

REGENERATIVE STADIUM DESIGN AND DELIVERY

A public working note for a 365-day civic
infrastructure anchor in the Rogue Valley

WORKING THESIS

The proposition

A regenerative stadium should be evaluated as more than a lower-impact event building. The stronger proposition is a year-round civic platform that coordinates public space, clean-air refuge, local workforce training, mixed-use activity, energy systems, water systems, and district renewal. The venue is the anchor; the district systems create the long-term value.

Publication status: This note is an independently developed concept. It does not represent a City of Medford project, an RCC partnership, a site-control position, an engineering certification, or a capital commitment.

Four design rules

Rule	Design direction	Evidence standard
1	Measure the whole life cycle	Mass timber may reduce embodied impacts and store biogenic carbon, but any public carbon claim should follow a project-specific whole-building life-cycle assessment, a verified sourcing plan, and an end-of-life scenario.
2	Design systems, not ornaments	Solar, storage, rainwater capture, filtration, shade, transit access, and landscape infrastructure should be sized against actual loads, climate data, code, maintenance capacity, and operating economics.
3	Program all 365 days	Training, recreation, health, retail, public meetings, and community services should carry the asset between event days. Each use requires an operator, schedule, access policy, and revenue or service rationale.
4	Keep the structure reversible	Modular connections, accessible service zones, replaceable assemblies, and recoverable materials can reduce lock-in and improve the residual value of the building system.

EVIDENCE IN PRACTICE

Reference cases

These precedents demonstrate individual parts of the thesis. They do not prove that the full Rogue Valley concept is feasible or financeable.

Reference	Transferable lesson
Mass timber research	US Forest Service whole-building studies report lower global-warming impacts for modeled mass-timber alternatives in specific regional cases. Results depend on material sourcing, transport, design, system boundaries, and end-of-life assumptions.
Mercedes-Benz Stadium	The venue reports LEED Platinum certification, 4,000 solar PV panels, and a 680,000-gallon rainwater cistern used for irrigation and cooling-tower make-up water. It is a useful systems precedent, not a cost or ownership analogue for Medford.
Tottenham Hotspur Stadium	The club reports certified renewable energy, zero Scope 2 emissions, a zero-to-landfill program, water-efficiency measures, and substantial public-transport access. The reference is operational: performance depends on management systems after opening.
Medford adopted planning	The City adopted a Downtown Plan into its Comprehensive Plan in October 2025. Any district concept must be tested against that adopted framework and the applicable land-use, transportation, infrastructure, and public-review requirements.

What a credible feasibility phase must produce

- A program brief that identifies year-round users, operators, hours, access requirements, and service outcomes.
- A site and mobility screen that tests parcel control, utilities, hazards, transit, pedestrian access, freight conflicts, and neighborhood effects.
- Concept design with code, fire, smoke control, acoustics, crowd safety, structure, envelope, and maintainability reviewed by qualified professionals.
- Whole-building life-cycle assessment and energy, water, stormwater, and smoke-resilience models with sources and uncertainty ranges.
- A capital and operating model that distinguishes grants, private equity, debt, public participation, earned revenue, and continuing subsidy without assuming any source is committed.

FROM CONCEPT TO DECISION

A staged delivery framework

Sta ge	Gate	Work	Decision output
0	Public thesis	Publish the problem statement, concept systems, maps, assumptions, and correction process.	A legible proposal that can be challenged.
1	Needs and site screen	Confirm demand, candidate users, planning context, environmental conditions, infrastructure capacity, and site-control path.	A go/no-go shortlist; no implied entitlement.
2	Concept engineering	Develop code pathway, structural scheme, utility loads, smoke-resilience strategy, water balance, and operating program.	Performance ranges and principal risks.
3	Commercial validation	Obtain third-party cost plan, operator input, market testing, funding eligibility review, and financing scenarios.	Bankability evidence, not a financing promise.
4	Public and regulatory process	Advance only with the required owners, agencies, utilities, neighbors, Tribal consultation, permits, and public decisions.	An authorized project or a documented stop.

Capital discipline

The concept may be evaluated as a portfolio of separable infrastructure services - venue operations, district energy, water management, mobility, mixed-use real estate, and workforce facilities - but legal separation does not eliminate risk. Public debt, tax revenue, grants, guarantees, or fee waivers should never be represented as available before the responsible body has completed its own process. The objective is transparent allocation of risk, not a claim of risk-free development.

REFERENCE SET

Sources and limits

1. US Forest Service - Life-cycle assessment of mass timber buildings
<https://research.fs.usda.gov/treesearch/67313>
2. US Forest Service - Comparative life-cycle assessment of mass timber and concrete
<https://research.fs.usda.gov/treesearch/60137>
3. Mercedes-Benz Stadium - Sustainability and LEED Platinum
<https://www.mercedesbenzstadium.com/sustainability>
4. Tottenham Hotspur - Sustainability
<https://www.tottenhamhotspur.com/the-club/sustainability/>
5. City of Medford - Comprehensive Plan and adopted Downtown Plan
<https://www.medfordoregon.gov/Government/Departments/Planning/CompPlan>

Limit: The reference cases establish that individual systems have been implemented elsewhere. They do not establish local technical feasibility, cost, ownership, demand, approvals, or finance. All Rogue Valley quantities and outcomes remain hypotheses until independently verified.