TAYLOR PROJECT SERVICES LLP
CELEBRATING 20 YEARS 1999-2019

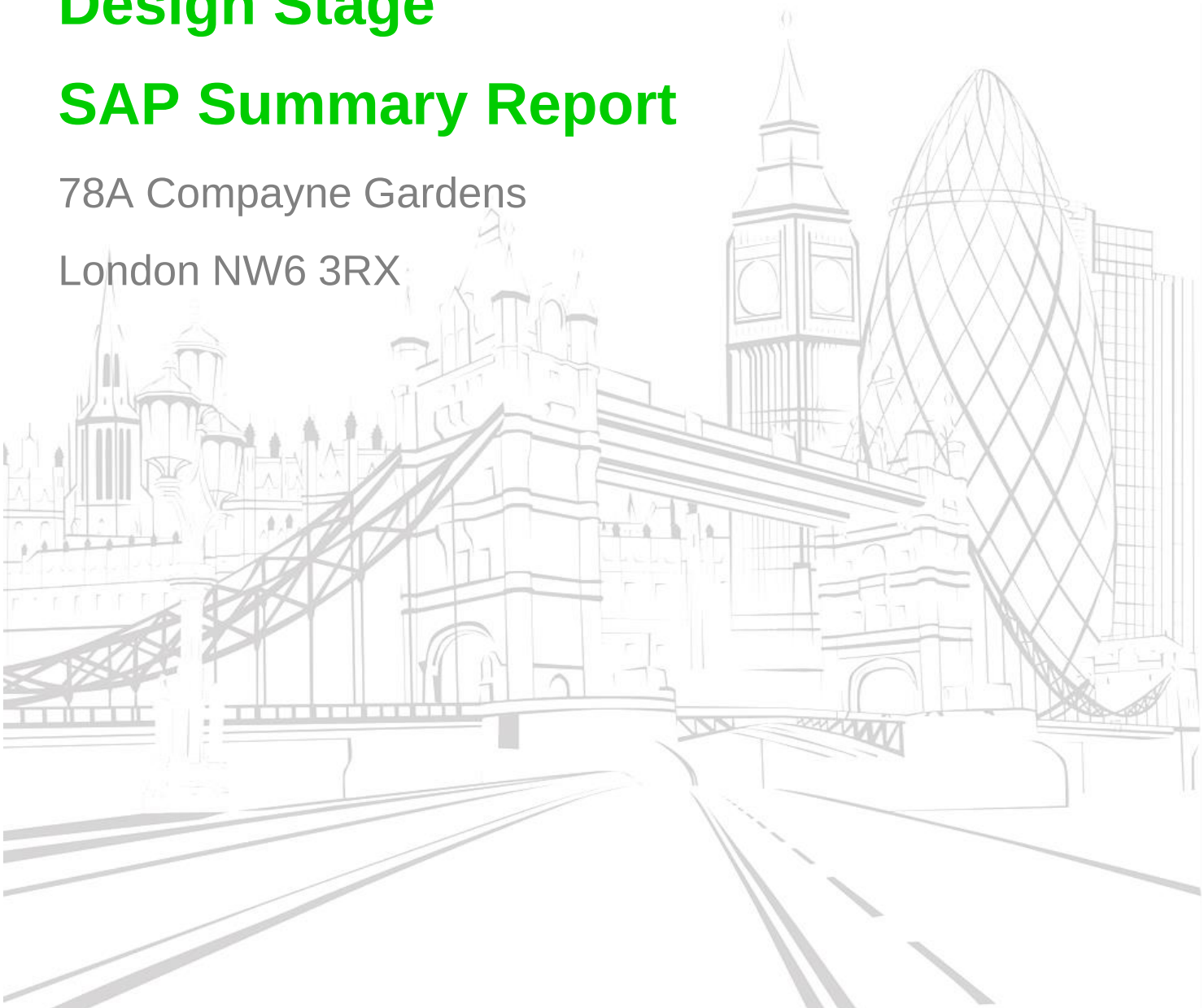
No 1 Cornhill
London EC3V 3ND

Design Stage

SAP Summary Report

78A Compayne Gardens

London NW6 3RX



November 2019

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78A Compayne Gardens

Issue and Revision Record				
Rev	**Date**	**Rev Comments**	**Produced by**	**Checked by**
D1	04/11/2019	For Comment		

Schedule of Units			
Unit	**Area**	**Building Regulation**	**Renewable Technology?**
1	87.62	Part L1a (New Build)	YES

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Ref:	78CG1119
Project	**78A Compayne Gardens**

Condition No.10
Prior to commencement of development, an energy statement demonstrating how the building will achieve a 20% reduction in carbon dioxide emissions beyond Part L 2013 Building Regulations (in line with the energy hierarchy) shall be submitted to and approved in writing by the Local Planning Authority. The Development shall not be implemented other than in accordance with the details as appsoves.

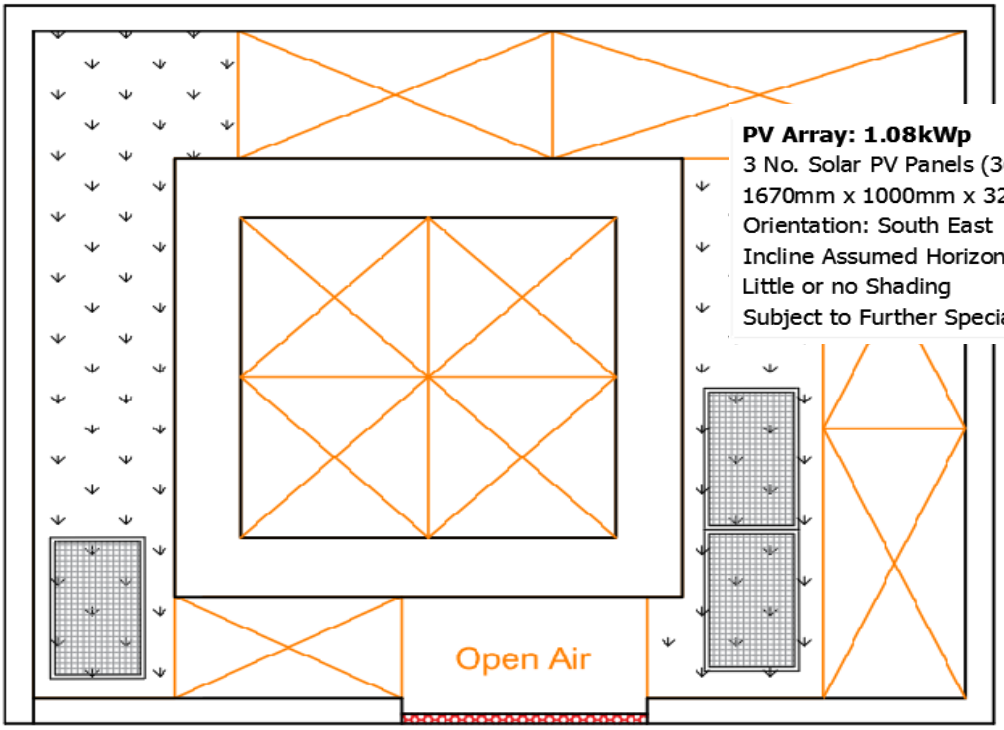
This section has been produced to satisfy the above condition, in ensuring that the building achieved a 20% reduction in carbon dioxide emissions beyond Part L 2013. This statement/report outlines the energy model used to achieve this level. .

Information

House	Area	Target Emission Rate (TER) - Annual KgCO2/m2	Total Target Emissions KgCO2/annum	Dwelling Emission Rate (DER) - Annual KgCO2/m2	Total Emissions KgCO2/annum	Reduction in CO2 Emissions (Kg/CO2)
1	87.62	24.64	2,158.96	18.38	1,610.46	548.50
*See Project Key Results					% Reduction in CO2	25.40%

Photovoltaic Information	
Number of Panels	3
Approx Panel Area	1.64
Total Area (m2)	4.92
Panel Output (kWp)	0.36
Total Output (kWp)	1.08
Total Output (kWh/yr)	932.04

PV Design Scope:
The Photovoltaic array is subject to specialist design. Assumptions at design stage: 360w monocrystalline panel, South East facing, horizontally laid with none or very little shading.



PV Array: 1.08kWp
3 No. Solar PV Panels (360w per panel)
1670mm x 1000mm x 32mm
Orientation: South East
Incline Assumed Horizontally Laid (10 Degrees)
Little or no Shading
Subject to Further Specialist Design and Energy Assessment

Indicative Roof Plan

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SAP Version	FSAP 2012		**78A Compayne Gardens**
Assessor	L Pasifull		

Option A (Gas Boiler and PV)

Design Stage Specification

The following specification gives an outline into the design parameters that have been adopted to produce the design stage SAP assessment. Should any of the details be incorrect, please inform us at your earliest convenience.

Thermal Elements		
Element Description	Reference/Source	U Value (W/m^2K)
Floor: Ground Floor	To be Confirmed	0.10
Floor: Exposed Soffit		0.12
Wall: New External Wall		0.18
Wall: Roof Wall (Mansard)		0.18
Roof: Ptched, insulated at ceiling		0.10
Roof: Terraced Roof/Flat Roof/Green Roof		0.10
Opening: Doors Int/Ext Doorset		1.40
Opening: Windows/Glazed Doors		1.40/ Gg Value: 0.60-0.65

Thermal Bridging		
Accredited Construction Details	It will be necessary for the developer to adopt Accredited Details to exposed Junctions on the new build elements of the scheme to satisfy the Part L1a (FEE) Criterion. This is in line with the guidance supplied by the Planning Portal. This collection of drawings require signing off on site at the As Built Stage	**Accredited Construction Details**
Lintels	It will be necessary for the developer to use thermal lintels (such as IG Hi-therm), on the new units. This will allow a Psi value of 0.08. If Equivalent lintels are proposed, this will need to be checked with the SAP assessment	**Psi of 0.05**

Air Leakage Testing		
Required	Air permeability testing should be carried out upon completion for this site. The developer should ensure that the new dwelling is tested to achieve an air permeability result no greater than 4.0	$m^3/h.m^2$ @ 50 Pa
		4.00

Building Services		
Ventilation	System 3: Centralised Whole House Mechanical Extract (Assumed: Vectaire MBOX 125/2DC)	**System 3: MEV**
Low Energy Lighting	All internal lighting will be low energy (100%)	**100%**
Part G Water Use	All dwellings will be designed to use no more than 105 litre of water per person per day	**<105l/person/day**

Heating	
Main Heating System	Heating will be provided via a Mains Gas fired condensing combi boiler, with a seasonal efficiency of no less than 89.4% Vaillant Ecotec Plus 824 assumed, subject to MEP Consultants approval
Controls	Time and Temperature Zone Control Required to all Areas
Secondary Heating System	None
Room Heaters	None
Hot Water	Hot water supplied via the mains hot water system, subject to MEP approval
Renewables	
Solar Thermal	None
Photovoltaics	Individual Photovoltaic array to the South East face of the unit. 1.08kWp (3 x 360W), 0-10 degree pitch, South East Facing, Little or no Shading assumed. Subject to specialist design **1.08 kWp**

Other		
Overheating Risk	The air change rate calculation assumes that windows can be opened fully in warmer weather. The overheating calculation is based on openings with dark curtains/roller blinds, closed during daylight hours.	
	Total CO_2 emissions (Actual) $KgCO_2$/Annum	**1,610.46**
	CO_2 reduction from Part L 2013 benchmark figures (%)	**25.40%**
	SAP Rating	**B 85**
Additional Notes	Any change in the assumed values could cause a Part L compliance failure. The SAP assessor should be consulted if any amendments are required	

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Option B (Air Source Heat Pump)

Design Stage Specification

The following specification gives an outline into the design parameters that have been adopted to produce the design stage SAP assessment. Should any of the details be incorrect, please inform us at your earliest convenience.

Thermal Elements		
Element Description	Reference/Source	U Value (W/m^2K)
Floor: Ground Floor	To be Confirmed	0.10
Floor: Exposed Soffit		0.12
Wall: New External Wall		0.17
Wall: Roof Wall (Mansard)		0.17
Roof: Ptched, insulated at ceiling		0.10
Roof: Terraced Roof/Flat Roof/Green Roof		0.10
Opening: Doors Int/Ext Doorset		1.00
Opening: Windows/Glazed Doors		1.20/ Gg Value: 0.60-0.65

Thermal Bridging		
Accredited Construction Details	It will be necessary for the developer to adopt Accredited Details to exposed Junctions on the new build elements of the scheme to satisfy the Part L1a (FEE) Criterion. This is in line with the guidance supplied by the Planning Portal. This collection of drawings require signing off on site at the As Built Stage	**Accredited Construction Details**
Lintels	It will be necessary for the developer to use thermal lintels (such as IG Hi-therm), on the new units. This will allow a Psi value of 0.08. If Equivalent lintels are proposed, this will need to be checked with the SAP assessment	**Psi of 0.05**

Air Leakage Testing		
Required	Air permeability testing should be carried out upon completion for this site. The developer should ensure that the new dwelling is tested to achieve an air permeability result no greater than 4.0	$m^3/h.m^2$ @ 50 Pa
		4.00

Building Services		
Ventilation	System 3: Centralised Whole House Mechanical Extract (Assumed: Vectaire MBOX 125/2DC)	**System 3: MEV**
Low Energy Lighting	All internal lighting will be low energy (100%)	**100%**
Part G Water Use	All dwellings will be designed to use no more than 105 litre of water per person per day	**<105l/person/day**

Heating	
Main Heating System	Heating will be provided via Air Source Heat Pump, providing heat via underfloor heating. Heat pump to have high COP, SEER and EER.
Controls	Time and Temperature Zone Control Required to all Areas
Secondary Heating System	None
Room Heaters	None
Hot Water	Hot water served via mains system, with integral hot water cylinder. Assumed values: 200 litres with daily nominal loss of 1.5kWh/day

Renewables	
Solar Thermal	None
Photovoltaics	None

Other		
Overheating Risk	The air change rate calculation assumes that windows can be opened fully in warmer weather. The overheating calculation is based on openings with dark curtains/roller blinds, closed during daylight hours.	
	Total CO_2 emissions (Actual) $KgCO_2$/Annum	**2,524.33**
	CO_2 reduction from Part L 2013 benchmark figures (%)	**20.70%**
	SAP Rating	**C (73)**
Additional Notes	Any change in the assumed values could cause a Part L compliance failure. The SAP assessor should be consulted if any amendments are required	

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Option C - NIBE Fighter Exhaust

Design Stage Specification

The following specification gives an outline into the design parameters that have been adopted to produce the design stage SAP assessment. Should any of the details be incorrect, please inform us at your earliest convenience.

Thermal Elements		
Element Description	Reference/Source	U Value (W/m^2K)
Floor: Ground Floor	To be Confirmed	0.10
Floor: Exposed Soffit		0.12
Wall: New External Wall		0.18
Wall: Roof Wall (Mansard)		0.18
Roof: Ptched, insulated at ceiling		0.10
Roof: Terraced Roof/Flat Roof/Green Roof		0.10
Opening: Doors Int/Ext Doorset		1.00
Opening: Windows/Glazed Doors		1.40/ Gg Value: 0.60-0.65

Thermal Bridging		
Accredited Construction Details	It will be necessary for the developer to adopt Accredited Details to exposed Junctions on the new build elements of the scheme to satisfy the Part L1a (FEE) Criterion. This is in line with the guidance supplied by the Planning Portal. This collection of drawings require signing off on site at the As Built Stage	**Accredited Construction Details**
Lintels	It will be necessary for the developer to use thermal lintels (such as IG Hi-therm), on the new units. This will allow a Psi value of 0.08. If Equivalent lintels are proposed, this will need to be checked with the SAP assessment	**Psi of 0.05**

Air Leakage Testing		
Required	Air permeability testing should be carried out upon completion for this site. The developer should ensure that the new dwelling is tested to achieve an air permeability result no greater than 4.0	$m^3/h.m^2$ @ 50 Pa
		4.00

Building Services		
Ventilation	System 3: Centralised Whole House Mechanical Extract (Assumed: NIBE Fighter F470	**System 3: MEV (NIBE)**
Low Energy Lighting	All internal lighting will be low energy (100%)	**100%**
Part G Water Use	All dwellings will be designed to use no more than 105 litre of water per person per day	**<105l/person/day**

Heating	
Main Heating System	Heating will be provided via an all-in-one exhaust and supply air heat pump which provides heating, ventilation, heat recovery and hot water. Design Stage assumption: NIBE Fighter F470
Controls	Time and Temperature Zone Control Required to all Areas
Secondary Heating System	None
Room Heaters	None
Hot Water	Hot water served via mains system, with integral hot water cylinder. Assumed values: 150 litres with daily nominal loss of 1.5kWh/day

Renewables	
Solar Thermal	None
Photovoltaics	None

Other		
Overheating Risk	The air change rate calculation assumes that windows can be opened fully in warmer weather. The overheating calculation is based on openings with dark curtains/roller blinds, closed during daylight hours.	
	Total CO_2 emissions (Actual) $KgCO_2$/Annum	**1,860.80**
	CO_2 reduction from Part L 2013 benchmark figures (%)	**41.44%**
	SAP Rating	**C (80)**
Additional Notes	Any change in the assumed values could cause a Part L compliance failure. The SAP assessor should be consulted if any amendments are required	

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Design Stage Specification

The following sanitary ware schedule has been applied to the Part G Water Calculator, referenced from 'The Water Efficiency Calculator for New Dwellings'. The calculator was developed in accordance with the Government's National Calculation Methodology for assessing water efficiency in new dwellings

Sanitaryware			
Descirption	Type	Flow Rate (L/m)/Capacity(l)	Quantity
Basin Taps	TBC	3 Litres a minute	4
Bath		150 Litres to Overflow Capacity	1
Shower		9 Litres a minute	2
WC's		2.5 Litre Part Flush/ 5 Litre Full Flush	3
Washing Machine		Default (Currently 8.17 Litres per KG of Dry Load)	1
Dishwasher		Default (Currently 1.25 Litres per Place Setting)	1
Kitchen Taps		9 Litres a minute	1
Other			

Unit	Water Use/Person/Day	Part G Compliance	Planning Condition Requirements
Lagny Plumstone Road	**104.3**	**PASS**	**PASS**

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Assessor	L Pasifull		

Developers Declaration

Deviations from Design Stage	**Complete**
Should any of the information shown within this document alter at As Built Stage, please note the changes below so the SAP results can be updated. (Please note, an additional recalculation charge may be required to allow for the necessary changes. We will notify you of this before any works are carried out).	
Deviations from Design Stage:	

Air Leakage Tests	
Air pressure tests will be required. Please supply a copy of the dwellings air test report(s), carried out by a third party specialist. We also require confirmation of whether **ALL** units have been tested or if **SAMPLE** units have been tested	

Postal Addresses	
Before EPC's can be produced, we require official postage addresses, clearly showing how these reference to the plot numbers noted at design stage	

Final Documentation		
We require the following documents to ensure that the correct evidence has been provided. Failure to provide this information will result in the use of 'worst case' SAP defaults, leading to a poorer EPC rating and possible Part L1a compliance failure.		
Heating and Hot Water	We require a specification for the heating and hot water systems, including Make, Model and Seasonal Efficiency, along with confirmation that this has been installed into the development	
Ventilation	If a ventilation system has been specified (i.e. MEV/MVHR), please supply the installation certificates and specification of the system used	
Renewable Technologies	Please supply MCS certification or equivalent from your specialist installer	

Signature		
I/we hereby declare that this development has been constructed in accordance with the specification laid out in this document unless otherwise stated in the deviations sections. We confirm that the EPC's and associated Building Regulations documents be issued on this basis.		
Signed		
Name		Date