



STEEL STRUCTURES

WAREHOUSES AND SHEDS

Building options and project catalogue 2026

Warehouses | workshops | storage sheds | agricultural buildings

DRIVING INDUSTRY FORWARD

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Building range and project guide

STT Engineering Solutions welcomes enquiries for steel warehouse and shed projects, fabricated building components and extensions. This catalogue helps you define the building, compare options and prepare a project brief for quotation.

Enquiry code	Building type	Typical use
SS-WH	Enclosed warehouse	Storage, distribution and production support
SS-WS	Workshop building	Machining, fabrication and service bays
SS-OS	Open sided shed	Covered equipment and materials storage
SS-PS	Partially enclosed shed	Weather protection with selected open elevations
SS-AG	Agricultural shed	Equipment, implements and farm storage
SS-EX	Extension or lean-to	Additional covered area beside an existing building

How to use this catalogue

Choose the use and enclosure type, define the footprint and clear heights, then specify access, internal loads and the site. The quotation confirms engineering, fabrication, transport, erection, cladding and civil-work responsibilities separately.

Building codes are enquiry references. Layout dimensions are planning examples, not pre-engineered kits. Member sizes, connection details, foundations and permissible loads require a project-specific structural design.

Project support

Our workshop includes CNC machining and fabrication facilities. Fabrication scope, engineering support, outside processes, transport and site work are agreed for each project. The catalogue does not promise a fixed delivery period or a universal price per square metre.

Warehouse and workshop buildings

An enclosed warehouse combines the structural frame, weather envelope and access requirements. Define operations before choosing the building geometry.

Building requirement	Options to consider
Internal space	Clear span or internal columns with defined aisle positions
Access	Roller shutters, sliding doors and personnel exits
Operations	Racking, work bays, loading areas and forklift movement
Envelope	Metal cladding, masonry interfaces or insulated panels
Environment	Ventilation, daylight, condensation and heat control
Future growth	End-wall extension or a separately designed adjoining building

Clearances and internal loads

Specify clear usable height beneath haunches, bracing and services. Eaves height alone does not guarantee the required clearance. Provide rack layouts, machinery positions and any loads attached to the frame.

Cranes and mezzanines

State crane capacity, span, duty, runway geometry and supplier reactions. For mezzanines provide use, occupancy, storage loads, access and service requirements. These options change the frame, connections and foundations and must be included at the design stage.

Warehouse enquiry example

SS-WH | 20 m wide x 40 m long | 800 m² footprint | 6 m target clear usable height | two vehicle doors | fully enclosed | site address and operational layout supplied. The structural arrangement and final dimensions are confirmed during design.

Open sheds and agricultural buildings

Sheds can provide roof cover with open sides or selected cladding. Exposure, stored materials and vehicle movement determine the project brief.

Shed option	Use focus	Details to specify
Open sided	Equipment and material cover	Open elevations, vehicle access and wind exposure
Three sided	Storage with one access elevation	Open face, door needs and enclosure changes
Agricultural	Implements and farm equipment	Machine envelope, storage and moisture conditions
Lean-to	Cover beside an existing building	Existing structure, drainage and support arrangement
Canopy	Loading or entrance cover	Projection, headroom, supports and impact protection

Wind and enclosure

Open and partially enclosed buildings require their actual openings and exposure to be included in design. Adding walls later can change wind pressures and structural demand. Record intended future enclosure in the original project brief.

Durability and drainage

Describe dust, fertilizer, chemicals, animal exposure, washdown and coastal or industrial conditions where applicable. Keep ground drainage, roof water discharge and vehicle access compatible with the building use.

Shed enquiry example: SS-OS | 15 m wide x 30 m long | 450 m² footprint | required vehicle clearance stated | open sides | site and equipment dimensions supplied.

Building dimensions and planning layouts

The examples below show footprint areas for early project discussions. They do not establish structural capacity, standard bay spacing, available stock or a guaranteed clear span.

Example	Width m	Length m	Footprint m²	Possible enquiry
A	10	20	200	Small storage shed
B	12	24	288	Equipment shed
C	15	30	450	Workshop or shed
D	20	40	800	Warehouse
E	25	50	1250	Warehouse or production cover
F	30	60	1800	Larger storage building

Dimension definitions

Width and length must state their measurement basis: overall cladding, frame centerlines or usable internal dimensions. Footprint area = width x length. Roof covering area is greater than the horizontal footprint for a pitched roof and may include overhangs.

Field	Record in the project brief
Clear width	Unobstructed usable internal width
Clear height	Lowest clearance beneath structure and services
Length	Overall building length and any future extension
Roof pitch	Target or selected cladding requirement
Bay arrangement	Frame positions coordinated with access and operations
Overhangs	Projection, soffit needs and drainage

Example: a 20 m x 40 m footprint is 800 m². At a symmetrical 10 degree roof pitch without overhangs, roof surface area is approximately 812.3 m² before laps, cutting allowance and wastage. This is a geometry example, not a sheeting order quantity.

Frames trusses and building components

The structural arrangement is selected for the span, loads, usable space, transport and erection requirements. Final steel sections follow the structural design.

Component or arrangement	Purpose and selection focus
Portal frame	Main transverse frame with designed rigid connections
Trussed roof	Roof support with chords and web members
Internal columns	Support where operational layout permits
Purlins and girts	Support roof and wall cladding
Bracing	Stability and force transfer between frames
Eaves members	Support and coordination at roof-wall junctions
Base plates and anchors	Transfer frame reactions into foundations
Connection plates and bolts	Join members with the designed load path

Fabrication information

Released drawings identify member marks, material grades, cut lengths, holes, weld requirements, bolts and finishes. Connection and bracing details are part of the design rather than choices made only from the building width.

Transport and erection

Plan member lengths, splice locations, lifting access and temporary stability. The erection sequence and temporary bracing must keep the structure stable before the permanent system and cladding are complete.

Existing buildings

Extensions require a survey of the retained structure, foundations and connections. Do not assume an existing roof or frame can carry a lean-to, crane, solar installation or new mezzanine without assessment.

Roofing wall cladding and weather protection

Select cladding with its support spacing, fixings, finish and exposure requirements. Roof and wall systems must work together at corners, openings and drainage interfaces.

Item	Options and specification fields
Roof sheeting	Profile, material, thickness, coating, color and pitch
Wall sheeting	Profile, orientation, finish and openings
Insulated panels	Thermal requirements, joints and fire performance
Translucent roof panels	Daylight layout, compatibility and service conditions
Flashings	Ridge, barge, apron, corner and opening details
Fasteners	Approved fixing type, washers and corrosion compatibility
Gutters and downpipes	Roof catchment, outlet layout and discharge route
Condensation control	Ventilation, insulation and suitable roof build-up

Envelope details

Specify weather sealing at roof laps, penetrations, doors and wall bases. Use the selected supplier installation requirements for pitch, support spacing, fastener layout and expansion. Cladding thickness and fixing spacing are confirmed for the project.

Drainage coordination

Coordinate roof water with site falls, drainage capacity and discharge location. Box gutters, valley gutters and roof penetrations need deliberate detailing and access for maintenance.

Roof mounted equipment

Provide solar panel, ventilation unit, cable tray and other equipment weights, positions and support reactions. Include maintenance access and any future roof loads in the design brief.

Doors ventilation and building accessories

Coordinate openings and accessories with columns, bracing, drainage and the required usable space.

Accessory	Information to specify
Roller shutter	Clear opening, operation, usage and wind exposure
Sliding door	Opening, parking space, track and security
Personnel door	Location, access and exit requirements
Vehicle access	Vehicle envelope, approach and clear headroom
Louvers and ventilators	Airflow need, weather protection and position
Roof ventilation	Type, location, curb and waterproofing
Windows and daylight	Positions, glazing and internal operations
Bollards and guards	Impact risk and separation from frame supports
Platforms and stairs	Access purpose, loads and connection details

Operations and services

Provide the layout for electrical services, fire systems, compressed air, extraction and plumbing. Service penetrations and supports require coordination before fabrication. Clearance around machinery and maintenance zones should be shown on the layout.

Separate specialist scope

Fire engineering, electrical installations, lifting equipment, security and process ventilation are defined separately in the quotation. The building brief should identify their requirements even when another contractor supplies them.

Site foundations and engineering requirements

The building must be designed for its actual location, ground conditions and use. Foundation and anchor details follow the structural reactions and geotechnical information.

Design input	Project information required
Location	Address, site survey, levels and surrounding exposure
Ground	Geotechnical information, bearing and settlement conditions
Use	Occupancy, stored materials and operational hazards
Loads	Wind, imposed loads, equipment, cranes and future additions
Foundations	Column reactions, uplift, shear and anchor requirements
Slab	Forklift, rack and machinery loads; joints and floor finish
Interfaces	Existing structures, masonry, services and boundaries
Approvals	Responsible professionals and project approval scope

Engineering responsibility

A suitably registered structural engineering professional must confirm the design basis, frame, connections and foundations for the project. The applicable South African design and approval requirements are established by the appointed project team.

Foundation setting out

Confirm gridlines, finished levels, anchor locations and templates before concrete work. Check foundation dimensions and anchor positions before erection. Changes need drawing approval and recorded instructions.

No universal beam size

A span alone does not determine an I-beam, truss section or foundation size. Roof loads, bay spacing, wind, restraint, connections and site conditions affect the design. This catalogue supplies project options rather than construction-ready structural member schedules.

Fabrication finishes and quality records

Fabrication quality depends on approved drawings, identified materials, controlled processes and inspection. Specify the required records in the enquiry.

Stage	Record or inspection focus
Materials	Grade, identification and agreed certificates
Cutting and drilling	Member dimensions, holes and edge preparation
Fit-up	Alignment, geometry and connection preparation
Welding	Specified procedures, personnel and inspection
Trial checks	Critical interfaces and dimensional checks
Surface preparation	Cleanliness and preparation for selected finish
Coating	System, thickness checks and curing requirements
Dispatch	Member marks, quantities, protection and packing

Finish options

Painted systems, galvanizing and other finishes are selected against exposure, service life, maintenance and fabrication details. Agree surface preparation, coating system, color and inspection criteria before manufacture. Galvanizing requires suitable venting, drainage and component detailing.

Handover pack

Agree the required drawings, inspection records, material documents, bolt and coating data, erection records and maintenance information. Any changes during fabrication or erection must be incorporated into the final project records.

Project scope quotation and delivery

A useful quotation makes every package and responsibility clear. Choose supply-only, fabrication with delivery, or an agreed package including erection and cladding; availability is confirmed for the project.

Package	Items to confirm in the quotation
Engineering	Survey, design, drawings and approvals responsibility
Steel fabrication	Primary frame, secondary members, bracing and connections
Finishes	Surface preparation, coating and touch-up
Transport	Delivery location, loads, unloading and access
Erection	Lifting, labor, temporary works and site conditions
Cladding	Roof, walls, flashings, gutters and fixings
Civil works	Earthworks, foundations, anchors and slab
Accessories	Doors, ventilation, stairs and guards
Exclusions	Services, specialist systems and unpriced items

Project sequence

Define the brief and site information; agree design and scope; release drawings; fabricate and inspect; prepare foundations; deliver and erect; install the envelope; complete inspections and handover. The schedule depends on approvals, material availability, site readiness and the selected scope.

Pricing inputs

Building area is only one input. Span, clear height, site loads, enclosure, finish, transport, foundation conditions and accessories change cost. A project quotation is prepared from the agreed brief rather than a universal rate per square metre.

Project enquiry sheet and contact

Send the following details to STT Engineering Solutions for a warehouse or shed quotation. A sketch with dimensions and site photographs helps establish a clear scope.

Enquiry field	Details to supply
Client and site	Name, contact, address and delivery location
Building use	Warehouse, workshop, shed or agricultural application
Dimensions	Width, length, clear height and measurement basis
Enclosure	Open sides, selected walls or fully enclosed
Access	Door openings, vehicles and approach layout
Loads	Racking, cranes, mezzanines, machinery and solar
Envelope	Cladding, insulation, ventilation and drainage
Site information	Survey, ground information and existing structures
Scope	Engineering, fabrication, delivery, erection and civil works
Commercial	Target budget, timing and required quotation detail

Project reference

Example: STT SS-WH | 20 m x 40 m | 800 m² | clear usable height 6 m | enclosed warehouse | two vehicle openings | Gauteng site | design and supply scope to be agreed.

Technical reference

Southern African Institute of Steel Construction: technical resources and project examples for steel buildings. Reference only; no SAISC membership, endorsement or project certification is implied.
<https://www.saisc.co.za/technical-articles/>

Contact and issue

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Steel structures catalogue issue 1 | 2 October 2026. The Word document is the editable master and the PDF is the matching customer issue. Building layouts and scope are confirmed through the project design and written quotation.