

Accessible Farm Shops



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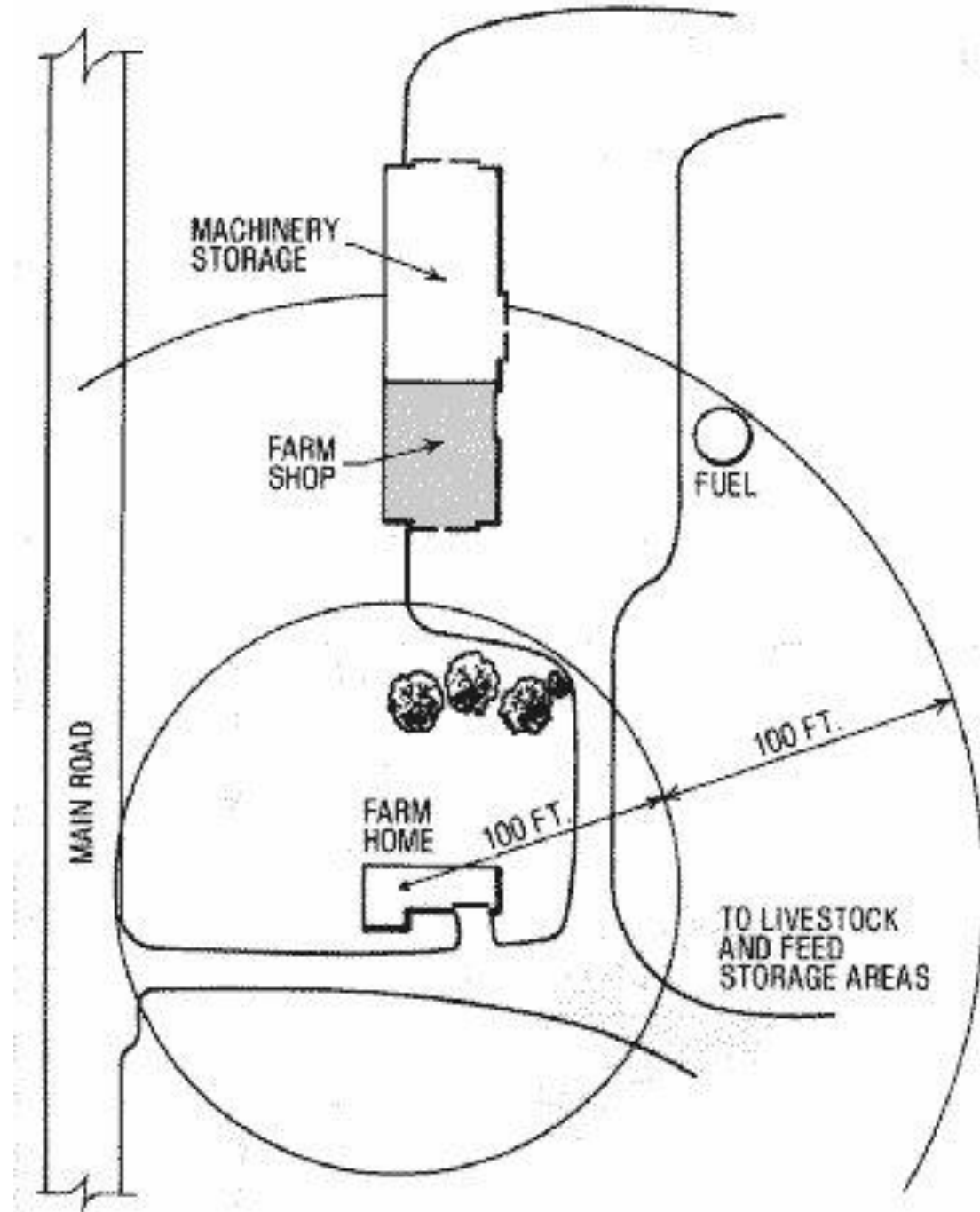
Introduction

Careful planning of the farm shop can make it accessible and usable for all individuals with and without medical impairments.



Location

The shop should be convenient to the farm home and to vehicle traffic. The circular zones, 100 feet apart, show how the shop fits into the rest of the farmstead.



Location

Make clear smooth pathways directly from the house to the shop that are easy to access with snow removal equipment.



Expected Uses

What tasks need done in the shop? Can tools be easily reached? Will equipment fit in the space for repairs or will it end up outside?



Renovate or build new?

Renovating an existing building may be the only good option from a financial perspective, but upgrades can be very expensive



Renovate or build new?

Building a new farm shop is a good choice if the existing shop building will not accommodate equipment or is structurally unsound



Structure

Size the shop to fit the largest equipment that is planned to be repaired plus 5-foot space for working. Plan for future growth as your equipment will likely be larger within 10 years



Structure

The farm shop will be most accessible when there is plenty of room to push a tool cart around equipment parked inside for repairs



Floors

Properly sloped floors and adequate floor drains play a crucial role in reducing slip hazards. Use metal floor drain grates rated to support heavy machinery.



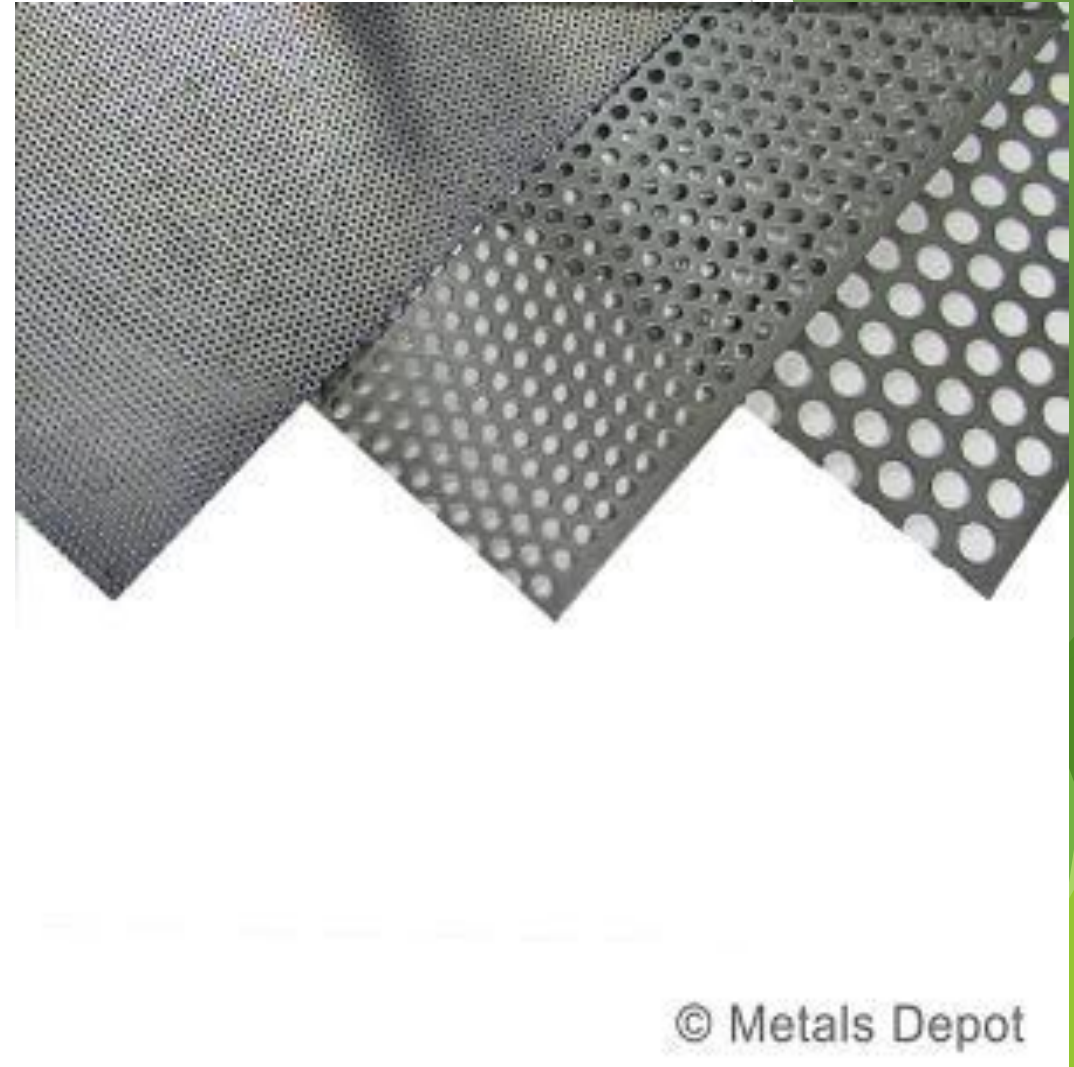
Floors

Use a hose reel on wheels to easily store the hose and move it to a warm storage location.



Wall and Ceiling Material

Wood or perforated steel panels help deaden sound in the farm shop



Wall and Ceiling Material

Wood walls make organizing tools easy! Obvious visible tool placement enhances access and reduces clutter.



Heating and Cooling

This well-insulated farm shop has gas heat. Fire resistant metal wall material should be installed around heat sources.



Ventilation

Ventilation hoods can be mounted over the metalworking workbench, or flexible ventilation tubes moved to those sites where welding is going to be done.



Ventilation

When adequate ventilation cannot be achieved for the workspace, powered air purifier respirators like the Cleanspace respirator will filter the air for an individual worker



Ventilation

Air cleaner systems draw dusty air through filters and blow the clean air back into the room but require regular maintenance. This table has a vacuum that draws dust down through the holes and into a filter



Windows and Doors

Standard garage door openers can be adapted with custom brackets to open sliding doors.



Windows and doors

A segmented overhead door with windows and power opener provides natural light and remote control.



Windows and doors

Sliding doors are low cost but may be hard to open and block other parts of the building. A walk-through door designed in the sliding door can allow personal access without opening the heavier large door.



Windows and doors

Service doors 36-inches wide with lever handles as shown are easy to open for all workers. Ramps should meet ADA standards with 12:1 slope and 1/2” thresholds.



Lighting

This farmer created an adjustable-height LED light stand to improve visibility in his farm shop



Lighting

LED is most efficient light source currently available, does not have a “strobe effect”, and has a wide operating temperature range. Note the rewind electric cord to reduce tripping and insulation.



Electrical

An electrical outlet on the front side of this work bench gives convenient access to power without using extension cords



Compressed Air

Auto rewind air-line storage reels make it easier for workers with arm impairments to store hoses. They are often mounted on the ceiling or side walls to reduce tripping hazards



Overhead cranes and service pits

This jib crane is mounted on a corner so it can swing 270 degrees around the shop.



Overhead cranes and service pits

Gantry crane with rolling worktable underneath it.



Overhead cranes and service pits

Workers with leg and back impairments can do their own mechanic work when they do not need to crawl under vehicles. Note the rolling tool cart.



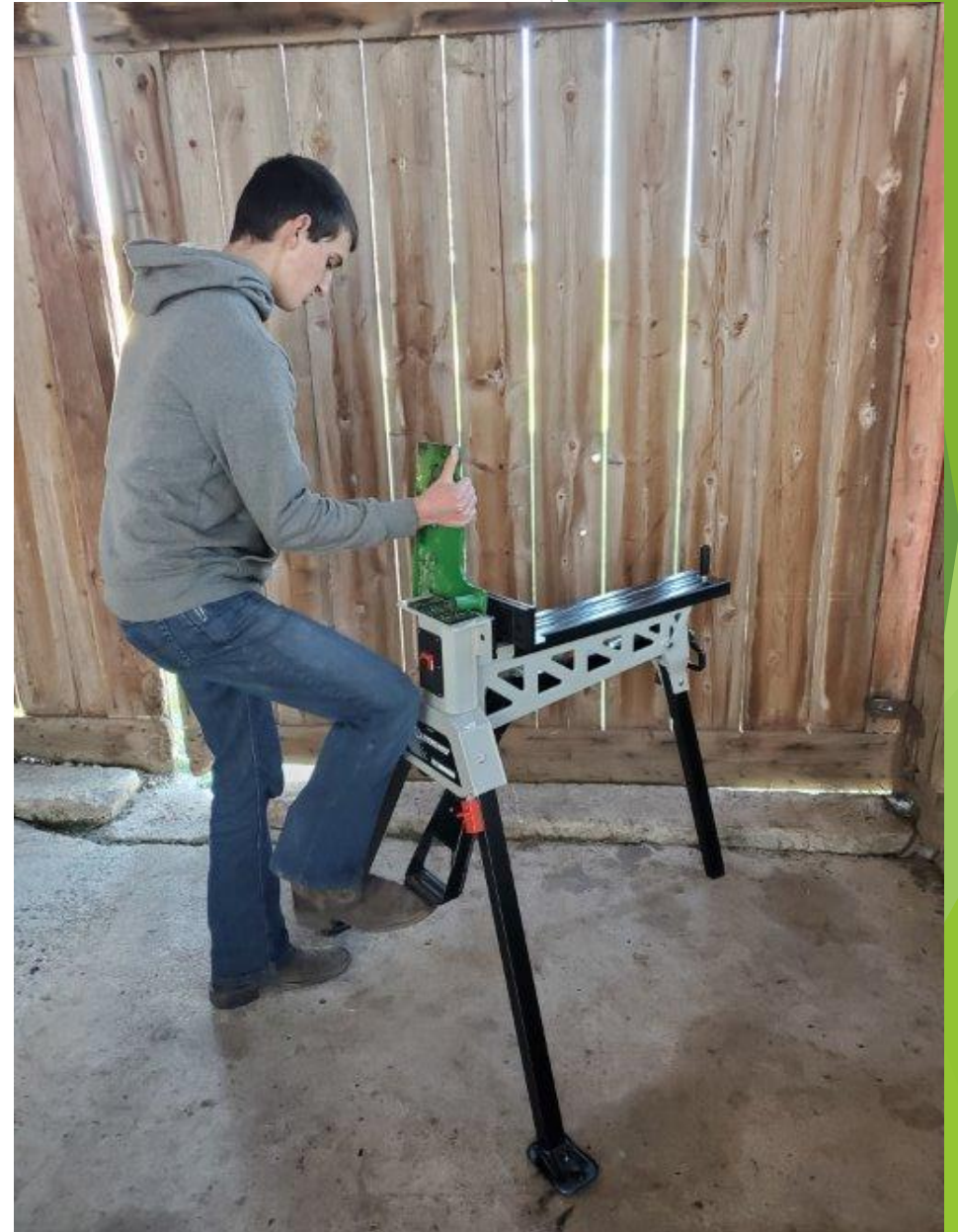
Overhead cranes and service pits

Planning for a service pit, lift or hoist is required during the initial planning and construction of the building to complete excavation and place anchor points.



Organizing the Farm Shop

Foot-operated vise clamps are especially helpful for working with one arm.



Using Tools



Hand tools with larger cushioned grips and wearing anti-vibration gloves help workers with carpal tunnel and hand impairments.



Velcro grip gloves hold your hand in a tight fist without exerting muscle strain. This can be helpful when holding shop tools for long times. This 18V impact driver is a flexible tool for removing fasteners quickly

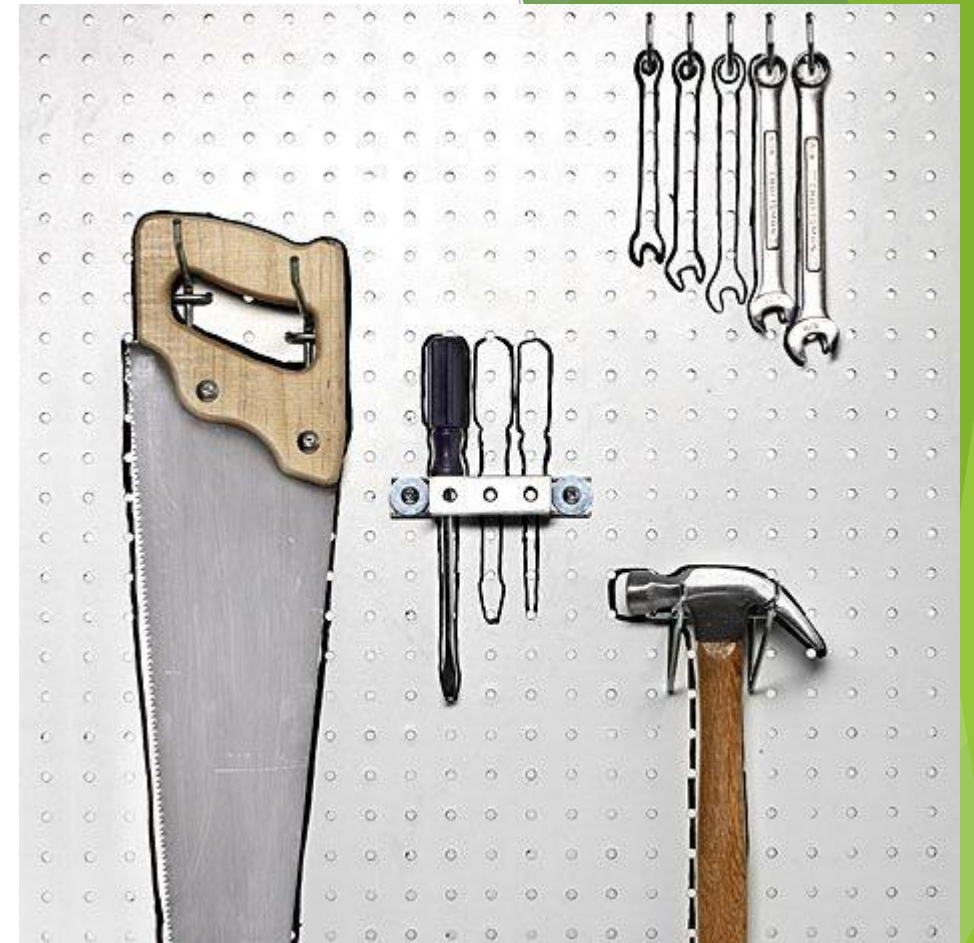
Battery Operated Tools

Cordless power tools have been developed for many applications



Tool Storage

Storing tools in color coded visible places makes it easy to put them away



Outlines of tools on a pegboard help workers know where to return tools for regular storage

Tool Storage

Colored coded SAE and Metric wrenches is especially helpful, but closed drawers hide contents from people with memory loss



Tool Storage

Rolling tool carts with hanging tools can be clearly seen and eliminate the need to make repeated trips to wallmounted racks



Tool Storage

Freestanding mobile workbenches with hanging tools are positioned adjacent to the task and reduce the need for multiple trips to toolbox. They can be accessed from all sides



Workspaces

Floor cushions in the workspace relieve hip and back pain. Note electrical outlets along the work bench



Workspaces

Wearable exoskeletons can support a person's back or shoulders while doing shop work.



Workspaces

This 12V powered work positioning seat reclines and powers up and down



Workspaces

This farmer uses his hydraulic lift cart as an adjustable height worktable. In conjunction with his adjustable height shop stool, he can always work on a project from an ergonomic position



Workspaces

This air compressor was raised from floor to table height with this foot-pumped hydraulic lift cart without straining the farmer's back.



Workspaces

Workers using wheelchairs need to roll under and/or around the workbenches to reach the surfaces without bumping their legs or feet



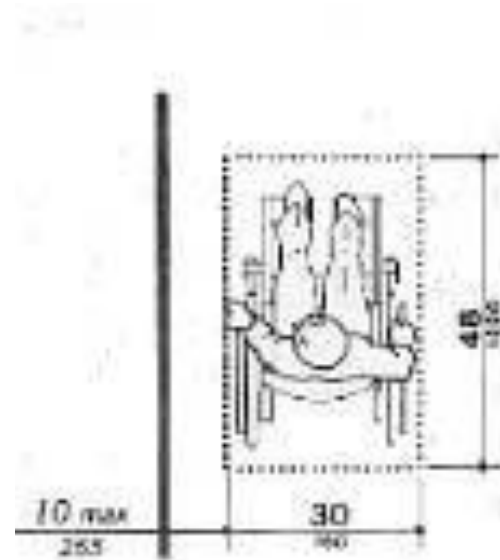
Workspaces

This welder's workstation has a face shield holder, tools underneath, and electrical outlets.

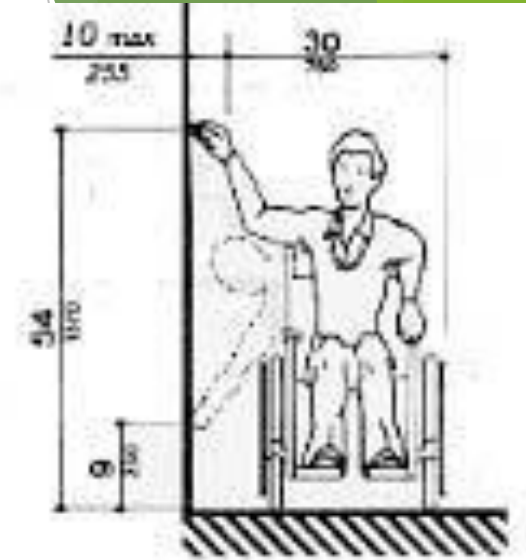


General Supply Storage

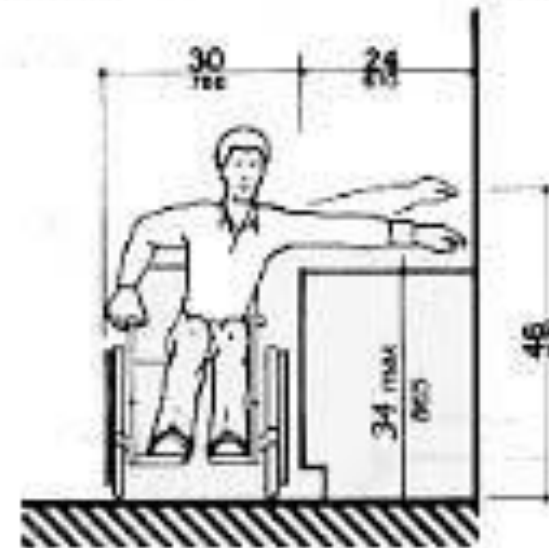
It is recommended to provide at least three-feet for passage between stationary objects and five- feet work/maneuverability space around stationary workbenches and tools.



(a) Clear Floor Space Parallel Approach



(b) High and Low Side Reach Limits



(c) Maximum Side Reach over Obstruction

General Supply Storage

Pathways
between storage
racks need to be
clear and
uncluttered



General Supply Storage

Open bins with labels allow a quick visual scan to find hardware and supplies and identify needed restocking



General Supply Storage

Pegboards can be a way to keep tools and maintenance supplies organized and visible instead of in out-of-sight locations.



Office and break room

This farm office has roll-under desks and lowered windows for looking out from a seated position



Office and break room

A restroom and shower with the break room increase efficiency of work in the farm shop and availability of a place to wash down if there is chemical exposure



Funding Accessibility Renovations

Working in the farm shop with one hand requires additional tools and sometimes costly assistive technology



Funding Accessibility Renovations

The vocational rehabilitation counselor and the farmer will work together to develop a plan for employment including services and assistive technology



Questions about Accessible Farm Shops?

Universal design in the farm shop increases everyone's ability to work more efficiently and with less need to accommodate as workers grow older or have medical impairments

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