

# The Ultimate Guide to Metal Building Construction

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Presented By:

The logo for Integrity Metal Buildings features the word "INTEGRITY" in large, bold, white capital letters with a blue outline, set against a blue diamond-shaped background with a white border. Below "INTEGRITY", the words "METAL BUILDINGS" are written in smaller, white capital letters, also with a blue outline.

**INTEGRITY**  
METAL  
BUILDINGS

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structure

## Pro Tip!

Look out for  
**Pro Tips!** along  
the way!

**Phase 1:**

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**Plan**

# Choosing the Right Materials



## Galvanized Steel

Fully customizable designs, including column-free interiors up to 60' wide.

Made from high-quality steel, with a bonded zinc coating, offering excellent corrosion resistance

Engineered for strength, longevity, and low maintenance.

### Pros:

**Durability:** Resists pests, rot, fire, and extreme weather better than wood or pole barns.

**Flexibility:** Easily customizable for windows, doors, and future expansions.

**Low Maintenance:** No need for repainting, pest treatments, or frequent repairs.

**Fast Construction:** Prefabricated components streamline the building process, reducing labor costs and time.

### Cons:

Higher initial investment compared to pole barns

Requires precise planning for foundation and anchor points.



## Red Iron

Built using heavy I-beams and welded components, often for industrial or large-scale commercial applications.

Pre-engineered to handle high loads and demanding conditions.

### Pros:

**Unparalleled Strength:** Ideal for extremely large or heavy-load applications, such as factories, airplane hangars, or warehouses.

**High Load Capacity:** Excellent for areas with heavy snow or wind loads.

**Customizable:** Designed for specific project needs, including clear-span options beyond 60' wide.

### Cons:

**Higher Costs:** Significantly more expensive than standard steel buildings due to material weight and custom engineering.

**Longer Build Times:** Heavier components require cranes and more extensive construction expertise.

**Overkill for Smaller Projects:** Often too robust and costly for typical personal or small business uses.



# Pole Barn

## Pros:

**Lower Initial Costs:** Often cheaper to construct than steel buildings upfront.

**Simple Construction:** Easier for DIY builders or local contractors to assemble.

**Flexible Design:** Suitable for basic layouts without extensive engineering.

## Cons:

Use wood posts as the structural frame, with steel panels for siding and roofing.

Common for agricultural applications, storage, and smaller-scale workshops.

**Limited Lifespan:** Wood framing is prone to rot, warping, and pest infestations, especially in humid climates.

**High Maintenance:** Requires ongoing upkeep to prevent structural damage (e.g., termite treatments, repainting).

**Strength Limitations:** Cannot handle the same snow, wind, or seismic loads as steel or red iron buildings.

## Why Choose Galvanized Steel?

**The Best of Both Worlds:** Combines durability, flexibility, and cost-effectiveness, offering a superior solution for most small-to-medium projects.

**Cost Over Time:** While pole barns may be cheaper upfront, your steel buildings save money in the long run by minimizing maintenance and repairs.

**Scalable Design:** Easier to expand or customize than red iron or wood-framed structures.



**Need more info?** Visit our website for educational blog posts on specific applications and options!

[www.IntegrityMetalBuildings.com/blog](http://www.IntegrityMetalBuildings.com/blog)



## Optimizing Your Building Design for Hot, Humid Conditions for the Southern Climate



### Heat Management:

Orient your building to minimize exposure to direct sunlight during peak afternoon hours.

Use reflective roofing materials or light-colored paint to reduce heat absorption.

Install roof overhangs or awnings to provide shade and reduce interior temperatures.

### Ventilation Matters:

Prioritize proper ventilation to combat humidity, especially in Texas and Louisiana.

Add ridge vents or powered fans to circulate hot air and prevent moisture buildup.

Consider insulated panels (double bubble) to reduce heat transfer and maintain comfort.



### Water Drainage:

Include gutters and downspouts to direct water away from the foundation during heavy rains in Arkansas and Louisiana.

Elevate the building pad slightly to avoid water pooling from flash floods.

### Storm and Wind Protection

Opt for wind-rated designs to withstand gusts common in Oklahoma and coastal areas of Mississippi.

Reinforce anchor points and ensure roof panels are securely fastened to handle high winds.



165 Mph  
Wind  
Rating

## Streamlining Construction and Future Use



### Ease of Construction:

Position your building on a site that allows construction crews to work efficiently.

Ensure clear access for delivery trucks, cranes, and other heavy equipment during the build.

### Daily Use Efficiency:

Design driveways and entryways to accommodate large vehicles, such as delivery trucks or trailers, especially if the building is for commercial or agricultural use.

Plan pathways for easy loading and unloading operations.

### Room for Growth:

Leave enough space around the building for future upgrades, like parking areas, lean-tos, or additional structures.

A flexible site layout can save significant costs if expansions become necessary.

## Pro Tip!

Consider the natural topography of your site when planning **drainage** and grading—**utilizing existing slopes** can save on excavation costs and improve long-term water management.

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## Researching & Choosing the Right Manufacturer

### Online Reviews and Testimonials:

Check Google, social media, and forums for reviews from previous customers.

Look for consistent praise for quality, communication, and on-time delivery.

### Materials Used:

Ensure high-quality steel with proper coatings for rust and weather resistance.

Ask about warranties for materials and workmanship.

### Certifications and Experience:

Verify they meet industry standards (e.g., AISC or IAS certifications for steel manufacturing).

Choose a company with a proven track record in your region or project type.

## Ask the Right Questions

### ? Project Timelines:

How long will it take to design, manufacture, and deliver the building?

### ? Support Services:

Do they provide support during permitting, site preparation, or post-construction?

### ? Cost Transparency:

Request detailed estimates that include manufacturing, delivery, and optional extras (like insulation or add-ons).



## Pro Tip!

"The cheapest option isn't always the best—**prioritize quality and reliability** to avoid costly mistakes later on."



## Budgeting for Your Building



### Key Cost Factors

**Size:** Larger buildings cost more but provide better value per square foot.

**Site Preparation:** Expenses for groundwork, foundation, and utilities vary by location.

**Permitting:** Fees for permits and engineered drawings may apply.

**Customization:** Add-ons like lean-tos, insulation, or doors and windows increase the total cost.

### Financing Options

**Cash Payment:**

Best for avoiding interest costs and securing discounts.

**Bank or Credit Union Loans:**

Financing with local banks often provides favorable rates for building projects.

Be prepared with a detailed estimate and project timeline!

**Specialty Lenders:**

Some lenders specialize in metal building financing and may offer more flexible terms.

**In-House Financing:**

Ask if we offer in-house financing options tailored to your project.

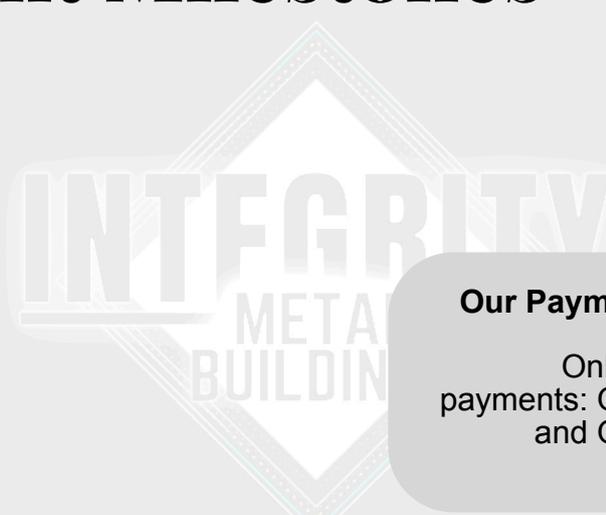
## Expected Payment Milestones

**Typical Payment Structure:**

Deposit: 10–20% to secure your order.

Midpoint Payment: Additional payment when materials are delivered or construction begins.

Final Payment: Remaining balance upon project completion.



**Our Payment Structure**

Only requires two payments: One at Deposit and One on Project Completion!

# Congratulations!

## You've Crushed Phase 1: Making a Plan

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Most people don't even get this far.

They overthink, procrastinate, or let fear hold them back. But not you. You've taken the first—and most critical—step toward building something that will last. Making a plan.

**Here's the truth:** without a solid plan, every project crumbles. But now you've got clarity, direction, and a roadmap to success. That's what separates the dreamers from the doers.

Now, it's time to take all this momentum and **dominate Phase 2.** Because the only thing standing between you and the building of your dreams is action. Let's go!

**Phase 2:**

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**Prep**

## Preparing Your Site for Success

### What to Remove:

Clear away all vegetation, debris, and obstacles like tree stumps or rocks.

Ensure the area is accessible for heavy machinery and delivery trucks.

### Importance of a Level Base:

A level site ensures structural stability and prevents uneven settling.

Reduces future repair costs caused by misaligned frames or foundations.

### Grading Tips:

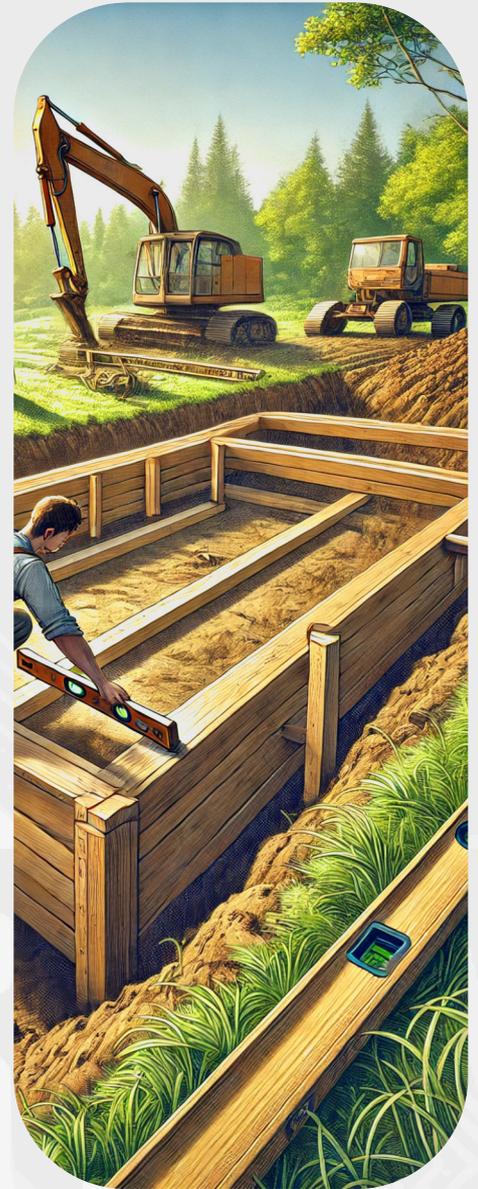
Grade the land to direct water away from the building to prevent pooling.

Use tools like laser levels or hire professionals for precision.

### Prevent Water Damage:

Incorporate drainage systems, like French drains or swales, to guide water safely away from the building.

Elevate the building pad slightly if the site is prone to flooding or heavy rain.



### Pro Tip!

Consider the **natural slope** of the site when planning drainage to minimize excavation costs.



**Most Common!**



## Concrete Slab

A flat, concrete pad poured directly onto the ground.

**Best For:** Garages, workshops, and most small-to-medium buildings.

**Advantages:** Simple to install, provides a stable base, and resists shifting.



## Concrete Footing

A reinforced concrete wall around the building's edge.

**Best For:** Barndominiums or buildings with heavy interior loads.

**Advantages:** Offers superior strength and allows for crawlspaces.



## Pier & Beam

Concrete or steel piers spaced to support the building's weight.

**Best For:** Sites with uneven terrain or where minimal excavation is preferred.

**Advantages:** Less material required, good for areas with expansive soils.



MOBILE HOME ANCHOR (GROUND)



CONCRETE ANCHOR



REBAR ANCHOR (GROUND)



MOBILE HOME ANCHOR (ASPHALT)

## Ground Anchors

Rebar rods are driven directly into the ground through the base rails of the building frame, making installation quick and straightforward.

Rebar anchors may not provide enough stability in loose or sandy ground. Alternatives like screw-in mobile home anchors are better suited for these conditions.



## Five Reasons to Consider Reinforcement

Reinforcement isn't always necessary, but there are specific conditions and scenarios where it's recommended to consider the foundation's strength and longevity. Here are the key instances:

### 1) Heavy Loads

- If your building will house heavy equipment, vehicles, or machinery (e.g., agricultural or industrial use).
- For barndominiums or multi-story structures with significant weight on the foundation.

### 2) Expansive or Poor Soil Conditions

- If the site has clay or sandy soil prone to shifting or settling over time.
- **Rebar or mesh** adds tensile strength, reducing the risk of foundation cracking due to soil movement.

### 3) Large or Wide Buildings

- For foundations supporting buildings with spans over 30 feet.
- Choose a company with a proven track record in your region or project type.

### 4) Extreme Weather Conditions

- In areas prone to freeze-thaw cycles, heavy rainfall, or seismic activity.
- For buildings in high-wind zones where lateral forces impact the structure.

### 5) Preventative Measure for Longevity

- Even for lighter buildings, reinforcement is worth considering to ensure durability and low maintenance over the long term.



# Electrical and Plumbing



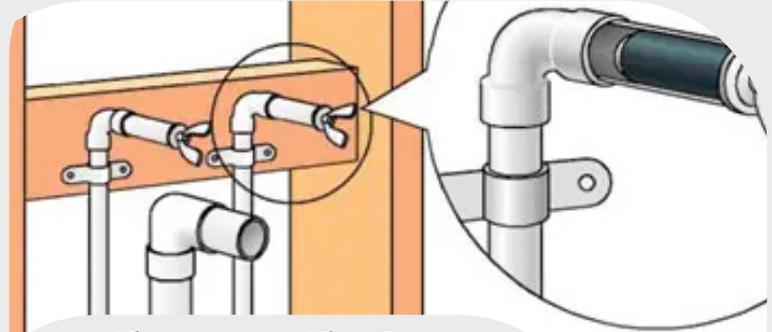
## Electrical Conduits

Use underground conduits to run wiring beneath the foundation for a clean and professional look.

Ensure conduits are laid before pouring concrete to avoid costly retrofits.

Map out where outlets, switches, and fixtures will go based on the building's purpose.

Use PVC or metal conduits rated for underground installation to prevent corrosion.



## Plumbing Stubs

### Essential Pre-Pour Prep:

Install plumbing stub-outs for water lines, drains, and sewer connections before the foundation is poured.

Mark their locations clearly to avoid accidental coverage during construction.

### Pro Tip!

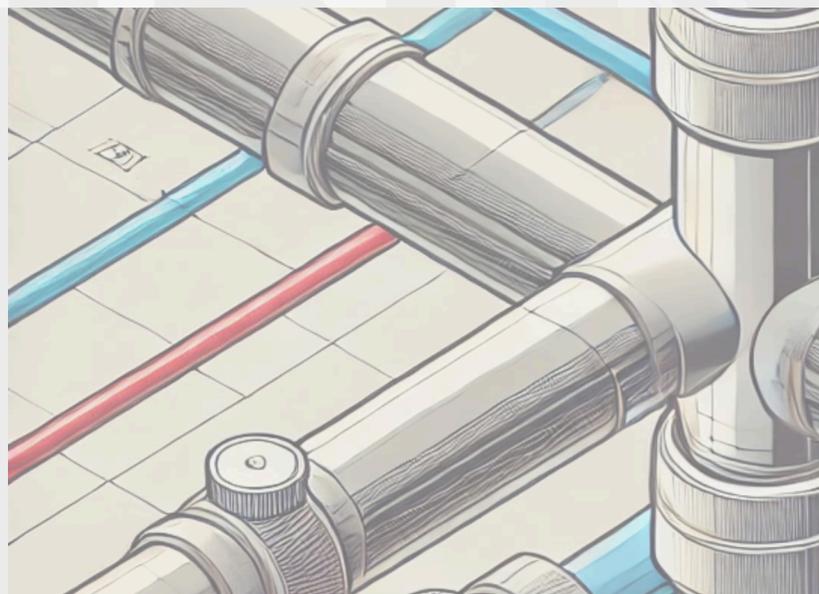
**"Test all plumbing lines for leaks before pouring the foundation to ensure everything is sealed and functional."**

## Future-Proofing Your Building

Add extra conduits and plumbing stubs in areas where expansions might occur, such as bathrooms, kitchens, or exterior hookups.

Install conduit sleeves for adding wiring or piping later without breaking through the foundation.

Adding a few extra conduits or plumbing stubs now can save you thousands in future upgrades

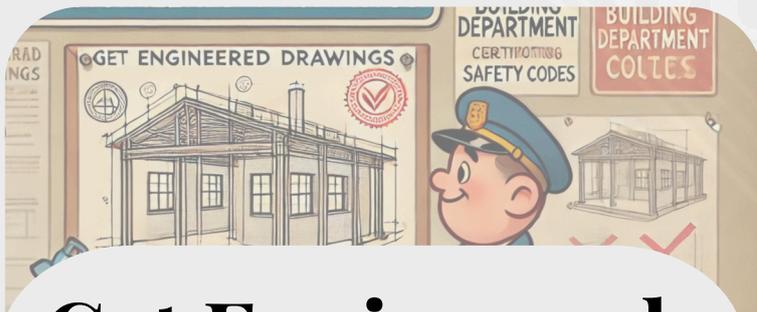


## Navigating Regulations for a Smooth Build



### Zoning Laws

Verify your property's zoning classification (e.g., residential, agricultural, or commercial) to ensure your building is allowed.



### Get Engineered Drawings

Detailed plans certified by a licensed engineer to demonstrate the building's structural integrity.

These documents can **expedite the permitting process** for your project and serve as a valuable resource for insurance claims, offering you **peace of mind and added protection**.

Many metal building suppliers (including us!) can provide engineered drawings to speed up approvals

**Pro Tip!**



### Setbacks & Easements

Determine the required distance between your building and property lines, roads, or neighboring structures.

Many municipalities require at least 10–25 feet of clearance for side and rear setbacks.

**Easements** are portions of your property designated for specific uses, like utility access, drainage, or shared driveways.

**Why It Matters:** You cannot build on or obstruct an easement, even if it's within your property boundary.

### Application Process

1. Gather Site plans, foundation designs, and engineered drawings,
2. Apply with your city or county's building department,
3. Pay any associated fees.
4. Wait for Approval!

**Apply early!** Delays in permits are one of the most common causes of project setbacks.

# Congratulations!

## **You've Conquered Phase 2: Preparation**

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You're not like most people. Most people stop when things get technical. Permits? Drainage? Foundations? That's where they throw in the towel.

But not you. You dug in. You handled setbacks, mastered zoning, and laid the groundwork (literally) for success. You didn't just check the boxes—you leveled up your entire project.

Here's the truth: Preparation separates amateurs from pros. And now, you're standing on a foundation—both literally and figuratively—that's ready to support something amazing.

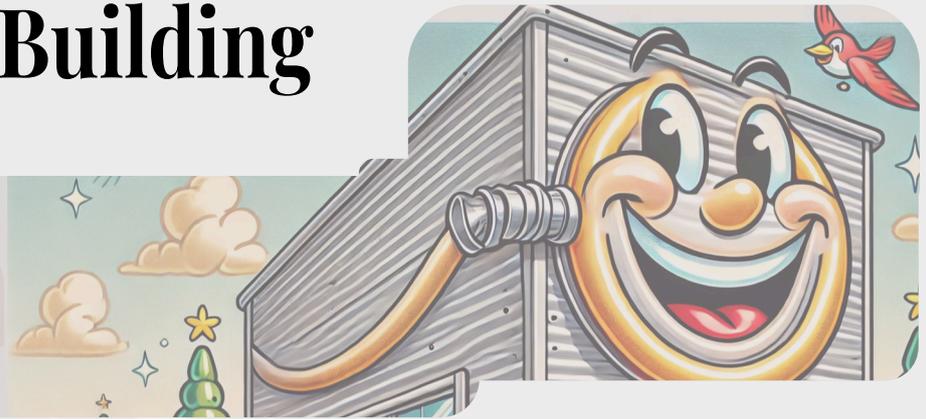
The hard part? You've already done it. Now it's time to build. Phase 3 starts now. Let's go!

**Phase 3:**

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**Ownership**

## Keeping Your Building in Top Shape



### Regular Cleaning:

Keeps your building looking great and prevents dirt or debris buildup that can cause damage over time.

Use a pressure washer or hose to remove dirt, bird droppings, and grime from the exterior.

Avoid abrasive tools that can scratch the surface or damage coatings.

### Rust Prevention:

Inspect for rust spots, especially in high-humidity areas or along the edges of panels. Treat small rust spots immediately with a rust inhibitor or primer.

Ensure the metal surfaces are properly painted or coated to resist moisture. Consider re-applying protective finishes every few years in harsh climates.

### Our steel panels and tubing are galvanized:

Coated and bonded with a Zinc finish that acts as a sacrificial layer, preventing rust and expanding the lifespan of the steel.



### Bolt and Fastener Checks

Over time, bolts and screws can loosen due to temperature changes or vibrations. Tighten them regularly to maintain structural integrity.

Look for signs of rust, stripping, or wear, and replace fasteners as needed.





## Fiberglass

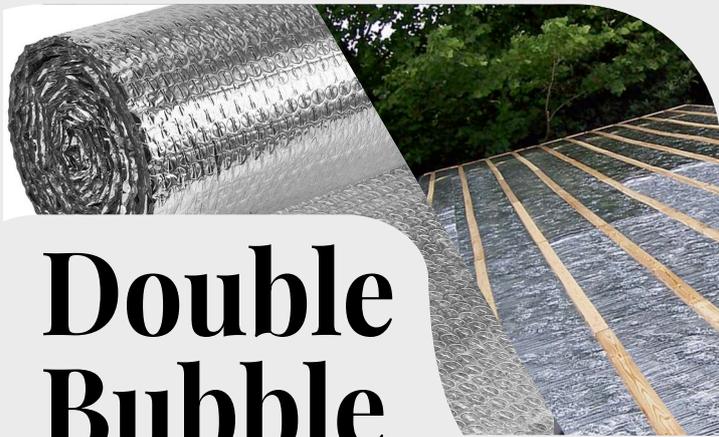
Available in rolls or batts, installed between wall and roof panels.

Cost-effective and widely available.

Best For:

**Oklahoma and Mississippi:** Perfect for moderate climates with occasional temperature extremes.

**Northern Texas and Arkansas:** Affordable option for spaces like workshops and garages.



## Double Bubble

Two layers of polyethylene bubbles sandwiched between reflective foil.

Lightweight, easy to install, and moisture-resistant.

Best For:

**Southern Texas and Louisiana:** Excellent for reflecting heat in hot, sunny climates.

**Mississippi:** Reduces cooling costs during long, hot summers.



## Pro Tip!

Use closed-cell foam for high humidity and maximum moisture protection.

## Spray Foam

Expands to fill gaps and creates an airtight seal. Excellent for controlling temperature and moisture.

Best For:

**Texas and Louisiana:** Ideal for humid coastal areas to combat moisture and heat.

**Arkansas:** Works well in areas with fluctuating temperatures for year-round efficiency.



## Vapor Barrier

Prevents moisture from penetrating the insulation or building materials.

Recommended in high-humidity areas to reduce condensation and mold risks.

Best For:

**Louisiana and Mississippi:** Critical for humid Gulf Coast climates.

**Eastern Texas and Arkansas:** Helps manage moisture in areas with seasonal rain.

## Protect Your Building From Unwanted Guests



### Sealing Gaps

Gaps in your building allow pests like rodents, insects, and birds to enter, causing damage and contamination.

#### How to Seal Effectively:

Use silicone caulk or expanding foam to close gaps around doors, windows, and foundation edges.

Install weatherstripping on doors and windows for an extra barrier.

Add fine mesh screens to any vents or openings for airflow while keeping pests out.

### Pro Tip!

Prevention is easier than removal—seal gaps and deter pests before they make your building their home.



### Safe Pest Deterrents

Keep the area around your building clear of debris, vegetation, or standing water that could attract pests.

Use gravel or concrete pads around the base to deter burrowing animals.

#### Safe Products to Use:

Place non-toxic traps or deterrents like ultrasonic pest repellents for a chemical-free solution.

Use essential oils like peppermint or citrus as natural repellents for insects.



# Common Applications



## Residential

**Barndominiums:** Open-concept living with space for storage or garages.

Example: 40' x 60' with half dedicated to living quarters and half to vehicle or equipment storage.

**Detached Garages:** Single or multi-bay layouts for vehicles, tools, or workshops.

Example: 30' x 50' with dedicated workbench areas and extra storage space.

## Pro Tip!

Think about natural light—position windows and skylights strategically to brighten living areas and reduce energy costs

## Pro Tip!

Plan for scalability—design modular spaces that can easily adapt to future needs like additional offices, storage, or retail areas.



## Commercial

### Retail or Office Spaces:

Open areas for retail displays or modular office layouts.

Example: 40' x 60' with partitioned spaces for offices and customer areas.

### Warehouses:

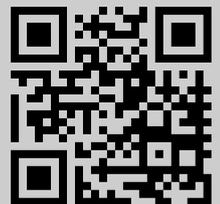
Designed for maximum storage with loading docks and roll-up doors.

Example: 60' x 120' with drive-through lanes for efficient loading/unloading.



**Not sure how to layout your space?** Visit our website to learn more about our layout-design service

[www.IntegrityMetalBuildings.com](http://www.IntegrityMetalBuildings.com)



# Maximizing Your Building's Potential



## Agricultural

### Equipment Storage Barns:

Wide interiors for tractors, combines, or other large machinery.

Example: 50' x 100' with sliding doors on both ends for easy access.

### Livestock Shelters:

Hybrid designs with open bays for feed storage and enclosed sections for animal housing.

Example: 60' x 80' with ventilated areas for livestock and skylights for natural lighting.

## Pro Tip!

Incorporate ventilation systems to maintain airflow, especially in livestock areas, to improve comfort and reduce odors



## Want to Customize Your Building's Interior Like a Pro?

Here are two tools to help you create a layout that's both functional and stylish:

### Floorplanner.com (Free):

Create simple floorplans and visualize your space in 3D—all for free. Perfect for DIYers who want to experiment with layouts.

### Sweet Home 3D (\$14.99):

Affordable, user-friendly software that lets you design detailed interiors and customize furniture, colors, and more.



**Not sure how to layout your space?** Visit our website to learn more about our layout-design service

[www.IntegrityMetalBuildings.com](http://www.IntegrityMetalBuildings.com)





## Inspection Checklist

### Foundation:

- Foundation is level and free of visible cracks.
- Anchors are securely installed and aligned per the engineered plans.



### Frame and Structure:

- Structural frame is plumb, square, and properly aligned.
- All fasteners (bolts, screws) are tight and undamaged.
- Roof and wall panels are flush with no gaps or uneven overlaps.

### Doors, Windows, and Openings:

- Doors and windows open and close smoothly without sticking or gaps.
- Pre-framed openings are correctly sized and sealed to prevent leaks or drafts.

### Pro Tip!

A detailed inspection now prevents costly repairs later—use this checklist to confirm your building is built to last.

### Sealing and Weatherproofing:

- Seams, edges, and corners are properly sealed with no visible gaps.
- Gutters and downspouts are securely attached and direct water away from the building.

### Final Walkthrough:

- Inspect the building interior and exterior for scratches, dents, or damage from construction.
- Verify all installed components match your order and engineered drawings.



# Thank You!

We appreciate you taking the time to learn more about planning, building, and maintaining your metal building. Whether you're just getting started or ready to take the next step, we're here to help every step of the way.



## Got questions?

Let's make it easy for you:

**Visit our website:** [IntegrityMetalBuildings.com](http://IntegrityMetalBuildings.com)

## Message us on Facebook:

[www.facebook.com/integritymetalbuildings](http://www.facebook.com/integritymetalbuildings)

**Call or Text:** (682) 253-5484

**Email:** [IntegrityMetalBuildings@gmail.com](mailto:IntegrityMetalBuildings@gmail.com)

## Pro Tip!

Your dream building is closer than you think—reach out today and let's bring it to life!