



CODEMA

City of Dublin Energy Management Agency

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17th January 2006
Berlin**



Greater Dublin Area

First Results Current Situation in Pilot Actions – WP2



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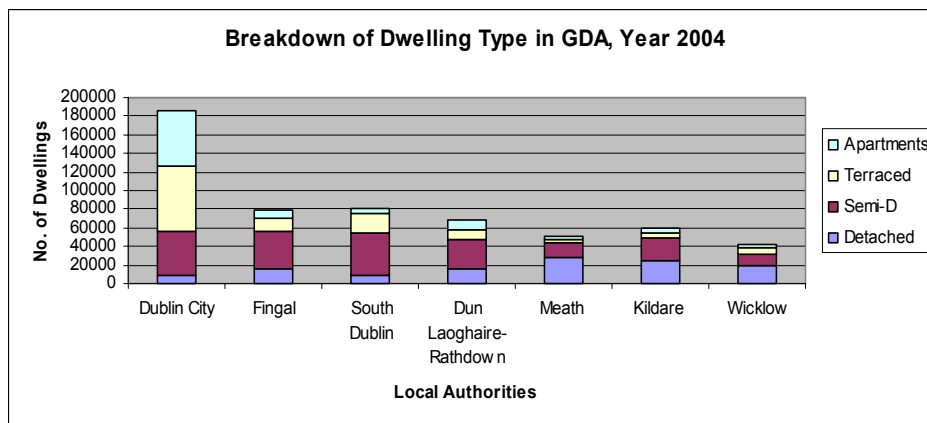
City of Public Energy Management Agency



Residential Sector

- Statistical Analysis results

- 577,538 Residential Buildings in GDA
- 91,529 Apartments in GDA



- WP2 - 9 Apartments analysed to date

Identification of Buildings (1)

- CODEMA have a total of 9 apartment block developments for WP2
- These consist of
 - 3 apartment block developments of social housing
 - 6 apartment block developments of private housing
- CODEMA received data for 10 private apartment block developments from Building Control
- Only 6 of these data sets contained all the information necessary for the calculation of an energy performance certificate

Identification of Buildings (2)

Queens St. Apartments



Bridgefoot St. Apartments

Identification of Buildings (3)

Type of Building Owner	Year of Construction	Number Dwellings	Number of floors	Total living Area	Type of building	Insulation standard Low/ middle/ high	Type of Heating System C = Central D = Decentral	Energy Source G = Gas O = Oil E = Electricity D = District Heat
Local Authority	1970	15 apts	5	946	cavity wall	high	C	G
Local Authority	1965	31 apts	5	1794	cavity wall	high	C	G
Local Authority	1964	32 apts	4	2167	cavity wall	high	C	G
Private	2005	14 apts	3	1418	cavity wall	high	D	G
Private	2003	39 apts	3	2864	cavity wall	high	D	E
Private	2003	34 apts	3	2739	cavity wall	high	D	E
Private	2004	36 apts	6	1420	cavity wall	middle	D	E
Private	2004	60 apts	3	4890	cavity wall	middle	D	E
Private	2005	24 apts	4	2120	cavity wall	high	D	E

Methodology (1)

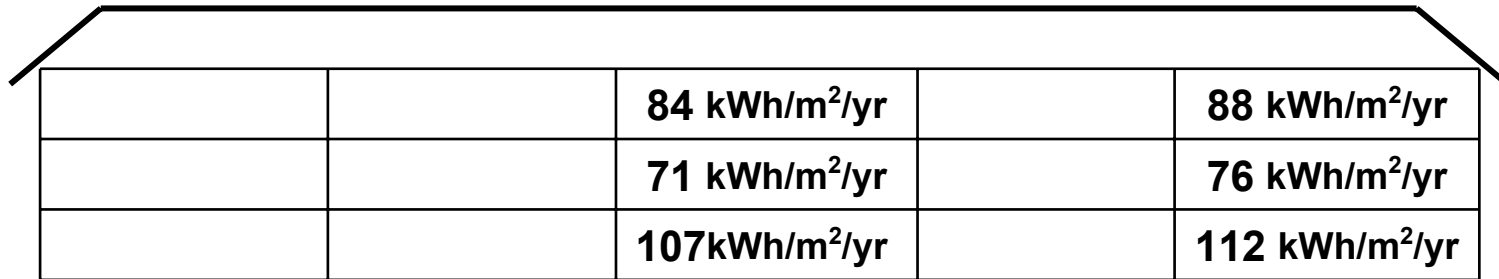
- Existing methodology for calculating the energy performance of a building - Heat Energy Rating
- HER is based on the Standard Assessment Procedure (SAP) as used by the UK Government agencies
- HER method possibly form the basis of the “calculation engine” on which future building energy rating calculation methods are based
- HER takes account of the following:
 - Energy requirements –
 - heat loss through the fabric, including at thermal bridges
 - air infiltration and ventilation
 - provision of domestic hot water
 - Energy inputs
 - solar gains
 - occupancy including the use of energy-using appliances
- Heating system responsiveness to demand and degree of control
- BER- need to take account of boiler efficiency and fuel type

Methodology (2)

- At present there is no methodology in Ireland to evaluate whole buildings with individual heating systems
- All the apartment developments evaluated by CODEMA have individual heating systems
- Individual apartment units were evaluated as opposed to the total external building envelope

Sample Energy Rating (1)

- This figure shows the Building Energy Rating (BER) for different apartment locations



		84 kWh/m²/yr		88 kWh/m²/yr
		71 kWh/m²/yr		76 kWh/m²/yr
		107kWh/m²/yr		112 kWh/m²/yr

- Each apartment has a different BER depending on its location within the building
- The location with the best BER is the Mid floor/Mid Terrace apartment
- The poorest case is the Ground floor/End Terrace apartment (In this case requiring 57% more heat energy per year than the best case)

Sample Energy Rating (2)

Energy Rating (BER)		BER (kWh/m ² /yr)	% Above Best case	% Diff from average
Ground Floor End Terrace	<i>Worst case</i>	112	57%	25%
Mid Floor End Terrace		76	6%	-15%
Top Floor End Terrace		88	23%	-2%
Ground Floor Mid Terrace		107	50%	20%
Mid Floor Mid Terrace	<i>Best case</i>	71	0%	-20%
Top Floor Mid Terrace		84	17%	-7%
Average		90	26%	0%





Thank You For Your Attention



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