QUANTITY TAKE-OFF

Assignment 1

CONSTRUCTION TECHNIQUES (CTE442)

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Table summary:

In the initial table, I counted and labeled the various beams. I computed the cumulative length of these beams and approximated the volume of concrete needed for them. In the case of beam *6 (TYPE 400*500)*, I was unable to locate its length in the *S2* table. Consequently, I referred to the S3 table, where I found the lengths of the beams, as indicated in table 1 below. Similarly, for beam *7 (TYPE 400*600)*, I assumed there were two beams and assigned lengths of *5 and 1.5* respectively, based on the provided figure.

In the second table, I listed four distinct steel joists and determined their total length and quantity. Utilizing this data, I calculated the combined weight of the joists, excluding joist 4 due to insufficient information provided in the figure. Consequently, the information regarding joist 4 remains designated as "NA."

For the final table, I followed the same procedures as in Table One to estimate the mass of steel required for the beams. Here, I referenced drawing *S3* for beam *types W460 * 67* and *W200 * 27*, each with three different beam lengths: *4.01, 4.085, and 4.745*. Additionally, I made assumptions for two different beams, *W200 * 27 and W310 * 29*, estimating their weights to be *216 kg* and *232 kg* respectively. With all this data, I calculated the total mass of steel to be *62,342.19 kg*.

Question 1

		m^2	m		m	m^3
	Beam Type	Cross-Section	Length of beam	No of beams	total length	total volume
B1	600 * 650	0.39	11	12	132	51.48
B1	600 * 650	0.39	12	18	216	84.24
B2	600 * 800	0.48	8	18	144	69.12
B3	600 * 900	0.54	11	2	22	11.88
B4	600 *900	0.54	14	2	28	15.12
B5	600 *900	0.54	8.1	2	16.2	8.748
B6 s3	400 * 500	0.2	4.01	2	8.02	1.604
B6 s3	400 * 500	0.2	4.085	1	4.085	0.817
B7 assume	400 * 600	0.24	5	1	5	1.2
B7 assume	400 * 600	0.24	1.5	1	1.5	0.36
B7	450 * 650	0.24	2.855	1	2.855	0.6852
B7	450 * 650	0.24	4.745	1	4.745	1.1388
∑						246.393

Question 2

	Joist Type	depth	weight(kg/m)	joist length	No of joists	Total length(m)	weight(kgs)
J1	600 * 12	600	12	12	20	240	2880
J1	600 * 12	600	12	11	12	132	1584
J2	700 * 15	700	15	14	3	42	630
J3	550 * 10	550	10	11	6	66	660
J4	NA	NA	NA	12	6	72	NA
∑ (Excluding J4)							5754

Question 3

	Beam type	weight	no of beams	Length	Total length(m)	Total weight(kgs)
	W460 * 67	67	7	12	84	5628
	W460 * 67	67	8	11	88	5896
s3	W460 * 67	67	3	9.145	27.435	1838.145
	W610 * 140	140	6	8	48	6720
	W610 * 140	140	1	12	12	1680
	W610 * 140	140	2	8.1	16.2	2268
	W610 * 155	155	16	8	128	19840
	W610 * 84	84	11	11	121	10164
	W610 * 84	84	1	14	14	1176

	W610 * 84	84	4	12	48	4032
	W530 * 82	82	2	12	24	1968
s3	W200 * 27	27	2	4.01	8.02	216.54
s3	W200 * 27	27	2	4.085	8.17	220.59
s3	W200 * 27	27	1	4.745	4.745	128.115
	W200 * 27	27	1	4.4	4.4	118.8
assume	W200 * 27	27	2	4	8	216
assume	W310 * 29	29	2	4	8	232
∑						62342.19

Summary: Throughout this assignment, I have learned to categorize various beams and joists based on their differing lengths and quantities. I have gained proficiency in observing drawings and incorporating their information into tables. Furthermore, I have developed the skill of making assumptions for data that may not have been explicitly provided. This process has encouraged me to exert additional effort in comprehending drawings more thoroughly. Overall, this assignment has prepared me for future work in this field.