

Housing & Community Services

Mechanical & Energy Efficiency Division



Comhairle Cathrach
Bhaile Átha Cliath
Dublin City Council

Mechanical & Energy Efficiency Division

The Mechanical and Energy Efficiency Division comprises of the following three sub divisions:

- ▶ Mechanical (Commercial)
- ▶ Mechanical (Domestic)
- ▶ Energy Efficiency



Mechanical (Commercial)

The Commercial Mechanical Division comprises of the management of 140 Corporate and Non Corporate sites in addition to supporting City Architects on new projects. Overview of the Division as follows:

- ▶ 43 Corporate Sites including 20 Libraries, The Liberty Arts, Crèche and Dance Studio Facilities, The Civic Offices and Hugh Lane Gallery for example
- ▶ 97 Non Corporate sites including 40 Senior Citizen Complexes, 25 Homeless Sites and 5 Culture, Recreation and Amenity (CRA) sites for example
- ▶ Associated plant and Equipment includes Heating, Refrigeration, Ventilation, Building Management Systems, Fire Dampers, Fire Suppression Systems and Gas Detection Systems
- ▶ Comprehensive Planned Preventative Maintenance Schedule and Contract Management Structure in situ with individual specialist contracts (423 in total) across all sites
- ▶ Upgrading of Gas detection to include CO sensors



Mechanical (Commercial)

- ▶ Part V inspection/condition surveys carried out in conjunction with City Architects
- ▶ Currently 20 Regeneration and New Build Projects comprising of 608 housing units
- ▶ Integration of our Better Energy Community (BEC) Schemes to extend to suitable sites including Senior Citizen Complexes and Homeless sites
- ▶ Management of renewable energy systems on new projects going forward
- ▶ All Mechanical works and maintenance is carried out to associated regulations and best industry standards



Mechanical (Domestic)

The Domestic Mechanical Division comprises of the management of 22,500 Domestic Boilers and Heating Systems.

Risks associated with aging stock include:

- ▶ Poor boiler efficiency resulting in higher bills to our tenants
- ▶ Increased number of breakdowns in colder weather
- ▶ Harmful emissions to the environment
- ▶ Potential risk of injury
- ▶ Potential dangerous levels of carbon monoxide
- ▶ Notice of hazards from contractors and gas networks

Going forward:

- ▶ Service our entire stock on an annual basis
- ▶ Implementation of a Boiler Replacement Programme

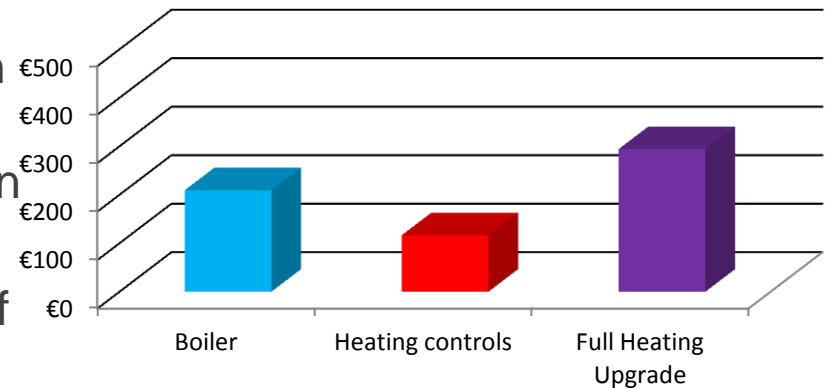


Mechanical (Domestic)

Boiler Replacement Programme (BRP)

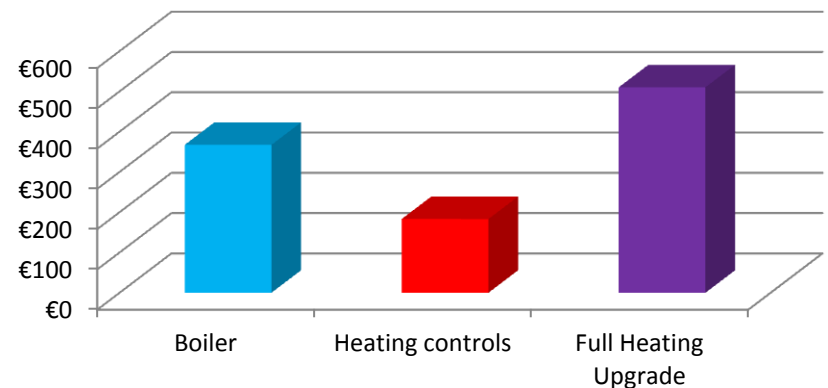
- ▶ €3 Million per annum allocated funding in Dublin City Council's capital budget over the next three years for BRP (€9 Million in total)
- ▶ BRP has been extended to Phase Two of The Energy Efficiency Fabric Upgrade Programme
- ▶ 618 boilers replaced to date in 2018
- ▶ Plan to ramp up BRP in the following complexes areas:
 - ▶ Oliver Bond House (396 Units)
 - ▶ Stannaway Court (43 Units)
 - ▶ Avondale House (66 Units)
 - ▶ James Larkin House (33 Units)

2 Bed Mid Floor Apartment



Expected Energy Savings for Full Heating Upgrade is 4975kWh

3 Bed Semi Detached House



Expected Energy Savings for Full Heating Upgrade is 8634kWh



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Energy Efficiency

The Energy Efficiency Division comprises of various energy upgrade works to our housing stock under The Energy Efficiency Fabric Upgrade Programme and our Better Energy Community Scheme Projects (BEC) on an annual basis.

Phase One

Phase One of the programme involved the following upgrades:

- ▶ Cavity Wall Fill Insulation
- ▶ 300mm Attic, Tanks and Pipes Insulation
- ▶ Roof and Wall Ventilation
- ▶ Draught Proofing
- ▶ Lagging Jackets

Phase One is now complete which saw in excess of 8,000 units upgraded with an average BER improvement from an F to a C3 rating and an estimated €29.6 million saved in energy bills for our tenants since it's commencement.

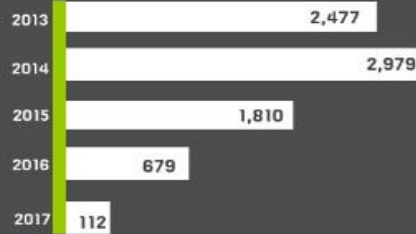


Dublin City Council Fabric Upgrade Programme

Phase 1

Between 2013-2017, Dublin City Council has upgraded 8,057 of its social housing units. The upgrades were carried out as part of Phase 1 of its Fabric Upgrade Programme and have resulted in significant energy and cost savings and improved comfort levels for tenants.

Units upgraded



272,476 MWh

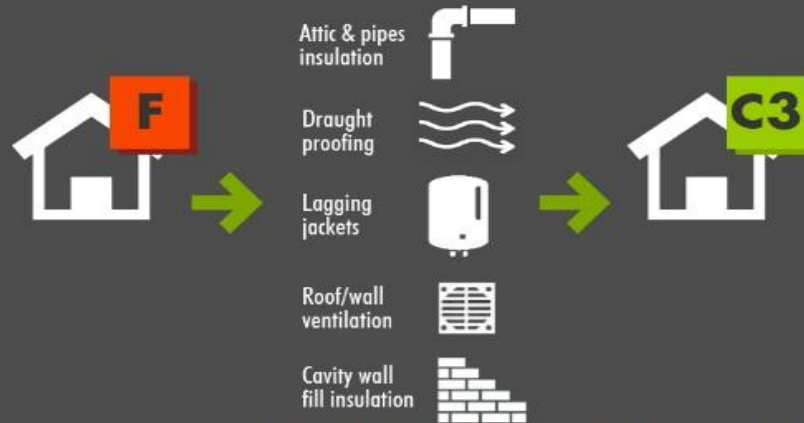
estimated energy saved from 2013-2017



€29.6 million

saved on energy bills from 2013-2017

Building Energy Rating (BER) on average improved from 'F' to 'C3'^{**}



^{**}Taken from a typical sample of 244 properties that underwent Phase 1



Energy Efficiency

Ballymun Project

- ▶ 154 Units in Ballymun which were a combination of Phase One and Phase Two
- ▶ Areas included Shangan Gardens, Sillogue, Sandyhill, Balcurris and Coultry Gardens
- ▶ €2.29M funding secured with the Department to fund project
- ▶ Upgrade measures included:
 - ▶ Cavity Wall / External Insulation
 - ▶ Attic Insulation
 - ▶ Boiler Replacement
 - ▶ Heating Controls
 - ▶ Windows and Doors (where required)
- ▶ The completion of the project now sees Ballymun completed in it's entirety

Before



After



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Energy Efficiency

Phase Two

Phase Two of the programme involves the following upgrades:

- ▶ External Wall Insulation
- ▶ 300mm Attic, Tanks and Pipes Insulation
- ▶ Roof and Wall Ventilation
- ▶ Draught Proofing
- ▶ Lagging Jackets
- ▶ Windows and Doors where required
- ▶ Boiler replacements where required under our Boiler Replacement Programme



Energy Efficiency

Phase Two

- ▶ Funding allocation for Phase Two has yet to be announced by the Department
- ▶ Phase Two has now commenced in the absence of Departmental funding
- ▶ 5 Frameworks (one per area) of 10 x contractors per framework area
- ▶ €5.8 Million per annum allocated funding in Dublin City Council's capital budget over the next three years for Phase Two (€17.4 Million in total)
- ▶ Target of 400 properties per annum over the next three years (1,200 total)
- ▶ We estimate approximately 5,243 units categorised under Phase Two
- ▶ Projected budget to complete Phase Two of approximately €80 Million
- ▶ Projected timeframe of 14 years to complete Phase Two based on current funding levels



Energy Efficiency

Phase Two Current Programme (154 units complete since mid-March)

<u>Area</u>	<u>Current Location</u>	<u>Currently working on</u>	<u>Future Locations</u>	<u>Future Works</u>
Central	Tolka Road	8 Units	Bargy Road, Russell Avenue and Church Road	10 Units
North Central	Edenmore Avenue, Crescent, Gardens and Laragh Close	9 Units	Edenmore Avenue, Crescent, Gardens, Clanree Road	28 Units
North West	Kippure Park and Annamoe Drive	11 Units	Kippure Park and Annamoe Drive	28 Units
South Central	Landen Road	7 Units	Cremona Road, Landen Road and Mourne Road	34 Units
South East	Beech Hill Crescent, Drive and Road	4 Units	Derravaragh Road and Larkfield Avenue	7 Units
Total		39 Units		107 Units



Energy Efficiency

Better Energy Community (BEC) Scheme Projects 2018

- ▶ Application approved by SEAI on **Friday 13th of April**.
- ▶ Main Application includes 3 x Blocks of Cromcastle, 10 House Northside, 10 Houses Southside, 19 Corporate and Communal Heating sites (**including 10 Senior Citizens and 4 Homeless**) to receive various upgrade works.
- ▶ Largest ever application by DCC, in summary €2.1M projected spend less €675k funding support from SEAI.
- ▶ Additional application through Energy Action to upgrade 16 houses in Ballyfermot.
- ▶ BEC Programme of Works ***commenced on the 23rd of April 2018.***
- ▶ Target ***completion date October 2018.***



Energy Efficiency

BEC Programme 2018

- Corporate and Communal Heating Sites
- Red = Homeless Sites (**78 Beds**), Orange = Senior Citizen Complexes (**317 Dwellings**)
- Expected Energy Savings of 1.5GWh

Building Name	Walls	Roofs	Windows	Doors	Heating	Controls	Pumps	PV Panels
Mellowes Court, Finglas	Complete	Complete			Complete	Complete	Complete	
Rathmines Court					Complete			
St. Laurence O'Tooles Court, Oriel St			Ongoing	Ongoing	Complete		Complete	
11 Belvedere Rd, Off Dorset St					Complete	Complete		
St. Lukes Court, Coolock					Complete		Complete	
Robinson Court, Cork St.					Complete		Complete	
Clareville Court, Glasnevin		Ongoing			Complete		Complete	
Father Kitt Court, Walkinstown					Complete			
North Circular Rd Mews Building		Ongoing			Complete	Complete		
Rathmines Library					Complete	Complete	Complete	
Walkinstown Library	Complete				Complete	Complete		
The Haven, 155 Navan Rd, Dublin 7		Ongoing	Ongoing	Ongoing				
Cedar House, Marlborough St					Complete	Complete		
Silloogue Golf Course								Complete
Griffith Crescent, Finglas, D11		Ongoing			Complete			
Albert College, Glasnevin, D11		Ongoing			Complete		Complete	
Beggars Bush Block D, Shelbourne Road, Dublin 4					Complete	Complete		
14 Walkinstown Green, Walkinstown					Complete			
Liberty Arts /Dance, Foley St								Complete
DCC Fleet Management, 9 Merchants Quay					Complete	Complete		



Energy Efficiency

Cromcastle

- ▶ Ireland's first ever Managed Energy Services Agreement (MESA) carried out by any Local Authority in Ireland across all eight blocks.
- ▶ Contract to run concurrently from 2015 to 2023.
- ▶ Heating now provided by high energy efficiency air to water heat pumps with remote access.
- ▶ Blocks 1 & 6 have been upgraded to receive External Wall Insulation and Demand Controlled Ventilation under our Better Energy Community Schemes 2016 & 2017.
- ▶ Under our **2018** Better Energy Community Scheme works commenced on the 8th of May to externally insulate Blocks 2, 3 & 4 and install Demand Controlled Ventilation to all blocks.
- ▶ Under our **2019** Better Energy Community Scheme application we plan to externally insulate the remaining three blocks (i.e. Blocks 5, 7 & 8).
- ▶ This will see the completion of all eight blocks which upon completion achieve a combination of A and B BER Ratings for individual units contained within.



Block 2 Cromcastle June 2018



Block 2 Cromcastle July 2018

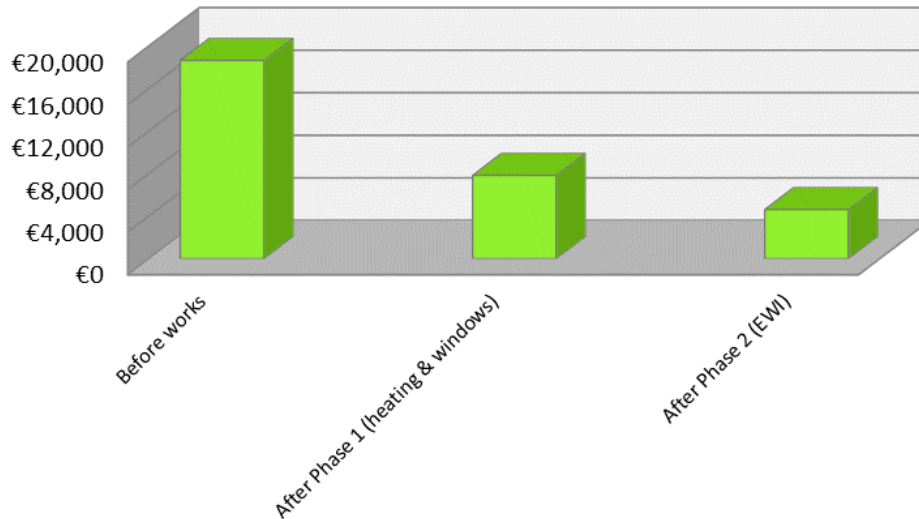


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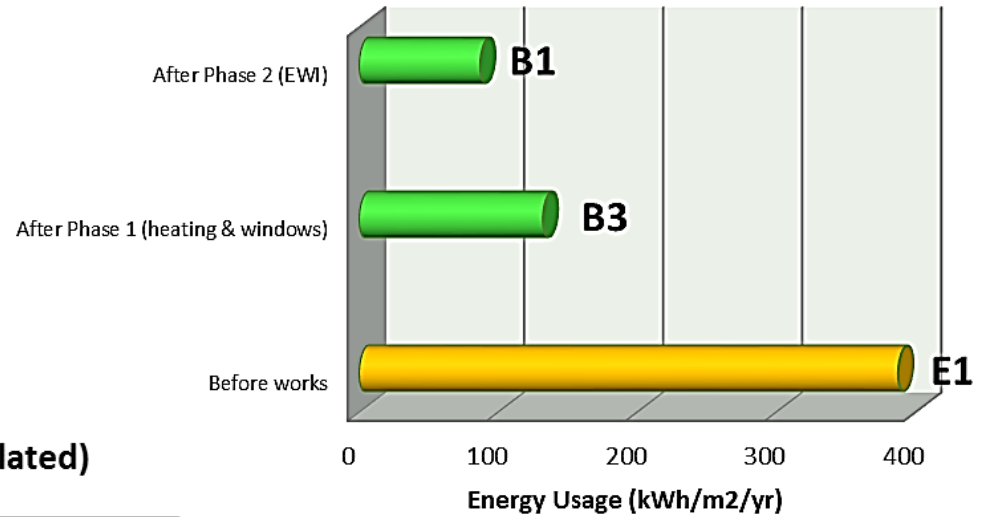
Energy Efficiency

Improvements with each Phase

Annual Running Costs (Calculated)



Average BER Rating



Energy Efficiency

Energy Efficiency Obligation Scheme (EEOS)

- ▶ The Energy Efficiency Obligation Scheme is administered by The Sustainable Energy Authority of Ireland (SEAI).
- ▶ There are various energy credits available for various elements of upgrade works.
- ▶ Only obligated parties (10 in total) can claim energy credits under The EEOS.
- ▶ Dublin City Council tendered our credits for our Boiler Replacement Programme with all of the obligated parties in May 2018.
- ▶ All funding achieved by tendering our energy credits will be reinvested in our Boiler Replacement Programme



Energy Efficiency

Pilot Projects

Warmth and Wellbeing Scheme

- ▶ The warmth and wellbeing scheme aims to improve the living conditions of vulnerable people living with chronic respiratory conditions
- ▶ The initiative is led by the Department of Communications, Climate Action and Environment, in conjunction with the Department of Health, the HSE and SEAI
- ▶ Upgrade measures include attic and wall ventilation and insulation, boiler replacement including heating controls and new windows and doors
- ▶ Scheme has been extended to Dublin 8, 10, 12, 22 and 24
- ▶ Upgrade works carried out at no cost to tenant
- ▶ Dublin City Council in partnership with SEAI on behalf of our tenants in these areas who qualify where 85 units have been upgraded to date and 27 are currently in progress



Energy Efficiency

Alone

- ▶ Alone is a charity organisation which supports older people to age at home
- ▶ Alone also provides Housing with Support, Support Coordination, Befriending and Campaigns for change to older people including those who are homeless, socially isolated, living in deprivation or in crisis
- ▶ Dublin City Council have partnered with Alone for a pilot project at our Senior Citizen Complex in Old Mill Court, Clanbrassil Street, Dublin 8
- ▶ Works include the installation of personal alarms which are monitored on a 24hr basis. Temperature sensors included in pilot project
- ▶ Works carried out at no cost to tenant
- ▶ Works completed June 2018



Energy Efficiency

Condensation Sub Group

- ▶ Condensation Sub Group initiated in September 2017 to discuss and try and address ongoing issues with mould, dampness and condensation in our housing stock
- ▶ Specialist Consultant, Andrew Lundberg, Director of Passivate, engaged to join Sub Group to offer specialist advice on proposals
- ▶ We are currently trialling four different products, namely:
 1. Damp Doctor – Positive Input Ventilation (PIV) which circulates air around the dwelling to reduce the moisture content in the air
 2. Soler and Palau – Similar to PIV however smaller fans which automatically initiate when the humidity rises to remove air out of the rooms



3. Mould Growth Consultants – Area where mould is present is treated and then an insulation type called Sempatap is applied over the affected area and painted over. The methodology behind the product is that it heats the wall which in turn prevents moisture being attracted to the cold surface
4. Inducoat – Similar to previous product whereby it is a paint however has a chemical which “fights” mould when it is trying to form on a surface



Energy Efficiency

Oliver Bond House

- ▶ Complex comprises of 396 Units over 16 Blocks
- ▶ Ongoing condensation issues
- ▶ Plan to carry out upgrade works in September 2018 to 12 Units including:
 - Positive Input Ventilation (PIV) which circulates air around the dwelling to reduce the moisture content in the air
 - New Windows and Doors
 - Boiler Replacements
 - Inducoat – Paint inclusive of a chemical which “fights” mould when it is trying to form on a surface
- ▶ If successful, submit funding request to the Department to upgrade entire complex
- ▶ Extend Boiler Replacement Programme to upgrade all non condensing boilers in the entire complex in 2018



Summary

- ▶ A lot done
- ▶ Plan to do a lot more
- ▶ Your support is appreciated

Thank You

