

Building a bridge on a sloping roof

Article Overview

Constructing a bridge on a sloping roof requires careful consideration of slope, truss design, load distribution, and safe access systems.

Structural Considerations

When building a bridge or walkway on a sloped roof, the first step is to assess the roof slope and load capacity. Low-slope roofs often use sloping flat trusses, which provide the necessary fall for drainage while maintaining a clean roof profile. Typical minimum slopes start at 1/4 inch per foot, but the exact slope depends on roof span, local code, and drainage requirements (ArchitectureCourses.org) . For long spans, the span-to-depth ratio is critical. A common rule of thumb for roof trusses is 1:12, meaning a 77-foot span would require a truss depth of approximately 7 feet 6 inches to maintain stiffness and prevent excessive deflection (Eng-Tips) . Bracing and secure connections are essential to prevent rolling or instability under load.

Materials and Truss Design

- Wood trusses are suitable for moderate spans and lighter loads.
- Steel trusses are preferred for wider spans, heavier loads, or when the roof supports additional equipment.
- Cambering the truss can offset dead load deflection, improving the visual and functional performance of the bridge (Eng-Tips) .

Safe Access and Walkways...



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For more information, pricing, or custom solutions, please contact us:

Website: <https://iiss.co.za>

Email: sales@iiss.co.za

Phone: +27 63 174 2895

Address: Unit 8, Innovation Park, 15 Rivonia Road, Sandton, Johannesburg,
2196, South Africa

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