

ARUN SAPKOTA

Civil Engineer | Structures • Transport • Geotechnical

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PROFESSIONAL SUMMARY

Civil engineer with a Bachelor of Civil Engineering from Pulchowk Campus, Nepal, and a Master of Engineering (Civil) at CQUniversity Melbourne (GPA 7.0/7.0, graduating July 2027). Six months of consultancy experience in road survey, detailed design and cost estimation. Postgraduate design work spans reinforced and prestressed concrete (AS 3600), steel portal frames (AS 4100), masonry (AS 3700), traffic analysis, pavement design and geotechnical consolidation modelling. Builds structural models in SPACE GASS, designs in Excel, and uses generative AI tools to work faster while checking every result against standards and hand calculations. Seeking a graduate civil or structural engineering role.

CORE SKILLS

Structural design: SPACE GASS, ETABS, AS 3600 concrete, AS 4100 steel, AS 3700 masonry, AS/NZS 1170.0/1/2/3, prestressed concrete

Transport and pavement: SIDRA Intersection, CIRCLY, HCM capacity and level of service, Austroads pavement design, NRRS road geometry

Geotechnical and drainage: SigmaW (GeoStudio) consolidation modelling, Terzaghi consolidation, CBR testing, hydrology and culvert design

Drafting and survey: AutoCAD, Civil 3D, SketchUp, total station and auto level survey, quantity estimation and rate analysis

Digital and AI tools: Generative AI for drafting, summarising literature and automating calculations; Microsoft Excel (design workbooks), Word, PowerPoint; Python, C

EDUCATION

Master of Engineering (Civil)

2025 – Jul 2027 (expected)

CQUniversity, Melbourne Campus, Australia

GPA 7.0 / 7.0: High Distinction in every unit completed to date.

Units: Concrete Design, Advanced Transportation Engineering Design, Geotechnical Engineering Design, Australian Engineering Practice, Engineering Asset and Maintenance Management, Steel and Masonry Design, Engineering Research Project Planning.

Bachelor of Civil Engineering

Oct 2017 – Apr 2023

Pulchowk Campus, Institute of Engineering, Tribhuvan University, Lalitpur, Nepal

Final-year project: survey, detailed design and cost estimation of a 2.5 km road (see Projects). Team leader.

PROFESSIONAL EXPERIENCE

Civil Engineer

Dec 2024 – Jun 2025

Notion Engineering Consultancy Private Limited, Nepal

Carried out survey, detailed design and cost estimation for road construction projects.

Contributed to the TU Curriculum Center – Umadevi Temple Road Section project, a one-lane road about 2.6 km long.

Coordinated with team members to meet project specifications and deadlines.

Lecturer, Mathematics (Plus Two)

Aug 2023 – Dec 2024

Trinity International Secondary School/College, Nepal

Taught mathematics to senior secondary students and built lesson plans that improved academic performance.

ENGINEERING PROJECTS

Final-Year Project: TU Curriculum Development Centre to Umadevi Temple Road, Kathmandu (team leader, team of 6) 2022

Surveyed the alignment (map study, reconnaissance, total station corridor survey) and designed the road geometry to NRRS 2071: Class III district road, 40 km/h design speed, 8.5 m formation width.

Designed the pavement from six CBR tests and a 20-year traffic forecast (catalogue, IRC and DoR methods) and designed side drains and pipe culverts from Gumbel rainfall analysis and the rational method.

Prepared quantities, rate analysis and the cost estimate to DoR and DoLIDAR norms.

Steel Portal Frame Shed, Perth (team of 3, AS 4100) 2026

Designed a 15 m span, 30 m long industrial shed: wind and gravity loads to AS/NZS 1170.2, 200UB22.3 rafters, 200UC46.2 columns and a bolted knee connection (M20 Grade 8.8).

Built the frame in SPACE GASS and compared its results with hand calculations and a design spreadsheet.

Reinforced Concrete Shopping Building, Darwin (AS 3600) 2026

Designed a flat slab (Level 1) and a beam-supported slab (Level 2), with cover set for fire resistance (FRP 120/90/60) and durability. Designed the Level 2 grid A beam and column A1.

Checked the roof slab for a 0.1 mm crack width: N12@300 mm failed and N12@100 mm passed.

Prestressed Concrete Continuous Beam (AS 3600) 2026

Designed a two-span beam (20 m spans, f'_c 60 MPa): I-girder section, prestress force and eccentricity from stress limits, three 12-strand tendons on a parabolic profile, ultimate capacity and long-term losses.

Masonry Wall Assessment for a Vertical Extension (AS 3700) 2026

Checked an existing 1996 clay brick wall for an added storey in an Excel design workbook (shear, rocking, bending, compression). The unreinforced wall failed in vertical bending, so a reinforced concrete masonry wall was designed to pass all checks.

Produced AutoCAD wall drawings and a SketchUp model.

Traffic Analysis (HCM, SIDRA Intersection) 2026

Showed that upgrading a two-lane highway segment from LOS D to a multilane road or freeway gives LOS A.

Compared unsignalised, signalised and roundabout intersections by hand and in SIDRA; the single-lane roundabout operated at LOS A.

Pavement Design (Austroads, CIRCLY) 2026

Designed four flexible pavements and two rigid alternatives (220 mm PCP and 190 mm CRCP on 150 mm LCS) for a 34-year design life at 90% reliability, and a 155 mm granular overlay.

Consolidation Settlement Analysis (SigmaW, Terzaghi) 2025

Modelled a 20 m x 10 m loaded area on 10 m of normally consolidated clay: 336 mm settlement after 10 years, with vertical drains at 2 m spacing speeding up consolidation. Compared with a Terzaghi hand calculation (720 mm) and explained the difference.

Research Plan: Oyster Shell and Waste Glass Powder in Mortar 2026

Wrote the research plan and completed the literature review and material preparation for testing partial cement replacement in mortar (flow, strength, absorption, SEM and XRD).

LEADERSHIP AND ADDITIONAL INFORMATION

Class Representative, Pulchowk Campus, for four years; team leader of the final-year project; awarded for anchoring student programs.

English (fluent), Nepali (native).

Holds a Victorian driver's license and has access to a reliable car, so can travel to site and project locations.

Can work full-time immediately as only internship part is left for University Study.

REFERENCES

Available on Request