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Assignment

ROOF PLANS

ATLANTIC INTERNATIONAL UNIVERSITY

HONOLULU, HAWAI

SPRING 2022

CONTENTS

INTRODUCTION3

CHAPTER 22- Roof Plan Components.....4

CHAPTER 23 – Roof Plan Layout9

BIBLIOGRAPHY.....11

INTRODUCTION

This section entails questions and answers for sections that talks about roof plan with various types, pitches, roof shapes and the type of materials used. Shows the different aspects of designing and roof and what to consider. ‘Green roof’ were discussed of how to improve the environment and how the apply to one’s design.

Roof framing systems were discussed such as for hip, gable and Dutch hip pertaining to lines and symbols, structural and non-structural materials, dimensions and roof shape.

CHAPTER 22- Roof Plan Components

Question 22–1 List and Describe three types of roof plans.

Three types of roof plans are:

- Shed Roof offers simplicity and economical construction method that does not have any drainage problems with only side sloping at angle.
- Gambrel Roof is a traditional shape that goes back to colonial period, with the lower level covered with a steep roof surface and the upper roof system at a different angle that has slighter pitch.
- Hip Roof is another traditional shaped roof that have similarities to a gable roof but the difference is that it comes together at a point called the hip. On a simple square or rectangular structure, it has 4 sloping sides with one pitch.

Question 22–2 In describing roof pitch, what do the numbers 4/12 represent?

4/12 represents the angle of a gradual sloping roof.

Question 22–3 What angle represents a 6/12 pitch?

The 6/12 pitch represents the 26° angle.

Question 22-4 Is a surface built at a 28° angle from vertical a wall or a roof?

The surface built vertically at an angle of 28° could be a roof.

Question 22-5 What are two advantages of using a flat roof?

Two advantages of using a flat roof are that flat roof can provide a platform for heating, cooling and other mechanical equipment. Flat roof is easier and faster to build so it is more energy and cost efficient.

Question 22-6 What is the major disadvantage of using a flat roof?

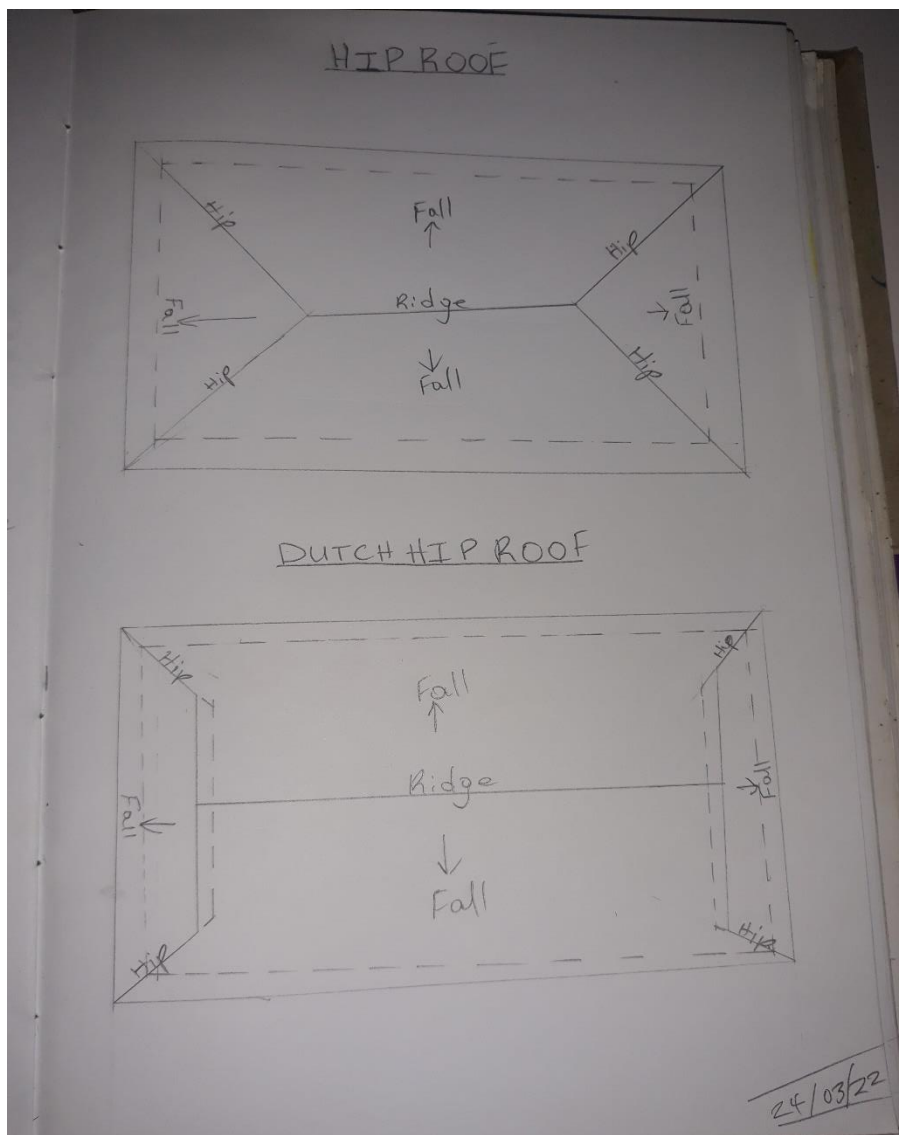
The major disadvantage of using a flat roof is that roof drainage maybe a problem especially for snowfall and rainfall.

Question 22-7 List three traditional roof shapes.

Three traditional roof shapes are hip roof, Gambrel roof and Dutch Hip Roof.

Question 22-8 Sketch and define the difference between a hip and Dutch hip roof.

The difference between a hip and Dutch hip roof is that gable roof is not incorporated in the hip roof layout.



Question 22-9 What are the two uses for mansard roof?

Two uses for mansard roof are to use as a parapet wall to hide mechanical equipment of the roof and to help hide the height of the upper level of a structure.

Question 22-10 List two common weights for asphalt or fibreglass shingles.

Two common weights for Asphalt or fibreglass shingles are: 235 lbs. per square and 300 lbs. per square.

Question 22-11 What are two common shapes of clay roof tiles?

Two common shapes of clay roof tiles are curved and flat shapes.

Question 22-12 What advantages do metal roofing panels have over other roofing materials?

Advantages of metal roofing panels are that it is more fire-proof than others, easier and faster installation.

Question 22-13 What is the minimum headroom required at the attic access?

The minimum headroom required at the attic access is 30" (762mm).

Question 22-14 What is the minimum size of an attic access opening?

The minimum size of an attic access opening is 22" x 30" (560x762mm).

Question 22-15 What type of roof is both a roof system and a framing system?

A-Frame Roof is both a roof system and a framing system.

Question 22-16 Use the internet to determine common material used for the waterproofing layer or the growing medium for a green roof.

EPDM (ethylene propylene diene monomer) Rubber, Novita Black Roof Breathable Membrane, Butyl & Green seal Rubber Pond Liners, Capital Valley Damp Proof Membrane are materials used for waterproofing layer or a growing medium for green roof.

Question 22-17 What is a cool roof?

Cool Roof is a roof that features highly reflective materials; which can be simply be painting the roof in light-coloured water sealant in which light colour doesn't absorb heat as much dark coloured.

Question 22-18 List methods for a three-tab shingle to be considered a green product.

Three-tab shingle to be considered a green product because it is 100% recyclable and can be reuse in a different form. Three-tab shingles are easy to maintain, repair and lightweight.

Question 22-19 What qualities does a product need to demonstrate to be considered friendly to the environment?

To be considered friendly to the environment, the product should energy efficient, recyclable, have endurance and cost-friendly with the overall repairs and installation.

Question 22-20 Use the internet to list five companies that provide green roofing products that are not already listed in this text.

Five companies that provide green roofing products:

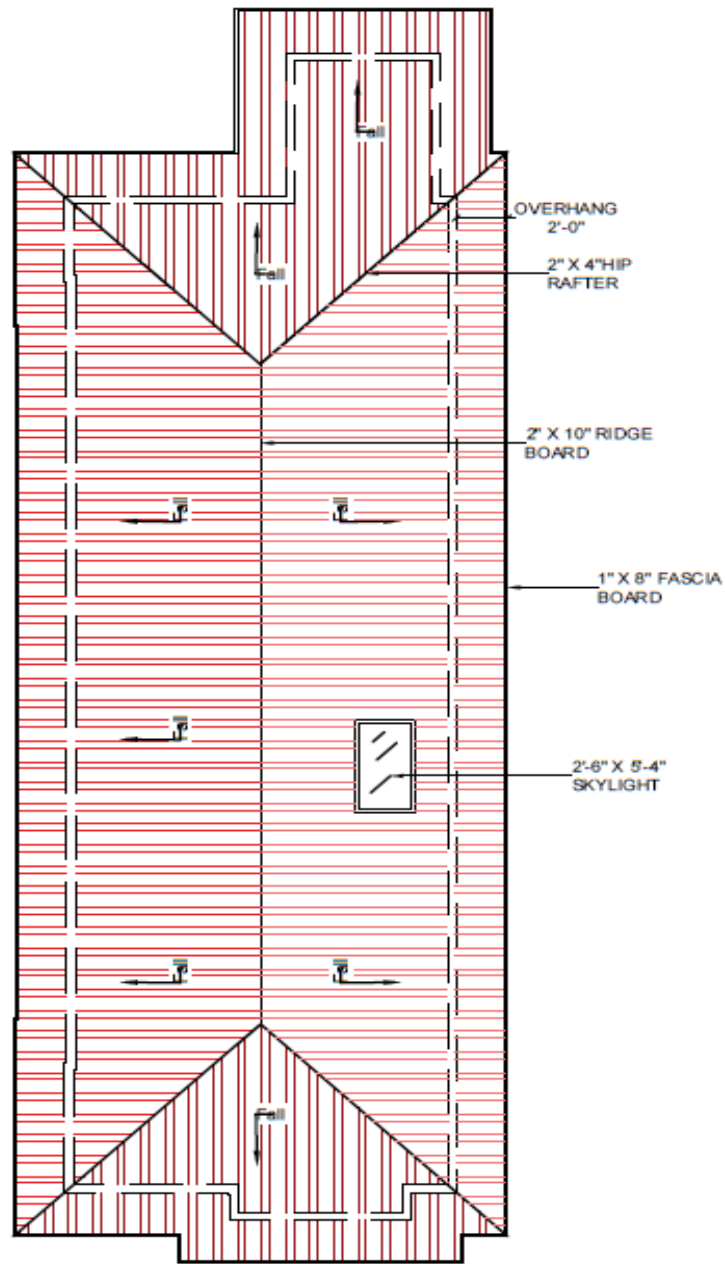
- Q-Bot
- Sage Smart Garden
- Vivacity Ltd
- STEP Private Limited
- GSky Plant Systems

CHAPTER 23 – Roof Plan Layout

Problems

Directions:

1. Using a floor plan, use a scale of $1/8'' = 1'-0''$ to draw a roof plan for a house. Design a roof system appropriate for your area, Sketch the layout you will see before you draw the roof plan.
2. Place the plan on the same sheet as the elevations if possible. If a new sheet is required, place the drawing so that other drawings can be put on the same sheet.
3. Use the information in the roof plan checklist on page 563 to complete your drawing.
4. The completed drawing will be turned in for evaluation.



ROOF PLAN

Scale: 1/8"=1'-0"

<p style="font-size: 2em; font-weight: bold;">A-1</p>	<p style="font-size: 0.8em; margin: 0;">Project Name: ROOF LAYOUT PLAN</p> <p style="font-size: 0.8em; margin: 0;">Designed By: _____</p> <p style="font-size: 0.8em; margin: 0;">Checked By: _____</p> <p style="font-size: 0.8em; margin: 0;">Date: APR 2022</p> <p style="font-size: 0.8em; margin: 0;">Scale: 1/8"=1'-0"</p>	<p style="font-size: 0.8em; margin: 0;">Project Name: ROOF LAYOUT PLAN</p>	<p style="font-size: 0.8em; margin: 0;">Prepared by: _____</p> <p style="font-size: 0.8em; margin: 0;">Checked by: _____</p> <p style="font-size: 0.8em; margin: 0;">Email: sterling_lab@aiu.edu</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 5%;">No.</td> <td style="width: 15%;">Description</td> <td style="width: 10%;">Qty</td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> </table>	No.	Description	Qty												
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