

<u>EXISTING Type/Style</u>	SAP	TER	DER	% Red in TER	DAP	MAP	EPC	PV Allocation
Block 1 Flat 1 - GF Flat EL/ML	93A	16.81	10.92	35.05	4.00	TBA	93A	2.75kWp SE facing on low pitch roof
Block 1 Flat 2 - GF Flat ML	94A	17.27	9.96	42.33	4.00	TBA	94A	2.75kWp SE facing on low pitch roof
Block 1 Flat 3 - FF Flat EL/ML	93A	14.40	5.75	60.06	4.00	TBA	93A	1.50kWp SE facing on low pitch roof
Block 1 Flat 4 - FF Flat ML	93A	14.62	6.05	58.61	4.00	TBA	93A	1.50kWp SE facing on low pitch roof
Block 1 Flat 5 - SF Flat EL/ML	93A	17.57	8.69	50.55	4.00	TBA	93A	2.00kWp SE facing on low pitch roof
Block 1 Flat 6 - SF Flat ML	93A	16.91	7.63	54.88	4.00	TBA	93A	2.00kWp SE facing on low pitch roof
Block 1 Flat 7 - GF ML	94A	17.27	9.96	42.33	4.00	TBA	94A	2.75kWp SE facing on low pitch roof
Block 1 Flat 8 - GF EL/ML	93A	16.81	10.92	35.05	4.00	TBA	93A	2.75kWp SE facing on low pitch roof
Block 1 Flat 9 - FF Flat ML	93A	14.62	6.05	58.61	4.00	TBA	93A	1.50Wp SE facing on low pitch roof
Block 1 Flat 10 - FF Flat EL/ML	93A	14.40	5.75	60.06	4.00	TBA	93A	1.50kWp SE facing on low pitch roof
Block 1 Flat 11 - SF Flat ML	93A	16.91	7.63	54.88	4.00	TBA	93A	2.00kWp SE facing on low pitch roof
Block 1 Flat 12 - SF Flat EL/ML	93A	17.57	8.69	50.55	4.00	TBA	93A	2.00kWp SE facing on low pitch roof
Block 2 Flat 1 - GF Flat EL/ML	93A	17.18	11.40	33.63	4.00	TBA	93A	2.75kWp SE facing on low pitch roof
Block 2 Flat 2 - GF Flat ML	94A	17.42	10.16	41.67	4.00	TBA	94A	2.75kWp SE facing on low pitch roof
Block 2 Flat 3 - FF Flat EL/ML	93A	14.76	6.20	57.98	4.00	TBA	93A	1.50kWp SE facing on low pitch roof
Block 2 Flat 4 - FF Flat ML	93A	14.81	6.28	57.59	4.00	TBA	93A	1.50kWp SE facing on low pitch roof
Block 2 Flat 5 - SF Flat EL/ML	93A	17.74	8.90	49.84	4.00	TBA	93A	2.00kWp SE facing on low pitch roof
Block 2 Flat 6 - SF Flat ML	93A	16.89	7.57	55.18	4.00	TBA	93A	2.00kWp SE facing on low pitch roof
Block 2 Flat 7 - GF ML	94A	17.42	10.16	41.67	4.00	TBA	94A	2.75kWp SE facing on low pitch roof
Block 2 Flat 8 - GF EL/ML	93A	17.18	11.40	33.63	4.00	TBA	93A	2.75kWp SE facing on low pitch roof
Block 2 Flat 9 - FF Flat ML	93A	14.81	6.28	57.59	4.00	TBA	93A	1.50kWp SE facing on low pitch roof
Block 2 Flat 10 - FF Flat EL/ML	93A	14.76	6.20	57.98	4.00	TBA	93A	1.50kWp SE facing on low pitch roof
Block 2 Flat 11 - SF Flat ML	93A	16.89	7.57	55.18	4.00	TBA	93A	2.00kWp SE facing on low pitch roof
Block 2 Flat 12 - SF Flat EL/ML	93A	17.74	8.90	49.84	4.00	TBA	93A	2.00kWp SE facing on low pitch roof
Block 3 Flat 1 - GF Flat EL/ML	93A	16.81	10.92	35.05	4.00	TBA	93A	2.75kWp SE facing on low pitch roof
Block 3 Flat 2 - GF Flat ML	94A	17.27	9.96	42.33	4.00	TBA	94A	2.75kWp SE facing on low pitch roof
Block 3 Flat 3 - FF Flat EL/ML	93A	14.40	5.75	60.06	4.00	TBA	93A	1.50kWp SE facing on low pitch roof
Block 3 Flat 4 - FF Flat ML	93A	14.62	6.05	58.61	4.00	TBA	93A	1.50kWp SE facing on low pitch roof
Block 3 Flat 5 - SF Flat EL/ML	93A	17.57	8.69	50.55	4.00	TBA	93A	2.00kWp SE facing on low pitch roof
Block 3 Flat 6 - SF Flat ML	93A	16.91	7.63	54.88	4.00	TBA	93A	2.00kWp SE facing on low pitch roof
Block 3 Flat 7 - GF ML	94A	17.27	9.96	42.33	4.00	TBA	94A	2.75kWp SE facing on low pitch roof

Block 3 Flat 8 - GF EL/ML	93A	16.81	10.92	35.05	4.00	TBA	93A	2.75kWp SE facing on low pitch roof
Block 3 Flat 9 - FF Flat ML	93A	14.62	6.05	58.61	4.00	TBA	93A	1.50kWp SE facing on low pitch roof
Block 3 Flat 10 - FF Flat EL/ML	93A	14.40	5.75	60.06	4.00	TBA	93A	1.50kWp SE facing on low pitch roof
Block 3 Flat 11 - SF Flat ML	93A	16.91	7.63	54.88	4.00	TBA	93A	2.00kWp SE facing on low pitch roof
Block 3 Flat 12 - SF Flat EL/ML	93A	17.57	8.69	50.55	4.00	TBA	93A	2.00kWp SE facing on low pitch roof
Block 4 Flat 1 - GF Flat EL/ML	93A	17.18	11.40	33.63	4.00	TBA	93A	2.75kWp SE facing on low pitch roof
Block 4 Flat 2 - GF Flat ML	94A	17.42	10.16	41.67	4.00	TBA	94A	2.75kWp SE facing on low pitch roof
Block 4 Flat 3 - FF Flat EL/ML	93A	14.76	6.20	57.98	4.00	TBA	93A	1.50kWp SE facing on low pitch roof
Block 4 Flat 4 - FF Flat ML	93A	14.81	6.28	57.59	4.00	TBA	93A	1.50kWp SE facing on low pitch roof
Block 4 Flat 5 - SF Flat EL/ML	93A	17.74	8.90	49.84	4.00	TBA	93A	2.00kWp SE facing on low pitch roof
Block 4 Flat 6 - SF Flat ML	93A	16.89	7.57	55.18	4.00	TBA	93A	2.00kWp SE facing on low pitch roof
Block 4 Flat 7 - GF ML	94A	17.42	10.16	41.67	4.00	TBA	94A	2.75kWp SE facing on low pitch roof
Block 4 Flat 8 - GF EL/ML	93A	17.18	11.40	33.63	4.00	TBA	93A	2.75kWp SE facing on low pitch roof
Block 4 Flat 9 - FF Flat ML	93A	14.81	6.28	57.59	4.00	TBA	93A	1.50kWp SE facing on low pitch roof
Block 4 Flat 10 - FF Flat EL/ML	93A	14.76	6.20	57.98	4.00	TBA	93A	1.50kWp SE facing on low pitch roof
Block 4 Flat 11 - SF Flat ML	93A	16.89	7.57	55.18	4.00	TBA	93A	2.00kWp SE facing on low pitch roof
Block 4 Flat 12 - SF Flat ML J	92A	17.18	7.77	54.77	4.00	TBA	92A	1.50kWp SE facing on low pitch roof
Block 5 Flat 1 - GF Flat EL/ML	93A	16.81	10.92	35.05	4.00	TBA	93A	2.75kWp SE facing on low pitch roof
Block 5 Flat 2 - GF Flat ML	94A	17.27	9.96	42.33	4.00	TBA	94A	2.75kWp SE facing on low pitch roof
Block 5 Flat 3 - FF Flat EL/ML	93A	14.40	5.75	60.06	4.00	TBA	93A	1.50kWp SE facing on low pitch roof
Block 5 Flat 4 - FF Flat ML	93A	14.62	6.05	58.61	4.00	TBA	93A	1.50kWp SE facing on low pitch roof
Block 5 Flat 5 - SF Flat EL/ML J	92A	18.25	9.21	49.53	4.00	TBA	92A	1.50kWp SE facing on low pitch roof
Block 5 Flat 6 - SF Flat ML	93A	16.91	7.60	55.06	4.00	TBA	93A	2.00kWp SE facing on low pitch roof
Block 5 Flat 7 - GF ML	94A	17.27	9.96	42.33	4.00	TBA	94A	2.75kWp SE facing on low pitch roof
Block 5 Flat 8 - GF EL/ML	93A	16.81	10.92	35.05	4.00	TBA	93A	2.75kWp SE facing on low pitch roof
Block 5 Flat 9 - FF Flat ML	93A	14.62	6.05	58.61	4.00	TBA	93A	1.50kWp SE facing on low pitch roof
Block 5 Flat 10 - FF Flat EL/ML	93A	14.40	5.75	60.06	4.00	TBA	93A	1.50kWp SE facing on low pitch roof
Block 5 Flat 11 - SF Flat ML	93A	16.91	7.63	54.88	4.00	TBA	93A	2.00kWp SE facing on low pitch roof
Block 5 Flat 12 - SF Flat EL/ML	94A	16.60	6.80	59.04	4.00	TBA	94A	2.00kWp SE facing on low pitch roof
Block 6 Flat 1 - GF Flat EL/ML	93A	17.18	11.40	33.63	4.00	TBA	93A	2.75kWp SE facing on low pitch roof
Block 6 Flat 2 - GF Flat ML	94A	17.42	10.16	41.67	4.00	TBA	94A	2.75kWp SE facing on low pitch roof
Block 6 Flat 3 - FF Flat EL/ML	93A	14.76	6.20	57.98	4.00	TBA	93A	1.50kWp SE facing on low pitch roof
Block 6 Flat 4 - FF Flat ML	93A	14.81	6.28	57.59	4.00	TBA	93A	1.50kWp SE facing on low pitch roof
Block 6 Flat 5 - SF Flat EL/ML J	92A	17.18	7.77	54.77	4.00	TBA	92A	1.50kWp SE facing on low pitch roof
Block 6 Flat 6 - SF Flat ML	93A	16.89	7.57	55.18	4.00	TBA	93A	2.00kWp SE facing on low pitch roof
Block 6 Flat 7 - GF ML	94A	17.42	10.16	41.67	4.00	TBA	94A	2.75kWp SE facing on low pitch roof
Block 6 Flat 8 - GF EL/ML	93A	17.18	11.40	33.63	4.00	TBA	93A	2.75kWp SE facing on low pitch roof
Block 6 Flat 9 - FF Flat ML	93A	14.81	6.28	57.59	4.00	TBA	93A	1.50kWp SE facing on low pitch roof
Block 6 Flat 10 - FF Flat EL/ML	93A	14.76	6.20	57.98	4.00	TBA	93A	1.50kWp SE facing on low pitch roof

Block 6 Flat 11 - SF Flat ML	93A	16.89	7.57	55.18	4.00	TBA	93A	2.00kWp SE facing on low pitch roof
Block 6 Flat 12 - SF Flat EL/ML	93A	17.74	8.90	49.84	4.00	TBA	93A	2.00kWp SE facing on low pitch roof

NEW BUILD Type/Style	SAP	TER	DER	% Red in TER	DAP	MAP	EPC	PV Allocation
Block 1 Type B GF EL North	92A	31.00	13.03	57.96	4.00	TBA	92A	2.00kWp SE facing on low pitch roof
Block 1 Type B GF EL South	92A	30.47	12.61	58.62	4.00	TBA	92A	2.00kWp SE facing on low pitch roof
Block 2 Type B GF EL North	92A	30.01	12.24	59.22	4.00	TBA	92A	2.00kWp SE facing on low pitch roof
Block 2 Type B GF EL South	92A	29.52	11.84	59.89	4.00	TBA	92A	2.00kWp SE facing on low pitch roof
Block 3 Type B GF EL North	92A	31.00	13.03	57.96	4.00	TBA	92A	2.00kWp SE facing on low pitch roof
Block 3 Type B GF EL South	92A	30.47	12.61	58.62	4.00	TBA	92a	2.00kWp SE facing on low pitch roof
Block 4 Type B GF EL North	92A	30.01	12.24	59.22	4.00	TBA	92A	2.00kWp SE facing on low pitch roof
Block 4 Type B GF EL South	92A	29.52	11.84	59.89	4.00	TBA	92A	2.00kWp SE facing on low pitch roof
Block 5 Type B GF EL North	92A	31.00	13.03	57.96	4.00	TBA	92A	2.00kWp SE facing on low pitch roof
Block 6 Type B GF EL North	92A	30.01	12.24	59.22	4.00	TBA	92A	2.00kWp SE facing on low pitch roof
Block 1 Type C FF EL North	92A	32.41	10.70	66.99	4.00	TBA	92A	3.00kWp SE facing on low pitch roof
Block 1 Type C FF EL South	92A	31.98	10.43	67.39	4.00	TBA	92A	3.00kWp SE facing on low pitch roof
Block 2 Type C FF EL North	92A	32.03	10.46	67.35	4.00	TBA	92A	3.00kWp SE facing on low pitch roof
Block 2 Type C FF EL South	93A	31.61	10.20	67.73	4.00	TBA	93A	3.00kWp SE facing on low pitch roof
Block 3 Type C FF EL North	92A	32.41	10.70	66.99	4.00	TBA	92A	3.00kWp SE facing on low pitch roof
Block 3 Type C FF EL South	92A	31.98	10.43	67.39	4.00	TBA	92A	3.00kWp SE facing on low pitch roof
Block 4 Type C FF EL North	92A	32.03	10.46	67.35	4.00	TBA	92A	3.00kWp SE facing on low pitch roof
Block 4 Type C FF EL South	93A	31.61	10.20	67.73	4.00	TBA	93A	3.00kWp SE facing on low pitch roof
Block 5 Type C FF EL North	94A	30.09	8.42	72.02	4.00	TBA	94A	3.00kWp SE facing on low pitch roof
Block 6 Type C FF EL North	94A	29.72	8.17	72.51	4.00	TBA	94A	3.00kWp SE facing on low pitch roof
Block 1 Type D GF ML	92A	29.52	12.71	56.94	4.00	TBA	92A	1.75kWp SW facing on low pitch roof
Block 1 Type D FF ML	92A	26.23	12.97	50.55	4.00	TBA	92A	1.50kWp SW facing on low pitch roof
Block 1 Type D SF ML	93A	28.94	11.66	59.71	4.00	TBA	93A	2.00kWp SW facing on low pitch roof
Block 2 Type D GF ML	92A	29.52	12.71	56.94	4.00	TBA	92A	1.75kWp SW facing on low pitch roof
Block 2 Type D FF ML	92A	26.23	12.97	50.55	4.00	TBA	92A	1.50kWp SW facing on low pitch roof
Block 2 Type D SF ML	93A	28.94	11.66	59.71	4.00	TBA	93A	2.00kWp SW facing on low pitch roof
Block 3 Type D GF ML	92A	29.52	12.71	56.94	4.00	TBA	92A	1.75kWp SW facing on low pitch roof
Block 3 Type D FF ML	92A	26.23	12.97	50.55	4.00	TBA	92A	1.50kWp SW facing on low pitch roof
Block 3 Type D SF ML	93A	28.94	11.66	59.71	4.00	TBA	93A	2.00kWp SW facing on low pitch roof
Block 4 Type D GF ML	92A	29.52	12.71	56.94	4.00	TBA	92A	1.75kWp SW facing on low pitch roof
Block 4 Type D FF ML	92A	26.23	12.97	50.55	4.00	TBA	92A	1.50kWp SW facing on low pitch roof
Block 4 Type D SF ML	93A	28.94	11.66	59.71	4.00	TBA	93A	2.00kWp SW facing on low pitch roof
Block 5 Type E SF EL	92A	32.13	10.90	66.08	4.00	TBA	92A	2.50kWp SE facing on low pitch roof

Block 6 Type E SF EL	93A	31.72	10.65	66.43	4.00	TBA	93A	2.50kWp SE facing on low pitch roof
Block 4 Type F SF EL	92A	24.96	8.64	65.38	4.00	TBA	92A	4.00kWp SE facing on low pitch roof
Block 7 Type G GF EL West	93A	27.64	10.72	61.22	4.00	TBA	93A	2.00kWp SE facing on low pitch roof
Block 7 Type G GF EL East	92A	26.60	11.57	56.50	4.00	TBA	92A	1.75kWp SE facing on low pitch roof
Block 7 Type G FF EL West	92A	24.31	10.77	55.70	4.00	TBA	92A	1.75kWp SE facing on low pitch roof
Block 7 Type G FF EL East	92A	23.39	11.65	50.19	4.00	TBA	92A	1.50kWp SE facing on low pitch roof
Block 7 Type G SF EL West	92A	24.31	10.77	55.7	4.00	TBA	92A	1.75kWp SE facing on low pitch roof
Block 7 Type G SF EL East	92A	23.39	11.75	49.77	4.00	TBA	92A	1.50kWp SE facing on low pitch roof
Block 7 Type G TF EL West	92A	26.39	10.84	58.92	4.00	TBA	92A	2.00kWp SE facing on low pitch roof
Block 7 Type G TF EL East	93A	25.52	10.06	60.59	4.00	TBA	93A	2.00kWp SE facing on low pitch roof
Block 7 Type G TPF EL West	93A	28.98	10.19	64.84	4.00	TBA	93A	2.50kWp SE facing on low pitch roof
Block 7 Type G TPF EL East	92A	28.06	11.24	59.94	4.00	TBA	92A	2.25kWp SE facing on low pitch roof
Block 7 Type H GF ML West	92A	25.92	12.32	52.47	4.00	TBA	92A	1.50kWp SE facing on low pitch roof
Block 7 Type H GF ML East	92A	25.92	12.32	52.47	4.00	TBA	92A	1.50kWp SE facing on low pitch roof
Block 7 Type H FF ML West	92A	22.81	11.99	47.44	4.00	TBA	92A	1.25kWp SE facing on low pitch roof
Block 7 Type H FF ML East	92A	22.81	11.99	47.44	4.00	TBA	92A	1.25kWp SE facing on low pitch roof
Block 7 Type H SF ML West	92A	22.81	11.99	47.44	4.00	TBA	92A	1.25kWp SE facing on low pitch roof
Block 7 Type H SF ML East	92A	22.81	11.99	47.44	4.00	TBA	92A	1.25kWp SE facing on low pitch roof
Block 7 Type H TF ML West	92A	22.81	11.99	47.44	4.00	TBA	92A	1.25kWp SE facing on low pitch roof
Block 7 Type H TF ML East	92A	22.81	11.99	47.44	4.00	TBA	92A	1.25kWp SE facing on low pitch roof
Block 7 Type H TPF ML West	92A	25.89	11.96	53.81	4.00	TBA	92A	1.75kWp SE facing on low pitch roof
Block 7 Type H TPF ML East	92A	25.89	11.96	53.81	4.00	TBA	92A	1.75kWp SE facing on low pitch roof

NOTES

Note: L1A 2014 Building Regs.

1. Specification developed and summarized below.
2. No secondary heating appliance.
3. 100% low energy lights.
4. Current total PV allocation for whole site is 261.5kWp (approx 1775m²). PV allocations MUST be wired to individual flats c/w inverter in order to achieve the EPC ratings shown.
5. Boiler, cylinder, PV & ASHP models/sizes used in initial SAPs by energy assessor are estimates only. All final selections MUST be made by the relevant consultant/designer and the details confirmed back to the energy assessor to allow the SAPs to be updated as required.
6. Air permeability = As listed in table. DAP = Design Air Permeability. MAP = Measured Air Permeability.
7. Ventilation = Local NuAire DMEV extract fans (Approved Document Part F system 3).
8. Heated communal stairs/corridors.

New Build

9. U-Values used: Ground floor = 0.15-0.17W/m²K, (100mm Celotex GA4000 PIR insulation), External wall = 0.21W/m²K (lightweight frame structure - details TBC), Pitched void roof = 0.10W/m²K (400mm mineral wool quilt), Flat roof = 0.15W/m²K (details TBC), Windows/Doors = 1.4W/m²K.

10. Heating via Mitsubishi Ecodan QUHZ-W40VA air source heat pump (55°C flow water setting assumed) c/w single zone central heating via radiators, programmer, bypass and TRVs.

11. Hot water provided via 200 litre indirect HW cylinder (1.63kWhr/day standing loss assumed).

12. Accredited Construction Details used for Thermal Bridging & Air Tightness.

Existing

13. Existing Wall = $0.18\text{W/m}^2\text{K}$ (200mm EWI insulation), Existing ground floor = $0.70\text{--}0.81\text{W/m}^2\text{K}$ (not thermally upgraded),
Pitched void roof = $0.13\text{W/m}^2\text{K}$ (300mm mineral wool quilt), Windows/Doors = $1.4\text{W/m}^2\text{K}$.

14. Boiler = Worcester Greenstar 30Si Compact gas combi with single zone central heating via radiators, programmer, room thermostat and TRVs.

15. SAP default value used for Thermal Bridging & Air Tightness (as existing details unknown).

NHBC Bldg Control Officer: NA

NHBC Site Ref: NA

Site Manager:

SAP Calcs & EPCs: Building Energy Performance Ltd (Kevin O'Donnell) Tel: 029 20851111 Fax: 029 20851522 Mob: 07949 481191

