will generate some residual degradation factors.

Valmont is committed to compensating the remaining Carbon Footprint with the implementation of its ZEP contract.

This commitment, which is currently optional for the sale of common products, has been integrated in the sale of all Valmont's timber poles.



Zero Emission Pole®
by valmont 

Towards sustainable development...



The ZEP programme

A partner: the Trees for Travel association.
<http://www.treesfortravel.info>

A process: a percentage proportional to the Carbon Footprint of the product is taken from the sale of each pole and given to this association.

These funds are used for a Jatropha Shrub Planting Programme in Mali.



In addition to their environmental benefits, the precious fruit from this shrub are used as raw material for:

- medicine,
- animal feed,
- the production of biofuel

These crops have allowed the development of a vital local economy.



Zero Emission Pole®
by **valmont** 

Towards sustainable development...



The ZEP contract

This ZEP certificate guarantees:

- The commitment of the client
- A local action



Zero Emission Pole[®]
by **valmont** 

Towards sustainable development...



Point n° 8

Innovative Aesthetics



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Towards sustainable development...



Diversity of materials

Various experts each with different skills are working together, combining materials to expand and enhance our ranges

These **mixing** opportunities allow our designers to express their creativity for a resulting project with an **individual identity**



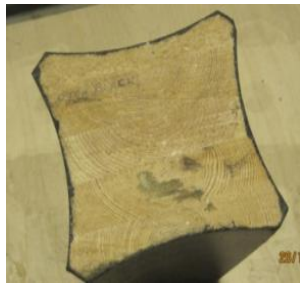


Exploring new shapes

Wood allows the use of a multitude of profiles which highlight the **identity** of a location:



Curves



Profiles



Grooves

Change a pedestrian's perception by playing with the **appearance of the surfaces**



Wood marking

Providing a strong **sense of identity**, engravings on the surface are used to tell the story of a place, a project, a culture...





A Valmont colour chart...



En raison des techniques d'impression, les nuances présentées peuvent différer de la réalité.

Wood

&

Metal



En raison des techniques d'impression, les nuances présentées peuvent différer de la réalité.

Wood stains & thermo-lacquering enhance the material and provide the final **identity** of a project.



For different atmospheres

	Topaze & Fjord 02			Cannelle & Canyon 02			Vanille & Toundra 02	
	Ardoise & Fjord 04			Muscade & City 01			Caramel & City 03	
	Onyx & City 02			Safran & Canyon 01			Cacao & Toundra 01	

Mineral



Spicy



Sweet





The
Collection

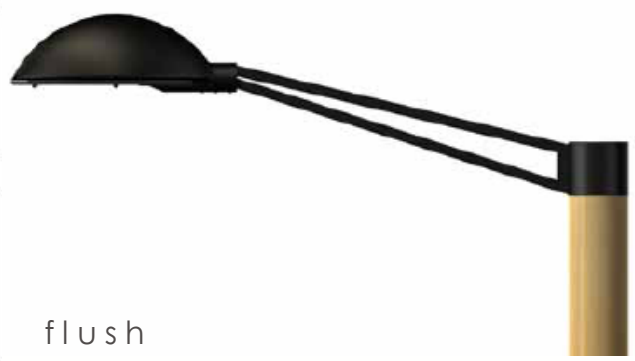
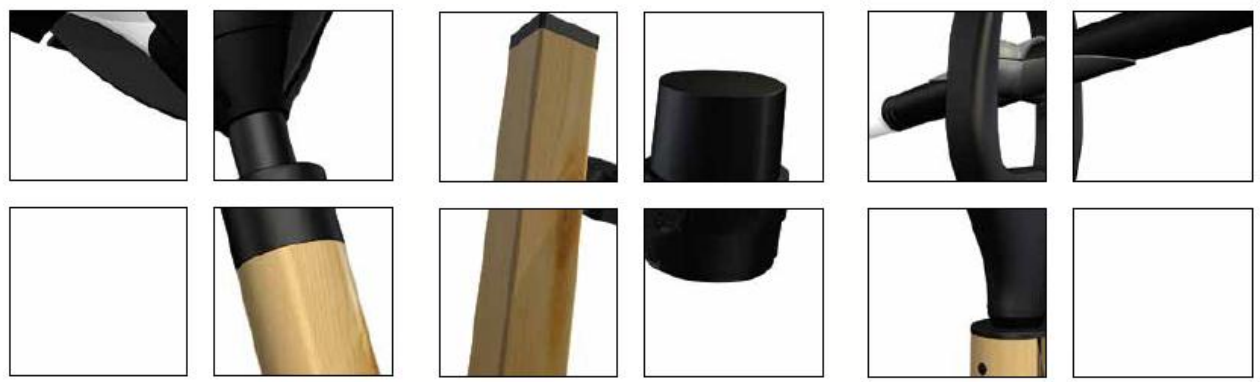
a **U**nique Signature



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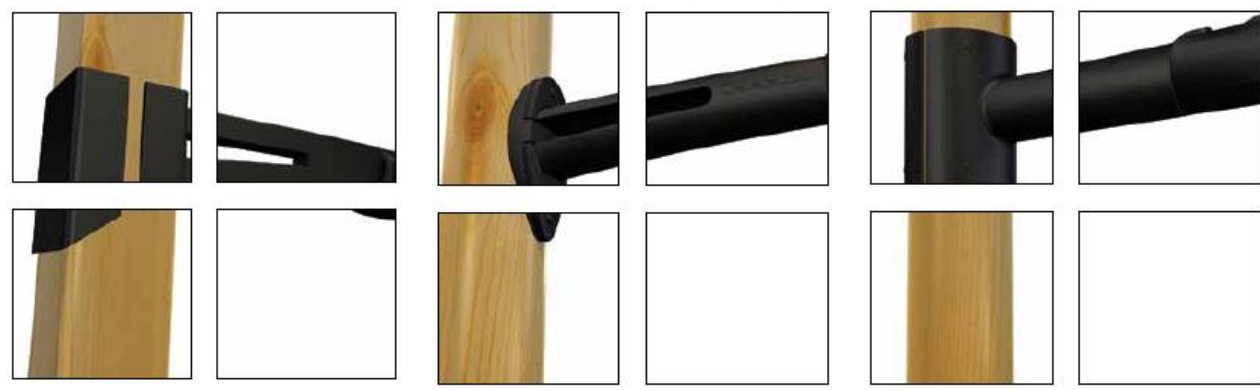


Top-set...



flush

Or at the side



overlapping

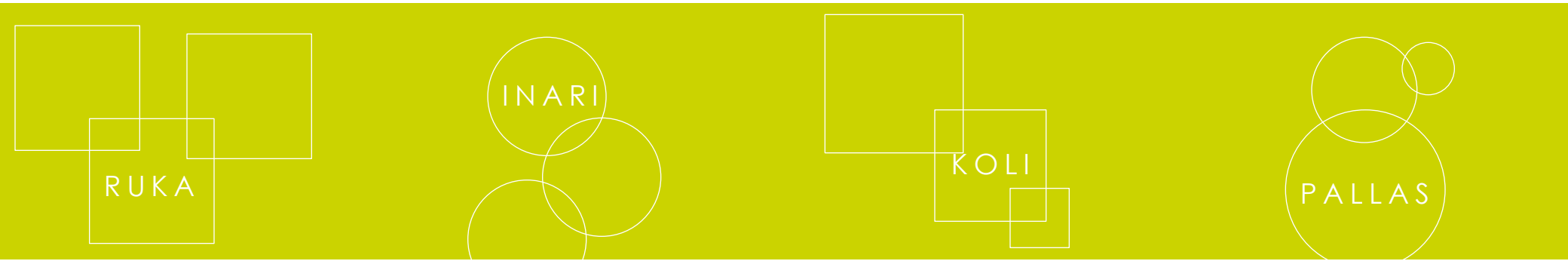


Products

Basics...



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INARI

KOLI

PALLAS

RUKA

Changes to the top-set sections

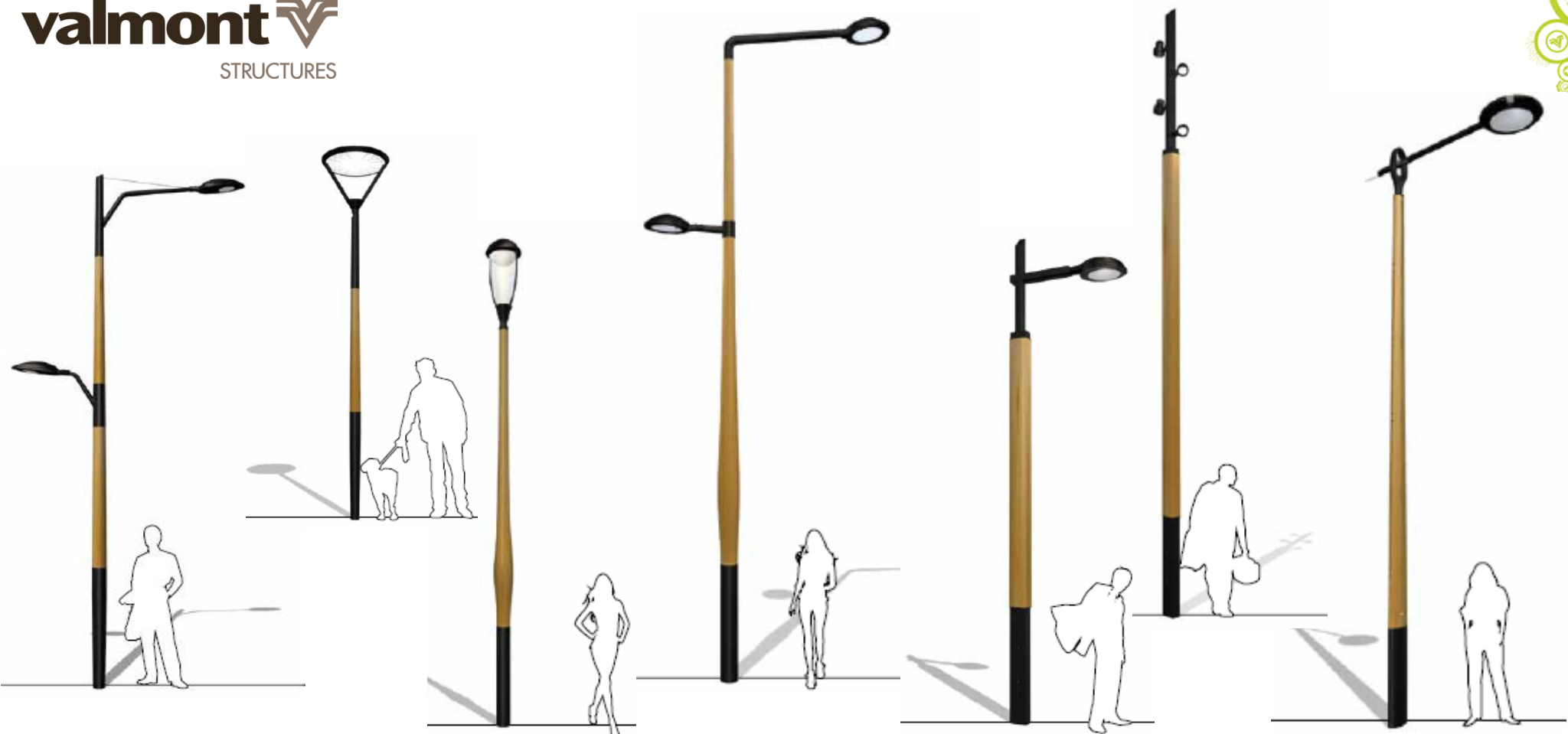


Products

...and a **N**ew **C**ollection



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SEKA

LEMPEA

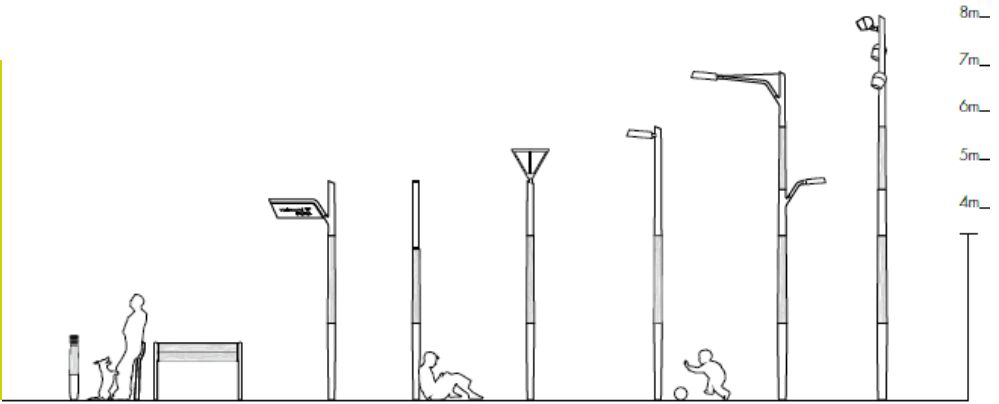
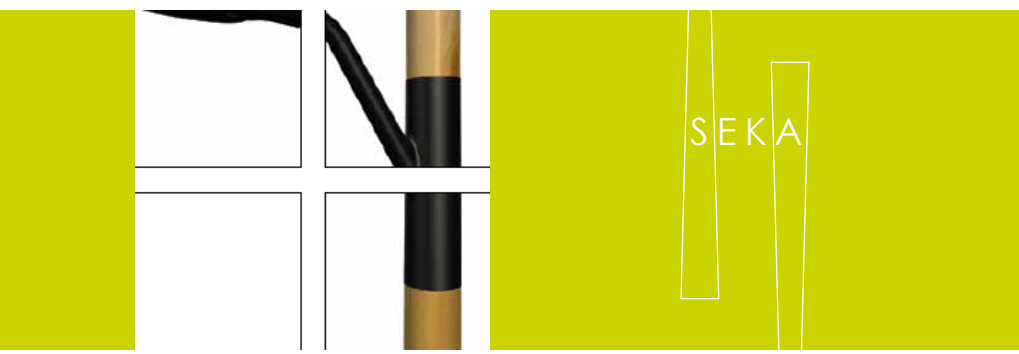
SOIKO

ONTELO



Seka Park & Seka

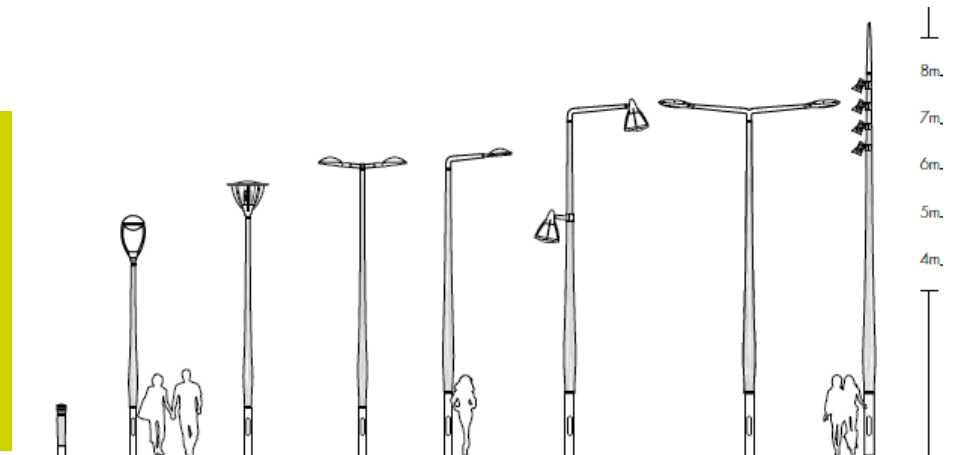
- Range of cylindrical-conical and inverted (at the base) urban lighting.
- Height range: 4 to 8m
- The added detail: the flush intermediate elements.





Lempeä Park & Lempeä

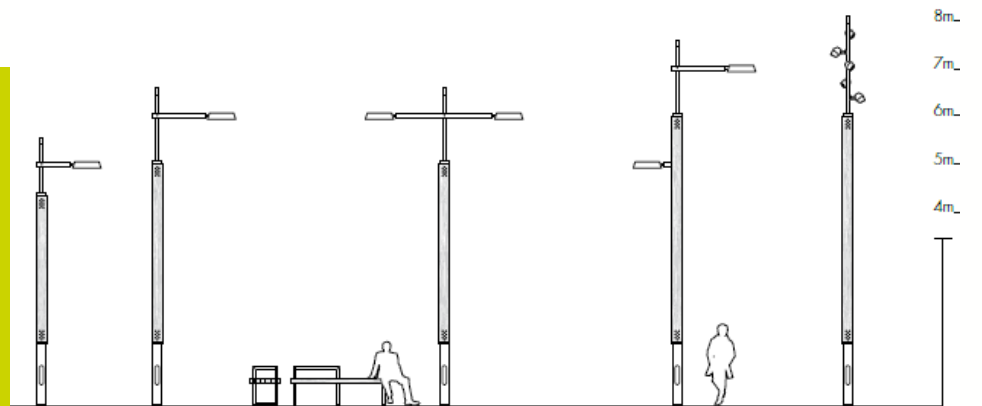
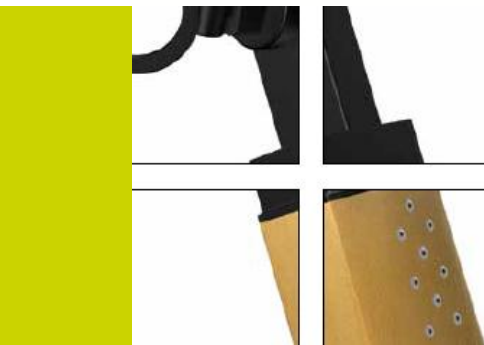
- Range of cylindrical-conical curved and grooved urban lighting.
- Height range: 4 to 8m
- The added detail: the curve.





Soiko Park & Soiko

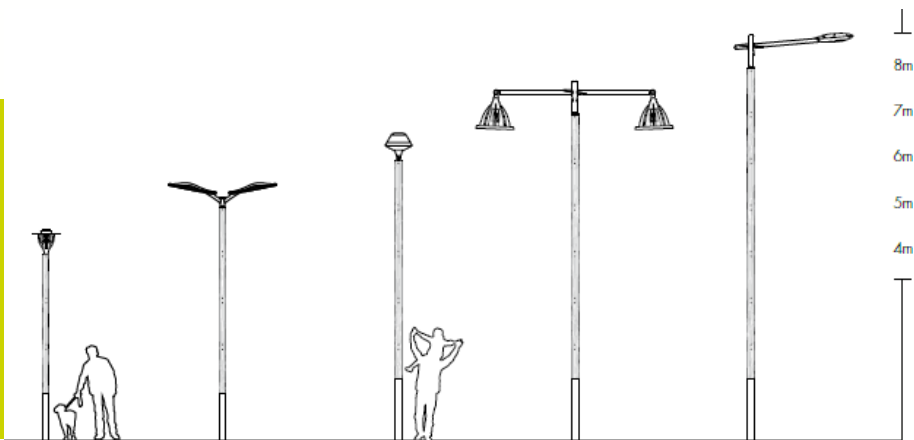
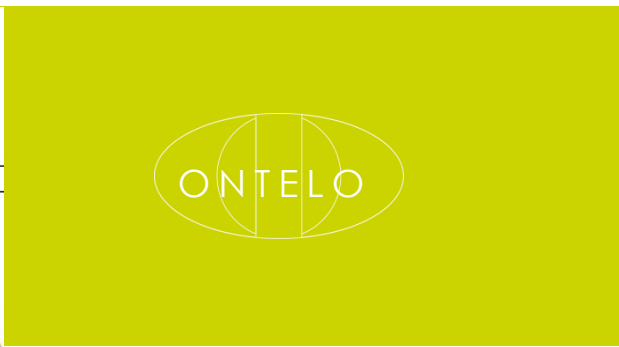
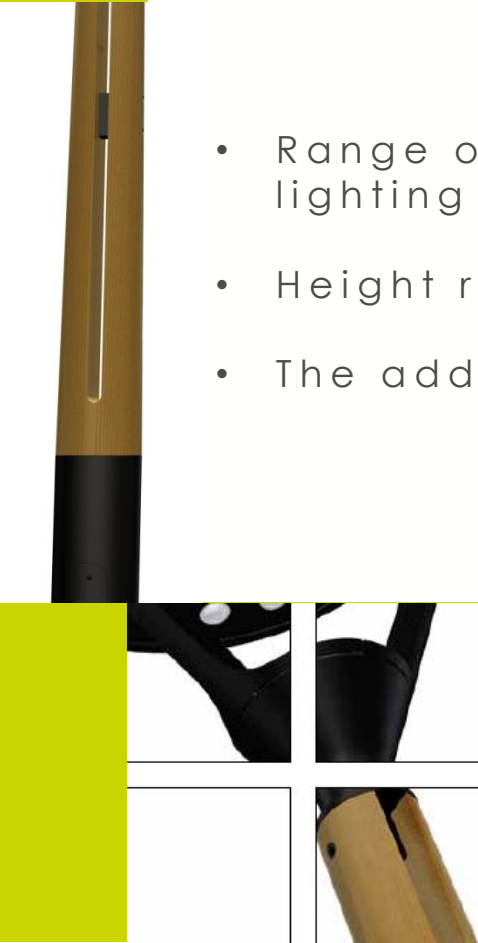
- Range of urban lighting with an elliptical angular section.
- Height range: 5 to 8m
- The added detail: the fittings

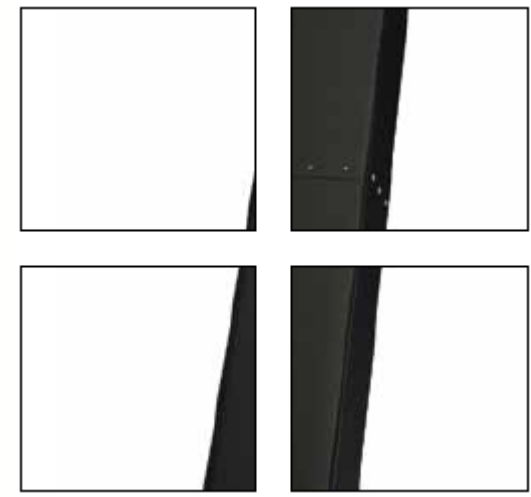
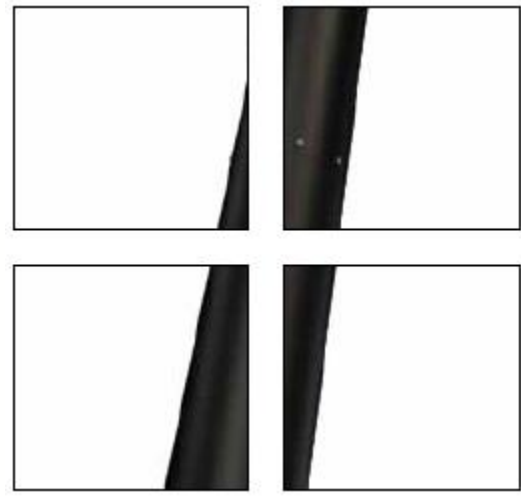




Ontelo Park & Ontelo

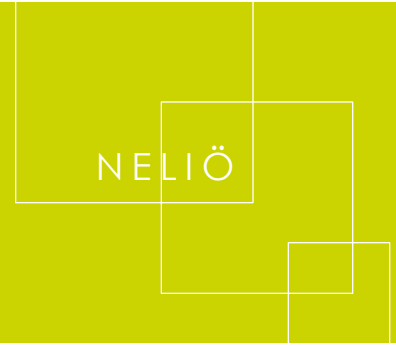
- Range of “elliptical-conical” urban lighting with an openwork design.
- Height range: 4 to 8m
- The added detail: the transparency





KARTIO

open Spaces



NELIÖ



Constructions

Projects



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In France ...

The Wood Collection has already been used in several reference sites ...

- Seloncourt
- Issoire
- Anzin
- Vesoul
- Bischeim ...





Seloncour
(25) France





Vesoul (70)
France





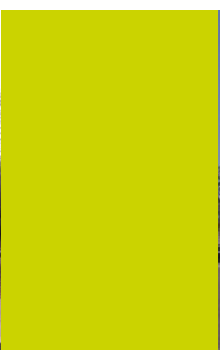
Issoire (63)
France





...and elsewhere.

- Valkenburg
- Queenstown
- Saint Louis
- Kangasniemi
- Karisto
- Haifa...





Poland





The
Netherlands



The Netherlands





Finland





Thank you



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