# ▲ TRIANGLE PROJECT MANAGEMENT

## VALUE STREAM MAP

*Lean Construction · Lessons Learned · Process Flow & Waste Identification*

**PURPOSE OF THIS DOCUMENT**

A Value Stream Map (VSM) is a Lean Construction tool used to visualise the complete flow of materials and information required to deliver a process — from initial request through to handover. It distinguishes Value-Adding Time (VAT) from Non-Value-Adding Time (NVAT), exposing waste, delay, and rework so the team can target improvement.

*This template walks through a worked example — a concrete slab pour cycle — and provides a current-state map, a future-state map, and a structured lessons-learned capture process. Replace the worked example with your own process before use.*

## A. PROJECT & PROCESS DETAILS

| | | | |
|---|---|---|---|
| **Project Name:** | [Project Name] | **Project No.:** | [Project No.] |
| **Process Mapped:** | [e.g. Concrete Slab Pour Cycle] | **Date of Mapping Session:** | [DD-Mon-YYYY] |
| **Facilitator:** | [Name, Role] | **Participants:** | [List trades / roles present] |
| **Scope Boundary (Start):** | [e.g. Material order placed] | **Scope Boundary (End):** | [e.g. Slab struck and cured] |

## B. VSM SYMBOL LEGEND

| | | | |
|---|---|---|---|
| **PROCESS BOX** | Represents a discrete process step. Shows Cycle Time (C/T), Lead Time, and crew/batch size. | **ARROW (→)** | Represents flow between process steps — either material flow or information flow. |
| **VAT** | Value-Adding Time — work the customer would pay for. Target: maximise. | **NVAT** | Non-Value-Adding Time — waiting, rework, transport, inspection delay. Target: eliminate. |

## C. CURRENT STATE MAP

*Worked Example — Concrete Slab Pour Cycle · Replace with your own process*

| 1. MATERIAL ORDERING | 2. DELIVERY & INSPECTION | 3. FORMWORK INSTALL | 4. REBAR FIX & INSPECTION | 5. CONCRETE POUR | 6. CURE & STRIKE |
|---|---|---|---|---|---|
| Lead Time: [___] | Lead Time: [___] | Lead Time: [___] | Lead Time: [___] | Lead Time: [___] | Lead Time: [___] |
| Batch Size: [___] | Batch Size: [___] | Crew Size: [___] | Crew Size: [___] | Crew Size: [___] | Duration: [___] |
| C/T: [___] hrs | C/T: [___] hrs | C/T: [___] hrs | C/T: [___] hrs | C/T: [___] hrs | C/T: [___] hrs |

| STEP | Step 1 | Step 2 | Step 3 | Step 4 | Step 5 | Step 6 |
|---|---|---|---|---|---|---|
| VAT (mins) | [___] | [___] | [___] | [___] | [___] | [___] |

| NVAT (mins) | [___] | [___] | [___] | [___] | [___] | [___] |
|---|---|---|---|---|---|---|

| TOTAL LEAD TIME | TOTAL VAT | TOTAL NVAT | PROCESS EFFICIENCY |
|---|---|---|---|
| [___] days | [___] mins | [___] mins | VAT ÷ Lead Time = [___]% |

## D. WASTE IDENTIFICATION — THE 8 WASTES (TIMWOODS)

*Identify where each waste type occurs in the current-state map above*

| | Waste Type | Definition | Where Observed in This Process |
|---|---|---|---|
| T | **Transport** | Unnecessary movement of materials, equipment, or people | *[Where observed in this process]* |
| I | **Inventory** | Excess materials, WIP, or stock sitting idle on site | *[Where observed in this process]* |
| M | **Motion** | Unnecessary movement by workers (searching, walking, reaching) | *[Where observed in this process]* |
| W | **Waiting** | Idle time — waiting for materials, instructions, inspections, or predecessor trades | *[Where observed in this process]* |
| O | **Overproduction** | Producing more than needed, or too early (e.g. premature procurement) | *[Where observed in this process]* |
| O | **Over-processing** | Doing more work than the specification requires | *[Where observed in this process]* |
| D | **Defects** | Rework, non-conformance, and quality failures requiring correction | *[Where observed in this process]* |
| S | **Skills (Underutilised)** | Not using the full skill, knowledge, or input of the workforce | *[Where observed in this process]* |

## E. FUTURE STATE MAP — TARGET IMPROVEMENT

*Redesign the process to eliminate identified waste*

| 1. MATERIAL ORDERING | → | 2. DELIVERY & INSPECTION | → | 3. FORMWORK & REBAR (Combined) | → | 4. CONCRETE POUR | → | 5. CURE & STRIKE |
|---|---|---|---|---|---|---|---|---|
| [Improved] Lead: [___] | | [Improved] Lead: [___] | | [Improved] C/T: [___] | | [Improved] C/T: [___] | | [Improved] Duration: [___] |

| TARGET LEAD TIME | TARGET VAT % | EXPECTED SAVING |
|---|---|---|
| [___] days (vs [___] current) | [___]% (vs [___]% current) | [___] days / [___] $ |

## F. IMPROVEMENT ACTIONS — KAIZEN PLAN

*Specific actions to move from current state to future state*

| Improvement Action | Waste Addressed | Responsible | Target Date | Done |
|---|---|---|---|---|
| [Describe specific improvement action] | [Waste type] | [Name/Role] | [Date] | ☐ |

| | | | | |
|---|---|---|---|---|
| [Describe specific improvement action] | [Waste type] | [Name/Role] | [Date] | ☐ |
| [Describe specific improvement action] | [Waste type] | [Name/Role] | [Date] | ☐ |
| [Describe specific improvement action] | [Waste type] | [Name/Role] | [Date] | ☐ |
| [Describe specific improvement action] | [Waste type] | [Name/Role] | [Date] | ☐ |
| [Describe specific improvement action] | [Waste type] | [Name/Role] | [Date] | ☐ |

## G. LESSONS LEARNED CAPTURE

*Document insights from this process for future projects*

| | |
|---|---|
| **What Went Well:** | [Capture positive practices worth repeating on future projects] |
| **What Did Not Go Well:** | [Capture issues, delays, or rework worth avoiding next time] |
| **Root Cause of Major Delays:** | [Summarise the underlying cause of the biggest NVAT items identified] |
| **Recommendation for Future Projects:** | [Specific, actionable recommendation for the next project team] |
| **Estimated Value of Improvement:** | [Time saved × frequency, or $ saved — quantify where possible] |

## H. REVIEW & DISTRIBUTION

| | | | |
|---|---|---|---|
| **Facilitated By:** | [Name, Role] | **Date:** | [DD-Mon-YYYY] |
| **Reviewed By (PM):** | [Name, Role] | **Date:** | [DD-Mon-YYYY] |
| **Distribution:** | ☐ Project Team ☐ PMO ☐ Client ☐ Lessons Learned Register | **File Reference:** | [VSM-XXX] |