

LEHO SARR AFRICAN FAMILY VILLAGE

External Reference Sources & Intellectual Lineage

1. PASSIVE SOLAR & THERMAL MASS

James Kachadorian

The Passive Solar House

Primary influence on:

- thermal flywheel thinking,
- nighttime insulation shutters,
- solar gain management,
- thermal storage logic,
- passive heating sequencing.

Key Concepts:

- insulated shutters,
 - direct gain systems,
 - interior thermal mass,
 - seasonal solar geometry.
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Passive House / Passivhaus Standards

Germany / Austria / Scandinavia

Influences:

- airtightness,
- continuous insulation,
- thermal bridge elimination,
- HRV/ERV systems,

- ultra-low operational energy.

Key Organizations:

- Passive House Institute
- PHIUS

Important Concepts:

- exterior continuous insulation,
 - minimized heat loss,
 - thermal envelope continuity,
 - controlled ventilation.
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2. AAC (AUTOCLAVED AERATED CONCRETE)

Hebel

Ytong

H+H

AAC Worldwide

Primary influence on:

- mineral wall systems,
- lightweight masonry,
- fireproof construction,
- vapor-open assemblies,
- thermal masonry.

Relevant Concepts:

- AAC block systems,
- reinforced AAC panels,
- large-format AAC wall systems,

- low-density mineral construction.

Key Regions:

- Germany,
 - Scandinavia,
 - Eastern Europe,
 - Middle East.
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3. LOW-CARBON CONCRETE

CarbonCure

Primary influence on:

- lower embodied carbon concrete,
- CO₂ mineralization,
- durable structural systems,
- long-lifespan concrete framing.

Relevant Concepts:

- captured carbon injection,
 - reduced cement intensity,
 - high-strength structural concrete.
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Additional Concrete References

LafargeHolcim

ECOPact

Ferrock (experimental)

Roman concrete durability studies

Relevant Themes:

- longevity,

- reduced permeability,
 - low-carbon binders,
 - mineral permanence.
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4. EXTERIOR ENVELOPE & RAINSCREEN SYSTEMS

Equitone

Primary influence on:

- mineral façade aesthetics,
- panelized rainscreen systems,
- civic/institutional appearance,
- durable façade assemblies.

Key Concepts:

- ventilated façades,
 - fiber cement panels,
 - large-format cladding,
 - minimalist mineral surfaces.
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Scandinavian Rainscreen Traditions

Influence on:

- ventilated wall systems,
 - moisture management,
 - freeze-thaw durability,
 - breathable assemblies.
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5. MINERAL WOOL & FIRE-RESISTANT ENVELOPES

Rockwool

Roxul

Thermafiber

Primary influence on:

- continuous exterior insulation,
- vapor-open wall assemblies,
- fireproof thermal envelopes,
- acoustic insulation.

Key Concepts:

- noncombustible insulation,
 - rainscreen compatibility,
 - thermal bridge reduction,
 - long-duration assemblies.
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6. MEGASTRUCTURE / ARCOLOGY / TERRACED URBANISM

Habitat 67

Moshe Safdie

Primary influence on:

- terraced density,
- modular communal housing,
- stepped solar geometry,
- private outdoor terraces in dense housing.

Arcology Theory

Paolo Soleri

Influence on:

- ecological megastructures,
 - integrated communal systems,
 - high-density ecological urbanism,
 - architecture as social metabolism.
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Metabolist Movement (Japan)

Relevant Architects:

- Kisho Kurokawa
- Kenzo Tange

Influence on:

- modular expansion,
 - adaptable infrastructure,
 - infrastructural megastructures.
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7. CIVIC & INSTITUTIONAL ARCHITECTURE

Nordic Civic Architecture

Influence on:

- restrained material palettes,
- daylight-centered design,
- durable public architecture,
- warmth through proportion rather than ornament.

Key Themes:

- social democracy expressed architecturally,
 - permanence,
 - public dignity,
 - ecological restraint.
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8. ECOLOGICAL & CLIMATE DESIGN

Building Science Corporation

475 High Performance Building Supply

Influence on:

- moisture management,
 - vapor-open assemblies,
 - thermal bridge analysis,
 - cold climate wall systems.
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NYSERDA

Potential relevance:

- incentives,
 - cold-climate research,
 - building performance guidance,
 - decarbonization pathways.
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9. RESILIENT SOCIAL HOUSING MODELS

Vienna Social Housing

Influence on:

- long-duration public housing,

- dignified collective living,
 - integrated courtyards,
 - social infrastructure.
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Scandinavian Cohousing

Influence on:

- shared kitchens,
 - collective childcare,
 - intergenerational design,
 - ecological domestic systems.
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10. LANDSCAPE & WINTER GARDEN SYSTEMS

Biosphere / Winter Garden Typologies

Relevant influences:

- indoor arboretums,
- enclosed winter commons,
- thermal buffering through vegetation,
- climate-moderated communal spaces.

Potential references:

- Eden Project
 - Montreal underground winter systems
 - Scandinavian winter gardens
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11. POTENTIAL FUTURE RESEARCH DOMAINS

Structural Research

- post-tensioned low-carbon concrete
- AAC panelized systems
- thermal break connectors
- mineral-based structural composites

Energy Systems

- geothermal loops
- district thermal systems
- solar thermal storage
- seasonal heat banking

Water Systems

- greywater reuse
- ecological wastewater treatment
- anaerobic digestion systems

Manufacturing

- prefabricated mineral wall systems
- modular façade assemblies
- low-carbon regional fabrication

12. OVERALL ARCHITECTURAL POSITION

Leho Sarr African Family Village currently sits at the intersection of:

- Passive House
- Arcology
- Civic Megastructure

- Ecological Social Housing
- Mineral-Based Construction
- Terraced Solar Urbanism
- Long-Duration Architecture
- Educational Commons Design