

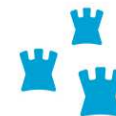
# Dublin City Council

## Mechanical & Energy Efficiency Division

### Climate Change SPC

29<sup>th</sup> January 2020

**Shane Hawkshaw - Senior Executive Engineer**

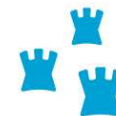


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# Mechanical & Energy Efficiency Division

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

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



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# Mechanical (Domestic)

The Domestic Mechanical comprises of the management of 22,500 Domestic Boilers.

Risks associated with aging stock include:

- ▶ Poor boiler efficiency resulting in higher bills to our tenants – **particularly those in fuel poverty**
- ▶ Increased number of breakdowns in colder weather
- ▶ Harmful emissions to the environment
- ▶ Potential risk of injury
- ▶ Potential dangerous levels of carbon monoxide

## Going forward:

- ▶ Service our entire stock on an annual basis
- ▶ Increase Boiler Replacement Programme
- ▶ Heat pumps

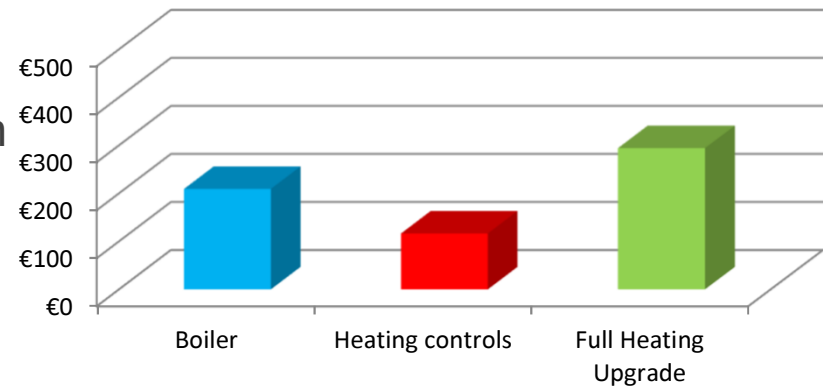


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# Boiler Replacement Programme (BRP)

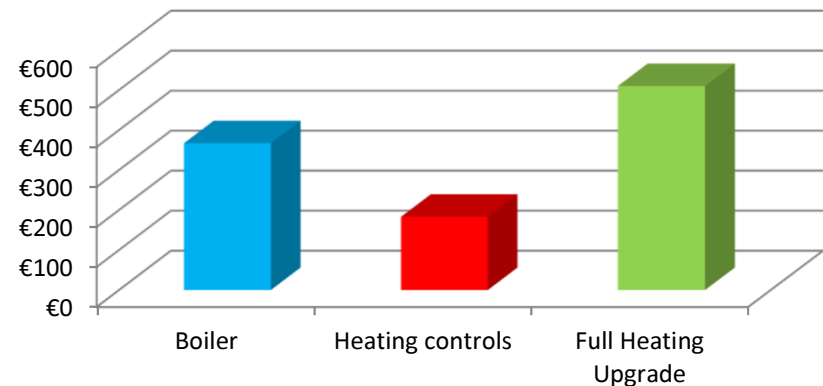
- ▶ €3 Million per annum allocated funding in Dublin City Council's capital budget over the next three years for BRP (€9 Million in total)
- ▶ BRP has been extended to Phase Two of The Energy Efficiency Fabric Upgrade Programme
- ▶ In excess of 25,000 site visits per annum
- ▶ Circa 3,000 boilers replaced since 2017
- ▶ 10 year manufacturer warranty implemented

## 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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# Mechanical (Commercial)



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# Mechanical (Commercial)



Heating



Ventilation



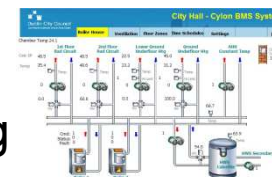
C.W.S.



H.W.S.



Refrigeration /  
Air Conditioning



B.M.S.



INERT Gas Fire  
Suppression Systems

Fire Suppression



Water Quality



Gas Detection



Energy Efficiency



HOT TUBS

Other Services – Site Specific



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# Mechanical (Commercial)

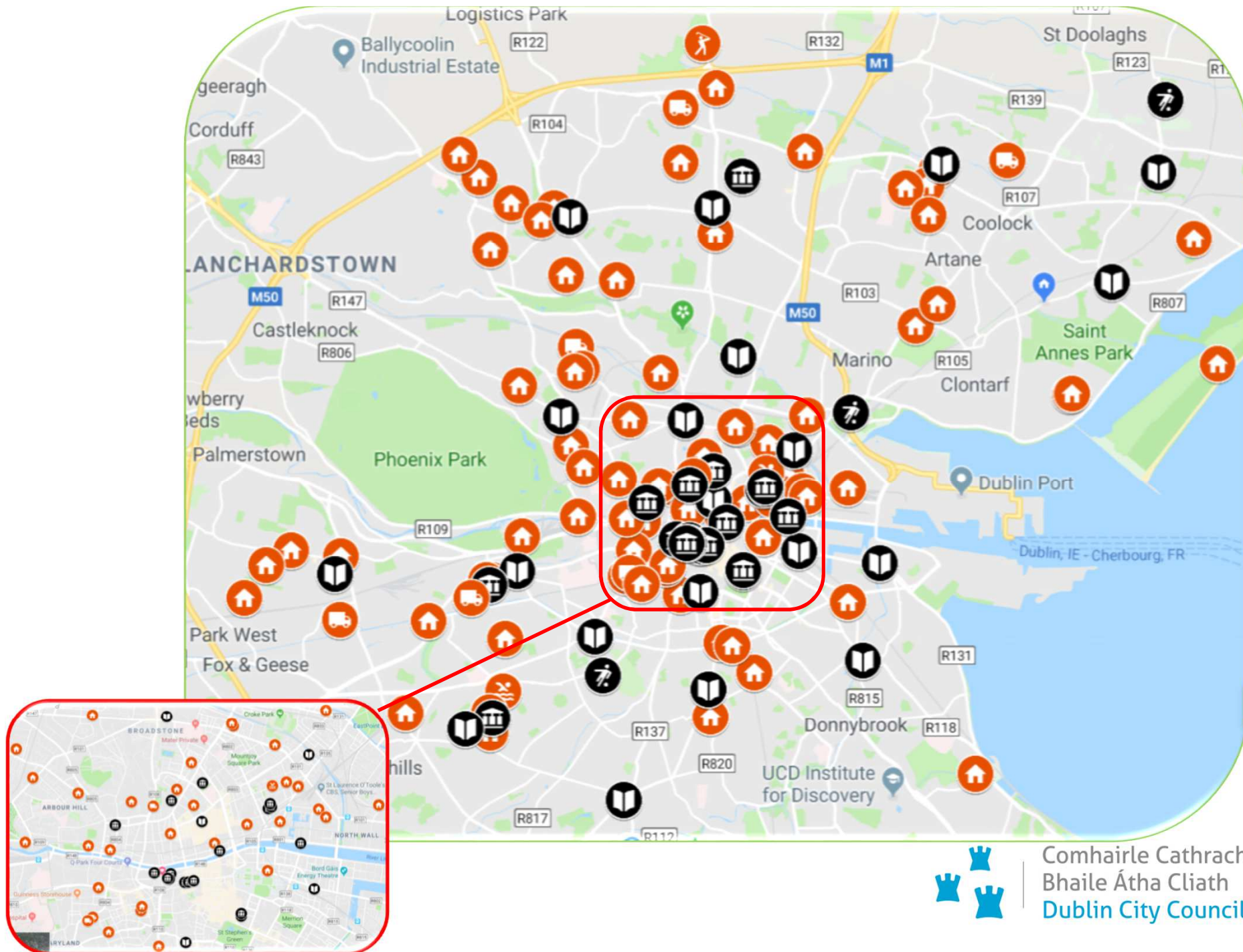
Overview of the Division sites as follows:

- ▶ **140** Sites in total covering all of DCC area's from Terenure Library in the south to Sillogue Golf Club at Dublin Airport in the North, Cheery Orchard Community Centre in the West to Bull Island Causeway Centre in the East.
- ▶ **43** Corporate Sites including:  
Libraries (20No.), Museums (Henrietta St Tenement, Richmond Barracks), Art Gallery (Hugh Lane, LAB), Protected Structures (City Hall, Mansion House, Rates Office), Restaurant (Fire), Crèche's (Little Stars, Liberty, Shangan), Sports Complex's, Dance Studio, Civic Offices and many other varied sites.
- ▶ **97** Non Corporate sites including:  
**40 Senior Citizen Complexes, 25 Homeless Accommodation Units, 5** Sports & Recreation (Swimming Pools, Golf Club), 8 Depot's / Engineering Sites, Coroners Court, Centralised Heating Systems and many other varied sites.



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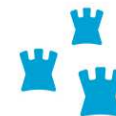
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# Mechanical (Commercial)

## Better Energy Community Scheme Projects (BEC) 2019

- ▶ Irelands National Retrofit Initiative managed by Sustainable Energy Authority of Ireland (SEAI)
- ▶ BEC projects facilitate community wide energy improvements
- ▶ 2019 DCC Application includes 29 Houses, 26 Sites ranging from Corporate and Communal Heating sites **(including 7 Senior Citizens Complexes and 4 Homeless Hostels)** to receive various upgrade works.
- ▶ Applications approved by SEAI in May 2019
- ▶ BEC Programme of Works commenced in June 2019
- ▶ Target completion date 30<sup>th</sup> September 2019.
- ▶ **100% of works now complete**



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# Mechanical (Commercial)

Site	Location	Type of Site	Pumped Wall Insulation	Attic Insulation	Windows / Doors	(Heating) Heat Pump	Controls	Pumps	Lighting	PV Panels	Status
Robinson Court	Cork Street, Dublin 8	Senior Citizens					Yes				Complete
Clareville Court	Glasnevin, Dublin 9	Senior Citizens					Yes				Complete
Father Kitt Court	Walkinstown, Dublin 12	Senior Citizens					Yes				Complete
St Laurence O'Toole's Court	Oriel Street, Dublin 1	Senior Citizens					Yes				Complete
Clancarthy Court	Clancarthy Road, Clontarf, Dublin 5	Senior Citizens				Yes					Complete
Rowan Hamilton Court	Dunmanus Road	Senior Citizens		Yes							Complete
Dominick Court	Dominick Street Lower, Dublin 1	Senior Citizens	Yes	Yes							Complete
Mews Building	81/83 North Circular Road, Dublin 7	Homeless					Yes				Complete
Cedar House	Marlborough Street, Dublin 1	Homeless					Yes				Complete
Maple House	North Circular Rd	Homeless					Yes	Yes			Complete
Haven House	Morning Star Avenue, Smithfield, Dublin 7	Homeless						Yes			Complete
Rathmines Library	Rathmines Road Lower, Dublin 6	Libraries					Yes				Complete
Ballymun Library	9 Ballymun Road, Dublin 9	Libraries			Yes				Yes		Complete
Pearse Street Library	144 Pearse St, Dublin 2	Libraries					Yes				Complete
Ringsend Library	Fitzwilliam Street, Dublin 4	Libraries							Yes		Complete
Liberty Crèche	Foley Street, Dublin 1	Crèche				Yes			Yes		Complete
Little Stars Crèche	116 North King St, Dublin 1	Crèche				Yes			Yes		Complete
Liberty Arts & Dance	Foley Street, Dublin 1	Corporate Services					Yes	Yes			Complete
Crumlin Pool	80 Windmill Road, Crumlin, Dublin 12	Sports / Recreational	Yes						Yes	Yes	Complete
Longmeadows Pitch & Putt Pavilion	Ballyfermot	Parks							Yes		Complete
Longmeadows Pitch & Putt Centre	Ballyfermot	Parks							Yes		Complete
Le Fanu Park, Pavilion,	Ballyfermot	Parks		Yes					Yes		Complete
Le Fanu Park, Parks Depot	Ballyfermot	Parks							Yes		Complete
Longmeadows Pitch & Putt Pavilion	Ballyfermot	Parks							Yes		Complete
Longmeadows Pitch & Putt Centre	Ballyfermot	Parks							Yes		Complete

Legend:		Senior Citizens
		Homeless
		Libraries
		Crèche
		Corporate
		Sports / Recreational
		Parks

- Range of upgrade measures implemented
- Expected Energy Savings of 845MWh per annum

# Energy Efficiency



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# Energy Efficiency

The Energy Efficiency Division comprises of various energy upgrade works to our housing stock under the following programmes:

- Warmth and Wellbeing Scheme
- Better Energy Community Scheme Projects (BEC)
- The Energy Efficiency Fabric Upgrade Programme – Phase One and Two



These programmes are part funded by the Sustainable Energy Authority of Ireland (SEAI), the Department of Communications, Climate Action and Environment and the Department of Housing Planning and Local Government with certain schemes contributing to meeting Dublin City Council's energy reduction target of 33% by 2020.

As of 2018 Dublin City Council has reduced its energy consumption by 33.1%\* and has exceed its target of 33% by 2020.



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# Energy Efficiency

## **Warmth and Wellbeing Scheme – Pilot Project**

- ▶ The Warmth and Wellbeing scheme aims to improve the living conditions of vulnerable people in receipt of fuel allowance and 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 147 units have been upgraded to date and 43 are currently in progress – 190 units to date in total



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# Energy Efficiency

## The Energy Efficiency Fabric Upgrade Programme.

The Energy Efficiency Fabric Upgrade Programme is designed to reduce unnecessary energy consumption, greenhouse gas emissions and demands for non renewable resources in Dublin City Councils housing stock.

It also provides tenants with healthier living conditions and offers significant money savings in heating costs.

The programme is rolled out in a phased basis:

- **Phase One**
- **Phase Two**
- **Ballymun Project – Special Case Project**



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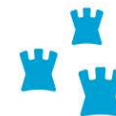


# Energy Efficiency

## 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.
  - ▶ Cylinder Lagging Jackets.
- 
- Phase One is now complete which saw 8,057 units upgraded



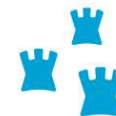
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# Energy Efficiency

## 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

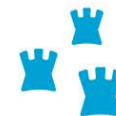


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# Energy Efficiency

## Phase Two

- ▶ Phase Two commenced in March 2018
- ▶ Previous Tender - 5 Frameworks (one per area) of 10 x contractors per framework area
- ▶ Current Tender – 11 lots/areas as per new electoral areas plus one citywide lot - €2 Million per area i.e. €24 Million total
- ▶ 762 properties upgraded to date – total spend to date €14.4 Million – Departmental funding to date €9.8 Million
- ▶ €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 230 properties per annum over the next three years based on current funding levels
- ▶ We estimate approximately 4,747 units categorised under Phase Two
- ▶ Projected budget to complete Phase Two of approximately €100 Million
- ▶ Projected timeframe of 17 years to complete Phase Two based on current funding levels



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# Energy Efficiency

## **Ballymun Project – Special Case 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 of Housing to fund the 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



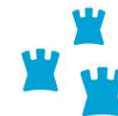
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# Energy Efficiency



**Before**

**After**

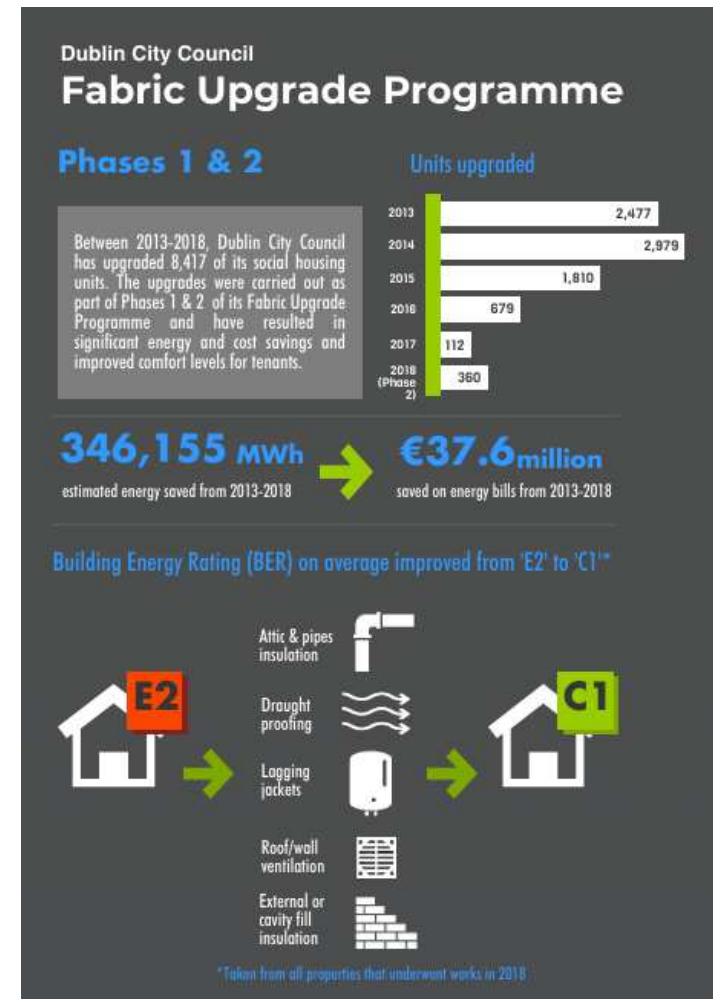


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# Energy Efficiency

## Results:

- Phase One Complete – 8,057 Units Upgraded
- Phase Two – 772 Units Upgraded to date
- Total of 8,829 Units Upgraded to date under Phase One and Phase Two of the programme
- Average BER improvement from an F to a C3 for Phase One and an E2 to a C1 rating achieved on Phase Two
- Approximately 70% of our houses have now been upgraded under the programme
- Estimated €37.6 Million saved in our energy bills for our tenants up to the end of 2018



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# Thank You

Shane Hawkshaw - Senior Executive Engineer



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