

SAP Specification Summary

Project: Alexander House, Reading

Stage: Design

29/06/2023

Energy Efficiency Targets: Compliance with 2021 Part L1, EPC rating C, New flats 19% CO2 reduction against B regs TER

	Thermal element	U-value (W/m ² K)	Source of U-value	Notes
Building fabric	Floor separating Flats from unheated car park	0.18	Recommended, required to achieve the targets	Build up TBC
	Upgraded existing external walls	0.30	Recommended, required to achieve the targets	38mm Gyproc thermaline PIR lining (shown on drawings) is sufficient only if the existing walls have at least 70mm mineral wool insulation in cavity
	External wall - 2nd floor	0.25	Recommended, required to achieve the targets	100mm cavity insulation should be Dritherm32 (instead of Dritherm 37 specified on drawings), Blockwork conductivity 0.18 W/mK or lower
	External wall - 3rd floor	0.18	Recommended, required to achieve the targets	Build up TBC
	Walls separating Unit 34 from unheated stair	0.25	Recommended, required to achieve the targets	100mm Dritherm32 in cavity
	Ceiling above Unit 34 and 36 bedroom below unheated roofspace	0.11	Recommended, required to achieve the targets	Build up TBC
	Floor below Unit 34 bedroom above unheated stair	0.20	Recommended, required to achieve the targets	Build up TBC
	All other walls, floors and roofs		Calculated from architect design drawings	
	Windows	1.3	Recommended, required to achieve the targets	Metal frame double glazed windows
	Thermal Bridging - PD flats		Recommended, required to achieve the targets	Psi-values equivalent to "accredited details", Insulated lintels at the 2nd floor (keystone hi-therm lintels or equivalent), Detailed thermal bridging calculations have to be carried out at detailed design stage; architect construction details will be required showing window abutment details and detailed junctions between walls/floors/roofs
	Thermal Bridging - New extension flats (2nd and 3rd floor)		Recommended, required to achieve the targets	Wall/roof junction Psi-value 0.15 W/mK, other Psi values compliant with SAP10.2 table R2, Detailed thermal bridging calculations have to be carried out at detailed design stage; architect construction details will be required showing window abutment details and detailed junctions between walls/floors/roofs

	Specification		Source of information
M&E	Ventilation - PD flats	Refer to separate xlsx sheet. In flats with MVHR, Supply and extract duct to and from exterior has to be insulated with 25mm insulation if less than 2m long or 50mm thickness for ducts over 2m long	Recommended, required to achieve the targets
	Ventilation - new extension flats (3rd floor)	MEV Vent Axia Multivent H	Assumed design stage specification
	Space heating and hot water - PD flats	Electric panel heaters with appliance thermostats and programmers; Direct electric cylinders OSO SX VIP 1-bedroom flats 120L, loss 0.96 kWh/day 2-bedroom flats 150L, loss 1.13 kWh/day	Assumed design stage specification
	Space heating and hot water - new extension flats (3rd floor)	Individual ASHP Mitsubishi Ecodan PUZ-WM60VAA or equivalent approved by SAP assessor, installed to MIS; radiators, flow temperature 55°C, time and temperature zone control Indirect cylinder Ecodan EHPT15X 150L	Assumed design stage specification

Showers	Flow rate 8 l/min or lower	Recommended, required to achieve the targets
Solar PV system	-	
Low energy lights	Lighting power density 2.3 W/m ² , lighting luminous efficacy 80 lm/W	Recommended, required to achieve the targets

	Specification	Source of information
Other	Air permeability rate in PD flats: refer to separate xlsx document	Recommended, required to achieve the targets
	Air permeability rate in new flats: 4 m ³ /h.m ²	Recommended, required to achieve the targets
	Photographic evidence has to be taken during construction in accordance with Appendix B of 2021 Part L1	Recommended, required to achieve the targets
	https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1133079/Approved_Document_L_Consevation_of_fuel_and_power_Volume_1_Dwellings_2021_edition_incorporating_2023_amendments.pdf	
	Communal corridors and stairs adjacent to PD flats have to be heated	