Project Brief

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Design an industrial factory shed in Kolkata

including:

• roof truss

• bracing system

• gantry girder

• stepped column

• base plate

• general arrangement drawing

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Input Data & Design Basis

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Defined span, column spacing, shed length, crane capacity,

roof pitch, material grade, bolt grade, and loading data

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Load Assessment

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Calculated:

• dead load

• live load

• wind load

• crane-related loads

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Truss Load Analysis

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Evaluated panel-point loads and truss configuration

for the steel roof system

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Member Design

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Designed:

• purlins

• truss members

• tension/compression members

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Bracing Design

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Designed:

• rafter-level bracing

• eaves-level bracing

for overall lateral stability

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Gantry Girder Design

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Checked crane loading effects and designed gantry section

for industrial operation requirements

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Column & Base Plate Design

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Designed stepped column system and base plate connection

to safely transfer structural loads

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Engineering Drawings

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Prepared:

• grid plan

• eaves-level plan

• rafter-level plan

• bracing-level plan

• roof truss arrangement and connection details

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Codes & References Used

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IS 800:2007

IS 875 (Part 3)

SP 6

SP 38

Limit State Design of Steel Structures

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Final Outcome