

COST ESTIMATES FOR RCBC

1. The following is a breakdown of the cost estimates for the RCBC for EHS. In this breakdown, the list has been divided into logical subsystems and all items expected to cost more than £10,000 are separately identified.

The sub-division into mechanical and electrical components is to allow the application of the price revision formula. The estimates have been revised to be valid on 15 February 1977.

The numbers identifying individual items are identical with those contained in the detailed list of components in Appendix 1A of the Rutherford Laboratory's offer.

<u>Section No.</u>	<u>Title</u>	<u>Cost Estimate</u>	
		<u>Mechanical</u>	<u>Electrical</u>
		£	£
1.	CHAMBER AND MAIN VACUUM ASSEMBLIES		
1.1	<u>Chamber assembly (excluding windows and piston-bellows assembly)</u>	138,701	-
	Including:	£	
1.1	Chamber body(inc.HXS)	60,160	
1.3	Window gasket(inc.1 spare)	12,480	
1.4	Window flange	10,088	
1.5	Optical side hydrogen shield	17,566	
1.7	Chamber support	13,083	
1.11	<u>Vacuum tank assembly (excluding windows)</u>	64,038	-
	Including:		
1.21.1	End plates(optics)	10,868	
1.21.3	End plates(exp)	21,164	
1.21.4	Centre section	10,452	
1.21.5	End sections(x 2)	19,994	
1.111	<u>Windows</u>	64,542	-
	Including:		
1.2	Optical window	55,120	
1.1V	<u>Radiation shields and superinsulation</u>	15,600	-
1.1V	<u>Instrumentation and controls</u>	8,528	3,296
1.1V	<u>Miscellaneous</u>	2,600	-
	Totals	294,089	3,296
	<u>Total Section Cost Estimate</u>	<u>£297,305</u>	

<u>Section No.</u>	<u>Title</u>	<u>Cost Estimate</u>	
		<u>Mechanical</u> £	<u>Electrical</u> £
<b>2. OPTICAL SYSTEM</b>			
11.1	<u>Main cameras</u>	55,536	7,210
	Including:		
		£	
2.3	Film gates and wind-on system(x4)	17,056	
2.4	Camera backs (x4)	22,880	
2.5	Cassettes(x10)	10,400	
11.11	<u>Data system</u>	-	9,888
11.111	<u>Illumination system</u>	5,408	6,283
11.114	<u>Miscellaneous</u>	2,600	-
	Totals	63,544	23,381
	<u>Total Section Cost Estimate</u>		<u>£86,925</u>
<b>3. CHAMBER TEMPERATURE CONTROL</b>			
111.1	<u>Valve vessel</u>	17,680	-
	Including:		
3.1	Refrigeration control valve box (incl. valves)	11,440	
111.11	<u>Instrumentation</u>	12,480	16,480
	Including:		
3.3	Flow control actuators (x6)	16,630	
3.4	Temperature sensors (x14)	10,300	
	Totals	30,160	16,480
	<u>Total Section Cost Estimate</u>		<u>£46,640</u>
<b>4. EXPANSION SYSTEM</b>			
IV.1	<u>Piston and bellows assembly (x2) + 3 spare bellows</u>	-	-
IV.11	<u>Hydraulic actuating system</u>		
	Including:		
4.3	Main valve block(2 valves)	15,600	
4.4	Pilot valves (x2 + 2)	10,400	
IV.111	<u>Instrumentation</u>	-	7,674
IV.114	<u>Miscellaneous</u>	520	2,575
	Totals	46,436	12,052
	<u>Total Section Cost Estimate</u>		<u>£58,488</u>

<u>Section No.</u>	<u>Title</u>	<u>Cost Estimate</u>	
		<u>Mechanical</u>	<u>Electrical</u>
		£	£
5.	VACUUM PUMPING SYSTEMS		
V.I	<u>Vacuum pumping modules</u>	21,800	8,137
V.II	<u>Miscellaneous</u>	<u>3,120</u>	<u>3,502</u>
	Totals	24,920	11,639
	<u>Total Section Cost Estimate</u>	<u>£36,559</u>	
6.	ACCESSORIES FOR THE CONTROL AND MONITORING SYSTEM		
VI.I	<u>Special interfacing</u>	-	10,300
VI.II	<u>Miscellaneous</u>	-	7,498
	<u>Total Section Cost Estimate</u>	<u>£17,798</u>	
7.	MECHANICAL HANDLING AND SPECIAL JIGS		
VII.I	<u>Handling equipment</u>	11,960	-
VII.II	<u>Supports etc.</u>	8,840	-
VII.III	<u>Miscellaneous</u>	8,320	-
	<u>Total Section Cost Estimate</u>	<u>£29,120</u>	
8.	IRON SUPPORT STRUCTURE		
	<u>Total Section Cost Estimate</u>	<u>£78,000</u>	
9.	TRANSPORTATION TO CERN		
	<u>Total Section Cost Estimate</u>	<u>£18,200</u>	
10.	MISCELLANEOUS		
	<u>Total Section Cost Estimate</u>	<u>£ 1,040</u>	
	<u>GRAND TOTAL COST</u>	<u>£670,075</u>	

2. The above estimates are composed from information from various sources, as follows:

2.1	RL estimates department	£265,936
2.2	Manufacturers' budget prices or catalogue prices	£122,828
2.3	Our own project team estimates	£165,797
2.4	CERN estimates	£115,514

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