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**The Complete Guide To
Building Your Own Greenhouse**

By Max Clarke

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About the Author

Max Clarke has been a keen amateur gardener for several years.

He loves building things to help him with his hobby and has actually made several small greenhouses.

He is grateful to his friends, both amateur gardeners and commercial growers that have shared some of their experiences and knowledge to help make his gardening and his book better.

He says that everyone should invest some time to create and maintain their own garden even if they only have a small area available.

A small garden is within almost everyone's budget and there are many rewards.

You will only really understand what he means when you start eating fresh, flavorful and inexpensive fruit and vegetables that you grew yourself.

But Max also gets great joy by sharing the produce and flowers that he grows and the knowledge from his years of experience as a gardener with his friends, family and, now, with the readers of his first book.

Table of Contents

Please Read This First	2
Disclaimer	2
About the Author	4
Table of Contents	5
1. What is a Greenhouse?.....	8
2. Uses of a Greenhouse.....	12
<i>Innovative Uses of Old Greenhouses Include:</i>	<i>13</i>
3. Greenhouse Types and Styles	14
Greenhouses for Your Area.....	20
How to Choose a Greenhouse	21
Placement of Your Greenhouse.....	21
Choice of Greenhouse.....	22
Framing Materials	24
5. Buying a Greenhouse	26
<i>Greenhouse Interiors</i>	<i>27</i>
Ten Steps to Building a Greenhouse.....	31
Materials for Building Your Greenhouse:.....	32
Steps for Building Your Greenhouse.....	33
Do You Need a Customized Greenhouse?	35
Building Your Own Greenhouse	36
Important Factors.....	40
Planning a Greenhouse Business.....	41
Essential Steps in Planning Your Greenhouse Business.....	43

Which Type of Greenhouse?	47
Greenhouse Accessories	47
Top Greenhouse Kits	49
Planning Your Greenhouse Location	52
The Best Frame for Your Greenhouse	56
Choose the Covering for Your Greenhouse	59
Footings, Flooring and Foundations	62
The Footings of Your Greenhouse	63
Flooring of Your Greenhouse	64
Selecting the Right Lights	66
Light Requirements	66
Types of Lights.....	67
Cooling, Ventilation and Your Greenhouse	70
Cooling and Ventilation of Greenhouses by Plants	70
Cooling and Ventilation by Blocking Sunlight	72
Ventilation Equipment	72
Automated Cooling and Ventilation Techniques	75
Understanding Heating Methods, Systems, Sources, and Distribution	77
Heating Systems and Methods	77
Fuel Sources for Heating Systems.....	80
<i>Popular Fuels:</i>	80
Heat Distribution inside Greenhouse.....	81
Calculating Energy Requirements for Heating Systems	84
Energy Requirements for Your Heating System.....	85
Watering Systems and Insulation Techniques	88

Greenhouse Watering Systems.....	88
Insulation Techniques in Greenhouses.....	90
Basic Greenhouse Care.....	93
Essential Accessories and Equipments for Maintenance.....	93
Greenhouse Maintenance Checklist.....	97
Maintenance Checklist for Your Greenhouse.....	98
Getting the Most from Your Cooling and Ventilation Systems ...	101
Maintaining the Heating Systems.....	105
Tips for Maintenance of Heating Systems.....	105
Control Greenhouse Pests and Diseases.....	108
<i>Cleaning Materials and Tools for a Small Greenhouse.....</i>	<i>108</i>
Cleaning and Disinfecting Your Greenhouse.....	109
Greenhouse Accessories Guide.....	112
Know Your Equipment and Supplies.....	116
<i>Essential Greenhouse Supplies.....</i>	<i>116</i>
Cold Frames and Hotbeds.....	119
Cold Frames.....	119
Hotbeds.....	121
Facts about Famous Greenhouses.....	122

Part-I: Introduction

1. What is a Greenhouse?

A greenhouse is a small house-shaped structure made of glass or plastic. It is designed to maintain optimum temperature and moisture inside it to help grow a wider variety of plants than the local climate will normally support and to protect them from any extreme weather.

Certain gases in the atmosphere, like carbon dioxide, water vapor, methane and nitrous oxide do not allow heat to escape back into the atmosphere. This quality makes these gases popular in commercial greenhouses.



Greenhouse with Geraniums (*Pelargonium* sp)

All greenhouses function on the same principle; they store heat from the sun. The glass or plastic panels of greenhouse reduce the amount of heat escaping while allowing light to penetrate. This increases the temperature within the greenhouse and keeps your plants warmer in winter.



Lettuce seedlings grown in a greenhouse before planting

Greenhouses range from a small structure for keeping in your terrace garden to as big as a city building. Their glass panels are grouped according to their transmission rate. The energy trapped within greenhouses heats up both soil and plants. They prevent or reduce infrared radiation, convection of gases and arrest electromagnetic radiation too.

Greenhouses are used for growing vegetables, fruits, flowers, and even crops like tobacco. You can grow flowers and vegetables in late winter in greenhouses, then transplant them outside in early spring.

These houses have meant an increase in artificial pollination although using bees is preferred when practical.

You have to maintain specific levels of humidity and heat within your greenhouses and control any potential influx of pests and associated diseases.

You can irrigate the plants in greenhouses if the need arises. The increased temperature is essential if you try growing summer vegetables in winter.

Greenhouses maybe used to protect plants from blizzards and dust storms too. Such greenhouse cultivation proves useful in deserts, Arctic wastelands and other land areas with poor fertility.

2. Uses of a Greenhouse

A greenhouse helps you grow your plants at regulated temperatures and humidity levels. It is easier to regulate temperatures within small greenhouses. Greenhouses are not necessarily hot houses. They allow the required amount of heat to be present within so that plants do not suffer from extreme heat or extreme cold. Having a greenhouse need not be a luxury. With a little persistence and innovation, you can have a greenhouse anywhere.



Coriander seedlings in a greenhouse

The Main Uses of a Greenhouse are –

- Helping small and tender plants to grow from seeds earlier than usual

- Grow plants within indoor environment in winter months
- Helps carry forward garden plants to use as stock in the next season
- Increases the variety of plants and blooms
- Allows you to experiment with new varieties of flowering plants and vegetables too
- Helps cultivation of winter vegetables in pots
- Helps maintain a continuous supply of vegetables all year through
- Helps develop your hobby of growing plants even if there is a space crunch

Innovative Uses of Old Greenhouses Include:

- Bus-stop for children in a cold winter
- Proves to be a garbage bin without the possibility of animals or pests creating a nuisance with open garbage
- Useful as a pottery room for children
- Useful as a storehouse for holding skateboards, bikes, ramps, and other things
- Can be used as a hot water tub for bathing

Part-II: Greenhouse Selection

3. Greenhouse Types and Styles

There are many different styles and types of greenhouses.



Greenhouse with Geraniums

Some of the more popular are:

A Freestanding Greenhouse: This greenhouse has an independent structure, not attached to your home. It has independent sidewalls, end walls and a gable roof. You can make it in any size, shape and style that you like and that can get planning permission for.

The amount of sunlight penetrating your greenhouse depends on various factors in its construction. You could need extra heating system if the free-standing greenhouse is completely separate from a heated building.

This freestyle greenhouse spreads over seventeen to eighteen feet. It can accommodate two walks, two side benches, and a center bench.



Business and Commerce Use

An Attached Greenhouse: These greenhouses are connected directly to your main building. Such greenhouses receive heat radiated from your home. Additionally, you can arrange for any necessary heat and light infrastructure from your home too. Also, be sure to take into consideration any special building restrictions that exist before constructing an attached greenhouse.

There are different types of attached greenhouses, including lean-to, even-span or window-mounted.

Attached, lean-to greenhouses lean against the building. They are supported because one of the sides is attached to the house. Lean-to greenhouses may have single or double-row plant benches with a total width between seven to twelve feet.

There is no absolute restriction on the length; it can be as long as the building. This type of greenhouse can get its water, electricity and heat from your home itself.

However, there are a few disadvantages too. These lean-to greenhouses may be constricted because of limited availability of space, light, and ventilation.



A Commercial User

Attached, Even-Span Greenhouses are an almost independent structure except that one end is attached to the house.

This type of greenhouse allows greater flexibility in arranging plants. It can easily accommodate two to three rows of plants. Attached, even-span greenhouses may be costlier to heat as they are larger. The exposed area of glass is likely to be greater.

Attached, Window-Mounted Greenhouses may be either a single unit or arranged in a stack on windows. You can construct a greenhouse to fit into your window by removing your regular window with simple tools and fit your greenhouse into the window space. You can use your imagination to fabricate your greenhouse in any shape you desire.

Portable Greenhouses: These greenhouses are available in many different sizes ranging from six feet to fifty feet in length and ten to a hundred feet in width. The largest of these are

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