



CONFEDERATION
OF FINNISH
CONSTRUCTION
INDUSTRIES



Embassy of Finland
Singapore

BUILDING THE FUTURE: FINNISH INNOVATIONS FOR SINGAPORE

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Finland

5.6 million people



Education



Trust



Innovation



Nature



Singapore

6.0 million people

Trust and
collaboration
has enabled
an innovative
culture in
Finland



©Helsinki, 1945



©Helsinki, 1945

After WWII, Finland faced enormous challenges:

- ✓ Resettling **15% of the population**
- ✓ Rebuilding the **country** and **economy**
- ✓ Shifting from **agriculture to industrialization**
- ✓ Start of **Urbanization**

1950–1975 25% of Finns moved to Cities



Finlands roadmap to carbon neutrality 2035

- **Finland is committed to achieving carbon neutrality by 2035**
- **All industries have committed to this goal and created roadmaps to reach it**
- **For the real estate and construction industries this means (compared to 2019):**
 - **2035: -78% greenhouse gas emissions (3,7 MtCO₂e)**
 - **2050: Carbon neutrality (0,9 MtCO₂e)**
- **The same targets and challenges apply to all countries and cities – including here in Singapore.**



BUILT ENVIRONMENT EMISSIONS 2017-2021

17,1 → 14,5 MtCO₂e (- 15%)

Source: <https://www.climate2035.fi/>,

<https://rt.fi/tietoa-alasta/ymparisto-ja-ilmasto/vahahiilinen-rakentaminen/vahahiilisyyden-vaikutukset>

To reach carbon neutrality,
we must invest and
innovate in four key areas:



Clean Energy



Energy efficiency & Tech



Low-Carbon Materials



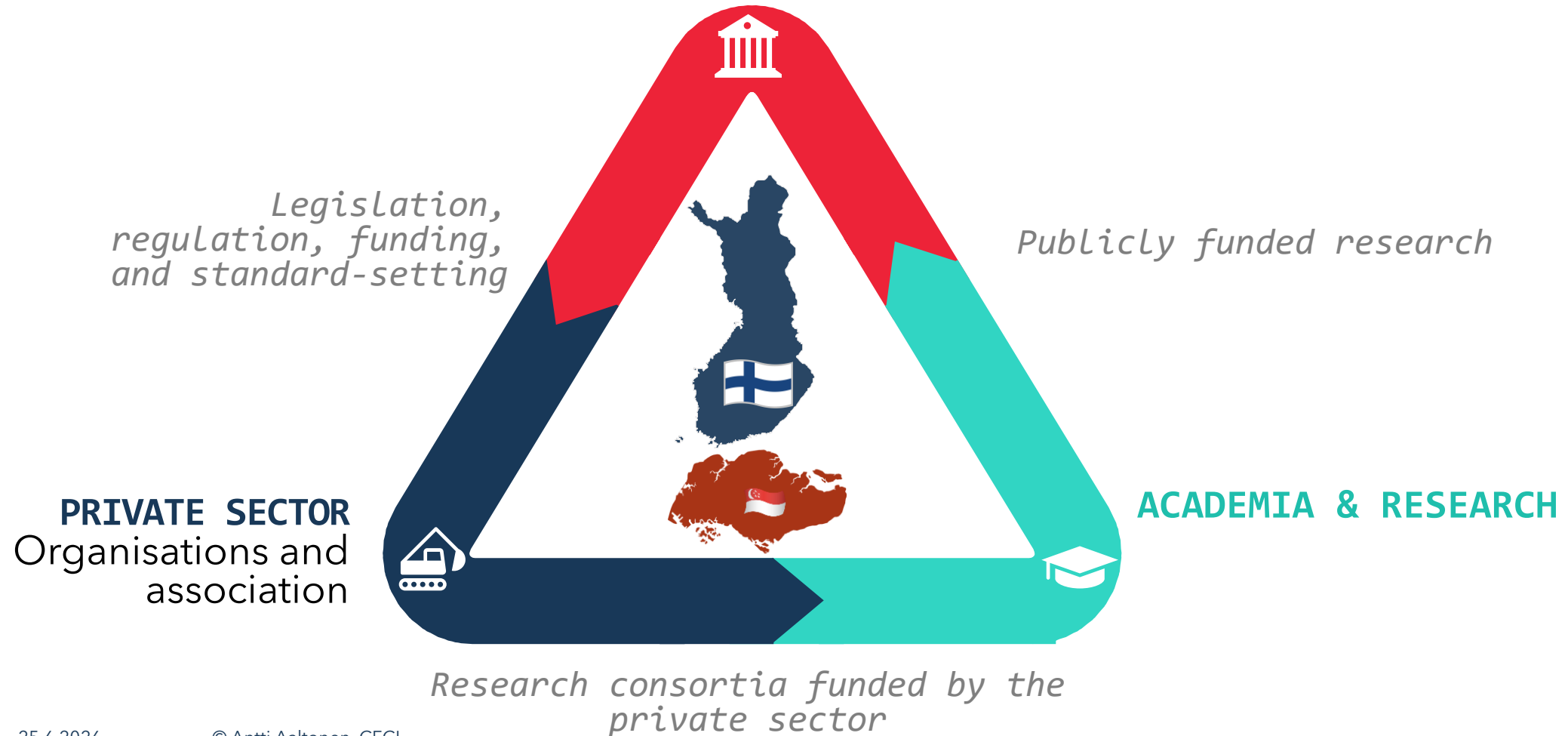
Production Innovation



Systemic
change is
not done in
silos

Collaboration is Our Nations Superpower

PUBLIC SECTOR
ministries & agencies



Case examples of Finnish innovation and technology

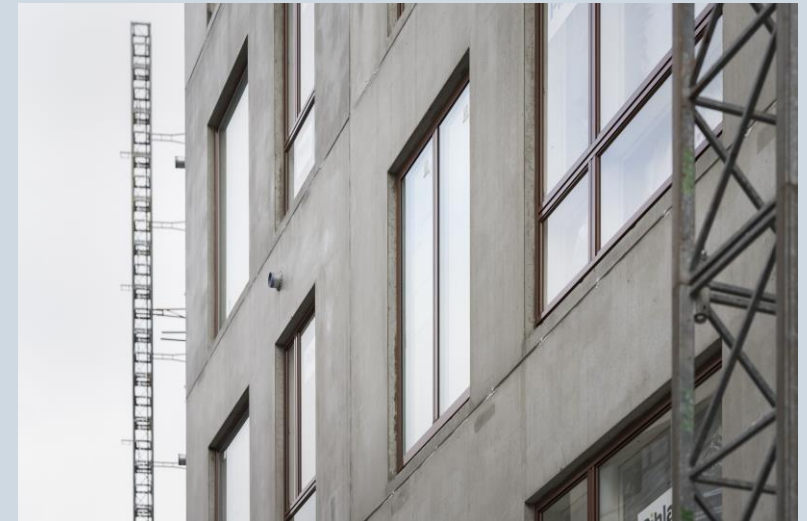
Innovation: Increasing productivity and speeding up delivery

Case 3: National prefabricated concrete element system (BES)

- 📌 **1960s:** Rapid urbanization creates need for industrialized housing
- 📌 **1970s:** BES (Concrete-element system) developed and widely adopted in Finland
- 📌 **1980s:** Standardization of key elements (columns, beams, hollow-core slabs)
- 📌 **1990s:** System evolves with improved design methods and broader industry adoption. Introduction to international markets for example to Singapore and Malaysia by Partek Ltd.
- 📌 **2000s:** Integration with digital design tools (CAD → BIM)
- 📌 **2010s:** Continued optimization, export of know-how and system concepts
- 📌 **2026:** BES remains a backbone of efficient, industrialized construction in Finland, supported by a nationwide network of precast factories enabling scalable, standardized production

BES-SYSTEM ENABLES:

- ✓ **FASTER CONSTRUCTION**
- ✓ **LOWER COSTS**
- ✓ **CONSISTENT QUALITY**
- ✓ **SCALABLE PRODUCTION**



🚧 **FROM BES TO (HDB'S) APCS - STANDARDIZATION ENABLES PRODUCTIVITY**



Innovation: Increasing productivity and speeding up delivery time

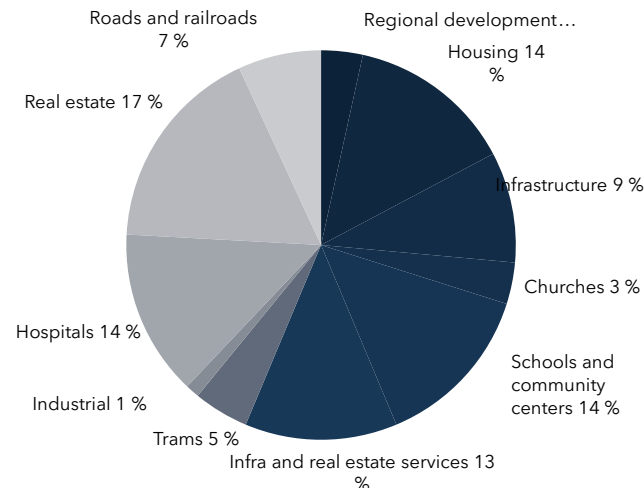
Case: Leading Alliance & IPD (Integrated Project Delivery) country

- 📍 **1990's:** First MC and CM -projects in Finland and abroad
- 📍 **2007:** National MC and CM-standard contracts introduced
- 📍 **2011:** First Alliance project (90 km rail line)
- 📍 **2012:** First Housing construction Alliance project (University of Helsinki)
- 📍 **2020:** National Alliance-standard contracts introduced
- 📍 **2026:** World's #1 Alliance & IPD country

The go-to model for biggest projects in Finland

PROJECTS ARE DELIVERED:

- ✅ **WITHIN BUDGET**
- ✅ **ON SCHEDULE**
- ✅ **WITH HIGHER QUALITY**



Case: Finland Leads the World in Takt Production



Takt production aims to streamline processes and significantly reduce construction time

- 📍 **2015** - Initiated by Aalto University research (benchmarked from DE & US)
 - 📍 **2017** - Implemented via *Building 2030 consortium* (university + companies)
 - 📍 **2018** - First pilots and more research
 - 📍 **2025** - 100+ projects delivered with Takt method
- 🏗️ From 1B€ airport extensions to 1M€ residential sites

- 🚀 **-40-50% FASTER DELIVERY**
- ✅ **HIGHER QUALITY**
- 😊 **HAPPIER CLIENTS**

Technology: Accelerating startups and adopting new technologies

Case: KIRAHub - the Innovation Ecosystem of the Built Environment

Founded in 2019 to accelerate the digital transformation of the construction and real estate industry

1. **Promotes** future-focused development themes through collaboration
2. **Connects** startups, corporations, public sector and academia
3. **Accelerates** the implementation of new technologies and data-driven solutions

 120+ member companies across the ecosystem

 3 out of 6 winners in the 2025 Nordic PropTech Awards were KIRAHub members



KIRAHUB IS WHERE FINLAND'S CONSTRUCTION INNOVATION HAPPENS.



Case: BIM and Digital Construction Permits

Finland is a global leader in utilizing BIM

 **2010:** Finnish government property owner **Senaatti** dictates the use of BIM in all its projects

 National **BIM standards and guidelines** established

 Enabled development of **fully digital construction permit services**

 **2025:** All construction permit designs must be submitted in **BIM-format**

 **Paper applications no longer accepted**

BIM BASED CONSTRUCTION PERMIT ENABLES FASTER APPROVALS, BETTER DATA, AND SMARTER CITIES.

Finland Builds more efficiently

– Global Productivity Benchmark

Independent study by CFCI & Aalto University reveals:

 Only **9,95 hours** of **work on-site needed per 1 m²** (gross) of multi-storey apartment building **to be completed** (w/o infrastructure works)

 Compared to global benchmark:

 **Finland is 2x more efficient!**

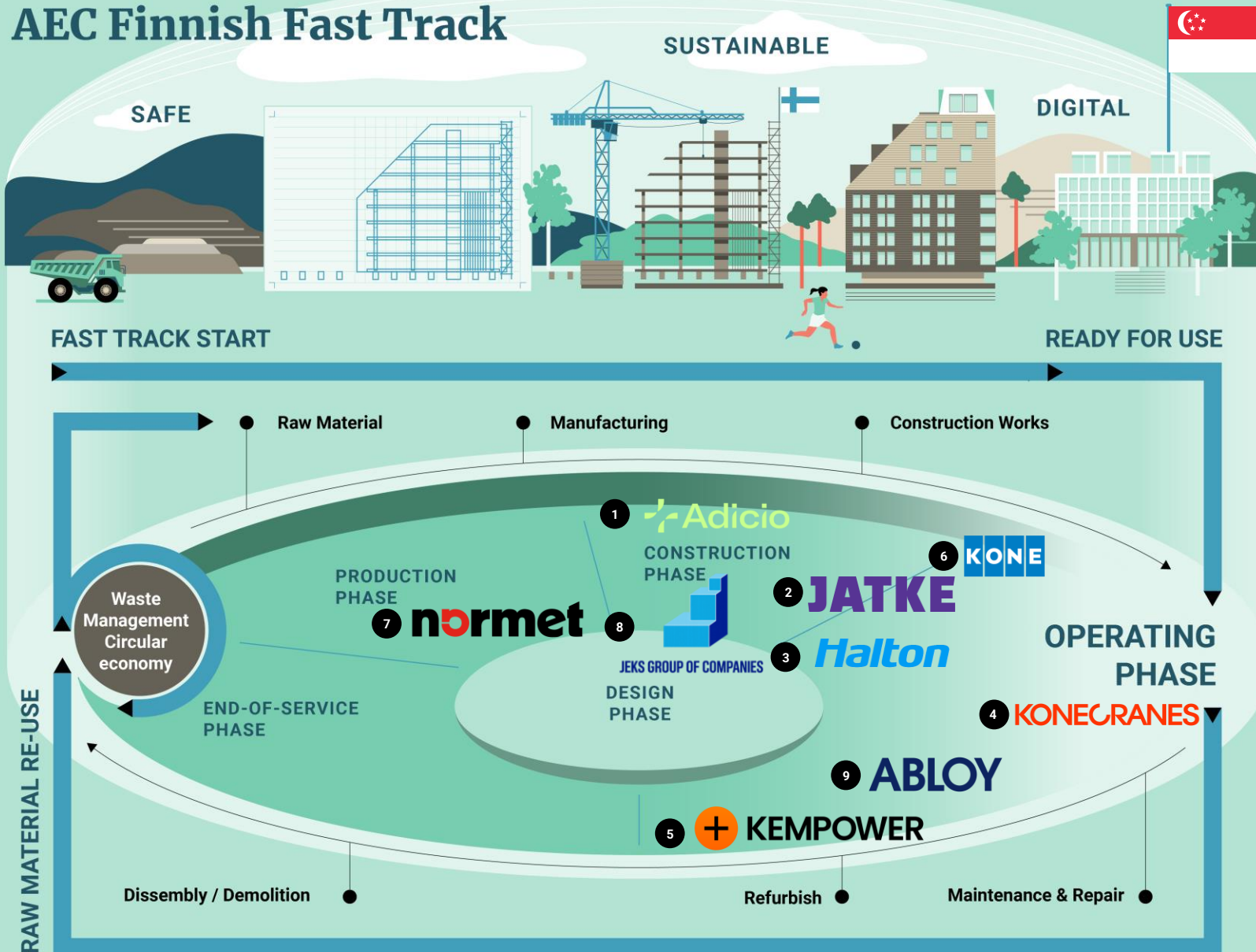
 Key factors: **high prefabrication, advanced digital tools and advanced project management methods**



FINLAND IS SETTING THE GLOBAL STANDARD IN CONSTRUCTION PRODUCTIVITY!



AEC Finnish Fast Track



Companies involved:

- 1 Adicio** – brings modern AI-site intelligence to construction teams.
- 2 Jatke** – Innovative urban development and construction company
- 3 Halton** – Global leader in healthy sustainable indoor environments
- 4 Konecranes** – World-class lifting and material handling solution
- 5 Kempower** – Fast-charging solutions for electric mobility
- 6 KONE** – Leading people flow and smart building solutions provider
- 7 Normet** – underground construction and mining technology expert
- 8 JEKS Engineering** – Advanced industrial engineering solutions
- 9 Abloy** – Global pioneer in intelligent access and security solutions

Finland is not a big
country, but we
build big things
together –

We are ready to
build a better future
with You!



Thank You!

Looking forward for the future collaboration!

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