NORTH LONDON WASTE AUTHORITY

North London Waste Authority

Member welcome pack: North London Heat and Power Project

Summary

The project to redevelop the Edmonton EcoPark started in 2013. Development consent was given by Government in 2017 and work has been under way on site since 2019. The purpose of the project is to ensure north London's residual waste continues to be treated in north London and avoids costly waste disposal options outside London and with private companies.

The Energy Recovery Facility is one part of the redevelopment. Since construction began, major recycling facilities and a community hub have been completed. They are already in operation and have won sustainability and social value awards.

The existing energy from waste plant is 56 years old. Replacing it with a new energy recovery facility represents the best outcome in terms of the environment, costs and securing local benefits.

Current construction on the Energy Recovery Facility is facing delays with officers working closely with the contractor to seek an appropriate resolution.

Contents

Rationale and preparation for project

North London Waste Authority manages about a quarter of all the rubbish and recycling in London. This is managed in line with the waste hierarchy and there is a duty to provide solutions for the waste collected from two million residents by boroughs.

This section explains how NLWA considered the options available for residual waste services to ensure the Authority can continue dealing with rubbish for another 50 years and why the North London Heat and Power Project was decided.

A historic timeline showing the decisions taken and future plans for Edmonton EcoPark is included.

An impending waste crisis

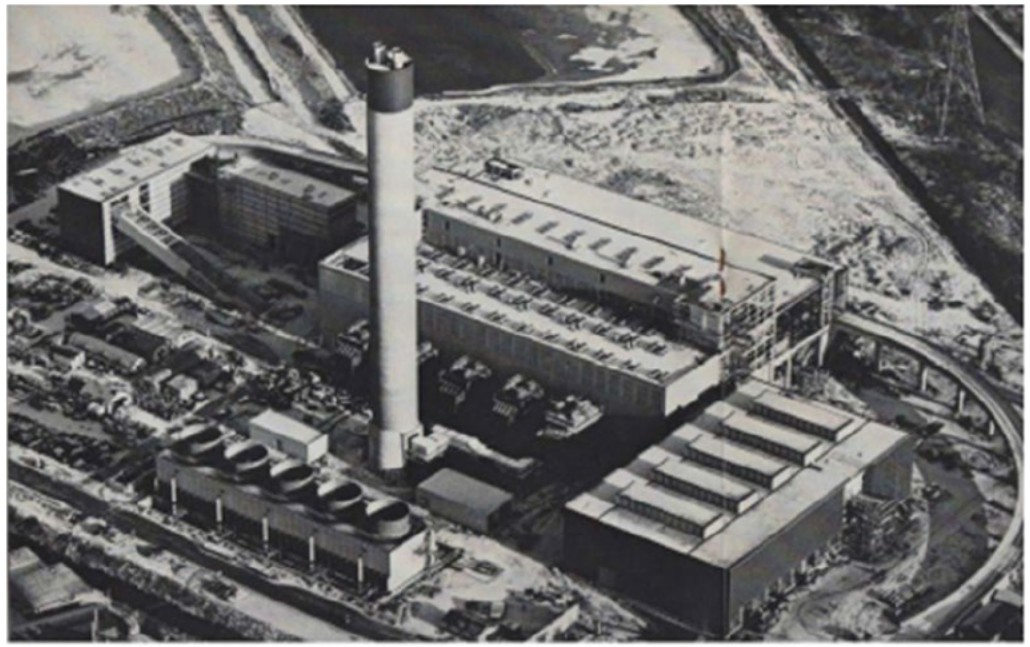
With a 56-year-old energy from waste (EfW) facility – which first opened in 1970 – NLWA relies on an aging plant that is close to the end of its operational life. This is operated by the Authority's wholly owned company LondonEnergy Ltd.

The plant has already outlived its expected design life and LondonEnergy increasingly faces operational challenges to maintain the service and treat the residual waste collected by boroughs in north London. As the plant becomes older and more unreliable its effective capacity reduces. Waste treated elsewhere has much higher costs to the Authority for a worse environmental outcome.

Plans began in 2010 to future-proof the services for waste management on the site in Edmonton. NLWA explored:

- Partnering with a Private Company to treat waste at the EcoPark
- Partnering with a Private Company to build a new energy from waste plant outside north London for our waste
- Redeveloping the Edmonton EcoPark as an Authority-delivered project

Initially, NLWA pursued a Public-Private Partnership (PPP) solution involving long-term contracts for treating waste. This approach was cancelled in 2013 following an assessment that a publicly financed project could deliver significant savings and improved environmental and local outcomes compared with the extremely high prices emerging for the PPP. That procurement was based on arrangements in Manchester, which is around the same size as north London. The annual costs to Manchester boroughs under their equivalent contract are £186m compared with £97m for north London at present.



Edmonton Incinerator
Photo credits: Uncredited
Taken from: GLC Dept. of Public Health Engineering Annual Report 1969-70
Published by: Greater London Council Department of Public Health Engineering
Date: 1970

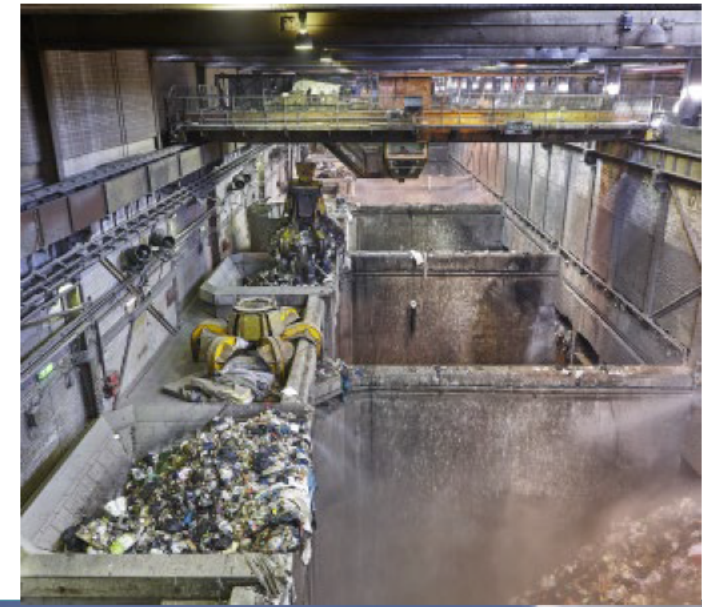
Residual waste disposal options

Even after north London reaches higher recycling and reduction rates there will still be waste generated in north London – for which North London Waste Authority has a statutory duty to provide a solution. The options to treat residual waste include:

- **Landfill** – which creates methane and risks pollutants leaching into the ground. This would require transporting waste 80-200km outside of London. It is also taxed by the government making it the most expensive option.
- **Energy from Waste** Advanced moving grate technology - where waste is combusted and used to generate electricity and heating. Gases released through combustion are cleaned and removed during the process.
- **Other Energy from Waste technologies** – Pyrolysis and Gasification still involve incineration and generation of carbon emissions, but have not been proven at the scale we would require in north London.

We have investigated options to 'pre-treat' residual waste (to remove recyclable material). All current technologies require additional major infrastructure and significant operating costs and have a low success rate in reducing residual waste. Therefore they do not remove the need for an energy recovery facility.

An Energy Recovery Facility which provides both heat and power was decided by members as the most suitable option to deal with waste in north London and to secure the best environmental and financial outcomes. This included new facilities that would provide a community centre, new reuse and recycling facilities and a waste transfer station for resource recovery with modern odour controls.



Why energy recovery represents the most responsible solution

The Energy Recovery Facility will treat north London's non-recyclable waste at Edmonton EcoPark and is the most environmentally friendly and economical option for boroughs as it provides both heat and power from the waste.

It was the only solution that would keep the treatment of north London's waste in north London and avoid transporting waste elsewhere.

Based on the options available Members chose a project that:

- **Treats 700,000 tonnes** of waste – future proofing a critical public service for another 50 years.
- **Generates electricity from waste for 127,000 homes** – to supply energy at a national level.
- **Supports a local heat network** – up to 60,000 homes in the surrounding area with the publicly owned heat network operator, Energetik.
- **Reduces carbon** associated with waste by avoiding landfill – equivalent to taking 110,000 cars off the road each year.
- **Improves air quality** – with emissions controls better than any other current facility in the UK and matching the best standards in Europe.
- **Future proofs income generated** by the waste treated – fluctuations in profits from energy generation can help offset cost of waste disposal to boroughs.
- **Keeps jobs in north London** – by avoiding sending waste elsewhere and reducing 30,000 lorry journeys in London

Diagram of a local heat network

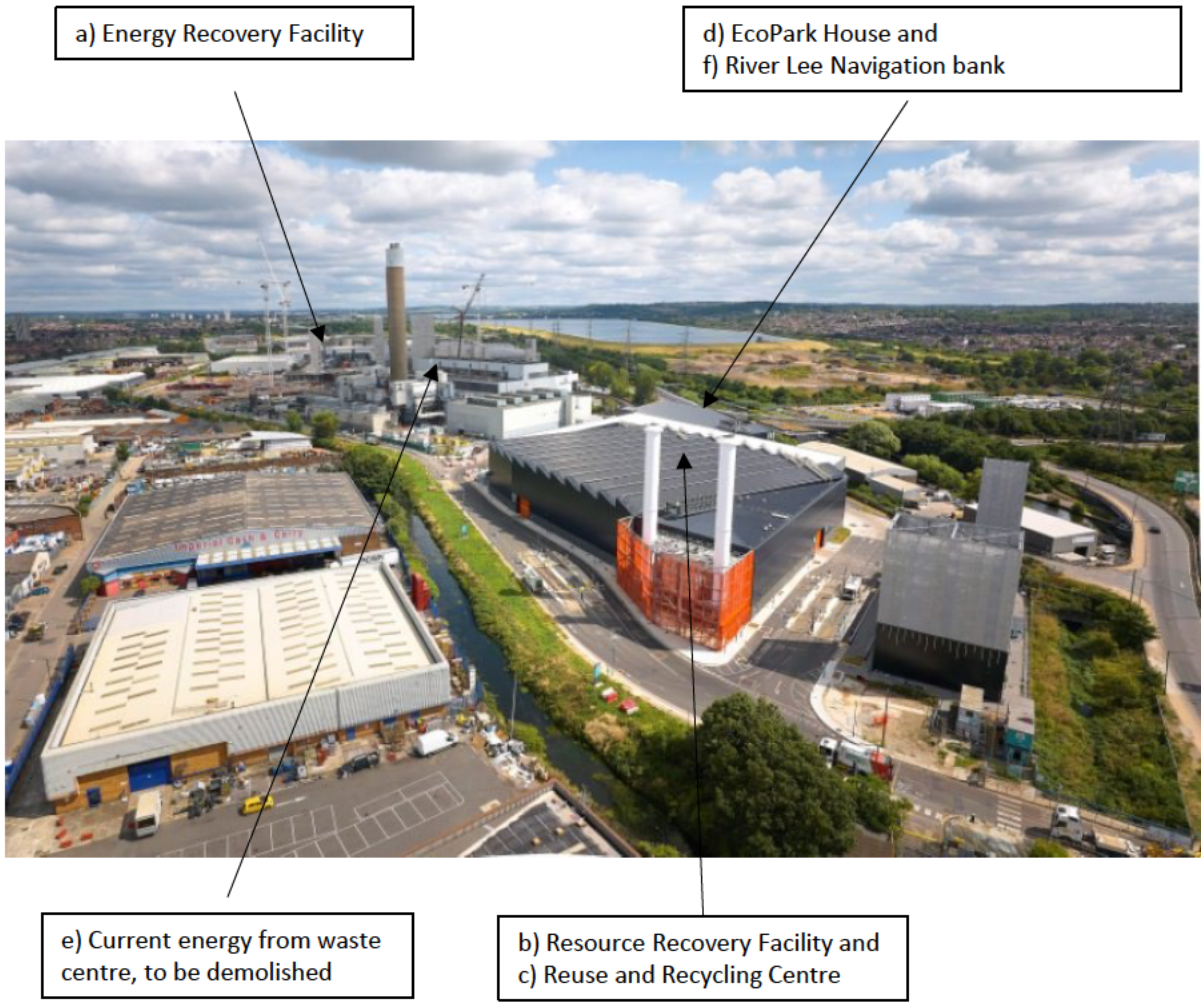
Overall works

A **Development Consent Order** was required due to the national significance of the facilities. This went through extensive public consultation in 2015 and was approved by the Secretary of State for Business, Energy and Industrial Strategy in 2017.

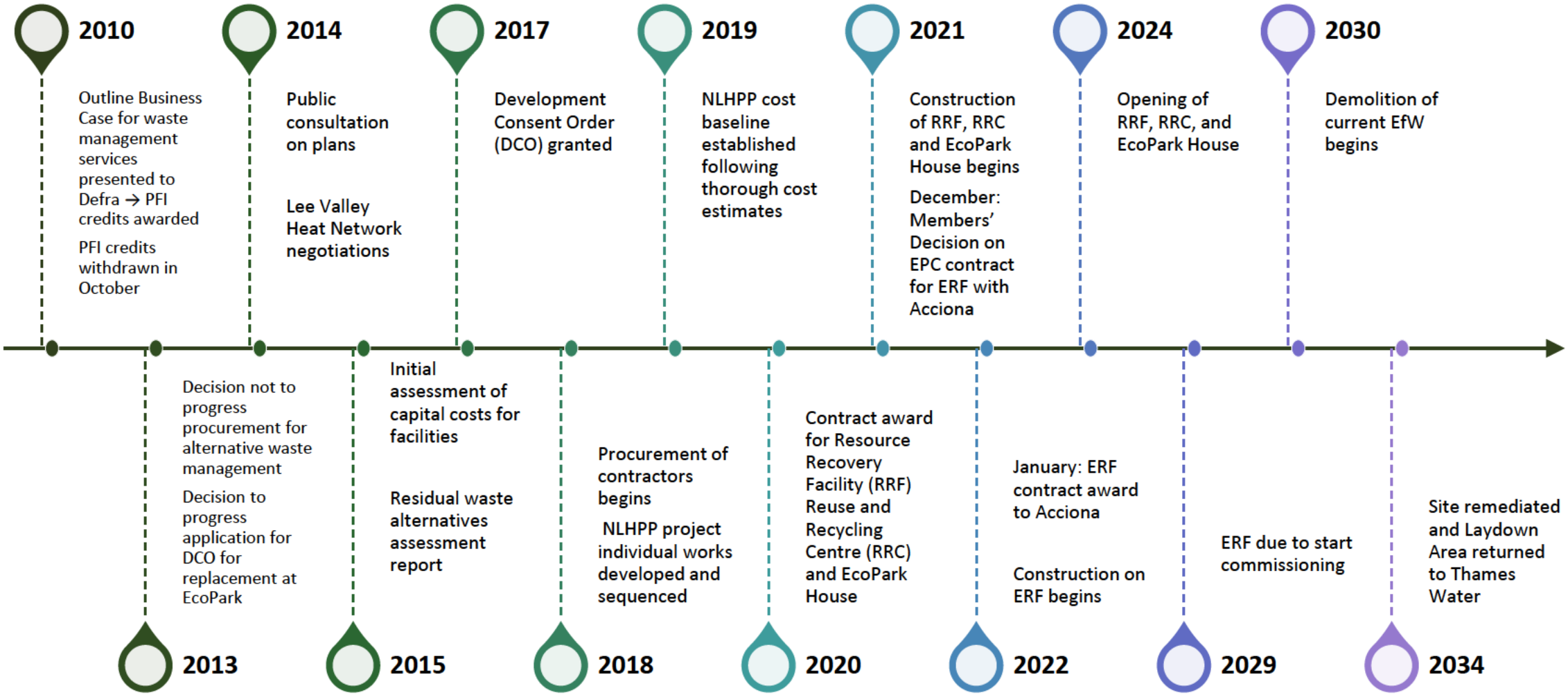
The main features of the Project are:

a) a northern area of the Edmonton EcoPark accommodating the **Energy Recovery Facility**
b) a southern area of the Edmonton EcoPark accommodating the **Resource Recovery Facility** (RRF)
c) A public **Reuse and Recycling Centre** (RRC)
d) a visitor, community and education centre with offices and a base for the Edmonton Sea Cadets - **EcoPark House**
e) a central space, where the existing EfW facility is currently located, which would be available for future waste-related development
f) a new landscape area along the edge with the River Lee Navigation
g) new northern and eastern access points to the Edmonton EcoPark.

Create a waste management facility in which local communities take pride, which demonstrates value and is a model for public sector project delivery



Edmonton EcoPark timeline



Quality in project delivery

North London Heat and Power Project encompasses a range of different facilities that provide more effective waste management services at Edmonton EcoPark.

This sections explains what the environmental, social and financial benefits of North London Heat and Power Project are for managing residual waste. It also shows how the scheme has been recognised within the construction and waste industry as a leading example of innovation and sustainability.

Pioneering community benefits

By progressing with the project in Edmonton EcoPark NLWA could secure better local outcomes for north London residents including:

- **Delivering a community hub** called EcoPark House as home for Edmonton Sea Cadets and an educational facility for teaching about circular economy
- **Creating jobs and skills training opportunities** during delivery for the local community and with local business involvement.
- **Creating an exemplar project for addressing construction industry challenges** such as poor mental health and under-representation of various groups in the waste and construction sectors.
- **Enabling hot water and heating** for 60,000 local homes and businesses, increasing the efficiency of energy generation at the site.
- **Improving local air quality** through advanced pollution control technology in the energy recovery facility, producing lower concentrations of emissions than any other facility in the UK

Members also set a minimum standard for **employment relations,** which includes aligning with national working agreements on work contracts which **ensures fair and equitable working conditions** for workers on NLHPP sites

High environmental requirements

Reducing Emissions

- Main emissions from energy from waste facilities are NOx, SO_2, PM and Dioxins – **these are carefully captured and controlled.**
- Wet/Dry Scrubbing to **reduce Particulate Matter** – levels 1000 times lower than the WHO safe limits.
- Odour Suppression Control **to remove 99% of odours**.

Enabling Decarbonisation

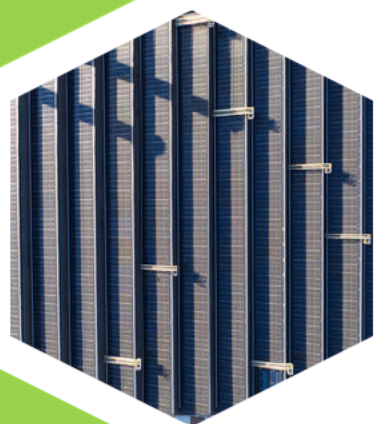
- **Largest Solar Array** in North London with 2,235 panels - enough to power 300 homes per year.
- Contribution to local council's **Heat Network part of UK Net Zero targets – pipes to connect have been laid.**
- Reduction in carbon associated with waste processing – equivalent to **taking 100,000 cars off the road** each year.

Constructing for sustainability

- First UK **Ultra Low Carbon Concrete** pour.
- Completely **Off-grid designs for EcoPark House** with solar panels & ground source heat pumps.
- Includes Green Roof to improve biodiversity.
- Encourage **material reuse schemes** with contractors.
- Mandated a **BREEAM 'very good' minimum** for construction contracts.

Best emission and odour controls in UK

2,235 solar panels which save 222.6 tonnes of CO2 per year



Designing & constructing sustainable facilities

Social Value successes

Addressing Inequalities

- 77 organisations received **Grant Funding & Volunteer time** through ACCIONA Re-Power Community Scheme to support disadvantaged & vulnerable people as well as sustainable initiatives.
- **Working with 7 Boroughs** to signpost and increase the impact of our social value work by linking up with councils' initiatives.
- **5,198 students engaged through Schools** to address barriers into STEM subjects, construction & waste careers.
- **Community Liaison Group** to keep up regular communication with residents living near the project area

Training and Upskilling Community

- **63 Apprenticeships** created for local residents. Equating to 100 years' worth of training.
- **242 Training Placements** delivered with a focus on kickstarting careers into jobs.
- Local employment targets with over **2500 roles available** across the life of the project.
- Contract targets for **25% local employment** built into contracts
- 14 **Women into Construction** trainees with 2 women going on to be employed through NLHPP and others receiving job offers.

Creating a safe work environment

- **Mental Health Awareness training** with Start the Conversation sessions to encourage the workforce to speak up regarding mental health.
- **Safety First culture** is prioritised around the construction site.
- **Apprentice Network & Reverse mentoring schemes** to increase retention of local apprentices and provide cross-employer engagement on project.

63
Apprenticeships created

242
Training Placements delivered

Maximising social and economic benefits

Economic Benefits

Publicly Owned Assets

- The Edmonton EcoPark is publicly-funded, publicly-owned, and publicly-run, **putting community interests ahead of profit**.
- **Income generated from energy sales** is used to offset disposal costs.
- As a public authority, NLWA is able to borrow from sources such as the Public Works Loan Board to **secure finance at the lowest cost possible** to the taxpayer.

Cost-effective waste disposal

- The cost of the Energy Recovery Facility will be paid for by the borough levy for managing the disposal of their waste, and the levy is **accounted for in boroughs future financing plans**.
- Disposing of waste in the new ERF will still be **30-55% cheaper than alternative options** in the long-term.
- **Avoid landfill tax of** £130.75 per tonne of waste with worse environmental outcomes and no income benefit from disposal.

Value for Money

- A robust value for money exercise was undertaken in line with The Green Book guidance by HM Treasury and it has been identified that **alternative options for waste management would have a higher cost**.
- **£100m in reduced borrowing rates** was awarded by HM Treasury recognising NLHPP as a vital piece of waste management and energy infrastructure with strong benefits for the environment and society
- **Invested over £57 million** to date in local companies supporting NLHPP delivery.

£100M in reduced borrowing rates from HM Treasury

30-55% cheaper than alternative options in the long-term

Invested £57 million in local companies

Bringing in experts in project delivery

NLWA have created a high-performing team of experts that support the delivery of the Project. This is supplemented by advisers from industry-leading organisations to provide programme management, technical knowledge, legal advice and a robust experience of project delivery.

Advisors include:

- Arup
- AECOM
- Ramboll
- Stephenson Harwood
- WSP

Working with these organisations ensures the ways of working to deliver the project creates an environment that:

- Supports Health, Safety and Wellbeing excellence
- Maintains ongoing waste operations during project construction
- Is a positive role model for employment relations
- Maximises social and economic benefits of the project to the local community

The NLHPP reports progress to NLWA Members through formal Authority Meetings and ad-hoc member briefings on specific issues as required.

Award recognition

NLWA has been focused on delivering the NLHPP to be an exemplary public sector project. Throughout the construction process, the project has been nominated, shortlisted and won a number of awards. Including:

- Winner for **Innovation in Delivering Sustainability and Social Value** for the Municipal Journal.
- Brownfield Awards for the **Best Public Sector Brownfield Project** & **Best Sustainable Brownfield Infrastructure Scheme**.
- **Public Sector Procurement Project of the Year** (2023) for Tomorrow's Procurement.
- Highly Commended in the **Civic Trust Awards** for the Architecture of the Resource Recovery Facility and EcoPark House.
- British Construction & Infrastructure Awards winner for **Social Infrastructure Project** on EcoPark House.
- **Most Innovative Project of the Year** (2023) at the Institute of Economic Development for the school's engagement programme.
- Acciona's Highly Commended for the **Most Engaged Employer** in the South with Women into Construction.
- Winner of the **Culture and Diversity Award** at the Partnership Awards for work on NLHPP.
- Highly Commended for **Best Workplace Mental Health Team** with Mates in Mind.
- Taylor Woodrow's Winner of **Corporate Social Responsibility Initiative of the Year (2022)** for Construction News Workforce Awards.
- Winner of the Bronze Award for **Green Apple Awards**.

Shortlisted	Winner	Finalist	Winner
Carbon Net Zero Initiative of the Year Cultural & Leisure Project of the Year Taylor Woodrow, EcoPark South June 2024	Innovation in Delivering Sustainability and Social Value North London Waste Authority, North London Heat and Power Project June 2024	Sustainability Award ARUP, North London Heat and Power Project May 2024	Most Innovative Project of the Year North London Heat and Power Project, School Engagement Programme November 2023

Current challenges

Since 2019 construction has been underway to redevelop the site and now the final major building element, the Energy Recovery Facility, is under construction.

This sections gives an overview of past buildings that have been developed on the site and the current progress of the Energy Recovery Facility construction.

Resource Recovery Facility & RRC

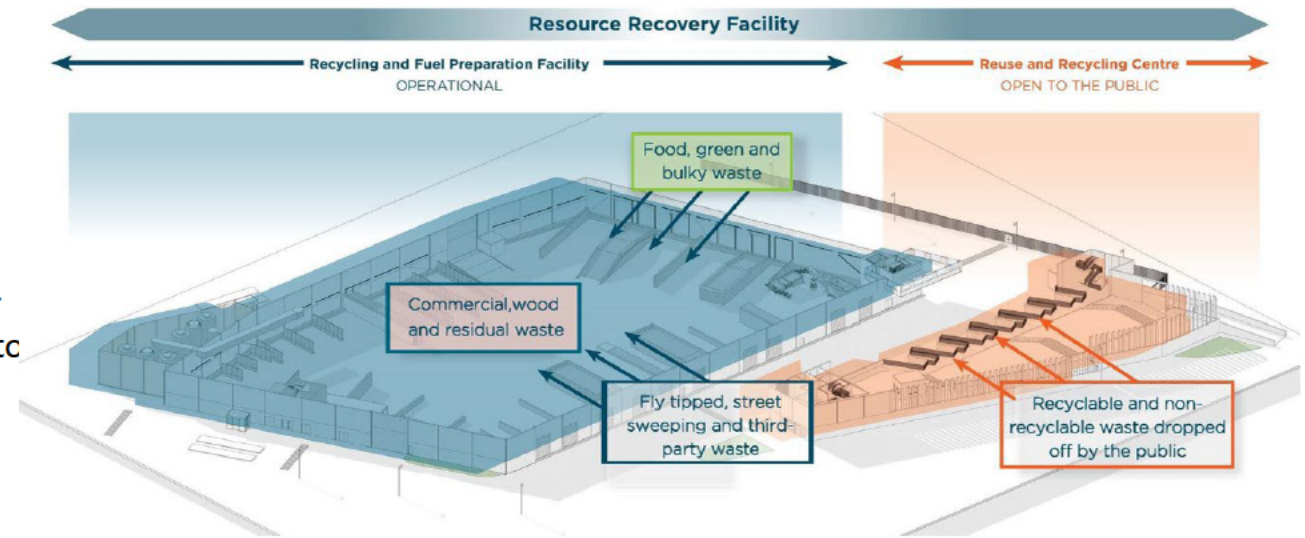
Seven north London boroughs began using the **380,000 tonne facility** in April 2024. It's here that borough vehicles deliver bulky waste for sorting, which includes recyclable and reusable materials, like wood, plastics, and metal. Garden/green waste is also brought here to be processed for onward recycling.

In its first year of full operation, around 170,000 tonnes were processed through the facility and more than 29,600 mattresses were saved from going into incineration. Anything leftover that cannot be recycled is then prepared for treatment before being transferred to the energy from waste plant.

The public Reuse and Recycling Centre **opened in July 2024**. It is the first major public facility delivered as part of the North London Heat and Power Project and allows north London residents to bring their recycling directly to the EcoPark for the first time.

In its first year:

- The centre welcomed more than **30,000 visitors**
- Collected over **2,000 tonnes of waste for recycling**
- Helped divert over **56 tonnes of carpet** from landfill



EcoPark House

EcoPark House is a new space for the Edmonton Sea Cadets, long-term residents of the site. The building includes classrooms, a drill hall, and boat storage facilities which open directly onto the wharf.

The upper floor serves as an education and community hub to provide information on the circular economy, recycling and waste management. **1,758 people have participated in events and educational sessions at the site since opening.**

There is also a lecture theatre, exhibition space, full kitchen, office spaces and wrap around balcony.

The building is entirely off-grid, saving over 200-tonnes of CO_2 per year throughout the life of the building, powered by solar energy from panels on the roof of the Reuse and Recycling Facility and heated from heat pumps located in the ground.

Construction progress, costs and delays

Following a public procurement in 2021, a contract was signed with Acciona in early 2022 to deliver the Energy Recovery Facility for £800M plus an allocation for risk and inflation which would be paid over the life of the construction.

Like all other major projects undertaken during this time, external factors driving inflation have included Brexit, the COVID-19 pandemic, global supply chain disruption, the war in Ukraine and wider economic instability. These factors contributed to sustained inflation, higher interest rates and a challenging delivery environment. Similar challenges are being faced by boroughs with their own local investment programmes, such as house building, but are amplified due to the scale, ambition and complexity of a nationally significant infrastructure project. However, disposing of waste in the new ERF will still be 30-55% cheaper than alternative options in the long-term.

In 2024 it became apparent the company was behind the agreed contract schedule for completion at the end of 2026. There were delays to construction designs and Acciona faced challenges in securing the workforce required onsite to carry out complex mechanical and electrical tasks.

The delays have impacted the cost pressures the contractor faces, as many costs are time related - the standing costs of the project for the contractor currently average £1 million a week.

Once the delays began surfacing, NLWA began pressing the contractor to come up with a recovery plan that would minimise the delays and provide more certainty on the future end date.

acciona

BUSINESS AS UNUSUAL

In response to delays, NLWA withheld payments which were linked with hitting milestones and steps were taken to strengthen delivery, including engagement with the contractor and consideration of contractual measures. In October 2024, a borough steering group was established to provide additional oversight.

While progress on the ERF delivery continues to be behind plan the site is active, with visible progress day on day. As the photos show, the construction is 50% completed and 70% of the specialist equipment needed to build the facility is manufactured and ready to be installed. The tipping hall (where lorries drop off the waste) and the bunker where waste is stored are complete and the boilers where the waste is burnt are under construction. Also under construction is the extensive Flue Gas Treatment (FGT) plant where the hot air is thoroughly cleaned through a range of processes and cooled.

As Acciona now face higher costs to complete the project than originally forecast, they are arguing the contract gives them special entitlements and are trying to recover costs from the Authority to support their completion.

With members' approval, NLWA have entered discussions with Acciona to see how an appropriate way forward can be found to finish the project - even with an agreed solution, Acciona will face significant losses on this project.

All options are still to being considered to secure the delivery of the plant, including:

- Robust contract enforcement
- Establishing a negotiated outcome which incentivises improved performance
- Removal of Acciona and procurement of a new contractor

Cancelling the construction altogether has been assessed but would have a huge adverse financial and environmental effect – borough levies would spike to write off costs incurred to date and to fund alternative disposal contracts with private sector waste operators which are more expensive than the public sector option.

More detailed information

Delivery of the Energy Recovery Facility project is the major challenge facing the Authority and will require thorough engagement and understanding from NLWA Members throughout their appointed time on the Authority.

NLWA officers work closely with borough colleagues to ensure they are informed and understand the construction challenges and proposed ways forward for Acciona.

This pack provides an initial introduction to the key facets of the project. NLWA officers have more detailed material to supply in coming weeks to give Members a more thorough briefing on what is involved in delivering one of the largest construction projects in London which will provide the cleanest energy from waste facility in the country.

There is an early opportunity to visit the Edmonton EcoPark and become familiar with the construction progress to support Members' understanding of the project. This will take approx. 3 hours and we encourage you to let us know when you can visit here:

[redacted]