

Integrated Construction Summary: Townhouse 1

Structural & Architectural Coordination

Project Coordination Team

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Document Dependency Statement

Yes, the **Stage 1 Plans (Architectural Drawings)** are **directly dependent** on the **Structural Engineering Drawings** provided earlier. The architectural plans reference the structural details repeatedly (e.g., “Refer to Engineer’s Drawings”), and the structural steel, footings, bracing, and tie-downs must align with the architectural layout, openings, and levels.

Here is the **updated and consolidated response** incorporating details from **both document sets**:

1 Detailed Structural Steel Quantities & Connection Details

1.1 Structural Steel Members (Quantified) – Townhouse 1

Table 1: Structural Steel Schedule

Mark	Section	Est. Length	Qty	Total Length	Notes
C1	90x3.5 SHS	2.7m	6	16.2m	Full-height columns
C2	90x5.0 SHS	2.7m	4	10.8m	Full-height columns
B1	250 PFC	6.0m	3	18.0m	Beams (deck/floor support)
B2	250 PFC + 12PL	4.5m	2	9.0m	Reinforced beam (over openings)
B3	230 PFC	5.0m	2	10.0m	Secondary beams
B4	310UB46.2	8.0m	1	8.0m	Main beam (garage/lower floor)
B5	250UB25.7	6.0m	3	18.0m	Floor beams
B6	330x85 GL15C	3.5m	4	14.0m	Glulam beam (timber)
B7	120x45 LVL 14	3.0m	10	30.0m	Lintels/beams (timber)
B9	290x45 LVL 14	5.0m	4	20.0m	Timber beams
B10	190x45 LVL 14	4.0m	6	24.0m	Timber beams
B11	2/290x45 LVL 14	4.5m	4	18.0m	Double LVL beams
DS	2/90x45 MGP12	2.4m	12	28.8m	Double studs (timber)
TS	3/90x45 MGP12	2.4m	8	19.2m	Triple studs (timber)

Additional Steel Elements:

- **Base plates:** 12PL, 10PL, 8PL (various)
- **Cleats & seat plates:** 10PL, 8PL, 3PL
- **Galvanized strapping:** 30x0.8mm for bracing and tie-downs (200m estimated)
- **Bolts:** M12, M16, M20 (8.8/S, coach, Hilti HIT-HY150)
- **Threaded rods:** M12 @ 600crs for brick support

1.2 Connection Details Summary

Referenced from **Structural Drawings 14, 15, 16** and coordinated with **Architectural Openings:**

Table 2: Connection Details

Connection Type	Details
Column Base Plate (B.C.)	12PL base plate, 2× M16 Hilti HIT-HY150 or HD bolts, grouted
Beam-to-Column (Cleat)	10PL cleat, 2× M20 8.8/S bolts, max edge distance 55mm
Beam-to-Beam (Seat)	8PL seat cleat, 2× M16 coach bolts
Timber-to-Steel	8PL cleat, M12 coach bolts, noggin blocks at fixing points
Bracing Straps	30×0.8mm galvanized strap, nailed with 2.8mm nails each end
Lintel Support	M12 threaded rod @ 600crs, 90×45 timber blocking
Deck Connections	10PL cleat, 2× M20 bolts, deck joists bolted through cleat
Roller Door Support	250 PFC lintel with 12PL plate (Refer to Architectural Drawing TH1-05)

Welding Specifications:

- Fillet welds: 6mm continuous for ≤12mm plate, 8mm for 16mm, 10mm for ≥20mm
- Electrodes: E48XX or W50XX
- Welding to AS/NZS 1554, symbols per AS 1103.1

Galvanizing & Painting:

- External steel: Hot-dip galvanized after fabrication
- Paint system: Zinc phosphate primer (75µm) + 2× epoxy coats (150µm each)

2 Phased Installation Schedule (Integrated with Architectural Sequence)

2.1 Phase 0 – Site Setup (Week 1–2)

- Sediment control per **Soil & Water Management Plan**
- Site cut, battering, and retaining walls per **Geotech Report**
- Stormwater and sewer connections installed
- Footings excavated and inspected

2.2 Phase 1 – Foundations & Slab (Week 3–5)

- Install bored piers (P1) and strip footings (SF1–SF4)
- Place reinforced concrete slab with edge beams (EB1)
- Install AG drains, waterproofing, and membrane
- Engineer inspection prior to pouring

2.3 Phase 2 – Structural Steel Erection (Week 6–8)

- **Week 6:** Column base plates set, grouted, and cured
- **Week 7:** Erect SHS columns (C1, C2) and primary beams (B4, B5)
- **Week 8:** Install secondary beams (B1–B3) and timber beams (B6–B11)
- **Week 8:** Bolt all connections, install temporary bracing

2.4 Phase 3 – Timber Framing & Roof (Week 9–11)

- Erect load-bearing timber walls (L.B. per architectural plans)
- Install floor trusses, joists, and deck framing
- Erect roof trusses @ 900crs, fix with Trip-L-Grip connectors
- Install wind bracing straps and tie-downs per **Drawing 18–19**

2.5 Phase 4 – Enclosure & Services (Week 12–16)

- Brick veneer and Weathertex cladding installed
- Windows and doors installed per **Door & Window Schedule**
- Plumbing rough-in (per **Plumbing Plan TH1-09**)
- Electrical rough-in (per **Electrical Plan TH1-13**)
- Roof sarking, battens, and Colorbond Custom Orb installed

2.6 Phase 5 – Finishes & Handover (Week 17–20)

- Insulation (wall, ceiling, floor) per **Energy Efficiency Plan**
- Plasterboard, waterproofing, tiling
- Painting, architraves, fixtures
- Final inspections, compliance certification

3 Summary of Steel Quantities (Approximate)

Table 3: Steel Quantities Summary

Material Type	Total Length	Estimated Weight	Notes
SHS 90x3.5/5.0	27.0m	180 kg	Columns
PFC 230–250	37.0m	600 kg	Beams
UB 250–310	34.0m	800 kg	Primary beams
Steel Plates (6–12mm)	–	150 kg	Cleats, base plates, connection
Galvanized Strapping	200m	40 kg	Bracing and tie-downs
Bolts (M12, M16, M20)	80 units	–	High-strength and coach bolts

4 Key Integration Points Between Structural & Architectural Plans

- Steel columns (C1, C2) align with **90SHS columns** shown on architectural floor plans.
- Beam B2 (250PFC+12PL) supports **roller door lintel** (4600×2700) per elevation.
- Deck beams (B1, B5) correspond to **deck areas** on floor plan (33.97m² and 2.05m²).
- Wind bracing locations match **bracing unit symbols** on architectural floor plans.
- Tie-downs are coordinated with **double studs (DS)** and **triple studs (TS)** at load-bearing walls.

5 Updated Timeframe Summary

Let me know if you need a [combined Gantt chart](#), [bolt schedule](#), or [material take-off spreadsheet](#) for procurement.

Table 4: Project Timeline Summary

Phase	Duration	Total Weeks
Fabrication (incl. procurement)	4–6 weeks	–
Site works & foundations	5 weeks	–
Steel erection	3 weeks	–
Timber frame & roof	3 weeks	–
Enclosure & services	5 weeks	–
Finishes & handover	4 weeks	–
Total Project Duration	–	20–24 weeks