

CLOVIS SANTOS

Civil Engineer | Clean Energy & Infrastructure

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PROFESSIONAL SUMMARY

Civil Engineer with 10+ years of hands-on experience in large-scale hydropower and infrastructure execution, distributed solar PV installation, and complex field operations in remote environments. Proven ability to lead multidisciplinary teams, manage contractor negotiations, and deliver projects in compliance with Brazilian engineering codes (ABNT, SINAPI, DNIT). Transitioning into clean energy research with a focus on decentralized Water-Energy-Food (WEF) systems for arid and semi-arid regions. Admitted to Arizona State University (MS Clean Energy Systems, Aug 2026). English fluency: TOEFL 100+ (C1).

CORE COMPETENCIES

Field Engineering & Construction Execution • Hydropower & Civil Infrastructure • Distributed Solar PV Installation • Cost Estimation (SINAPI / DNIT) • Project & Contract Management • Fire Protection Systems (SPK / ABNT) • Earthworks, Drainage & Reinforced Concrete • Community Negotiation & Stakeholder Relations • Microsoft Excel • Technical English (C1)

PROFESSIONAL EXPERIENCE

Civil Engineer — Independent Consultant | *Self-Employed* Dec 2022 – Present

- Deliver execution-focused civil engineering consulting for small-to-medium infrastructure and construction projects, providing contract-based technical support and site supervision.
- Perform detailed cost estimation and budget analysis for civil works, including comparative studies of SINAPI and DNIT reference benchmarks versus regional market prices.
- Coordinate field operations involving heavy equipment scheduling, contractor management, and execution-oriented engineering tasks in diverse site conditions.

Field Engineer — Solar PV Installation | *SS Solar* Oct 2025 – Dec 2025

- Executed on-site installation of distributed photovoltaic systems, including module mounting, structural alignment, and foundation work for PV support structures.
- Ensured compliance with technical drawings and project specifications throughout all field activities, applying construction safety protocols (NR-10, NR-35).
- Collaborated with multidisciplinary installation teams to maintain schedule adherence and quality standards across residential and commercial PV deployments.

Civil Engineer — Fire Detection & Safety Systems (Contract) | *Grupo JV* Mar 2024 – Oct 2025

Concessionária da Rodoviária Interestadual de Sinop | ~1,000 m² active facility

- Led full recovery and code-compliance retrofit of abandoned sprinkler (SPK) and smoke/fire detection systems across an operational building — previously left incomplete by multiple contractors.
- Diagnosed and corrected an entirely inverted SPK installation (4-inch steel pipework suspended incorrectly); reorganized and supervised team of 4–8 in complete realignment before pressurization with compressed air testing.
- Self-studied ABNT fire detection standards from scratch; audited and replaced all 400+ detection points, reprogrammed control panels, and recovered a damaged central unit — avoiding full replacement cost.
- Achieved Corpo de Bombeiros approval in ~2 months (within the 3-month regulatory window) with only two minor corrective returns.

Civil Engineer — Hydropower Projects (Contract) | *Concasa* 2014 – 2024

UHE Sinop (400 MW) & UHE Santo Antônio (3,150 MW)

- Executed civil construction for two of Brazil's largest hydropower facilities: UHE Sinop (400 MW) and UHE Santo Antônio (3,150 MW), comprising a combined installed capacity exceeding 3,500 MW.

- Performed reinforced concrete works, formwork assembly, earthworks, drainage systems, and access road construction across multi-year project cycles.
- Led compensatory infrastructure negotiations for ~1,000 affected families in UHE Sinop's flood zone, managing a team of up to 10 personnel across remote sites with access roads exceeding 3 hours of unpaved travel.
- Resolved critical impasses with resistant landowners through customized negotiation strategies — including hiring a property owner as a subcontractor — avoiding at least one judicial reintegration proceeding and reducing legal exposure for the concessionaire.
- Secured on-site food, lodging, and internet access from local communities, significantly reducing operational costs and logistics overhead in remote areas.

EDUCATION

B.S. in Civil Engineering | UNIFASIFE

Mar 2019 – Dec 2022

Thesis: Comparative cost analysis of heavy equipment ownership and operating costs (DNIT/SINAPI benchmarks vs. regional market prices, Mato Grosso state).

M.S. Clean Energy Systems (Incoming) | Arizona State University

Aug 2026

Research focus: Modular Water-Energy-Food (WEF) Nexus systems integrating solar PV generation, battery storage, solar-powered reverse osmosis desalination, and controlled-environment agriculture for arid/semi-arid deployment.

CERTIFICATIONS & LICENSES

CREA-MT (Active Professional License, Mato Grosso) • NR-35 (Work at Height) • NR-10 (Electrical Safety) • NR-01 / NR-02 (General & Preliminary Safety Inspection)

LANGUAGES

English: Advanced / C1 — TOEFL iBT 100+ **Portuguese:** Native

ACADEMIC PRODUCTION

Conceptual paper: Modular off-grid WEF Nexus system for arid/semi-arid regions integrating solar PV, battery storage, solar-powered RO desalination, and climate-controlled greenhouse agriculture (2025). Used as graduate application writing sample.