Sheridan | Architecture

# Exercise 12: Office/Warehouse roof steel quantity take-off

Structural Steel Framing

CADD12384

a. Extracting the data
b. Sorting by Steel members and elements
c. Adding column headers
d. Adding formulas
e. Adding the Misc. steel estimate
f. Calculating the deck

# Contents of this presentation

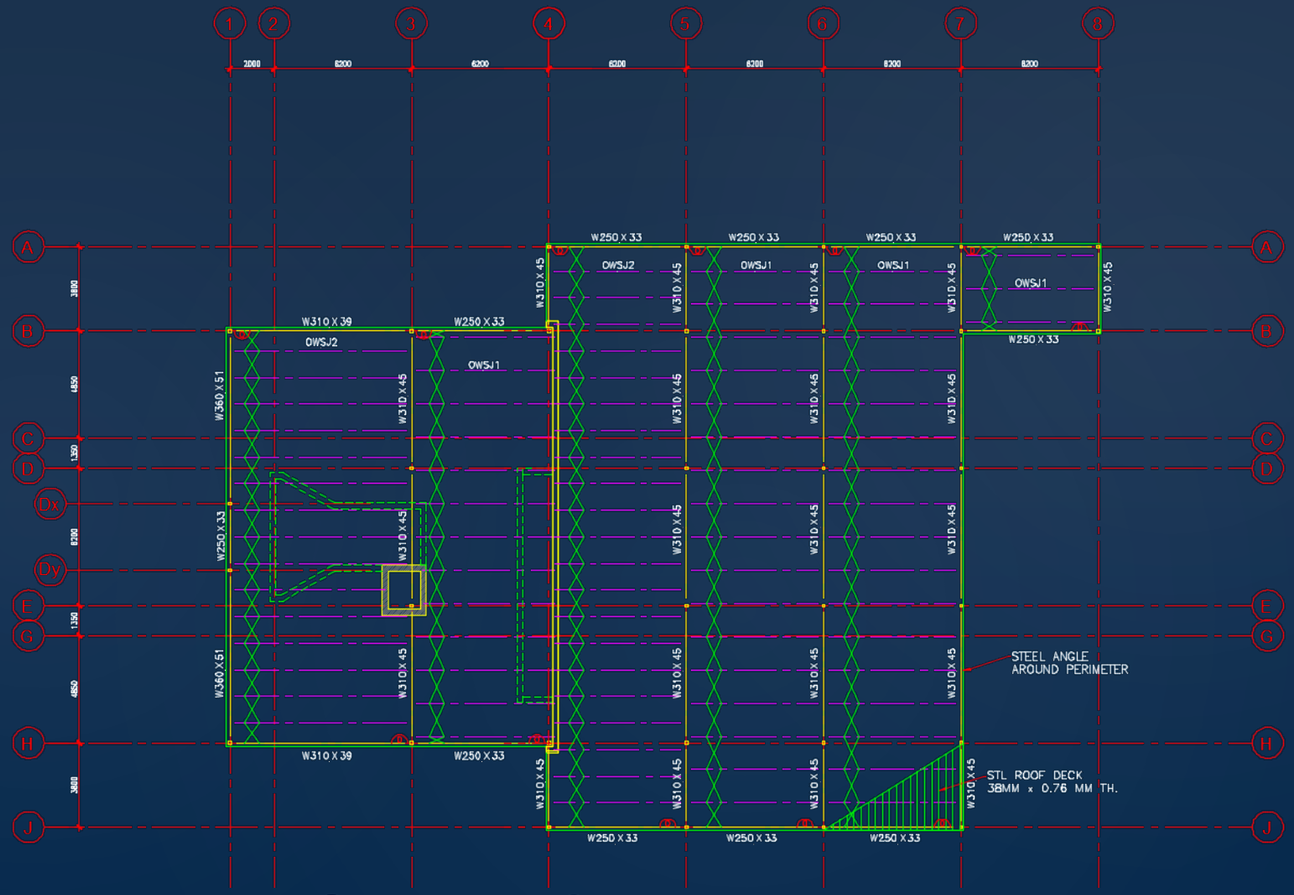
# Warning

- You MUST hand in exercise 12 as a zip file with all the necessary files included.
- Your extracted data will be checked against the exercise 12 data in the assembled drawing – it must match.
- Do not copy the numbers from this presentation – except for the joist linear weight and steel deck weight.
- If you do not hand in the exercise12 files, the data extraction (dxe) template file, and the final excel file, this exercise will not be marked.

# Warning again

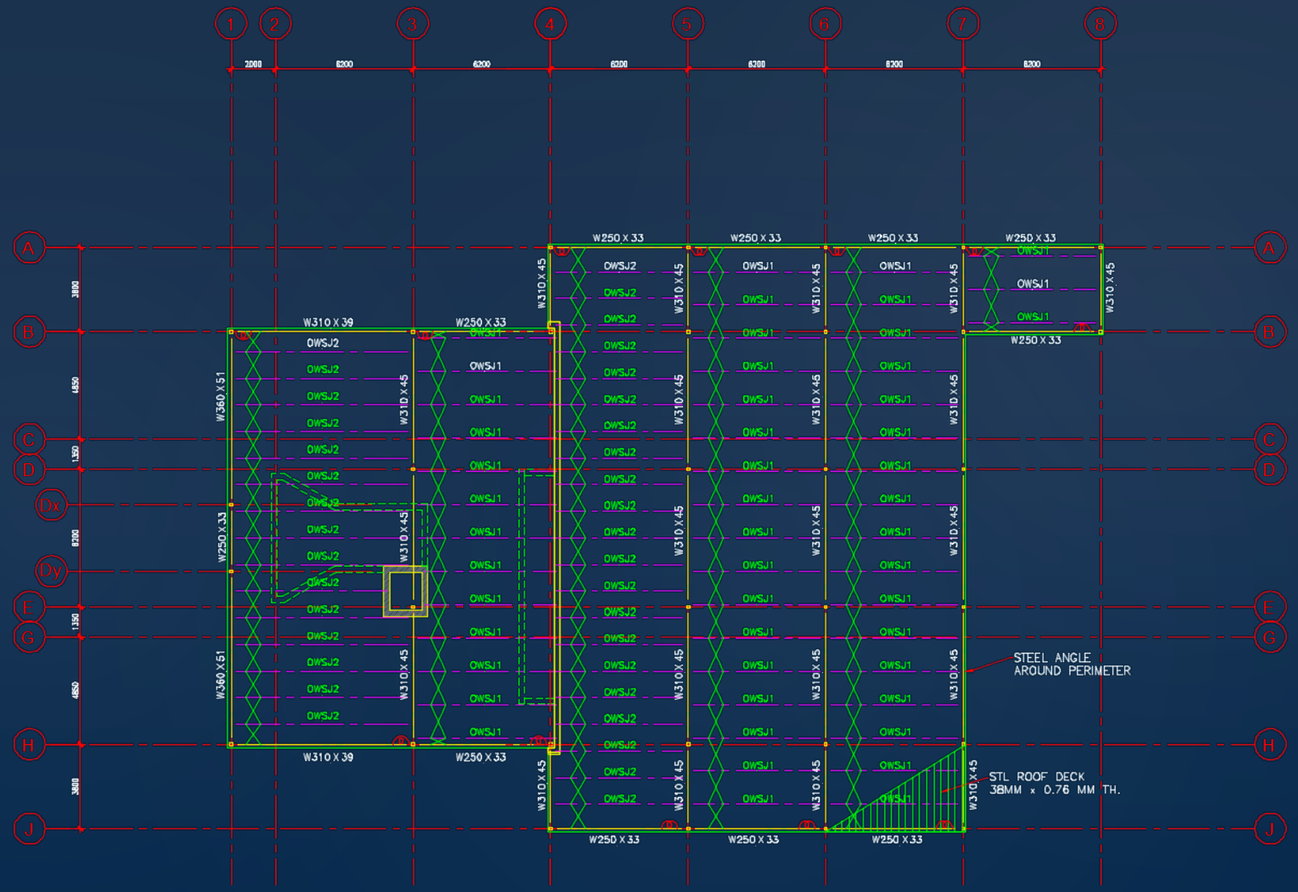
- You MUST hand in exercise 12 as a zip file with all the necessary files included.
- Your extracted data will be checked against the exercise 12 data in the assembled drawing – it must match.
- Do not copy the numbers from this presentation – except for the joist linear weight and steel deck weight.
- If you do not hand in the exercise12 files, the data extraction (dxe) template file, and the final excel file, this exercise will not be marked.

- The completed task 7  (ready for plotting) is shown.



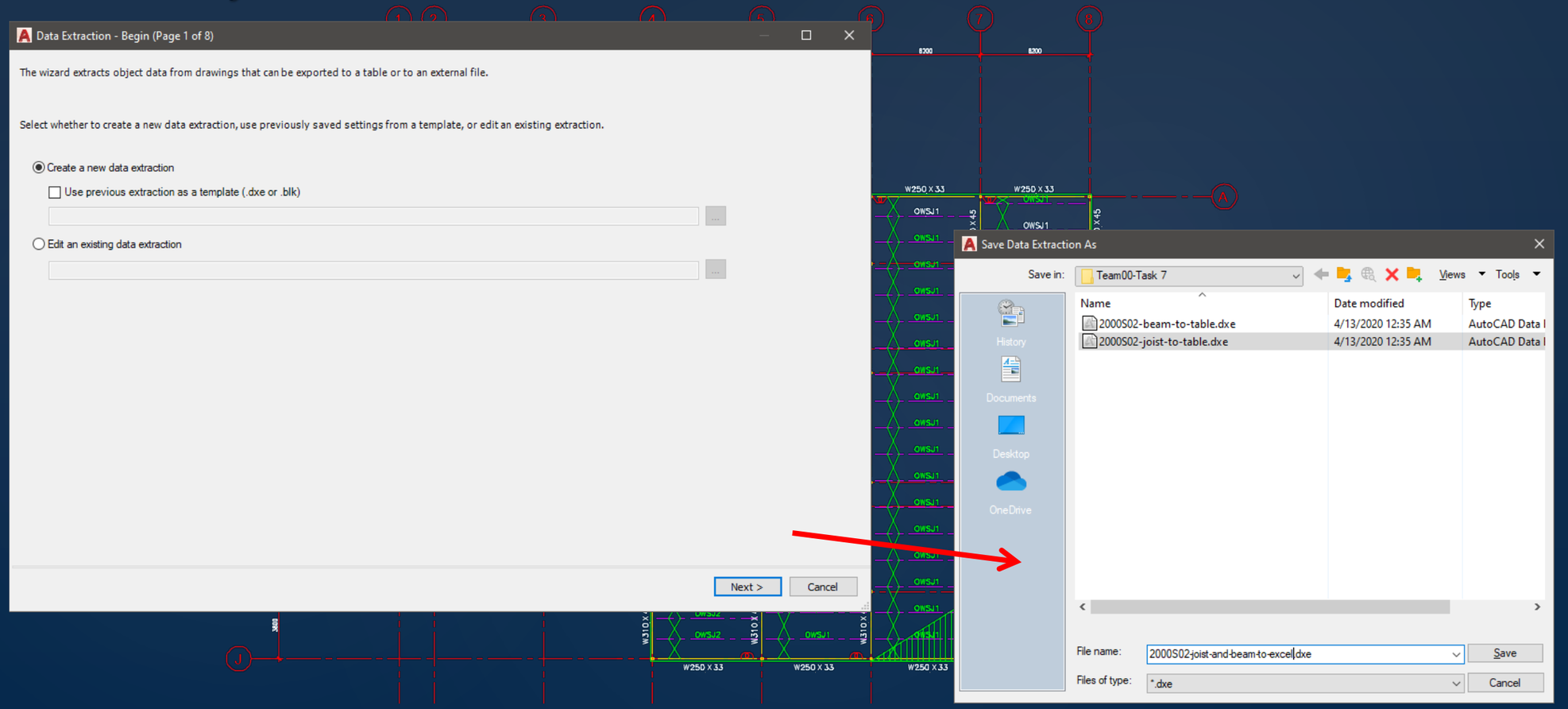

# Extracting the data

- Make sure that all the layers containing attributes or blocks are NOT frozen.



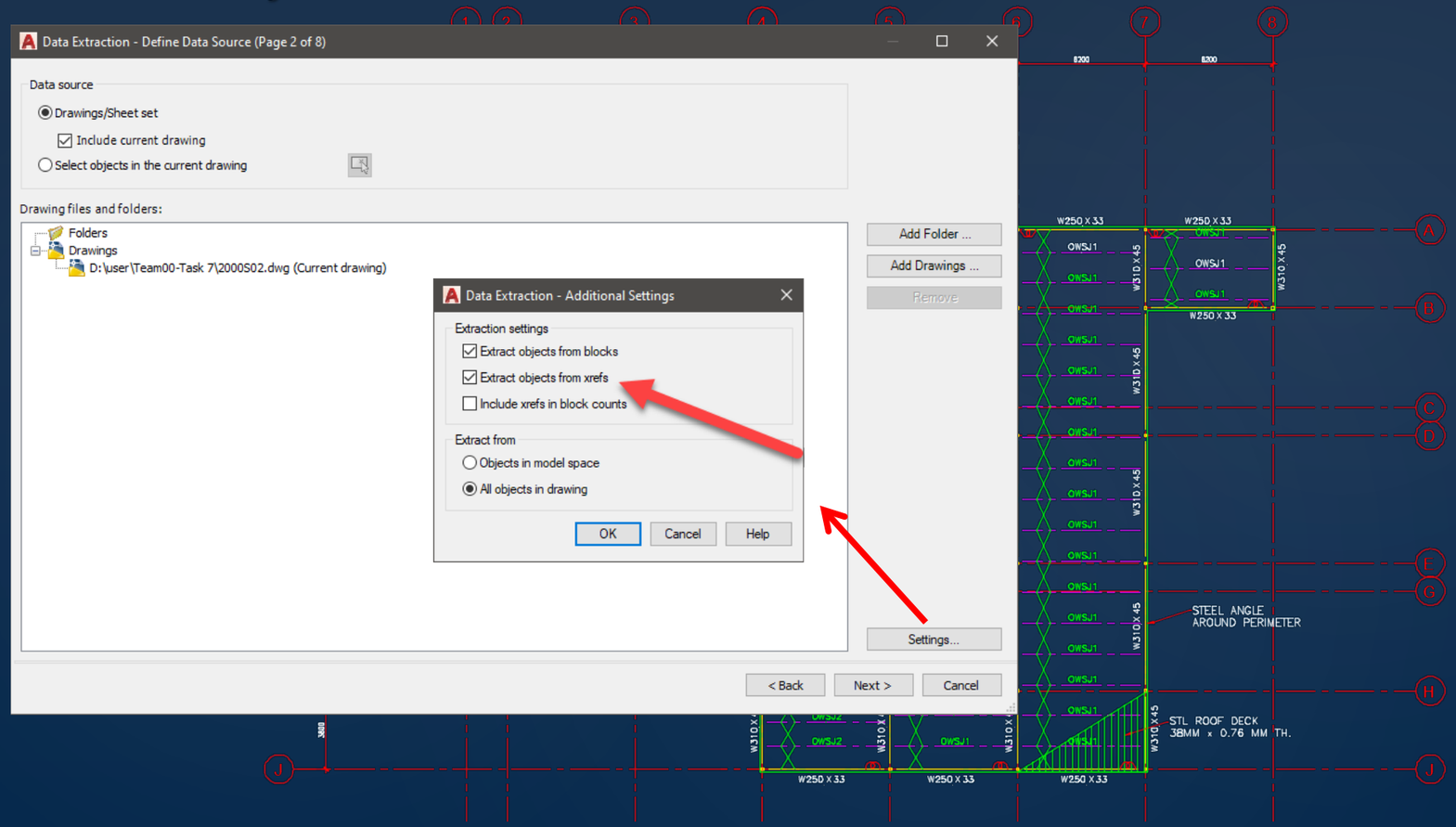

# Extracting the data

- Using the dataextraction command, extract the beam and joist data.



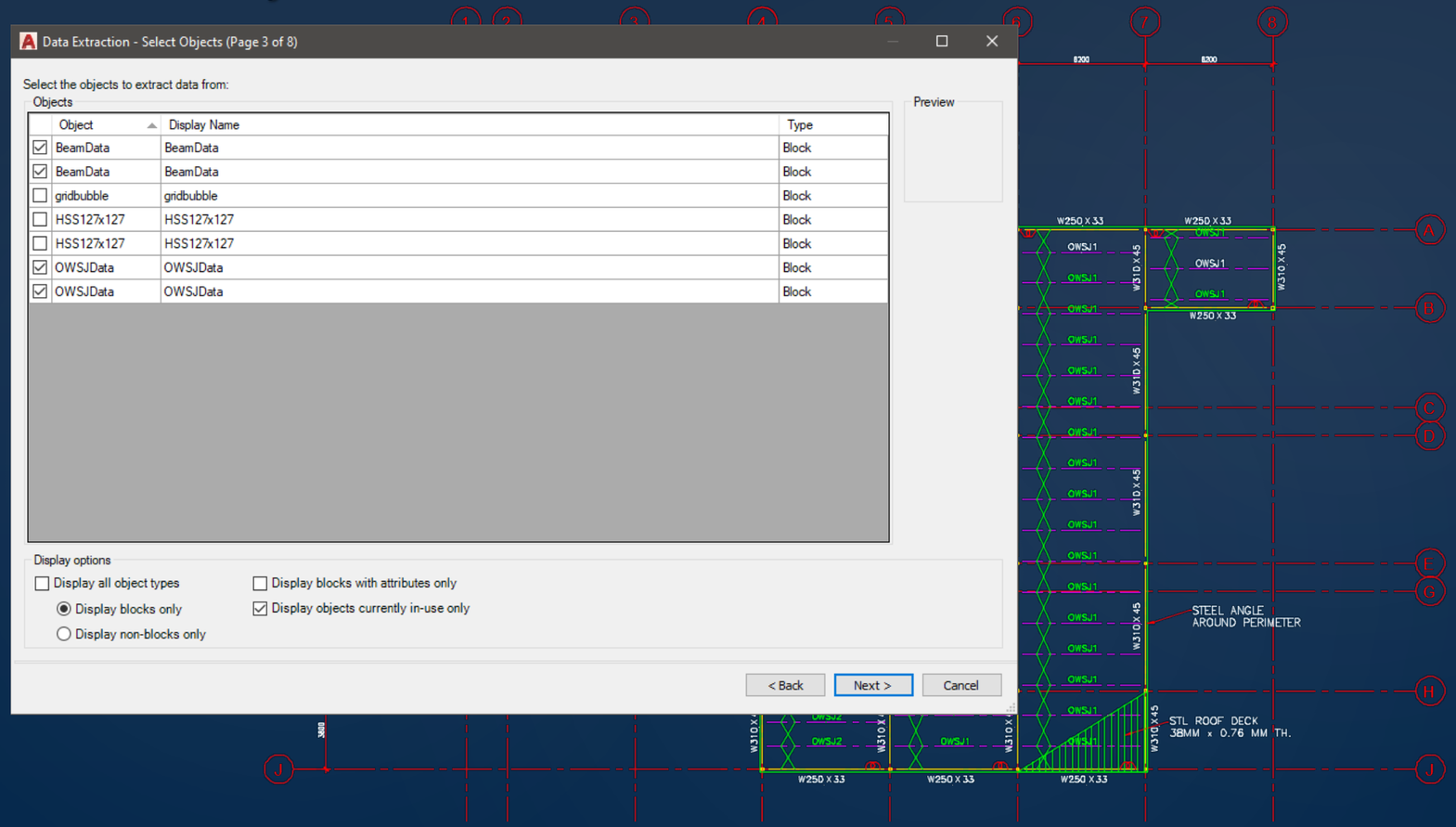

# Extracting the data

- Using the dataextraction command, extract the beam and joist data.



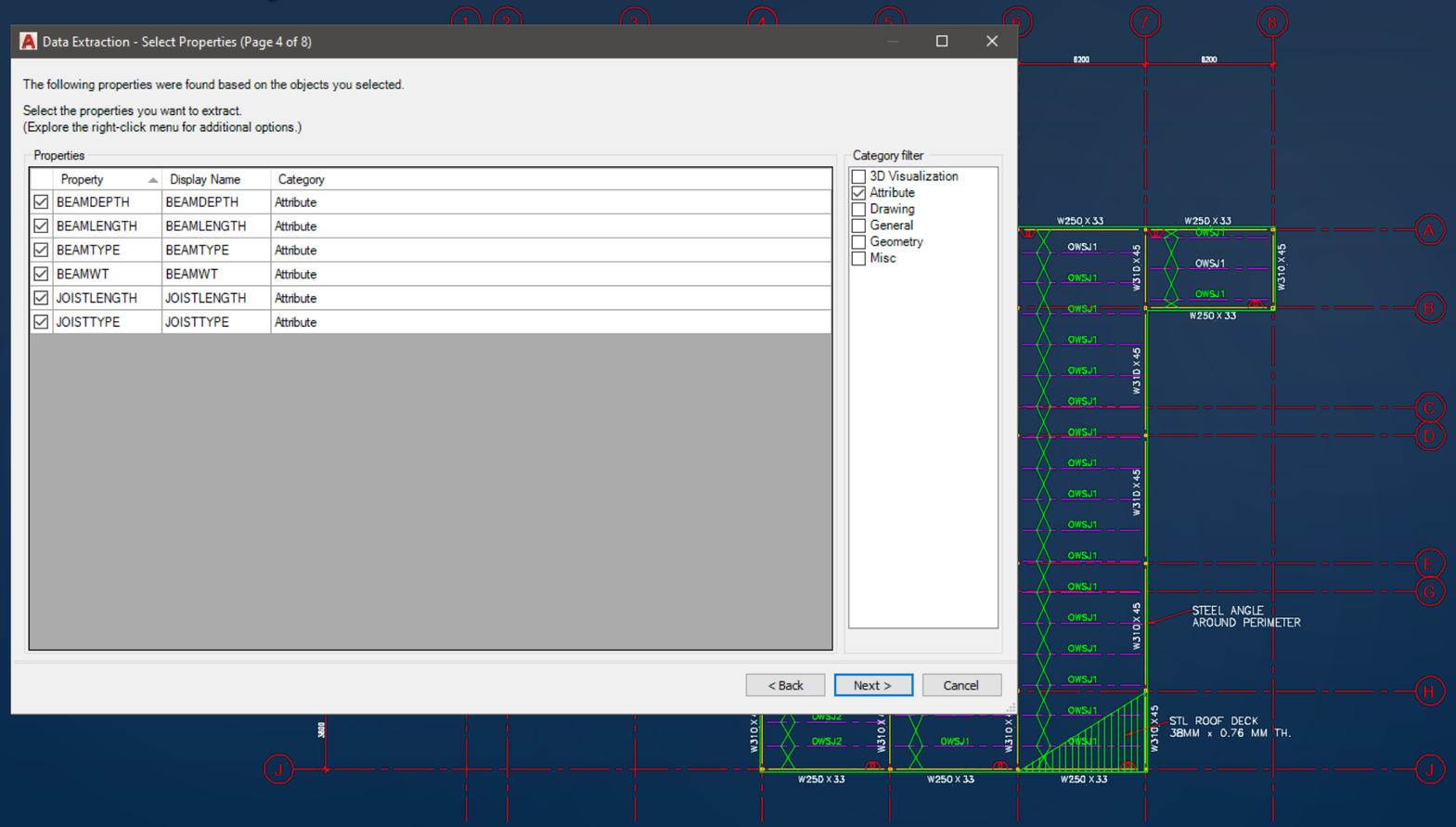

# Extracting the data

- Using the dataextraction command, extract the beam and joist data.



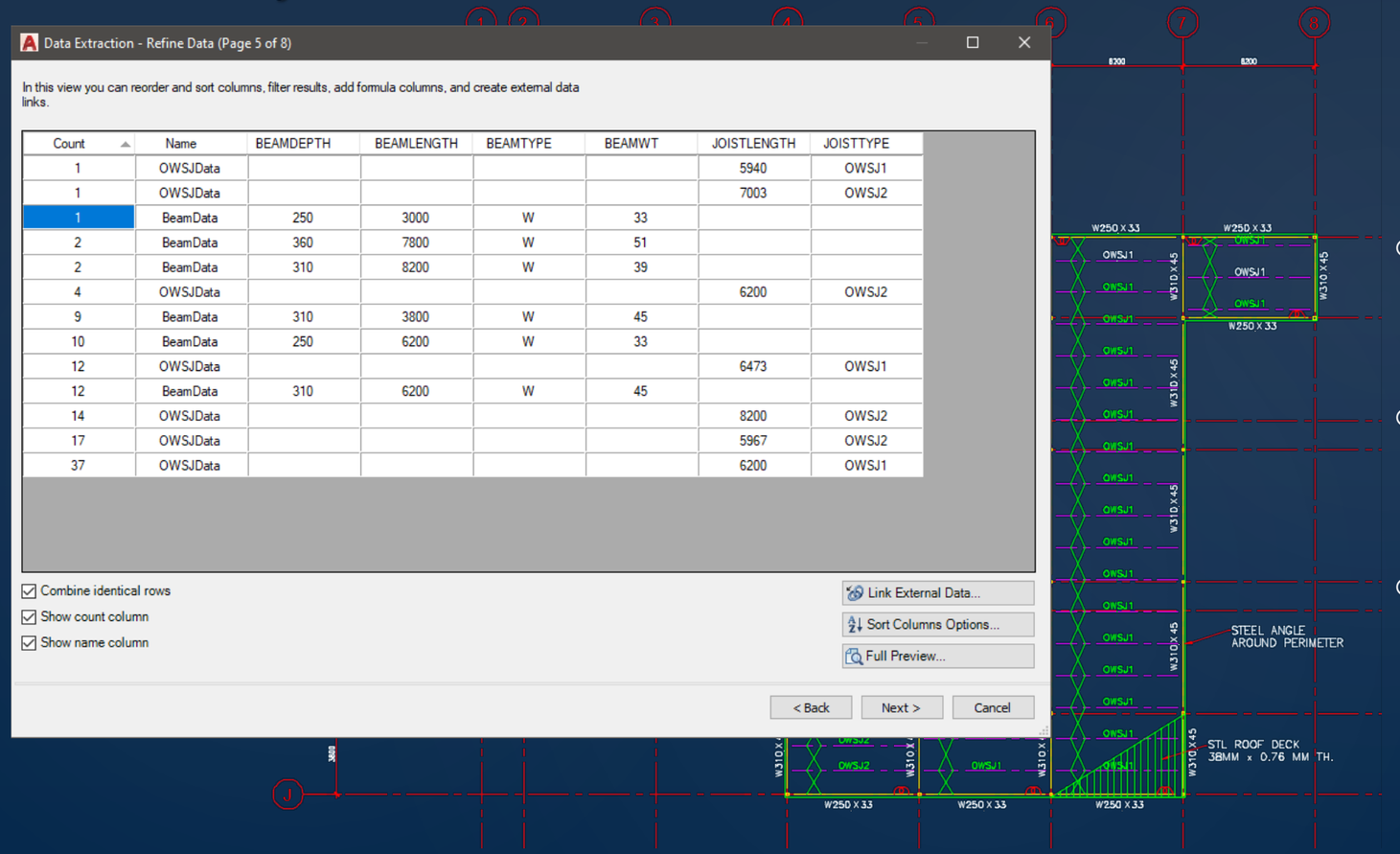

# Extracting the data

- Using the dataextraction command, extract the beam and joist data.




# Extracting the data

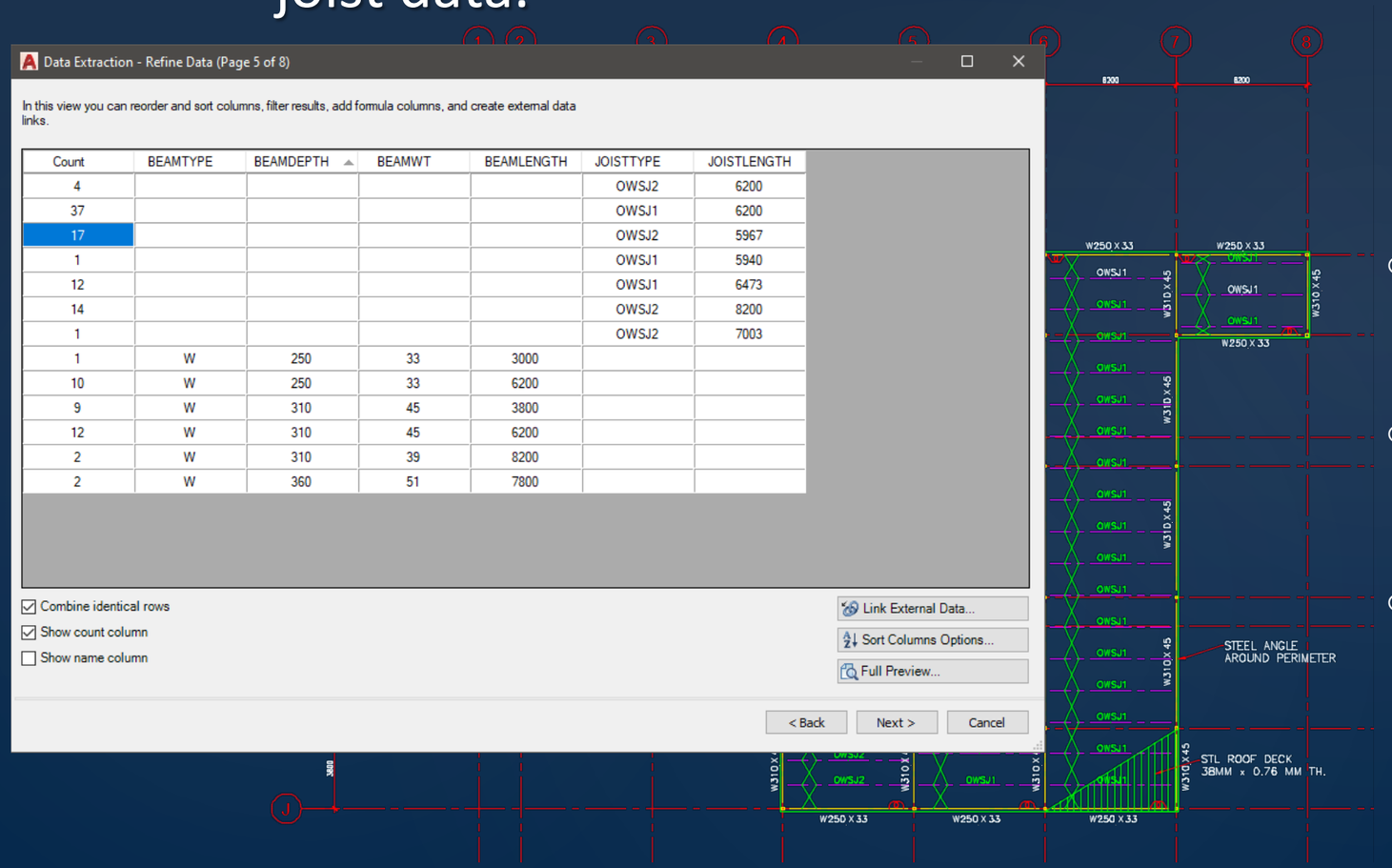
- Using the dataextraction command, extract the beam and joist data.




- Remove the name column.
- Rearrange the columns.
- Sort by beamdepth

# Extracting the data

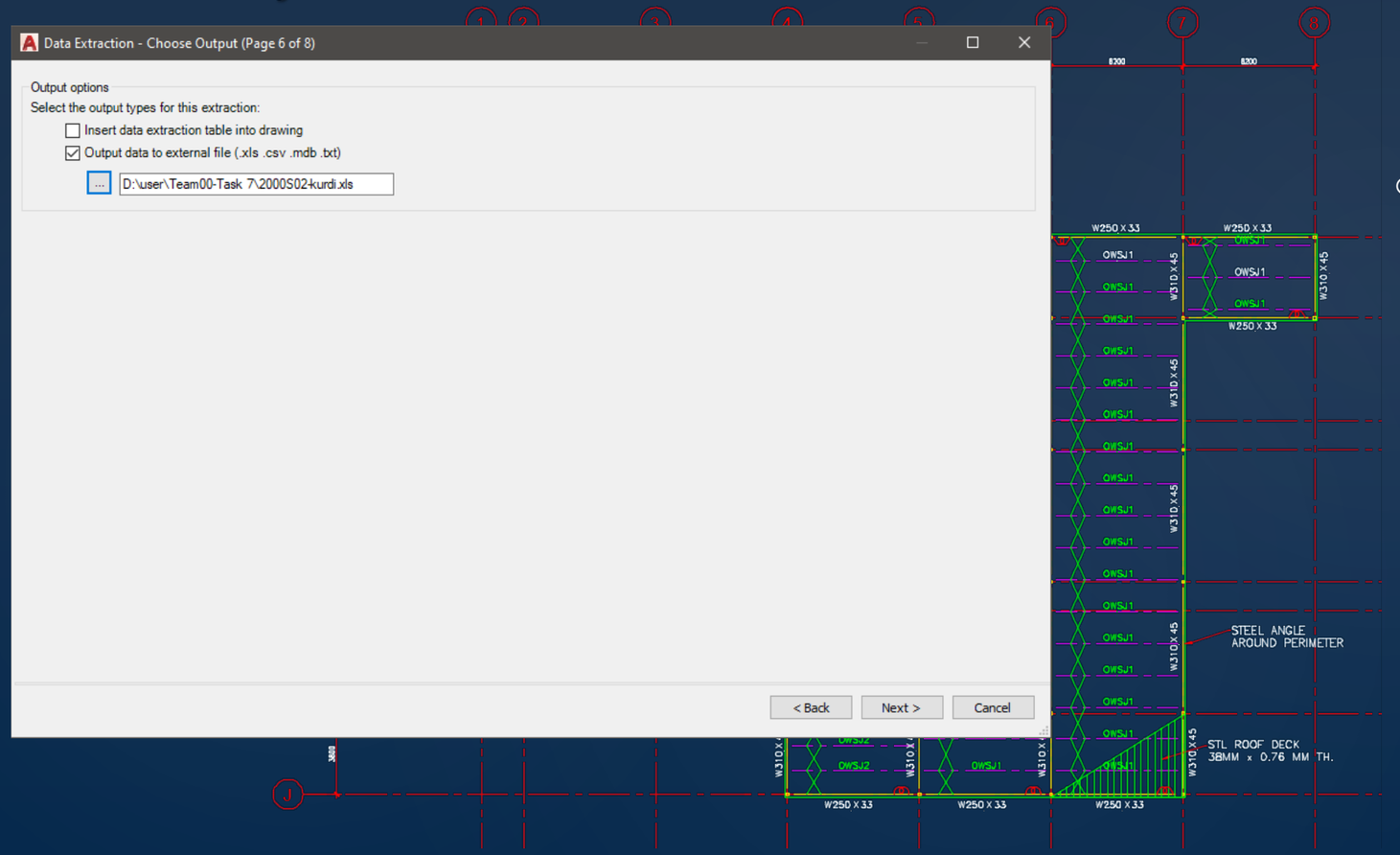
- Using the dataextraction command, extract the beam and joist data.




- Remove the name column.
- Rearrange the columns.
- Sort by beamdepth

# Extracting the data

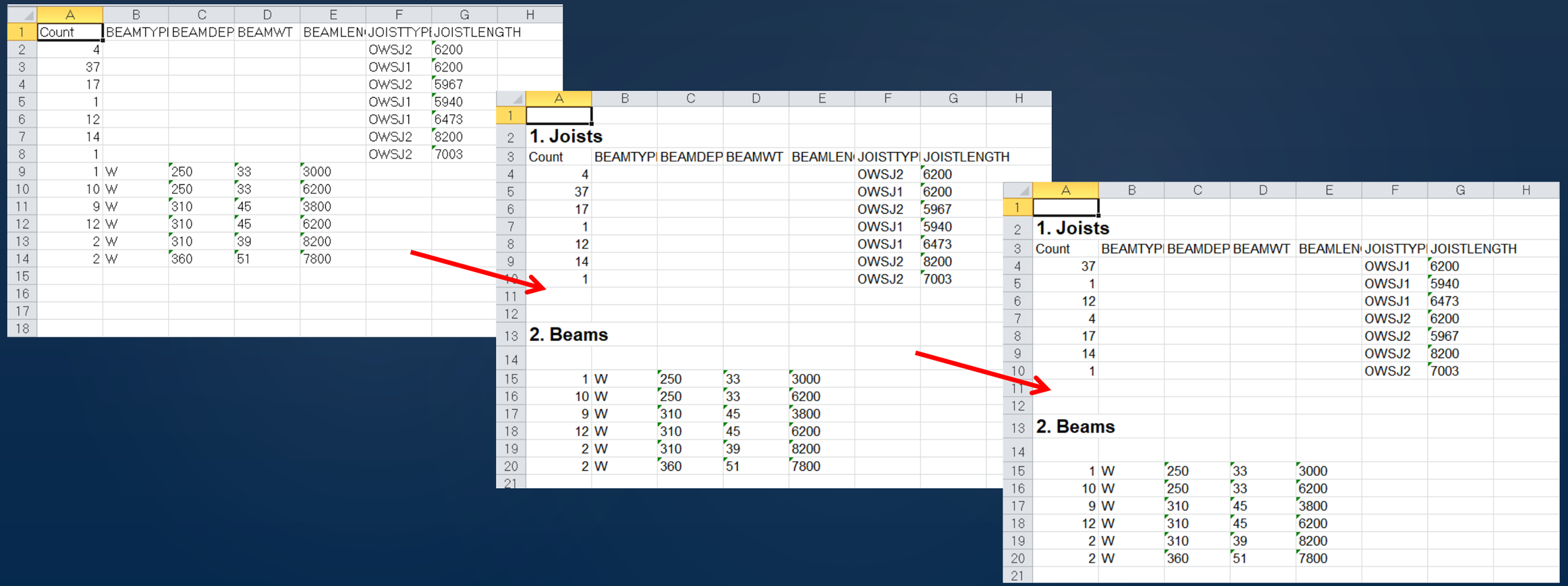
- Using the dataextraction command, extract the beam and joist data.




- Output the data to an external file called 20xxS02-**** where xx is your team number and **** is your loginname.

# Extracting the data

- Sort the results by joists and beams (beams are already sorted), and then sort the joists.



| Count | BEAMTYPE | BEAMDEP | BEAMWT | BEAMLEN | JOISTTYPE | JOISTLENGTH |
|---|---|---|---|---|---|---|
| 4 | | | | | OWSJ2 | 6200 |
| 37 | | | | | OWSJ1 | 6200 |
| 17 | | | | | OWSJ2 | 5967 |
| 1 | | | | | OWSJ1 | 5940 |
| 12 | | | | | OWSJ1 | 6473 |
| 14 | | | | | OWSJ2 | 8200 |
| 1 | | | | | OWSJ2 | 7003 |
| 1 | W | 250 | 33 | 3000 | | |
| 10 | W | 250 | 33 | 6200 | | |
| 9 | W | 310 | 45 | 3800 | | |
| 12 | W | 310 | 45 | 6200 | | |
| 2 | W | 310 | 39 | 8200 | | |
| 2 | W | 360 | 51 | 7800 | | |

**1. Joists**

| Count | BEAMTYPE | BEAMDEP | BEAMWT | BEAMLEN | JOISTTYPE | JOISTLENGTH |
|---|---|---|---|---|---|---|
| 4 | | | | | OWSJ2 | 6200 |
| 37 | | | | | OWSJ1 | 6200 |
| 17 | | | | | OWSJ2 | 5967 |
| 1 | | | | | OWSJ1 | 5940 |
| 12 | | | | | OWSJ1 | 6473 |
| 14 | | | | | OWSJ2 | 8200 |
| 1 | | | | | OWSJ2 | 7003 |

**2. Beams**

| | | | | | | |
|---|---|---|---|---|---|---|
| 1 | W | 250 | 33 | 3000 | | |
| 10 | W | 250 | 33 | 6200 | | |
| 9 | W | 310 | 45 | 3800 | | |
| 12 | W | 310 | 45 | 6200 | | |
| 2 | W | 310 | 39 | 8200 | | |
| 2 | W | 360 | 51 | 7800 | | |

**1. Joists**

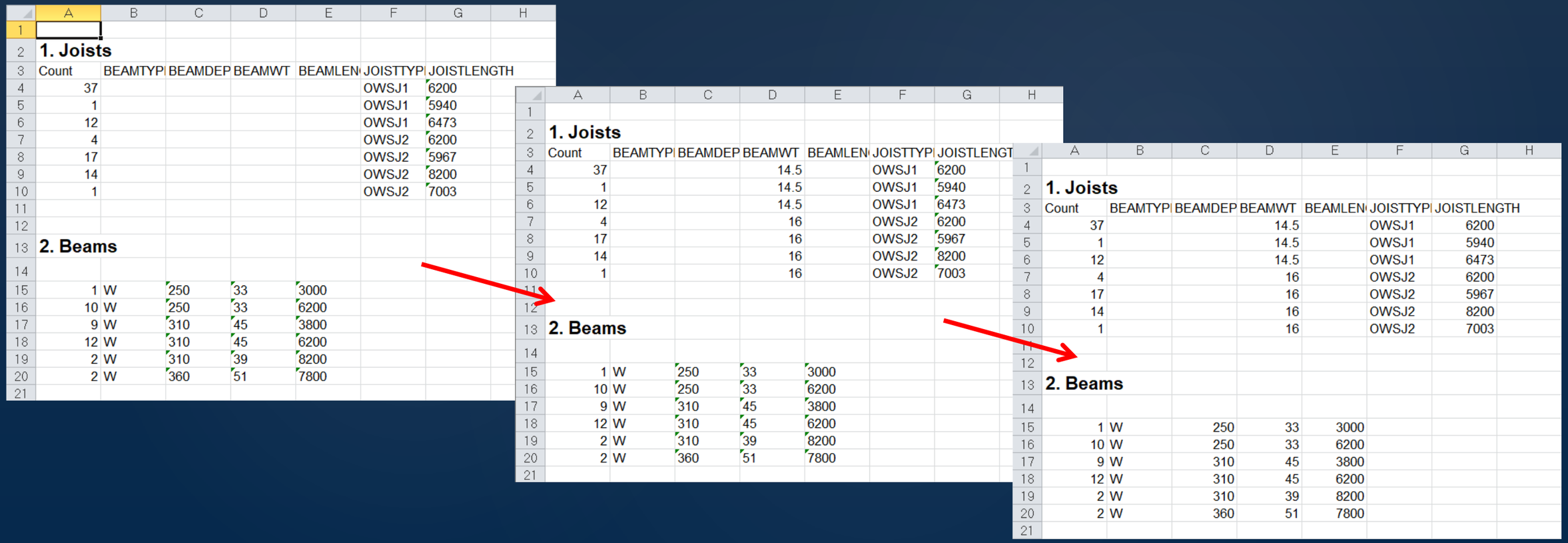
| Count | BEAMTYPE | BEAMDEP | BEAMWT | BEAMLEN | JOISTTYPE | JOISTLENGTH |
|---|---|---|---|---|---|---|
| 37 | | | | | OWSJ1 | 6200 |
| 1 | | | | | OWSJ1 | 5940 |
| 12 | | | | | OWSJ1 | 6473 |
| 4 | | | | | OWSJ2 | 6200 |
| 17 | | | | | OWSJ2 | 5967 |
| 14 | | | | | OWSJ2 | 8200 |
| 1 | | | | | OWSJ2 | 7003 |

**2. Beams**

| | | | | | | |
|---|---|---|---|---|---|---|
| 1 | W | 250 | 33 | 3000 | | |
| 10 | W | 250 | 33 | 6200 | | |
| 9 | W | 310 | 45 | 3800 | | |
| 12 | W | 310 | 45 | 6200 | | |
| 2 | W | 310 | 39 | 8200 | | |
| 2 | W | 360 | 51 | 7800 | | |

# Sorting by Steel members and elements

- Add the missing data: OWSJ1 is 14.5 kg/m, and OWSJ2 is 16 kg/m. OWSJ3 (if necessary) is 16 kg/m
- Correct the data warnings: Convert the text to numbers.



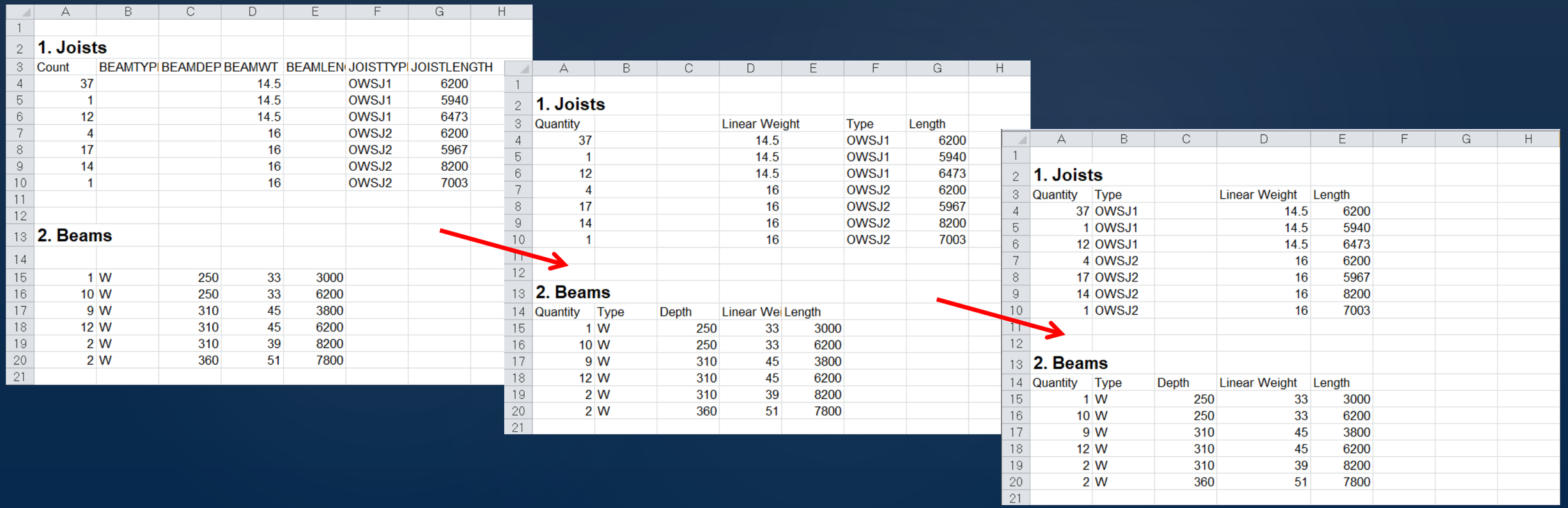
| | A | B | C | D | E | F | G | H |
|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | |
| 2 | **1. Joists** | | | | | | | |
| 3 | Count | BEAMTYP | BEAMDEP | BEAMWT | BEAMLEN | JOISTTYP | JOISTLENGTH | |
| 4 | 37 | | | | | OWSJ1 | 6200 | |
| 5 | 1 | | | | | OWSJ1 | 5940 | |
| 6 | 12 | | | | | OWSJ1 | 6473 | |
| 7 | 4 | | | | | OWSJ2 | 6200 | |
| 8 | 17 | | | | | OWSJ2 | 5967 | |
| 9 | 14 | | | | | OWSJ2 | 8200 | |
| 10 | 1 | | | | | OWSJ2 | 7003 | |
| 11 | | | | | | | | |
| 12 | | | | | | | | |
| 13 | **2. Beams** | | | | | | | |
| 14 | | | | | | | | |
| 15 | 1 | W | 250 | 33 | 3000 | | | |
| 16 | 10 | W | 250 | 33 | 6200 | | | |
| 17 | 9 | W | 310 | 45 | 3800 | | | |
| 18 | 12 | W | 310 | 45 | 6200 | | | |
| 19 | 2 | W | 310 | 39 | 8200 | | | |
| 20 | 2 | W | 360 | 51 | 7800 | | | |
| 21 | | | | | | | | |

| | A | B | C | D | E | F | G | H |
|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | |
| 2 | **1. Joists** | | | | | | | |
| 3 | Count | BEAMTYP | BEAMDEP | BEAMWT | BEAMLEN | JOISTTYP | JOISTLENGT | |
| 4 | 37 | | | 14.5 | | OWSJ1 | 6200 | |
| 5 | 1 | | | 14.5 | | OWSJ1 | 5940 | |
| 6 | 12 | | | 14.5 | | OWSJ1 | 6473 | |
| 7 | 4 | | | 16 | | OWSJ2 | 6200 | |
| 8 | 17 | | | 16 | | OWSJ2 | 5967 | |
| 9 | 14 | | | 16 | | OWSJ2 | 8200 | |
| 10 | 1 | | | 16 | | OWSJ2 | 7003 | |
| 11 | | | | | | | | |
| 12 | | | | | | | | |
| 13 | **2. Beams** | | | | | | | |
| 14 | | | | | | | | |
| 15 | 1 | W | 250 | 33 | 3000 | | | |
| 16 | 10 | W | 250 | 33 | 6200 | | | |
| 17 | 9 | W | 310 | 45 | 3800 | | | |
| 18 | 12 | W | 310 | 45 | 6200 | | | |
| 19 | 2 | W | 310 | 39 | 8200 | | | |
| 20 | 2 | W | 360 | 51 | 7800 | | | |
| 21 | | | | | | | | |

| | A | B | C | D | E | F | G | H |
|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | |
| 2 | **1. Joists** | | | | | | | |
| 3 | Count | BEAMTYP | BEAMDEP | BEAMWT | BEAMLEN | JOISTTYP | JOISTLENGTH | |
| 4 | 37 | | | 14.5 | | OWSJ1 | 6200 | |
| 5 | 1 | | | 14.5 | | OWSJ1 | 5940 | |
| 6 | 12 | | | 14.5 | | OWSJ1 | 6473 | |
| 7 | 4 | | | 16 | | OWSJ2 | 6200 | |
| 8 | 17 | | | 16 | | OWSJ2 | 5967 | |
| 9 | 14 | | | 16 | | OWSJ2 | 8200 | |
| 10 | 1 | | | 16 | | OWSJ2 | 7003 | |
| 11 | | | | | | | | |
| 12 | | | | | | | | |
| 13 | **2. Beams** | | | | | | | |
| 14 | | | | | | | | |
| 15 | 1 | W | 250 | 33 | 3000 | | | |
| 16 | 10 | W | 250 | 33 | 6200 | | | |
| 17 | 9 | W | 310 | 45 | 3800 | | | |
| 18 | 12 | W | 310 | 45 | 6200 | | | |
| 19 | 2 | W | 310 | 39 | 8200 | | | |
| 20 | 2 | W | 360 | 51 | 7800 | | | |
| 21 | | | | | | | | |

# Sorting by Steel members and elements

- Type in the correct column headers for the joists and beams.
- Move the joist type and length columns.



| | A | B | C | D | E | F | G | H |
|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | |
| 2 | **1. Joists** | | | | | | | |
| 3 | Count | BEAMTYP | BEAMDEP | BEAMWT | BEAMLEN | JOISTTYP | JOISTLENGTH | |
| 4 | 37 | | | 14.5 | | OWSJ1 | 6200 | |
| 5 | 1 | | | 14.5 | | OWSJ1 | 5940 | |
| 6 | 12 | | | 14.5 | | OWSJ1 | 6473 | |
| 7 | 4 | | | 16 | | OWSJ2 | 6200 | |
| 8 | 17 | | | 16 | | OWSJ2 | 5967 | |
| 9 | 14 | | | 16 | | OWSJ2 | 8200 | |
| 10 | 1 | | | 16 | | OWSJ2 | 7003 | |
| 11 | | | | | | | | |
| 12 | | | | | | | | |
| 13 | **2. Beams** | | | | | | | |
| 14 | | | | | | | | |
| 15 | 1 | W | 250 | 33 | 3000 | | | |
| 16 | 10 | W | 250 | 33 | 6200 | | | |
| 17 | 9 | W | 310 | 45 | 3800 | | | |
| 18 | 12 | W | 310 | 45 | 6200 | | | |
| 19 | 2 | W | 310 | 39 | 8200 | | | |
| 20 | 2 | W | 360 | 51 | 7800 | | | |
| 21 | | | | | | | | |

| | A | B | C | D | E | F | G | H |
|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | |
| 2 | **1. Joists** | | | | | | | |
| 3 | Quantity | | | Linear Weight | | Type | Length | |
| 4 | 37 | | | 14.5 | | OWSJ1 | 6200 | |
| 5 | 1 | | | 14.5 | | OWSJ1 | 5940 | |
| 6 | 12 | | | 14.5 | | OWSJ1 | 6473 | |
| 7 | 4 | | | 16 | | OWSJ2 | 6200 | |
| 8 | 17 | | | 16 | | OWSJ2 | 5967 | |
| 9 | 14 | | | 16 | | OWSJ2 | 8200 | |
| 10 | 1 | | | 16 | | OWSJ2 | 7003 | |
| 11 | | | | | | | | |
| 12 | | | | | | | | |
| 13 | **2. Beams** | | | | | | | |
| 14 | Quantity | Type | Depth | Linear Wei | Length | | | |
| 15 | 1 | W | 250 | 33 | 3000 | | | |
| 16 | 10 | W | 250 | 33 | 6200 | | | |
| 17 | 9 | W | 310 | 45 | 3800 | | | |
| 18 | 12 | W | 310 | 45 | 6200 | | | |
| 19 | 2 | W | 310 | 39 | 8200 | | | |
| 20 | 2 | W | 360 | 51 | 7800 | | | |
| 21 | | | | | | | | |

| | A | B | C | D | E | F | G | H |
|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | |
| 2 | **1. Joists** | | | | | | | |
| 3 | Quantity | Type | | Linear Weight | Length | | | |
| 4 | 37 | OWSJ1 | | 14.5 | 6200 | | | |
| 5 | 1 | OWSJ1 | | 14.5 | 5940 | | | |
| 6 | 12 | OWSJ1 | | 14.5 | 6473 | | | |
| 7 | 4 | OWSJ2 | | 16 | 6200 | | | |
| 8 | 17 | OWSJ2 | | 16 | 5967 | | | |
| 9 | 14 | OWSJ2 | | 16 | 8200 | | | |
| 10 | 1 | OWSJ2 | | 16 | 7003 | | | |
| 11 | | | | | | | | |
| 12 | | | | | | | | |
| 13 | **2. Beams** | | | | | | | |
| 14 | Quantity | Type | Depth | Linear Weight | Length | | | |
| 15 | 1 | W | 250 | 33 | 3000 | | | |
| 16 | 10 | W | 250 | 33 | 6200 | | | |
| 17 | 9 | W | 310 | 45 | 3800 | | | |
| 18 | 12 | W | 310 | 45 | 6200 | | | |
| 19 | 2 | W | 310 | 39 | 8200 | | | |
| 20 | 2 | W | 360 | 51 | 7800 | | | |
| 21 | | | | | | | | |

# Adding Column Headers

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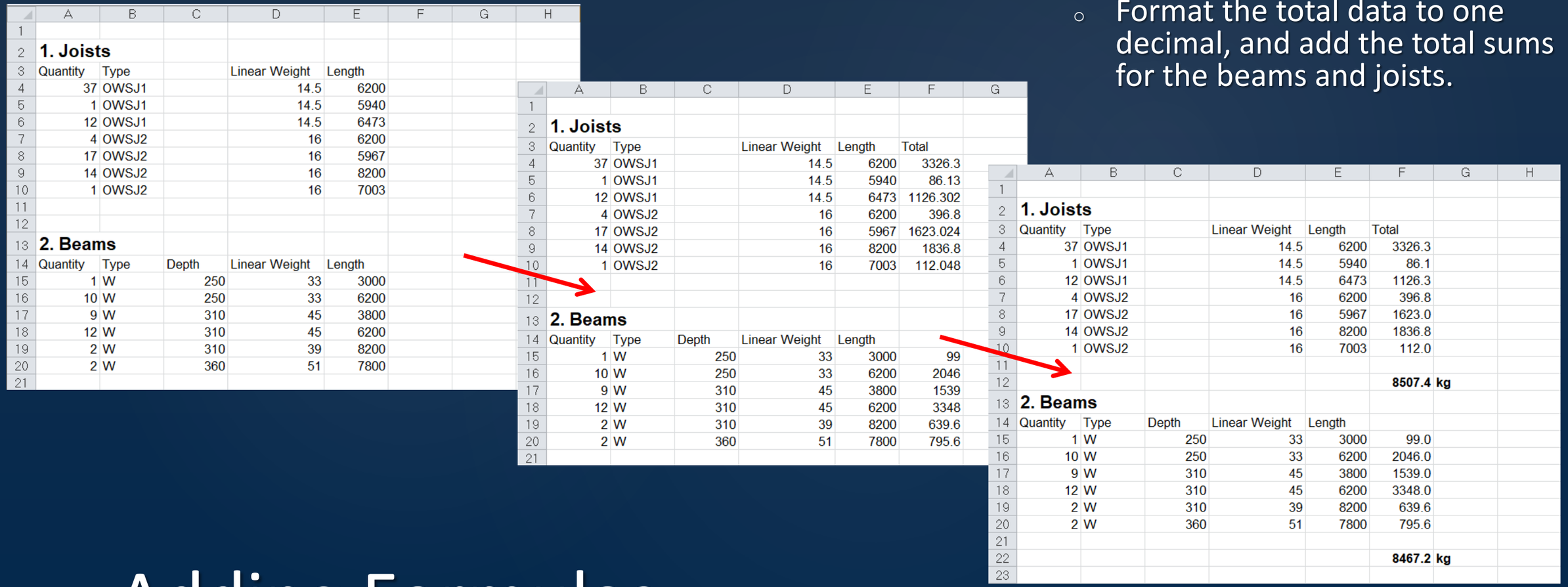
- The formula for total weight is simple:

  quantity*linear weight*length/1000

- Format the total data to one decimal, and add the total sums for the beams and joists.



| | A | B | C | D | E |
|---|---|---|---|---|---|
| 1 | | | | | |
| 2 | **1. Joists** | | | | |
| 3 | Quantity | Type | | Linear Weight | Length |
| 4 | 37 | OWSJ1 | | 14.5 | 6200 |
| 5 | 1 | OWSJ1 | | 14.5 | 5940 |
| 6 | 12 | OWSJ1 | | 14.5 | 6473 |
| 7 | 4 | OWSJ2 | | 16 | 6200 |
| 8 | 17 | OWSJ2 | | 16 | 5967 |
| 9 | 14 | OWSJ2 | | 16 | 8200 |
| 10 | 1 | OWSJ2 | | 16 | 7003 |
| 11 | | | | | |
| 12 | | | | | |
| 13 | **2. Beams** | | | | |
| 14 | Quantity | Type | Depth | Linear Weight | Length |
| 15 | 1 | W | 250 | 33 | 3000 |
| 16 | 10 | W | 250 | 33 | 6200 |
| 17 | 9 | W | 310 | 45 | 3800 |
| 18 | 12 | W | 310 | 45 | 6200 |
| 19 | 2 | W | 310 | 39 | 8200 |
| 20 | 2 | W | 360 | 51 | 7800 |
| 21 | | | | | |

| | A | B | C | D | E | F |
|---|---|---|---|---|---|---|
| 1 | | | | | | |
| 2 | **1. Joists** | | | | | |
| 3 | Quantity | Type | | Linear Weight | Length | Total |
| 4 | 37 | OWSJ1 | | 14.5 | 6200 | 3326.3 |
| 5 | 1 | OWSJ1 | | 14.5 | 5940 | 86.13 |
| 6 | 12 | OWSJ1 | | 14.5 | 6473 | 1126.302 |
| 7 | 4 | OWSJ2 | | 16 | 6200 | 396.8 |
| 8 | 17 | OWSJ2 | | 16 | 5967 | 1623.024 |
| 9 | 14 | OWSJ2 | | 16 | 8200 | 1836.8 |
| 10 | 1 | OWSJ2 | | 16 | 7003 | 112.048 |
| 11 | | | | | | |
| 12 | | | | | | |
| 13 | **2. Beams** | | | | | |
| 14 | Quantity | Type | Depth | Linear Weight | Length | |
| 15 | 1 | W | 250 | 33 | 3000 | 99 |
| 16 | 10 | W | 250 | 33 | 6200 | 2046 |
| 17 | 9 | W | 310 | 45 | 3800 | 1539 |
| 18 | 12 | W | 310 | 45 | 6200 | 3348 |
| 19 | 2 | W | 310 | 39 | 8200 | 639.6 |
| 20 | 2 | W | 360 | 51 | 7800 | 795.6 |
| 21 | | | | | | |

| | A | B | C | D | E | F | G | H |
|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | |
| 2 | **1. Joists** | | | | | | | |
| 3 | Quantity | Type | | Linear Weight | Length | Total | | |
| 4 | 37 | OWSJ1 | | 14.5 | 6200 | 3326.3 | | |
| 5 | 1 | OWSJ1 | | 14.5 | 5940 | 86.1 | | |
| 6 | 12 | OWSJ1 | | 14.5 | 6473 | 1126.3 | | |
| 7 | 4 | OWSJ2 | | 16 | 6200 | 396.8 | | |
| 8 | 17 | OWSJ2 | | 16 | 5967 | 1623.0 | | |
| 9 | 14 | OWSJ2 | | 16 | 8200 | 1836.8 | | |
| 10 | 1 | OWSJ2 | | 16 | 7003 | 112.0 | | |
| 11 | | | | | | | | |
| 12 | | | | | | **8507.4** | **kg** | |
| 13 | **2. Beams** | | | | | | | |
| 14 | Quantity | Type | Depth | Linear Weight | Length | | | |
| 15 | 1 | W | 250 | 33 | 3000 | 99.0 | | |
| 16 | 10 | W | 250 | 33 | 6200 | 2046.0 | | |
| 17 | 9 | W | 310 | 45 | 3800 | 1539.0 | | |
| 18 | 12 | W | 310 | 45 | 6200 | 3348.0 | | |
| 19 | 2 | W | 310 | 39 | 8200 | 639.6 | | |
| 20 | 2 | W | 360 | 51 | 7800 | 795.6 | | |
| 21 | | | | | | | | |
| 22 | | | | | | **8467.2** | **kg** | |
| 23 | | | | | | | | |

# Adding Formulas

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- There is no standard formula for Misc. Steel (the bridging, steel plates, connecting rods, perimeter angle etc…)
- Every firm seems to have their own homegrown formulas.

- One solution is to take 5% of the total weight of the beams and joists.

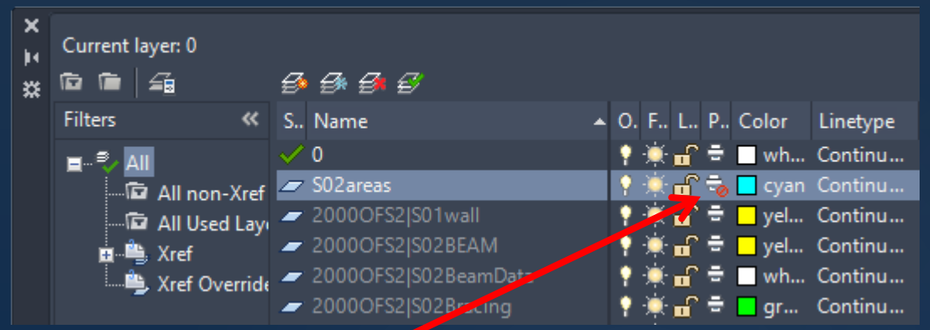
| | A | B | C | D | E | F | G | H |
|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | |
| 2 | **1. Joists** | | | | | | | |
| 3 | Quantity | Type | | Linear Weight | Length | Total | | |
| 4 | 37 | OWSJ1 | | 14.5 | 6200 | 3326.3 | | |
| 5 | 1 | OWSJ1 | | 14.5 | 5940 | 86.1 | | |
| 6 | 12 | OWSJ1 | | 14.5 | 6473 | 1126.3 | | |
| 7 | 4 | OWSJ2 | | 16 | 6200 | 396.8 | | |
| 8 | 17 | OWSJ2 | | 16 | 5967 | 1623.0 | | |
| 9 | 14 | OWSJ2 | | 16 | 8200 | 1836.8 | | |
| 10 | 1 | OWSJ2 | | 16 | 7003 | 112.0 | | |
| 11 | | | | | | | | |
| 12 | | | | | | **8507.4** | **kg** | |
| 13 | **2. Beams** | | | | | | | |
| 14 | Quantity | Type | Depth | Linear Weight | Length | | | |
| 15 | 1 | W | 250 | 33 | 3000 | 99.0 | | |
| 16 | 10 | W | 250 | 33 | 6200 | 2046.0 | | |
| 17 | 9 | W | 310 | 45 | 3800 | 1539.0 | | |
| 18 | 12 | W | 310 | 45 | 6200 | 3348.0 | | |
| 19 | 2 | W | 310 | 39 | 8200 | 639.6 | | |
| 20 | 2 | W | 360 | 51 | 7800 | 795.6 | | |
| 21 | | | | | | | | |
| 22 | | | | | | **8467.2** | **kg** | |
| 23 | | | | | | | | |

| | A | B | C | D | E | F | G | H |
|---|---|---|---|---|---|---|---|---|
| 10 | 1 | OWSJ2 | | 16 | 7003 | 112.0 | | |
| 11 | | | | | | | | |
| 12 | | | | | | **8507.4** | **kg** | |
| 13 | **2. Beams** | | | | | | | |
| 14 | Quantity | Type | Depth | Linear Weight | Length | | | |
| 15 | 1 | W | 250 | 33 | 3000 | 99.0 | | |
| 16 | 10 | W | 250 | 33 | 6200 | 2046.0 | | |
| 17 | 9 | W | 310 | 45 | 3800 | 1539.0 | | |
| 18 | 12 | W | 310 | 45 | 6200 | 3348.0 | | |
| 19 | 2 | W | 310 | 39 | 8200 | 639.6 | | |
| 20 | 2 | W | 360 | 51 | 7800 | 795.6 | | |
| 21 | | | | | | | | |
| 22 | | | | | | **8467.2** | **kg** | |
| 23 | | | | | | | | |
| 24 | **3. Miscellaneous Steel** | | | | | | | |
| 25 | | | | | | =(F12+F22)*0.05 | | |
| 26 | | | | | | | | |
| 27 | | | | | | | | |
| 28 | | | | | | | | |

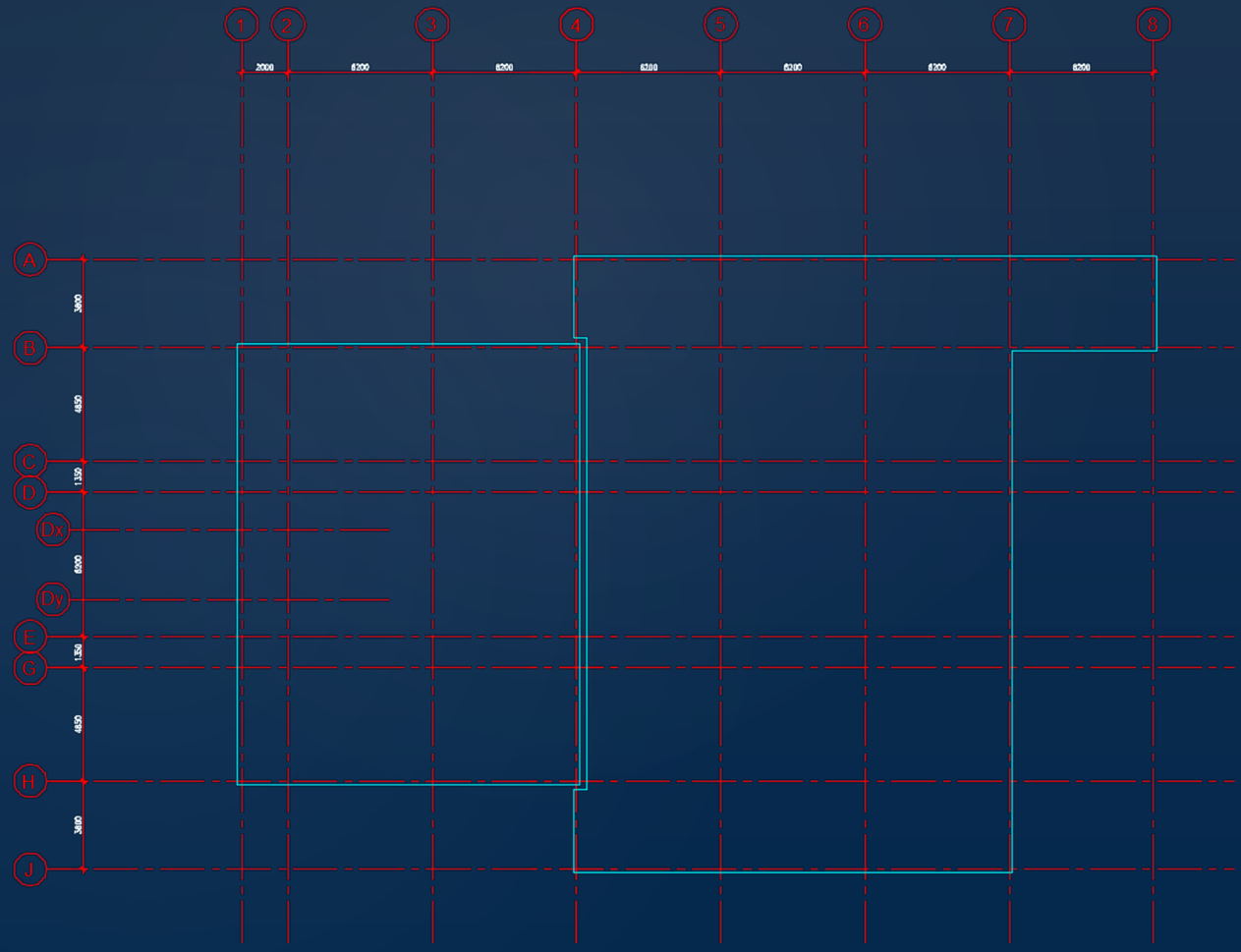
| | A | B | C | D | E | F | G | H |
|---|---|---|---|---|---|---|---|---|
| 10 | 1 | OWSJ2 | | 16 | 7003 | 112.0 | | |
| 11 | | | | | | | | |
| 12 | | | | | | **8507.4** | **kg** | |
| 13 | **2. Beams** | | | | | | | |
| 14 | Quantity | Type | Depth | Linear Weight | Length | | | |
| 15 | 1 | W | 250 | 33 | 3000 | 99.0 | | |
| 16 | 10 | W | 250 | 33 | 6200 | 2046.0 | | |
| 17 | 9 | W | 310 | 45 | 3800 | 1539.0 | | |
| 18 | 12 | W | 310 | 45 | 6200 | 3348.0 | | |
| 19 | 2 | W | 310 | 39 | 8200 | 639.6 | | |
| 20 | 2 | W | 360 | 51 | 7800 | 795.6 | | |
| 21 | | | | | | | | |
| 22 | | | | | | **8467.2** | **kg** | |
| 23 | | | | | | | | |
| 24 | **3. Miscellaneous Steel** | | | | | | | |
| 25 | | | | | | **848.7** | **kg** | |
| 26 | | | | | | | | |
| 27 | | | | | | | | |
| 28 | | | | | | | | |

# Adding the Misc. Steel Estimate

- To calculate the weight of the steel deck, draw two polylines around the perimeter angle and the walls.




- Create a new layer called S02areas, make it non plottable, and draw the polylines.




# Calculating the Deck

- Enter the steel deck areas in Excel.
- The deck weight is 1.6psf (pounds per square foot)

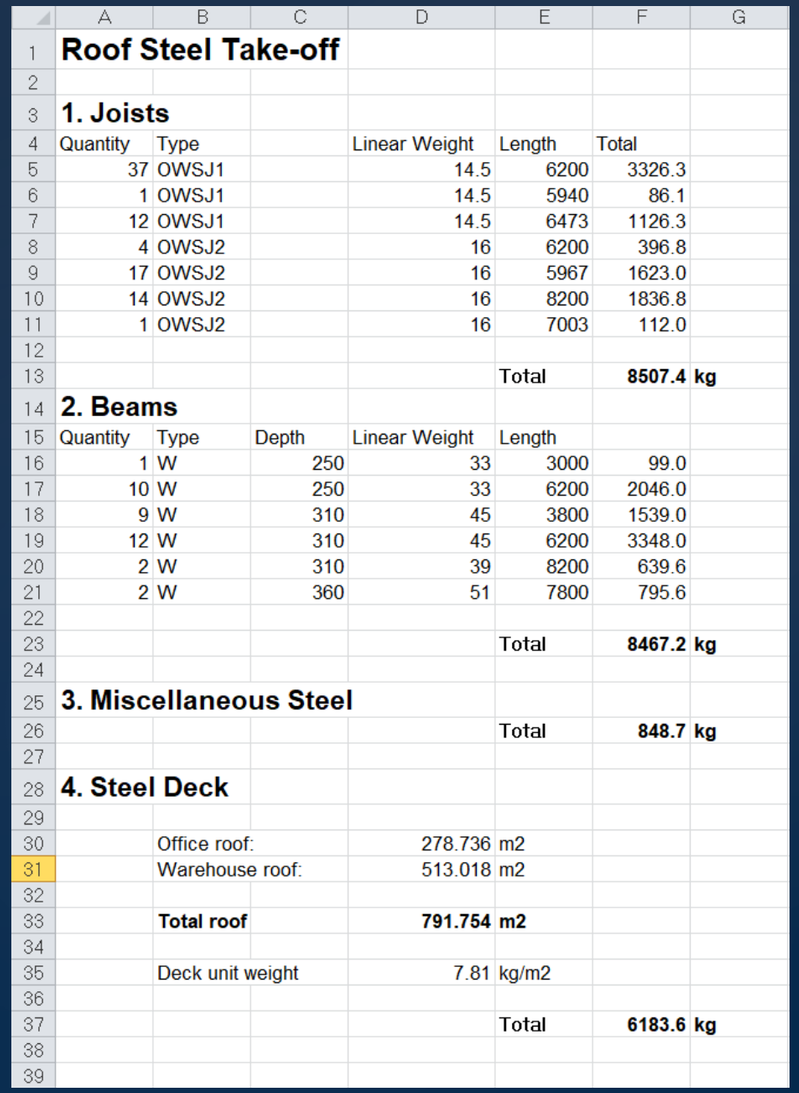
- So after conversion the deck weight is 7.81 kg/m²

| | A | B | C | D | E | F | G | H |
|---|---|---|---|---|---|---|---|---|
| 10 | 1 | OWSJ2 | | 16 | 7003 | 112.0 | | |
| 11 | | | | | | | | |
| 12 | | | | | | **8507.4** | **kg** | |
| 13 | **2. Beams** | | | | | | | |
| 14 | Quantity | Type | Depth | Linear Weight | Length | | | |
| 15 | 1 | W | 250 | 33 | 3000 | 99.0 | | |
| 16 | 10 | W | 250 | 33 | 6200 | 2046.0 | | |
| 17 | 9 | W | 310 | 45 | 3800 | 1539.0 | | |
| 18 | 12 | W | 310 | 45 | 6200 | 3348.0 | | |
| 19 | 2 | W | 310 | 39 | 8200 | 639.6 | | |
| 20 | 2 | W | 360 | 51 | 7800 | 795.6 | | |
| 21 | | | | | | | | |
| 22 | | | | | | **8467.2** | **kg** | |
| 23 | | | | | | | | |
| 24 | **3. Miscellaneous Steel** | | | | | | | |
| 25 | | | | | | **848.7** | **kg** | |
| 26 | | | | | | | | |
| 27 | | | | | | | | |
| 28 | | | | | | | | |

| | A | B | C | D | E | F | G | H |
|---|---|---|---|---|---|---|---|---|
| 22 | | | | | | **8467.2** | **kg** | |
| 23 | | | | | | | | |
| 24 | **3. Miscellaneous Steel** | | | | | | | |
| 25 | | | | | | **848.7** | **kg** | |
| 26 | | | | | | | | |
| 27 | **4. Steel Deck** | | | | | | | |
| 28 | | | | | | | | |
| 29 | | Office roof: | | 278.736 | m2 | | | |
| 30 | | Warehouse roof: | | 513.018 | m2 | | | |
| 31 | | | | | | | | |
| 32 | | **Total roof** | | **791.754** | **m2** | | | |
| 33 | | | | | | | | |
| 34 | | Deck unit weight | | 7.81 | kg/m2 | | | |
| 35 | | | | | | | | |
| 36 | | | | | Total | **6183.6** | **kg** | |
| 37 | | | | | | | | |
| 38 | | | | | | | | |

# Calculating the Deck

# The Final Result



| | A | B | C | D | E | F | G |
|---|---|---|---|---|---|---|---|
| 1 | **Roof Steel Take-off** | | | | | | |
| 2 | | | | | | | |
| 3 | **1. Joists** | | | | | | |
| 4 | Quantity | Type | | Linear Weight | Length | Total | |
| 5 | 37 | OWSJ1 | | 14.5 | 6200 | 3326.3 | |
| 6 | 1 | OWSJ1 | | 14.5 | 5940 | 86.1 | |
| 7 | 12 | OWSJ1 | | 14.5 | 6473 | 1126.3 | |
| 8 | 4 | OWSJ2 | | 16 | 6200 | 396.8 | |
| 9 | 17 | OWSJ2 | | 16 | 5967 | 1623.0 | |
| 10 | 14 | OWSJ2 | | 16 | 8200 | 1836.8 | |
| 11 | 1 | OWSJ2 | | 16 | 7003 | 112.0 | |
| 12 | | | | | | | |
| 13 | | | | | Total | **8507.4** | **kg** |
| 14 | **2. Beams** | | | | | | |
| 15 | Quantity | Type | Depth | Linear Weight | Length | | |
| 16 | 1 | W | 250 | 33 | 3000 | 99.0 | |
| 17 | 10 | W | 250 | 33 | 6200 | 2046.0 | |
| 18 | 9 | W | 310 | 45 | 3800 | 1539.0 | |
| 19 | 12 | W | 310 | 45 | 6200 | 3348.0 | |
| 20 | 2 | W | 310 | 39 | 8200 | 639.6 | |
| 21 | 2 | W | 360 | 51 | 7800 | 795.6 | |
| 22 | | | | | | | |
| 23 | | | | | Total | **8467.2** | **kg** |
| 24 | | | | | | | |
| 25 | **3. Miscellaneous Steel** | | | | | | |
| 26 | | | | | Total | **848.7** | **kg** |
| 27 | | | | | | | |
| 28 | **4. Steel Deck** | | | | | | |
| 29 | | | | | | | |
| 30 | | Office roof: | | 278.736 | m2 | | |
| 31 | | Warehouse roof: | | 513.018 | m2 | | |
| 32 | | | | | | | |
| 33 | | **Total roof** | | **791.754** | **m2** | | |
| 34 | | | | | | | |
| 35 | | Deck unit weight | | 7.81 | kg/m2 | | |
| 36 | | | | | | | |
| 37 | | | | | Total | **6183.6** | **kg** |
| 38 | | | | | | | |
| 39 | | | | | | | |

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