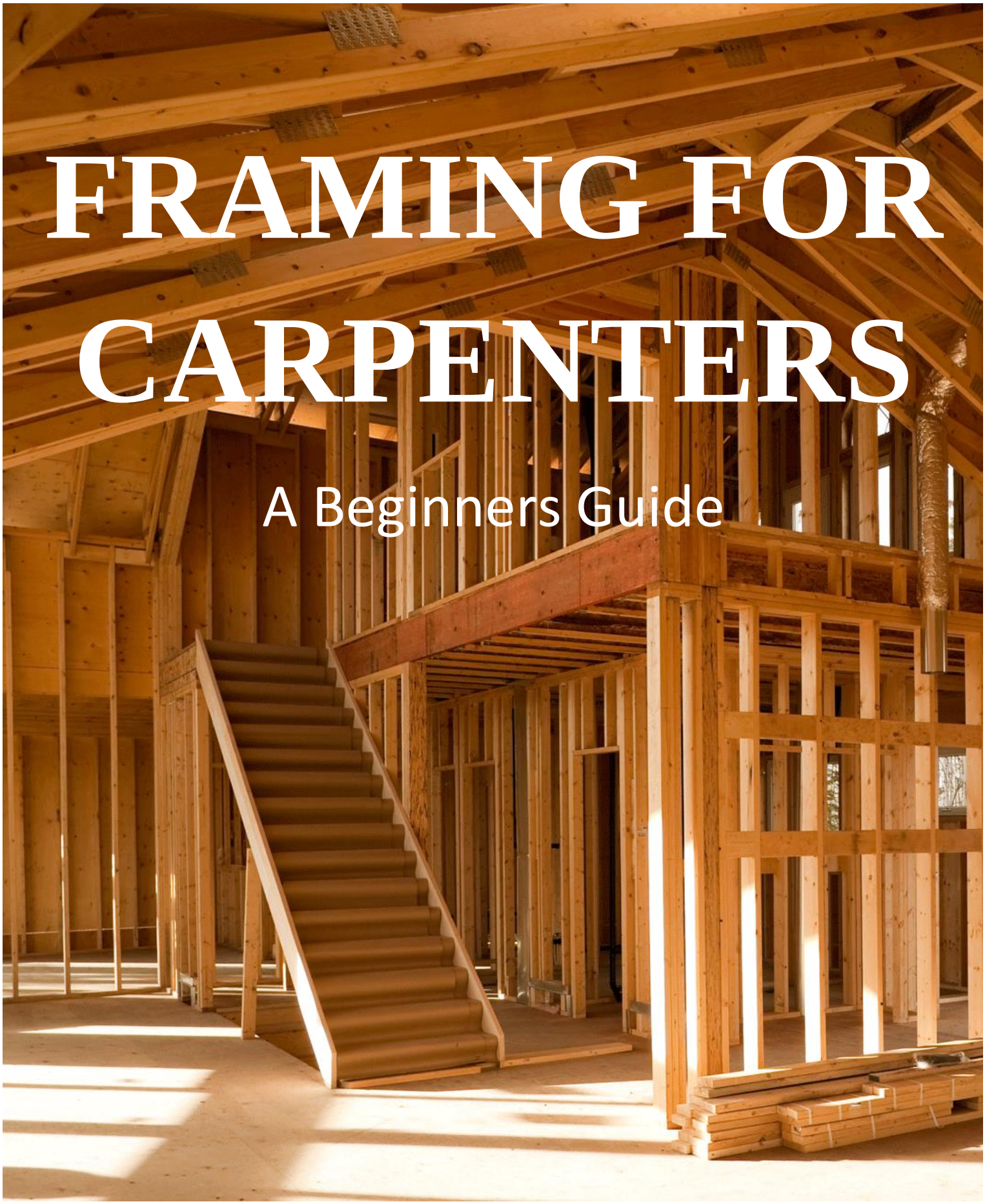

FRAMING FOR CARPENTERS

A Beginners Guide

MATT GAFFNEY

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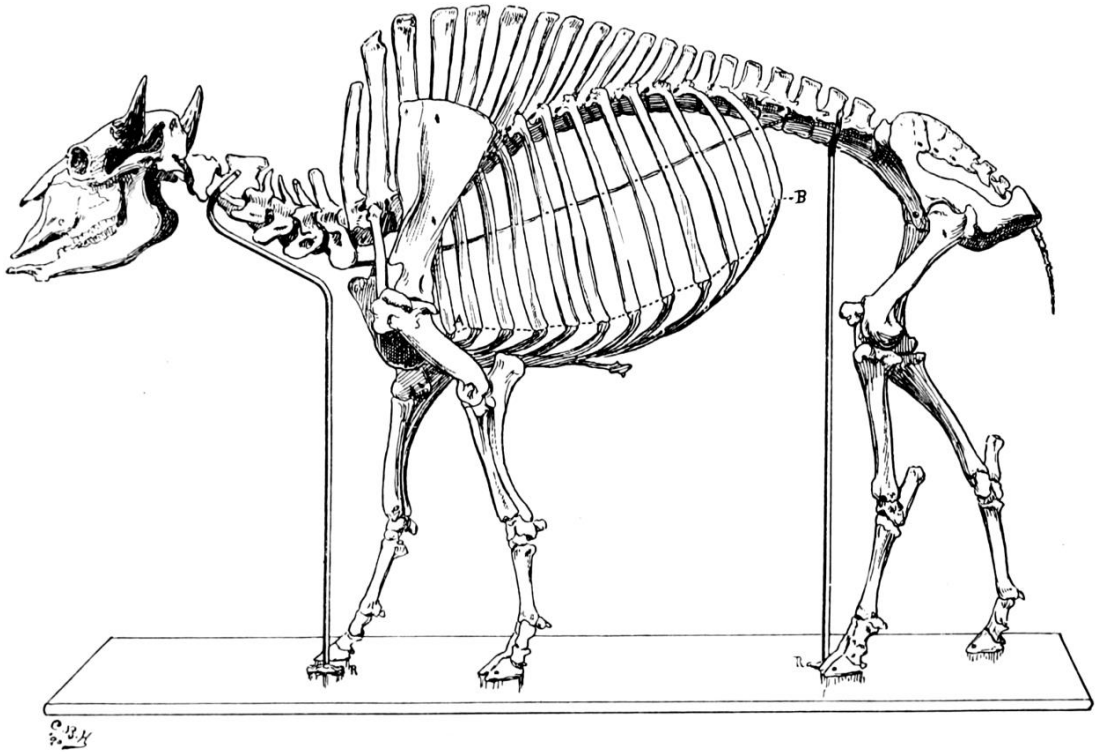
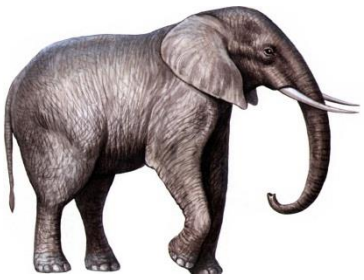


INTRODUCTION TO FRAMING

Why is Structure Important?

Structure is the underlying framework or skeleton of an object or thing. This framework is what holds the outside parts of an object together. In the case of the animal shown above, the skin and muscle is attached to the



skeleton so that the elephant's body doesn't fall apart. In the case of a building, the structure is called Framing. Proper framing is important to make a building strong. It also determines the size and shape of the building.

The image above shows the framework of a traditional house. Like any built object, it is made up of parts. Each part connects together to make one whole structure. In this case the structure only acts as the bones of the house which will later be covered by plywood and other finishing material. It is important to note that with today's modern methods of designing and manufacturing, as well as, new developments in types of material, the structure of a building can also be its final form. One example is the building shown to the right.

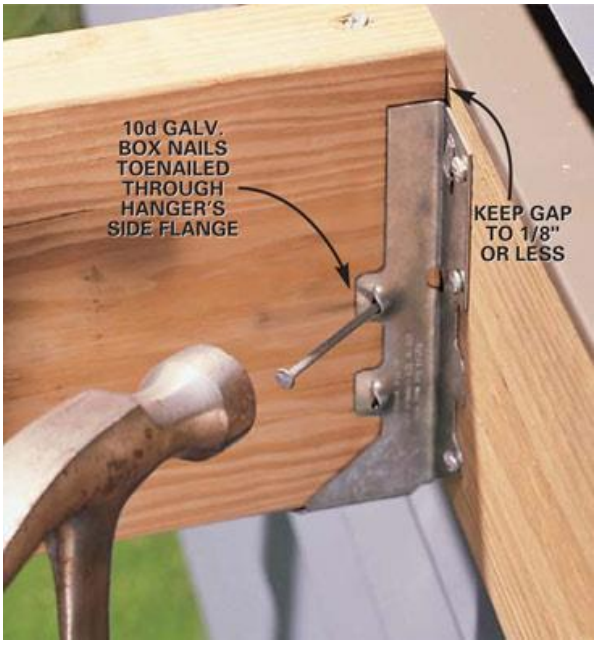
Materials used in Construction

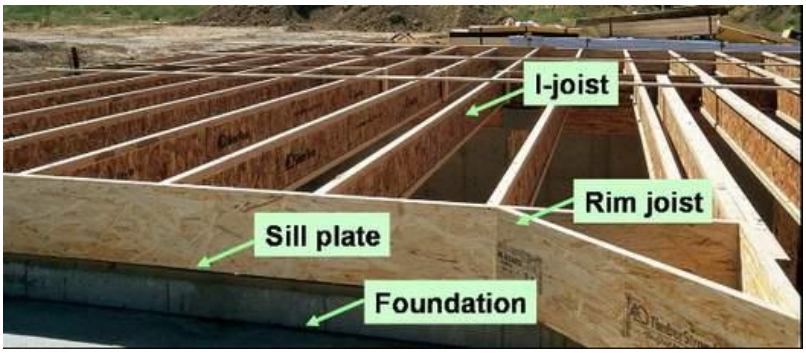
The parts of a building's structure are made from a variety of materials. Concrete is used in the foundation.

The foundation is the base that the rest of the building is built upon. The concrete is poured into temporary forms that define the inside and outside walls of the foundation.

Floor Joists rest upon the foundation to create a platform that the rest of the house can be built upon. These Floor Joists are made from either traditional or

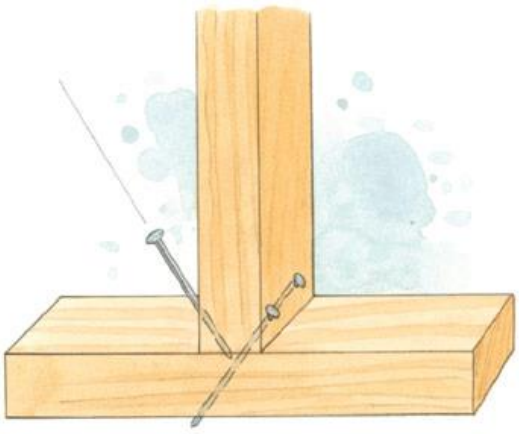
engineered lumber. The first is cut directly from the tree and milled to the proper dimension (2x12 for floor joists), while the second is made from manufactured composites that are designed to have the same strength as lumber.





The i-joists are connected to the rim joist using hardware called "joist hangers". Nails are used to connect the hanger to the joists. Plywood is then attached to the floor joists to create a subfloor platform that the rest of the structure can be built upon.

Now that there is a platform to work on we are now able to construct walls that can be built and attached to it.



The walls of a house are made using 2x4's, which can be made out of wood or metal. The material that is used depends on the specific building code for the area. With wood studs the parts are assembled using the "Toenailing" method illustrated above.

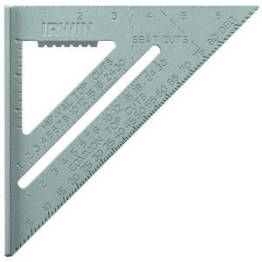
Walls tend to be built on the ground and are then raised into place using a group of people working together, or a system of jacks. Once the walls are raised, they are connected together in a pattern that is set forth in the building plans.

Tools used in Construction

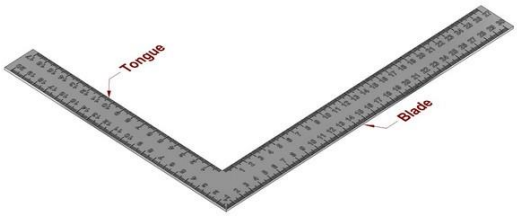
There are many kinds of tools that are used in construction. Here are a basic collection of hand and power tools that every carpenter should have.

Measuring Tape- This is the tool that every carpenter carries on their hip. It is used in every stage of the construction process.

Speed Square- This is a tool that a carpenter carries in his pouch. It is used to make square lines across 2x4's for cutting and for laying out rafters.



Framing Square- This is a critical tool for calculating rafter angles and cuts. It is also used to measure the rise and run of a staircase.



Carpenter's Pencil- Not all pencils are created equal. A carpenter's pencil is flat so that it won't roll. It can be sharpened with a utility knife.

Level- A level is used to find level and plumb. This is handy when setting studs in place.

Chalk Line- This tool has a string that is reeled up inside the box which is full of chalk. It is used to make layout chalk lines over a long distance.

Framing Hammer- This hammer is larger than most hammer's and has a waffled head. A good carpenter can drive a nail in 2 shots with this hammer.

Plumb Bob- A weighed brass bob at the end of a string. This tools is centuries old and is used to find a plumb line.

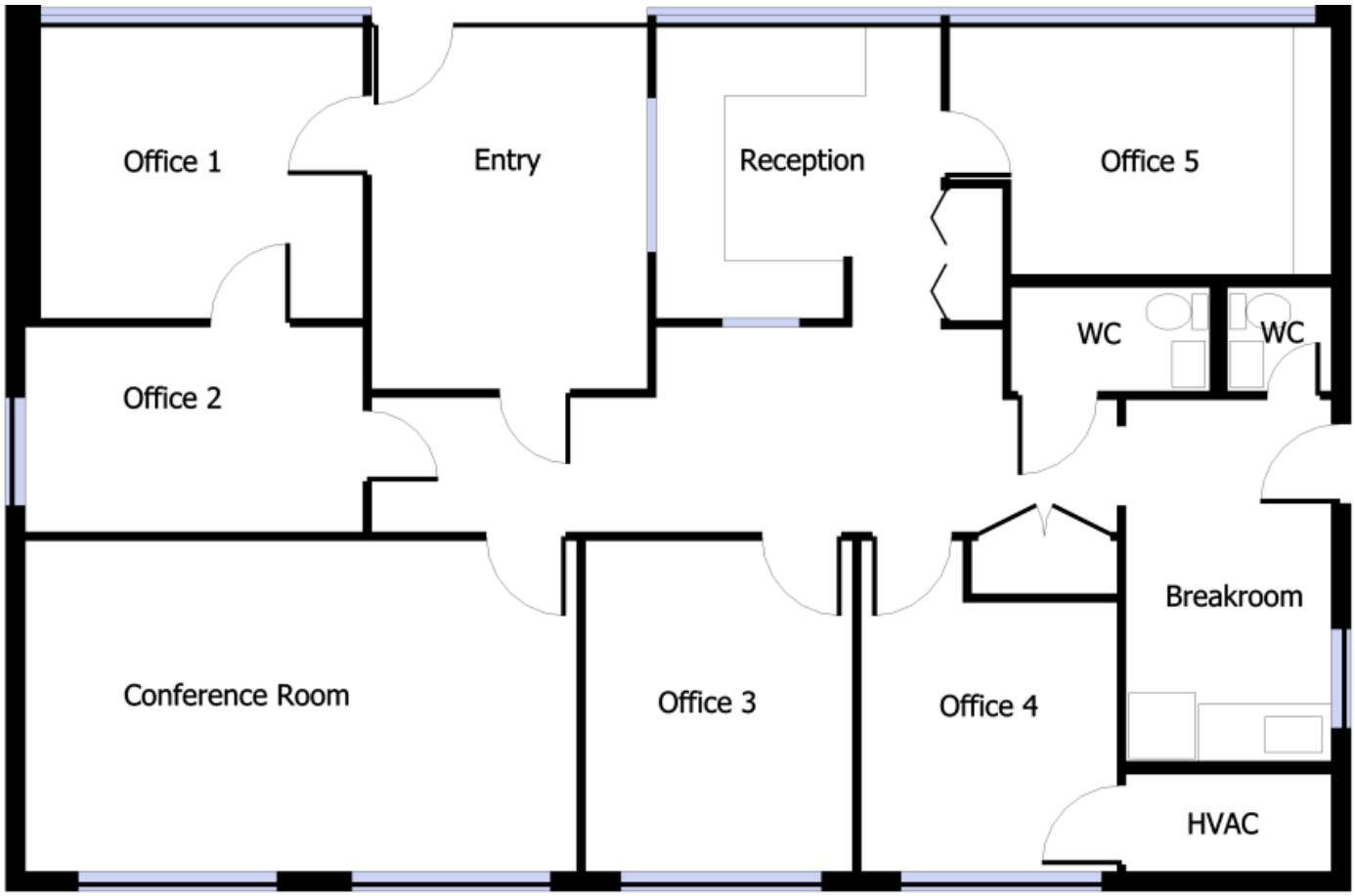
Steel Tape- A flexible measuring tape that is used to measure long distances. Good for finding the perimeter of a space.

Circular Saw- This is the primary power tool on a job site for cutting 2x4 studs, making roof rafter cuts and cutting plywood to size.

Screwgun- This tool is used to connect metal studs to metal track. It is also used to screw plywood to floor joists.

Building According to a Plan

All aspects of the building process happen according to a plan. These plans are called blueprints. This first plan



shows the layout of the walls and how they separate the space. At the right is an example of a roofing plan.