

## 07 / ABOUT THE COST MODEL

The cost model below is for a medium-quality build-to-rent scheme located in central Manchester. The scheme is a multi-block project that comprises two residential towers (one of 29 storey and one of 23 storeys) that together provide about 480 units. The two towers are connected at ground level with a single-storey amenity space to accommodate a gym, a cafe, a residents' lounge and meeting rooms, as well as a basement that reflects the full footprint of the superstructure above. The gross internal

area of the scheme is 43,081m<sup>2</sup> (463,715ft<sup>2</sup>) and the net internal area 31,146m<sup>2</sup> (335,255ft<sup>2</sup>).

All costs in the model - for both materials and labour - are current at the second quarter of 2019 and are based on a Manchester location, for a project using a design and build arrangement.

The cost model excludes demolitions, any main contractor's first-stage or pre-construction fees and contractor's post-novation design fees. The estimate also excludes: furniture, fittings and

equipment (FF&E); operations and services equipment (OS&E); section 106/278 agreements and VAT. The amenity space is included in the costs for the shell and core but not covered in terms of fit-out.

The purpose of the cost model is to reflect construction cost only and development cost. The rates may need to be adjusted to account for specification, site conditions and constraints, procurement route and programme.

## 08 / COST MODEL FOR A BTR SCHEME

	Element cost (£)	Cost/m <sup>2</sup> GIFA	% total cost		Element cost (£)	Cost/m <sup>2</sup> GIFA	% total cost
<b>SHELL AND CORE</b>				<b>Roof</b>	<b>680,000</b>	<b>15.78</b>	<b>1.0</b>
<b>Substructure and basement box</b>	<b>4,886,000</b>	<b>113.42</b>	<b>7.1</b>	Pre-stressed roof slabs, 300mm thick incl waterproofing system (1,880m <sup>2</sup> @ £280/m <sup>2</sup> )	530,000		
Excavate and remove materials offsite; to depth of 500mm (5,675m <sup>3</sup> @ £40/m <sup>3</sup> )	227,000			Allowance for green roof	75,000		
Removal of unknown obstructions	25,000			Allowance for cleaning cradle and davits	25,000		
De-watering works	10,000			Allowance for lift overruns	50,000		
Piling mat (1,420m <sup>3</sup> @ £30/m <sup>3</sup> )	43,000			<b>Stairs</b>	<b>446,000</b>	<b>10.35</b>	<b>0.7</b>
Ground beams; 600x600mm deep incl blinding (2,235m <sup>3</sup> @ £385/m <sup>3</sup> )	475,000			Precast reinforced concrete stairs; powder-coated metal balustrades and handrails (57nr @ £7,500)	428,000		
Allowance for lift pits (7nr @ £6,000/nr)	42,000			Allowance for sundry platforms to plantrooms	10,000		
Ring beam to sheet pile wall (225m @ £200/m)	45,000			Allowance for cat ladders to access roofs (3nr @ £2,500)	8,000		
Piles, 700mm diameter, 12m long (5,000m @ £165/m)	825,000			<b>External walls, windows, doors and balconies</b>	<b>17,849,000</b>	<b>414.32</b>	<b>26.0</b>
Pile caps, rebar @ 250kg/m <sup>3</sup> , 1,300mm thick (2,316m <sup>3</sup> @ £505/m <sup>3</sup> )	1,160,000			Precast concrete panels, corners and transoms with cut-brick face, including 115mm insulation (14,304m <sup>2</sup> @ £820/m <sup>2</sup> )	11,730,000		
Mobilise piling rig	45,000			Unitised windows fixed and sealed between brick panels with opening light frame-less joints (8,255m <sup>2</sup> @ £725/m <sup>2</sup> )	5,985,000		
Pile testing	35,000			Facade to lift overrun (144m <sup>2</sup> @ £95/m <sup>2</sup> )	14,000		
Sheet piles incl trimming tops; (2,250m <sup>2</sup> @ £195/m <sup>2</sup> )	449,000			Revolving door in glazed curtain wall system at level 0	25,000		
Mobilise sheet piling rig	15,000			Allowance for external doors	75,000		
Removal of spoil (2,358m <sup>3</sup> @ £30/m <sup>3</sup> )	71,000			Roller shutter doors	20,000		
Allowance for removal of hazardous spoil @ 10% (245m <sup>3</sup> @ £370/m <sup>3</sup> )	91,000			<b>Internal walls, partitions and doors</b>	<b>2,021,000</b>	<b>46.91</b>	<b>2.9</b>
Allowance for basement slab, 600mm thick (1,700m <sup>2</sup> @ £160/m <sup>2</sup> )	272,000			Apartment entrance doors incl ironmongery (480nr @ £700/nr)	336,000		
Allowance for car park ramp	60,000			Fire doors, single, incl ironmongery (60nr @ £950/nr)	55,000		
Waterproofing basement walls/slab (775m <sup>2</sup> @ £37/m <sup>2</sup> )	29,000			Allowance for doors generally to all other areas	240,000		
Reinforced concrete walls; cross walls incl 300mm-thick rebar (920m <sup>2</sup> @ £270/m <sup>2</sup> )	250,000			Communal areas, toilet partitions, cubicles (6nr @ £560/nr)	3,000		
Columns, 350mm x 1,000mm x 3m (110nr @ £1,000/nr)	110,000			Allowance for partitions/drylining to landlord areas	115,000		
Upper ground slab, pre-stressed (1,700m <sup>2</sup> @ £185/m <sup>2</sup> )	315,000			Party walls: plasterboard partitions 225mm-thick, separating walls to ground floor (10,294m <sup>2</sup> @ £115/m <sup>2</sup> )	1,184,000		
Allowance for underslab drainage (1,700m <sup>2</sup> @ £35/m <sup>2</sup> )	60,000			Allowance for pattresses within walls and ceilings	28,000		
Allowance for tower crane base	75,000			Allowance for glazed, demountable partitions to office spaces, including doors	60,000		
<b>Frame and upper floors</b>	<b>12,165,000</b>	<b>282.38</b>	<b>17.8</b>	<b>Floor finishes</b>	<b>882,000</b>	<b>20.47</b>	<b>1.3</b>
Reinforced concrete frame; comprising columns, core walls and beams (42,045m <sup>2</sup> @ £120/m <sup>2</sup> )	5,050,000			Raised timber floor to landlords areas (13,030m <sup>2</sup> @ £35/m <sup>2</sup> )	456,000		
Pre-stressed floor slabs, 225mm thick (42,045m <sup>2</sup> @ £155/m <sup>2</sup> )	6,517,000			Allowance for screed to basement parking areas	32,000		
Steel trimming to floor (45 tonnes @ £3,360/tonne)	151,000			Carpet to landlord areas (5,535m <sup>2</sup> @ £35/m <sup>2</sup> )	194,000		
Precast connections at basement slab	215,000			Vinyl to storage areas (670m <sup>2</sup> @ £45/m <sup>2</sup> )	30,000		
Allowance for secondary steel structures	100,000			Skirting (7,800m @ £15/m)	117,000		
Floor grates to risers (215nr @ £620/nr)	132,000						

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	Element cost (£)	Cost/m <sup>2</sup> GIFA	% total cost		Element cost (£)	Cost/m <sup>2</sup> GIFA	% total cost
Allowance for inset entrance mats	5,000			Variable refrigerant flow systems	195,000		
Vinyl floor finishes to gym (150m <sup>2</sup> @ £55/m <sup>2</sup> )	8,000			Local cooling units (comms room)	20,000		
Allowance for all ceramic tiles in lobbies, kitchens, WCs	40,000			Water treatment for low-temperature hot water systems	24,000		
<b>Wall finishes</b>	<b>789,000</b>	<b>18.31</b>	<b>1.2</b>				
Ceramic tiles for WCs (1,020m <sup>2</sup> @ £45/m <sup>2</sup> )	50,000			<b>Ventilation installations</b>	<b>823,000</b>	<b>19.10</b>	<b>1.2</b>
General: tape, joint and paint finish (20,090m <sup>2</sup> @ £10/m <sup>2</sup> )	201,000			General ventilation	198,000		
Allowance for skirtings (705nr @ £15/m)	538,000			Smoke ventilation	625,000		
<b>Ceiling finishes</b>	<b>636,000</b>	<b>14.76</b>	<b>0.9</b>	<b>Electrical installations</b>	<b>3,287,000</b>	<b>76.30</b>	<b>4.8</b>
Allowance for plasterboard suspended ceiling (13,030m <sup>2</sup> @ £45/m <sup>2</sup> )	586,000			Low-voltage distribution	813,000		
Extra over allowance for moisture-resistant ceiling to chute room	10,000			Distribution to apartments	512,000		
Allowance for access hatches (125nr @ £265/nr)	33,000			Generator systems	455,000		
Upstands to glazed perimeter ceiling (145m @ £45/m)	7,000			Life safety installations, automatic transfer switches, cabling	148,000		
<b>Fittings, furnishings and equipment</b>	<b>334,000</b>	<b>7.75</b>	<b>0.5</b>	Small power distribution	243,000		
Allowance for reception desk	25,000			General lighting systems	646,000		
Feature wall to rear of reception desk, incl storage	10,000			Earthing and bonding	99,000		
Freestanding feature walls behind reception sofas (2nr @ £7,500/item)	15,000			Containment	276,000		
Allowance for a food and beverage unit	10,000			External lighting	52,000		
Allowance for various feature joinery elements	15,000			Testing of electrical installations	40,000		
Allowance for signage	30,000			Sound system	9,000		
Bicycle rack banks (7nr @ £25,000/nr)	175,000			Induction loops	3,000		
Post boxes (480nr @ £75/nr)	36,000			<b>Gas installations</b>	<b>108,000</b>	<b>2.51</b>	<b>0.2</b>
Kitchenette to serve function room	5,000			Natural gas	108,000		
Kitchen areas to ground floor staff canteen	8,000			<b>Protective installations</b>	<b>1,361,000</b>	<b>31.59</b>	<b>2.0</b>
Kitchen allowance to bar area	5,000			Residential sprinklers	492,000		
<b>General builder's work</b>	<b>30,000</b>	<b>0.70</b>	<b>0.0</b>	Basement sprinklers	303,000		
Allowance for builder's work in connection	30,000			Wet risers	416,000		
<b>Sanitaryware</b>	<b>5,000</b>	<b>0.12</b>	<b>0.0</b>	Lightning protection and electronic surge protection	101,000		
Allowance for all sanitaryware	5,000			Firestopping	49,000		
<b>Disposal installations</b>	<b>1,182,000</b>	<b>27.44</b>	<b>1.7</b>	<b>Communication installations</b>	<b>1,836,000</b>	<b>42.62</b>	<b>2.7</b>
Rainwater drainage	123,000			Data distribution system	9,000		
Above-ground drainage	1,059,000			Building energy management system (BEMS)	549,000		
<b>Water installations</b>	<b>1,377,000</b>	<b>31.96</b>	<b>2.0</b>	TV distribution systems	356,000		
Domestic cold water	1,331,000			Fibre installations to apartments	256,000		
Green roof irrigation	10,000			CCTV system	56,000		
Water treatment for water services	36,000			Access control and intercom	207,000		
<b>Heat source</b>	<b>816,000</b>	<b>18.94</b>	<b>1.2</b>	Intruder detection system	3,000		
Boilers	375,000			Disabled refuge	6,000		
Flues to roof	280,000			Fire detection and alarms systems	394,000		
CHP	161,000			<b>Lift installation</b>	<b>1,477,000</b>	<b>34.28</b>	<b>2.2</b>
<b>Space heating and air treatment</b>	<b>1,522,000</b>	<b>35.33</b>	<b>2.2</b>	Passenger lifts from ground floor to level 29 (6nr @ 240,000/nr)	1,440,000		
Low-temperature hot water	1,283,000			Passenger lift from basement to ground floor (1nr)	37,000		
				<b>MEP builders' work</b>	<b>275,000</b>	<b>6.38</b>	<b>0.4</b>
				Allowance for MEP builder's work	275,000		
				<b>MEP preliminaries and contingencies</b>	<b>13,744,000</b>	<b>319.03</b>	<b>20.1</b>
				Preliminaries (14%)	7,670,000		
				Overheads and profit (4.5%)	2,811,000		
				Contingency / risk transfer (5%)	3,263,000		
				<b>TOTAL SHELL &amp; CORE WORKS</b>	<b>68,563,000</b>	<b>1,591.50</b>	<b>100.0</b>

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	Element cost (£)	Cost/m <sup>2</sup> GIFA	% total cost		Element cost (£)	Cost/m <sup>2</sup> GIFA	% total cost
<b>RESIDENTIAL FIT-OUT</b>							
<b>Internal walls and doors</b>	<b>5,910,000</b>	<b>137.18</b>	<b>17.5</b>	<b>Sanitaryware</b>	<b>788,000</b>	<b>18.29</b>	<b>2.3</b>
Single internal apartment doors, incl ironmongery (1,955nr @ £600/nr)	1,173,000			Allowance for all sanitaryware	788,000		
Double internal apartment doors, incl ironmongery (625nr @ £1,200/nr)	750,000			<b>Disposal installations</b>	<b>360,000</b>	<b>8.36</b>	<b>1.1</b>
Access doors to corridor risers (10nr @ £200/nr)	2,000			Above-ground drainage	360,000		
Allowance for double cupboard doors (1,030nr @ £900/nr)	929,000			<b>Water installations</b>	<b>975,000</b>	<b>22.63</b>	<b>2.9</b>
Partitions: plasterboard stud partition to cores /external walls (69,060m <sup>2</sup> @ £40/m <sup>2</sup> )	2,762,000			Domestic hot and cold water	975,000		
Partitions: stud plasterboard (2,620m <sup>2</sup> @ £75/m <sup>2</sup> )	197,000			<b>Heat source</b>	<b>1,100,000</b>	<b>25.53</b>	<b>3.3</b>
Extra over; moisture-resistant plasterboard to bathrooms (14,360m <sup>2</sup> @ £7/m <sup>2</sup> )	101,000			Heat interface unit to apartments	1,100,000		
<b>Floor finishes</b>	<b>3,050,000</b>	<b>70.8</b>	<b>9.0</b>	<b>Space heating and air treatment</b>	<b>1,640,000</b>	<b>38.07</b>	<b>4.9</b>
Allowance for raised timber floors (30,052m <sup>2</sup> @ £35/m <sup>2</sup> )	1,052,000			Underfloor heating to apartments	1,640,000		
Good-quality timber floor finishes to living/dining/reception areas (10,372m <sup>2</sup> @ £55/m <sup>2</sup> )	570,000			<b>Ventilation installations</b>	<b>1,295,000</b>	<b>30.06</b>	<b>3.8</b>
Carpets to bedrooms (10,430m <sup>2</sup> @ £35/m <sup>2</sup> )	365,000			Mechanical ventilation heat recovery to apartments	1,295,000		
Ceramic tiles to bathrooms (9,250m <sup>2</sup> @ £50/m <sup>2</sup> )	463,000			<b>Electrical installations</b>	<b>2,240,000</b>	<b>52.00</b>	<b>6.6</b>
Skirtings (40,240m @ £15m)	604,000			Electrical installations, consumer unit, power and lighting installaton	2,240,000		
<b>Wall finishes</b>	<b>2,060,000</b>	<b>47.82</b>	<b>6.1</b>	<b>Protective installations</b>	<b>465,000</b>	<b>10.79</b>	<b>1.4</b>
Bathroom; 100% coverage ceramic tiles (17,835m <sup>2</sup> @ £45/m <sup>2</sup> )	803,000			Sprinklers to apartments	465,000		
Allowance for splashback to kitchen (490 items @ £510/item)	249,000			<b>Communication installations</b>	<b>800,000</b>	<b>18.57</b>	<b>2.4</b>
General; tape and joint and paint finish (88,660m <sup>2</sup> @ £10/m <sup>2</sup> )	887,000			Fire alarms, data and TV installations to apartments	800,000		
Allowance for mastic (480nr @ £250/nr)	120,000			<b>Special installations</b>	<b>100,000</b>	<b>2.32</b>	<b>0.3</b>
<b>Ceiling finishes</b>	<b>1,400,000</b>	<b>32.50</b>	<b>4.1</b>	Controls to apartments	100,000		
Allowance for plasterboarding suspended ceiling (30,052m <sup>2</sup> @ £35/m <sup>2</sup> )	1,052,000			<b>Builders' work</b>	<b>195,000</b>	<b>4.53</b>	<b>0.6</b>
Extra over for moisture-resistant ceiling to bathrooms and en-suites (9,250m <sup>2</sup> @ £6/m <sup>2</sup> )	56,000			Allowance for MEP builder's work in connection	195,000		
Allowance for access hatches (720nr @ £400/nr)	288,000			<b>Preliminaries and contingencies</b>	<b>6,699,000</b>	<b>155.50</b>	<b>19.8</b>
<b>Joinery</b>	<b>600,000</b>	<b>13.93</b>	<b>1.8</b>	Preliminaries (14%)	3,777,000		
Allowance for double wardrobe doors only (890nr @ £595/nr)	530,000			Overheads and profit (4.5%)	1,298,000		
Proprietary shelving to service room (200nr @ £340/nr)	68,000			Contingency/risk transfer (5%)	1,352,000		
<b>Fittings, furnishings and equipment</b>	<b>4,000,000</b>	<b>92.85</b>	<b>11.8</b>	<b>TOTAL RESIDENTIAL FIT-OUT</b>	<b>33,762,000</b>	<b>783.69</b>	<b>100.00</b>
Mirrors within apartments (490nr @ £75/nr)	37,000			<b>EXTERNAL WORKS AND UTILITIES</b>			
Door numbering (490nr @ £10/nr)	5,000			<b>External works and incoming services</b>	<b>1,380,000</b>	<b>32.03</b>	<b>100.0</b>
Directional signage blocks	20,000			Allowance for external works generally incl drainage, finishes, street furniture and feature lighting	550,000		
Fitted kitchens for 1-bed apartments: wall and base units; white goods; (145nr @ £7,500/nr)	1,088,000			Allowance for connection to existing sewer network	25,000		
Fitted kitchens for 2-bed apartments; wall and base units; white goods (335nr @ £8,500/nr)	2,848,000			Civil works associated with incoming supplies	50,000		
<b>General builder's work</b>	<b>85,000</b>	<b>1.97</b>	<b>0.3</b>	Allowance for substations and connections	500,000		
Allowance for general builder's work	85,000			Allowance for gas booster and connections	80,000		
				Allowance for water connections	75,000		
				Allowance for drainage connections	75,000		
				Allowance for data pits and ducts	25,000		
				<b>TOTAL EXTERNAL WORKS AND UTILITIES</b>	<b>1,380,000</b>	<b>32.03</b>	<b>100.00</b>
				<b>TOTAL CONSTRUCTION COST</b>	<b>103,673,000</b>	<b>2,406</b>	