

Extracts from the UCL Cost and Carbon Tool

Building: Project A

HOME

- STEP 1: DEFINE
- STEP 2: CALCULATE
- STEP 3: RESULTS
- DATA

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Step 1: defining and benchmarking the project

BETA

Back Use this step to define your project and review an estimated breakdown of annual energy consumption. **Next**

DESCRIBING YOUR PROJECT [Find building on Google Maps](#)

Define type of project: **Existing building change**
Note: Tool to be completed by UCL or external consultant

Select the existing building: **Project A**

BENCHMARKING YOUR PROJECT

	Existing	Total
Total natural gas (kWh per m ²)	120	
Total district heating (kWh per m ²)	0	
Total electricity (kWh per m ²)	76	
Area (NIA) (m ²)	4,000	4,000
Admin/support (%)	0	0
Labs - chemical sciences (%)	0	0
Labs - Engineering - phys sciences (%)	0	0
Labs - medical & biosciences (%)	0	0
Libraries (%)	0	0
Residences (%)	0	0
Sports centres (%)	0	0
Teaching (%)	100	100
Space heating (gas kWh per m ²)	96	96
Hot water (gas kWh per m ²)	24	24
Space heating (DH kWh per m ²)	0	0
Hot water (DH kWh per m ²)	0	0
Space heating (electricity kWh per m ²)	0	0
Hot water (electricity kWh per m ²)	0	0
Cooling (kWh per m ²)	19	19
Lighting (kWh per m ²)	19	19
Auxiliary - fans and pumps (kWh per m ²)	19	19
Equipment / small power (kWh per m ²)	19	19

BENCHMARK BASED ENERGY COST SPLIT

CHART KEY

- Space heating (gas)
- Hot water (gas)
- Space heating (DH)
- Hot water (DH)
- Space heating (electricity)
- Hot water (electricity)
- Cooling
- Lighting
- Auxiliary - fans and pumps
- Equipment / small power

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Carbon saving: **2,336** (kgCO₂e in year one)

Cost saving: **539** (£ in year one)

Step 2: calculating, exploring and selecting changes

BETA

Back Use the built in tools to help you calculate energy savings and payback periods of common interventions. You can compare different and then select the best approach for your building. Instant feedback on carbon and cost savings is provided, for your preferred option, as you select changes for your project. **Next**

TOOLS AND PAYBACKS TO INFORM SELECTIONS

2.1 Click for building fabric tool <i>Use this tool to make changes to the building envelope.</i>	Preferred paybacks: 22 Years
2.2 Click for ventilation tool <i>Use this tool to compare and/or amend natural and mechanical ventilation strategies.</i>	8 Years
2.3 Click for boiler tool <i>Use this tool when replacing or upgrading existing natural gas boilers.</i>	10 Years
2.4 Click for VRF/chiller tool <i>Use this tool when replacing or upgrading cooling systems.</i>	#N/A Years
2.5 Click for lighting tool <i>Use this tool when replacing or upgrading lighting systems, including the provision of daylight and occupant control.</i>	4 Years
A. Click for bespoke tool A <i>Use this tool if you want to do something slightly different and have already calculated the energy savings.</i>	#N/A Years
B. Click for bespoke tool B <i>Use this tool if you want to do something slightly different and have already calculated the energy savings.</i>	0 Years
C. Click for bespoke tool C <i>Use this tool if you want to do something slightly different and have already calculated the energy savings.</i>	0 Years

NPV OF SELECTIONS

SELECTIONS

- Include fabric change? **No**
- Include vent. change? **No**
- Include boiler change? **No**
- Include VRF/Chiller change? **No**
- Include lighting change? **Yes**
- Include bespoke change A? **No**
- Include bespoke change B? **No**
- Include bespoke change C? **No**

PAYBACK
 PREFERRED **4** YEARS
 SECOND **2** YEARS

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Project A

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STEP 2: CALCULATE

• STEP 3: RESULTS

DATA

Carbon saving:

2,336

(kgCO2e in year one)

Cost saving:

539

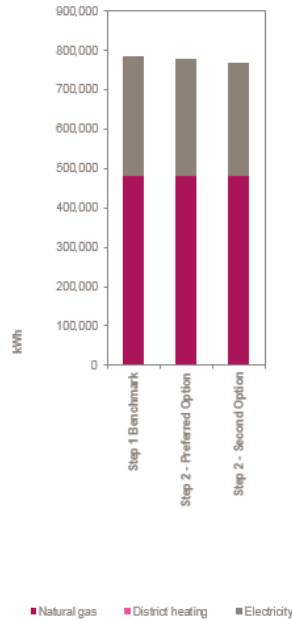
(£ in year one)

Step 3: results

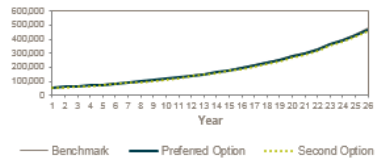
Back

Review the 'year one' energy savings and the 25 year cost and carbon projections.

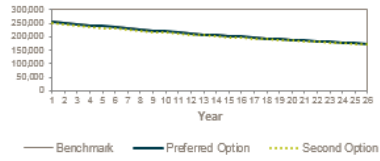
ENERGY IN YEAR ONE



ENERGY COST PROJECTION



ENERGY CARBON PROJECTION



Generate Report Tables

BETA

Data

SELECTIONS

Include fabric change?

No

[Go back and select.](#)

Include vent change?

No

[Go back and select.](#)

Include boiler change?

No

[Go back and select.](#)

Include VRF/Chiller change?

No

[Go back and select.](#)

Include lighting change?

Yes

[Go back and select.](#)

Include bespoke change A?

No

[Go back and select.](#)

Include bespoke change B?

No

[Go back and select.](#)

Include bespoke change C?

No

[Go back and select.](#)