METHODOLOGY / PUBLIC NOTICE OF AUTHORSHIP

Terra Genesis

Digital twins and architect-directed design agents

AUTHORSHIP

Gaurav Vatsa

Founder of Terra Genesis / AERONOVA TIA Consultants

Terra Genesis is a digital-twin-based methodology for generative architecture. Master Architect Gaurav Vatsa is its Chief Controller and human design co-pilot. He directs specialist design agents, explores alternatives with OpenAI models and decides which model-tested scheme advances.

HOW THE METHOD WORKS

The architect turns the brief into design rules and sets up a digital twin of the site. The team develops distinct options against that common model. Each option carries a record of what changed, how it performed and which assumptions still need checking.

The team compares the cost of building and running each option on the same basis. For a revenue-generating project it also tests demand, cash flow and the timing of funding. On a school it can compare pupil capacity with the cost of delivering each phase.

PERSONAL RIGHTS NOTICE

I conceived Terra Genesis and develop it through my independent practice, AERONOVA TIA Consultants. I claim rights in my original writings, design specifications, drawings and software contributions. Project agreements and collaborators’ credits apply to their respective work.

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METHOD IN PRACTICE

From site evidence to a design decision

The Chief Controller questions proposals, changes constraints and asks the agents to rerun tests. The design objective is to use the most capable OpenAI model available and validated for each task. The digital twin retains the geometry, quantities and revision history.

01	**Establish the site**	Register the boundary, levels, access, climate, brief and budget. Identify the source and status of each input. The architect accepts the baseline for the design stage.
02	**Generate options**	Set the variables and constraints. OpenAI models can interpret the brief and propose alternatives. Modelling tools build each alternative as a separate revision of the twin.
03	**Test and appraise**	Teams test geometry, circulation, climate, structure, operations and cost. A coordinator brings conflicting findings to the Chief Controller. A missing critical input keeps the affected decision open.
04	**Select and issue**	Gaurav decides which scheme progresses and records his reasons. The team issues drawings, quantities, visualisations and the appraisal from the accepted revision, and rechecks them when the design changes.

ILLUSTRATIVE DESIGN DECISION

A shaded courtyard could bring two classroom wings closer together. The team models a compact and an open arrangement, then measures travel distance, tests daylight and compares the cost of the covered walk. The architect can choose a layout and record which trade-off informed that choice.

PILOTS IDENTIFIED BY GAURAV VATSA

Sanjeevani Vann, Nagpur	Le Press Phase 3, Lucknow
Raipur school, Chhattisgarh	Sankadady, Karnataka

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