

# Green Plank® Case Study

## When Coastal Furniture Must Last

A 13-Year Reference for Low-Maintenance NFC Benches at Sibbarp, Malmö



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### 1. Project Overview

**Project name:** Sibbarp Coastal Park Bench Installation

**Location:** Sibbarp, Malmö, Sweden (Øresund coastline)

**Year(s):** 2013–present

**Client / authority:** Malmö City (public)

**Application:** Public park benches and coastal urban furniture





## 2. Background & Challenge

Public benches installed along the Øresund coastline are exposed to far harsher conditions than typical urban furniture. At Sibbarp, benches are subject to **constant moisture, salt-laden winds, rain, strong weather cycles**, and **biological growth such as algae**. These conditions significantly shorten the service life of traditional materials.

Prior to 2013, Malmö City used wooden planks for coastal park benches. In practice, these benches followed a predictable pattern of failure. Despite annual maintenance involving painting, repairs, and replacement of damaged components, the wooden planks typically **rotted within 2–3 years**. Compared to benches installed in inland city environments, replacement and maintenance cycles at the coastline were substantially shorter.

This resulted in:

- High and recurring **maintenance labour costs**
- Frequent **material replacement**
- Increased **CO<sub>2</sub> impact** from repeated production, transport, and installation
- Limited long-term sustainability for public investments

Malmö City needed a more durable and environmentally responsible solution for coastal public furniture—one that could withstand continuous exposure while reducing lifecycle costs.





### 3. Project Requirements

For benches installed in the coastal zone, Malmö City defined clear functional and operational requirements:

- Long service life under **high-moisture and coastal exposure**
- Resistance to rot, algae, and biological degradation
- Structural performance suitable for **120 cm centre-to-centre (c/c) spans**
- Stable surface behaviour under changing weather conditions
- Minimal maintenance beyond basic cleaning
- Reduced replacement frequency and improved lifecycle sustainability
- Compliance with public procurement and environmental objectives





## 4. Solution: Green Plank® System

In 2013, Malmö City selected **Green Plank® natural-fiber composite (NFC) planks** for a park bench installation at Sibbarp, close to the Øresund shoreline.

### Product and installation details:

- Green Plank NFC bench planks
- Installed with **120 cm c/c spans**
- Application: coastal public park benches

The decision to replace wood with NFC planks was driven by the need to eliminate rot and reduce maintenance, while maintaining the functional and visual requirements of public furniture.

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## 5. Key Technical Advantages

- **Moisture resistance:** NFC material does not rot under prolonged exposure
- **Structural performance:** Maintains integrity over long spans (120 cm c/c)
- **Dimensional stability:** Performs reliably through weather and temperature cycles
- **Surface durability:** Resists biological degradation common in coastal environments



- **Maintenance profile:** No painting, sealing, or component replacement required
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## 6. Environmental & Sustainability Impact

- Eliminates frequent replacement of wooden planks
  - Reduces waste generation and transport-related emissions
  - Improves lifecycle CO<sub>2</sub> performance through extended service life
  - Supports a more sustainable use of public resources
  - Sustainability achieved primarily through **longevity and reduced intervention**, rather than short-term material substitution
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## 7. Economic & Operational Benefits

- Removal of recurring repair and replacement cycles
- Significant reduction in labour costs for coastal furniture maintenance
- Predictable long-term performance for a high-exposure application
- Improved value for taxpayers through lower lifecycle costs

For Malmö City, the shift from wood to NFC planks transformed coastal benches from a recurring maintenance issue into a stable, long-term asset.

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## 8. Results & Outcomes

- Installed in **2013**, the Green Plank bench at Sibbarp continues to perform strongly
- **After more than 13 years**, the bench remains structurally sound and functional
- No evidence of rot or material failure despite continuous coastal exposure
- Confirms suitability of NFC planks for demanding marine-adjacent public furniture

(See reference images documenting current condition.)

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## 9. Conclusion: Why This Case Matters

This case demonstrates how **replacing wood with durable NFC planks** can fundamentally improve the performance and sustainability of coastal public furniture.

- **For municipalities:** clear reduction in maintenance burden and lifecycle cost
- **For architects and specifiers:** confidence in structural performance under harsh exposure
- **For public buyers:** a long-term, real-world reference supporting sustainable procurement

The Sibbarp bench installation is not a trial or a laboratory test. It is a **13-year in-service reference** on the Øresund coast—showing that well-specified natural-fiber composite solutions can outperform traditional materials where durability, economy, and sustainability must align.

