



NCC Construction Ltd

Matti Aho

Profit Unit Director



Case Kuninkaantie upper secondary school, swimming pool and games hall



NCC's BOT projects

- Arlanda rail link, Sweden SEK 5 billion
- Motorway A2, Poland SEK 2.7 billion
- District heating plant, Skurup, Sweden SEK 40 million
- Kallax airport, Sweden shareholder

- *Kuninkaantie upper secondary school, games hall and swimming pool*





Kuninkaantie upper secondary school



The first public-private partnership project in Finland.

Espoo:

- purchases maintenance and user services from the project companies
- pays only for the services produced
- partnership model 28 years, service contract 25 years
- the goal is to pass the optimal number of risks associated with the project from the city to the private service providers

Service production began in autumn 2003 .



NCC Construction Finland Ltd



- NCC's role
 - leading the project team
 - optimising life-cycle costs (LCC)
 - environmental life-cycle assessment (LCA)
 - construction
 - fittings, educational equipment
 - maintenance



ABB Oy

Building services and facilities management

- turnkey supplier of services and systems related to building services throughout the building's life cycle
- ABB's facilities management guarantee high-quality building maintenance and facilities services that are efficient in terms of total costs



Sodexho's services

- high-quality restaurant services for the pupils, staff and outsiders
- lobby services in the main lobby
- swimming pool lobby and café services
- lifeguard's services
- opening and locking the games hall's doors
- attendant services
- sanitation services





Services at Kuninkaantie upper secondary school

BUILDING

MAINTENANCE

- tending and maintaining the grounds
- cleaning and waste disposal
- security services
- managerial and building management services
- repair and maintenance of buildings

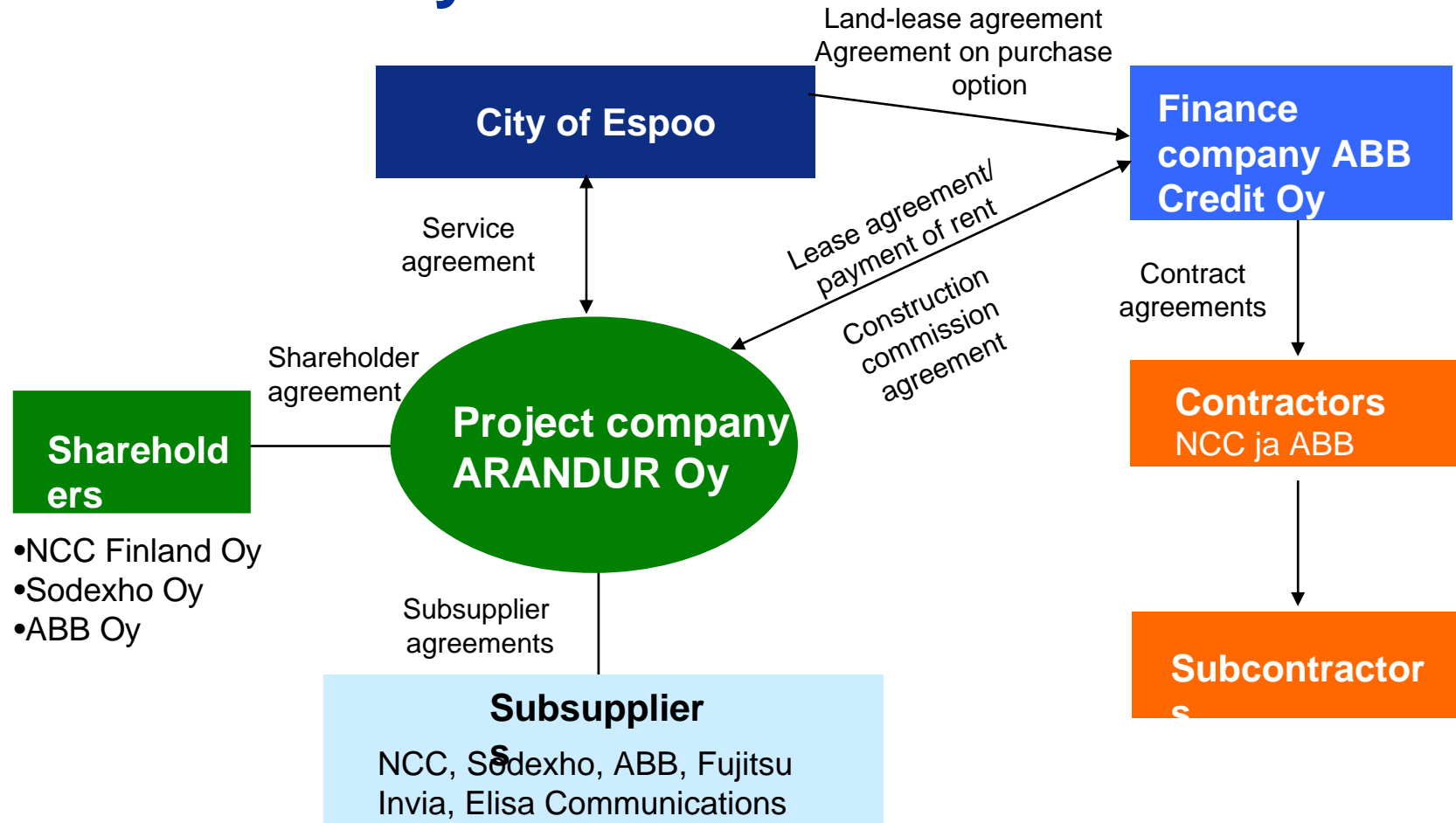
OTHER SERVICES

- restaurant services
- attendant and mailing services
- fittings and educational equipment
- ICT services
- swimming pool and games hall operating services
- external sources of income
- general emergencies





Agreements for Kuninkaantie upper secondary school

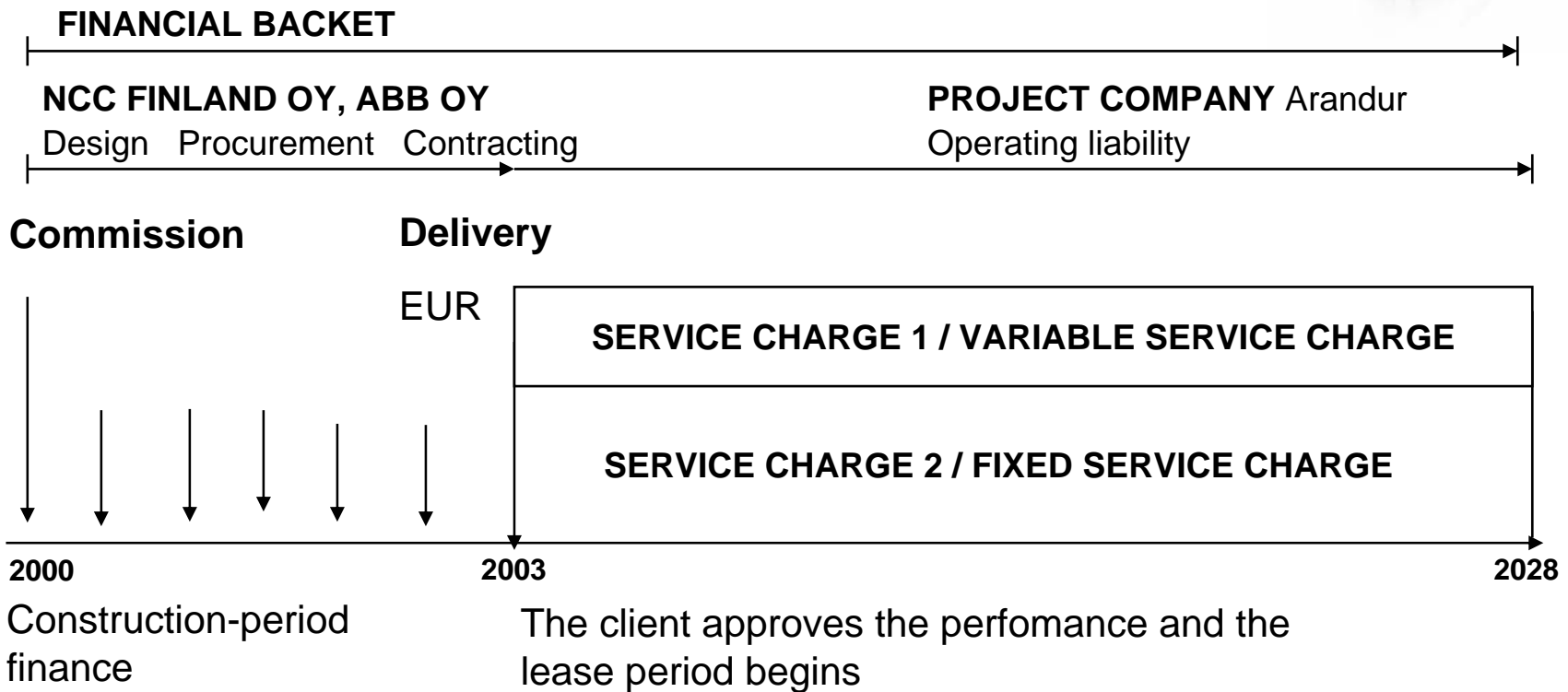




Private finance in public projects



New construction projects





Risk-sharing in Kuninkaantie upper secondary school



Espoo

- inflation
- customers; the pupils
- changes in legislation
- *force majeure*
- official charges; land-lease, municipal taxation, etc
- functional renovations

Project company

- technical condition; maintenance and renovations
- quality and quantity of services; sanctions
- quantities consumed
- economic cycles
- availability



Solutions/ products

- Use of eco-assessment calculation in choice of materials
- Steel pools (Swedish Invarmex)
- Econet-LTO system (efficiency, moisture control)
- Heat recovery for shower water
- Kitchen machinery – energy aspect
- Advanced waste sorting and recycling
- Integrated ticket sales, cashier and gate system for swimming pool
- Real-time monitoring and running via the internet of the building automation system



Example



	comparison case	Eco-assessment calculation		Difference	During 25 years
LCA	9,992	8,354	kWh/htm²	-16.4%	-7,371 MWh
LCC	29,966	29,656	SEK/htm²	-1.0%	-4 MSEK
INV	19,157	19,170	SEK/htm²	0.1%	+ 0.6 MSEK

Changes in the Kuninkaantie upper secondary school project:

- better windows (u-value)
- heat recovery systems

Result:

- insignificant increase in capital cost
- substantial improvement in energy expenses
- substantial decrease in environmental impacts



Kuninkaantien

lukio, liikunta-
ja uimahalli



Partnership with trust



ABB


Sodexho

NCC 