

Principles of creating three-dimensional works in design.



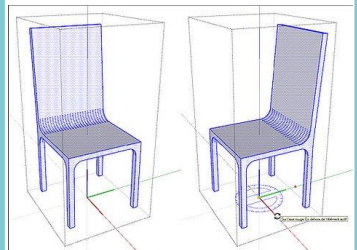
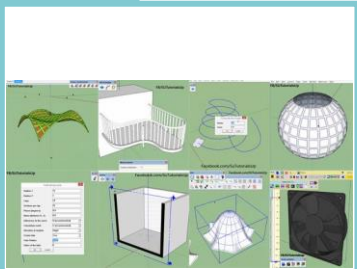
EDA 2308 Computer Aided Design for 3D Presentation 1

Instructors in charge of the course and
instructors Kittisak Techakanjanakit

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01

Basic Operation
of Forming
Objects in 2D
and 3D



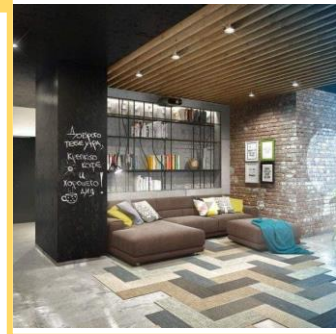
02

color and
material



03

Use of lighting
and camera
angles



04

animation



05

displaying
different images



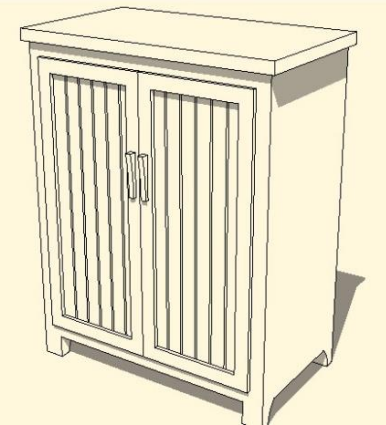
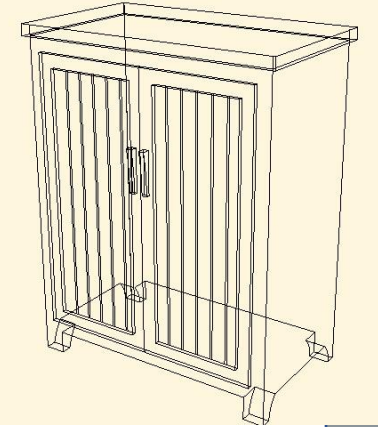
01

object shaping
2D and 3D

building
basics3D model



1. Start by creating the shape of the basic object.
2. Determining the unit of measurement in the work
3. Creating layers
4. Defining the object model
5. Copying objects
6. Methods for creating three-dimensional works
7. View and display controls
8. Fundamentals of working with objects (Principal toolkit)



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01

Introduction to 3D programs

View and display control

Choosing a template for starting work



Various template styles that can be selected. There will be details as follows.

>Simple Template – Feet and Inches and Simple Template – Meters are the default templates. suitable for general work>Architectural Design – Feet and Inches and Architectural Design – Millimeters are suitable for architecture and interior design.>Google Earth Modeling – Feet and Inches and Google Earth Modeling – Meters are ideal formats for creating models for use in the Google Earth program.>Engineering – Feet and Engineering – Meters is a form of work that is suitable for engineering work.>Product design and Woodworking – Inches and Product Design and Woodworking Millimeters are ideal for smaller work. and furniture template

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02

Appearance and components of the program

Appearance and components of SketchUp when opening the program accordingly. The SketchUp window contains the following components:

A. Work area (Drawing Area)

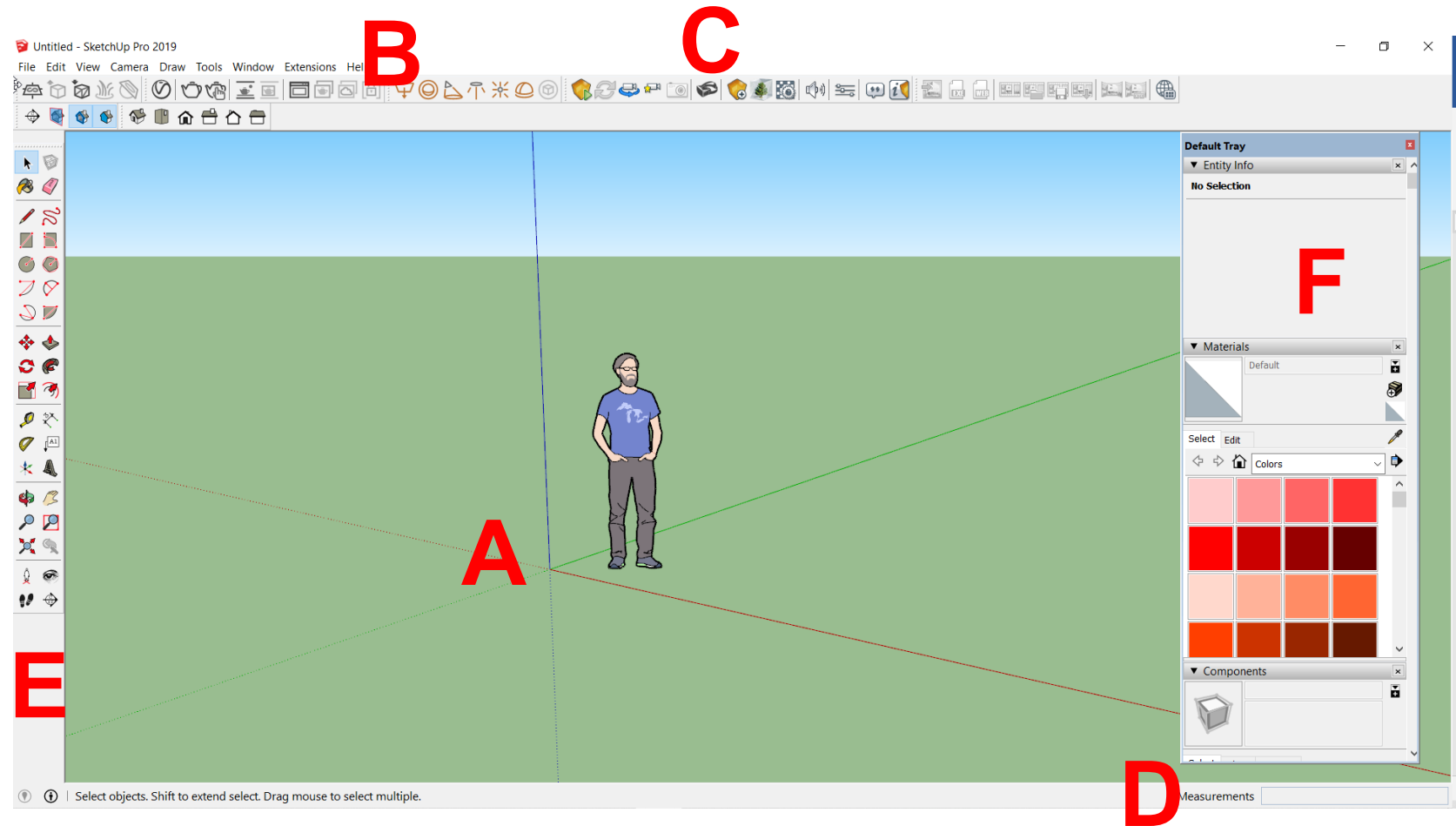
B. Menu Bar

C. Toolkit (Toobar)

D. Status bar

E. Measurements Toobar

F. Context menu



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03

Appearance and components of the program

Appearance and components of SketchUp when opening the program accordingly. The SketchUp window contains the following components:



Manage working window, enable/disable toolkit When you open the program for the first time, SketchUp will display only the basic tools to work with. Such tools are called The Getting Started toolkit is a work tool for beginners starting with SketchUp.

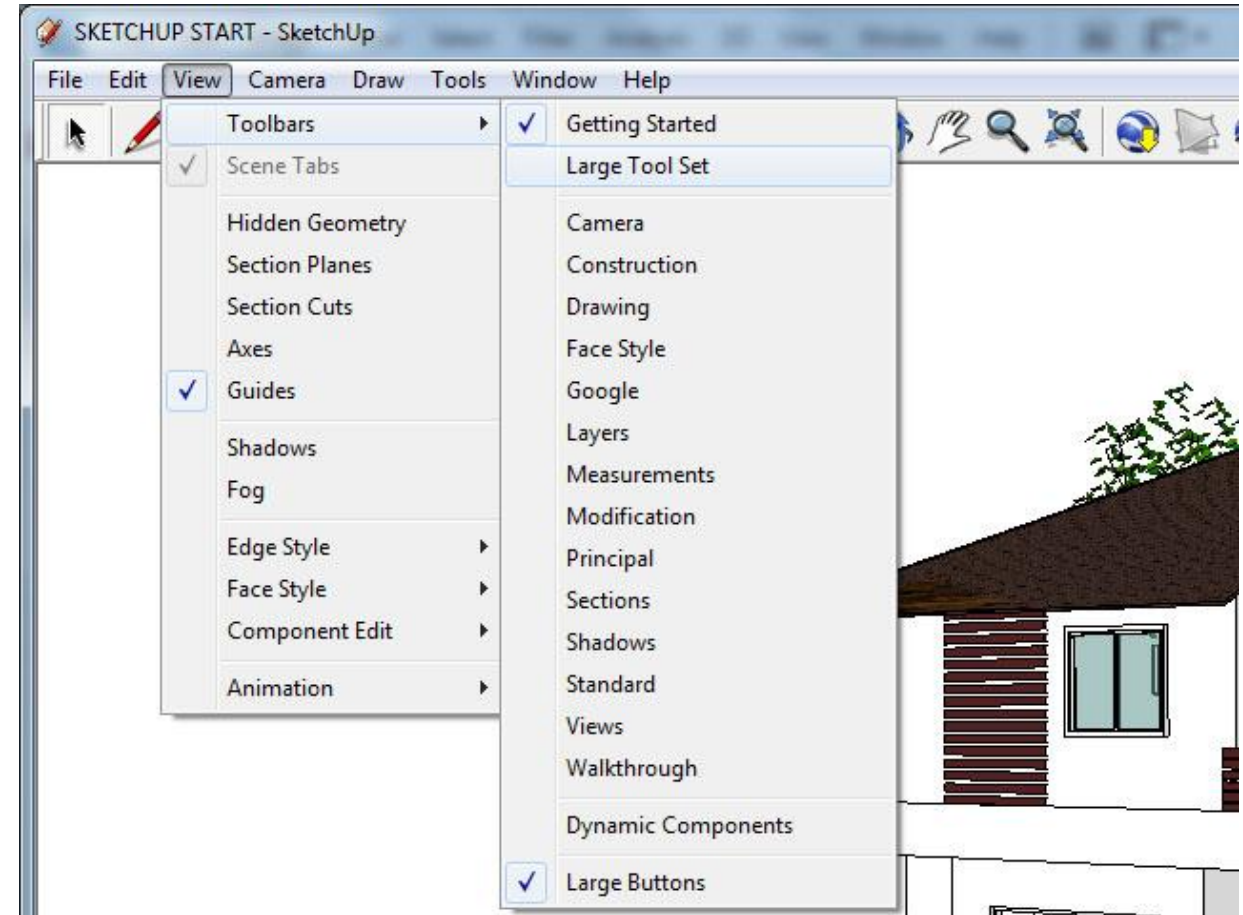
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04

Appearance and components of the program

Appearance and components of SketchUp when opening the program accordingly. The SketchUp window contains the following components:

The Getting Statted toolkit can be seen by clicking the View > Toolbars menu, which can be seen that in front of the Getting Started command there is a check mark. If you want a full tool It must be opened by clicking View > Toolbar menu and selecting Large Tool Set to work as follows.

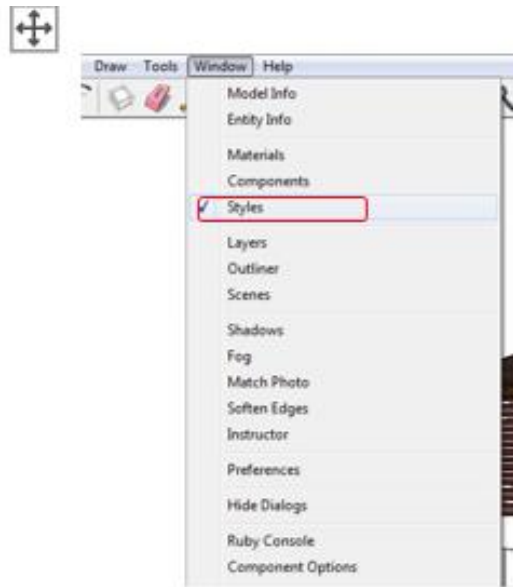


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05

Appearance and components of the program

Appearance and components of SketchUp when opening the program accordingly. The SketchUp window contains the following components:



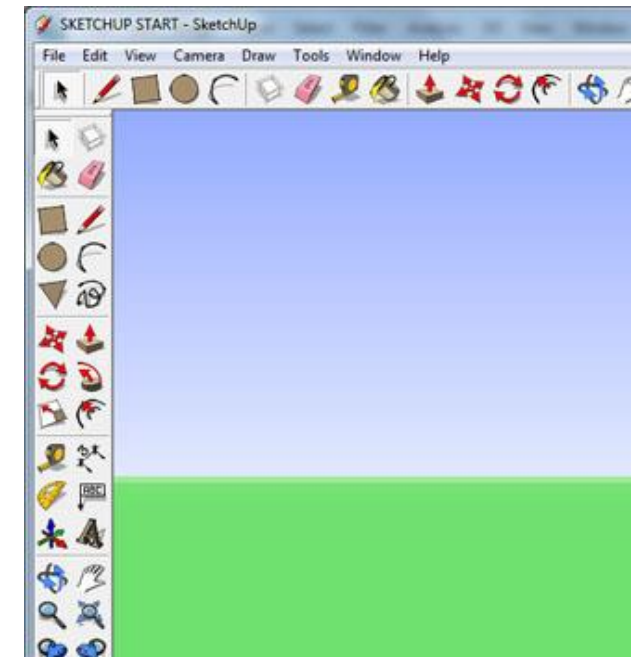
01.คลิกเมนู Window > Styles



02. ในหน้าต่าง Styles คลิกแท็บ Edit



03. คลิกปุ่ม Background Settings แล้วปรับสีส่วนต่างๆ



In SketchUp, besides the sky color and space color, the program is provided. We can also change the sky color and background color to the desired color by setting values from the Styles window as follows.

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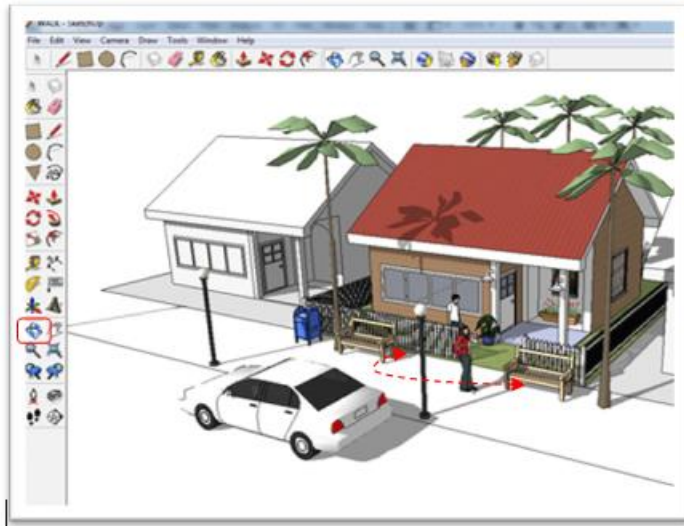
06

Appearance and components of the program

Appearance and components of SketchUp when opening the program accordingly. The SketchUp window contains the following components:

หมุนไปดูภาพในมุมต่างๆ ด้วยเครื่องมือ Orbit

Orbit เป็นเครื่องมือสำหรับหมุนกล้องไปดูส่วนต่างๆ ราบๆ โมเดล มีวิธีใช้งานดังต่อไปนี้

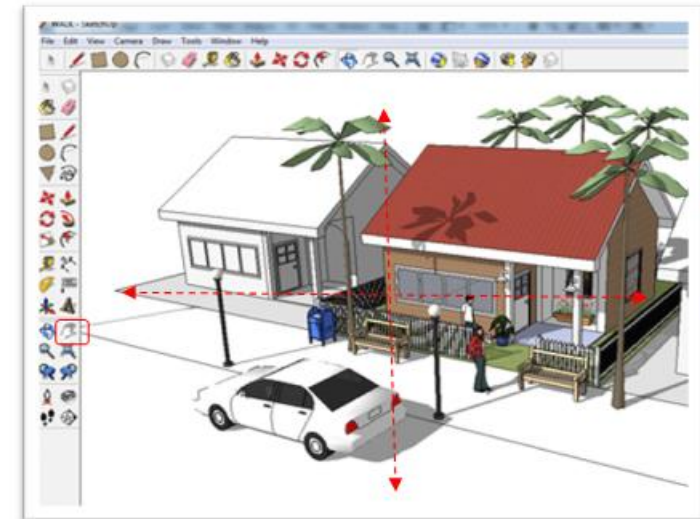


01.คลิกเครื่องมือ Orbit

02.แตรกเมาส์เพื่อหมุนดูภาพมุมอื่นๆ ได้ตามต้องการ

เลื่อนภาพในแนวระนาบด้วยเครื่องมือ Pan

Pan เป็นเครื่องมือสำหรับแพนกล้องไปดูส่วนต่างๆ ของโมเดลตามแนวระนาบ มีวิธีใช้งานดังต่อไปนี้



01.คลิกเครื่องมือ Pan

02.แตรกเมาส์ไปในทิศทางที่ต้องการเลื่อนไปดูภาพ

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07

Appearance and components of the program

Appearance and components of SketchUp when opening the program accordingly. The SketchUp window contains the following components:



01.คลิกเครื่องมือ Zoom Window



02. แดรกเมาส์เป็นกรอบรอบส่วนที่ต้องการซูม



03.ภาพส่วนที่อยู่ในกรอบจะถูกซูมเข้ามา

In the regular Camera toolkit available in the toolbox on the side. It lacks the Zoom window tool, which uses the mouse cursor to create a frame around the part to be zoomed in. If you want to use the tool, you will have to call the full Camera toolkit by clicking View > Toolbars > Camera, and then selecting the Zoom Window tool to use as follows.

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Appearance and components of the program

Appearance and components of SketchUp when opening the program accordingly. The SketchUp window contains the following components:

ซูมโมเดลทั้งหมดที่ทำงานอยู่ด้วยเครื่องมือ Zoom Extents

Zoom Extents เป็นเครื่องมือสำหรับซูมภาพให้เห็นโมเดลทั้งหมดที่อยู่ มีวิธีใช้งานดังต่อไปนี้



01.โมเดลที่ถูกซูมเข้ามาใกล้ๆ แบบนี้



02.คลิกเครื่องมือ Zoom Extents



03.โปรแกรมจะซูมให้เห็นโมเดลที่มีอยู่ทั้งหมด

To use the Zoom tool, if we hold down the <Shift> key while dragging the mouse The program will change from normal zooming in and out. To change the Field of View or the width of the view instead.If you want a picture that has a wider view Like looking at the Y lens, use this method. <Shift+Dragmouse> down to increase the width of the view. Or <Shift+Dragmouse> upwards to decrease the width of the view.

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09

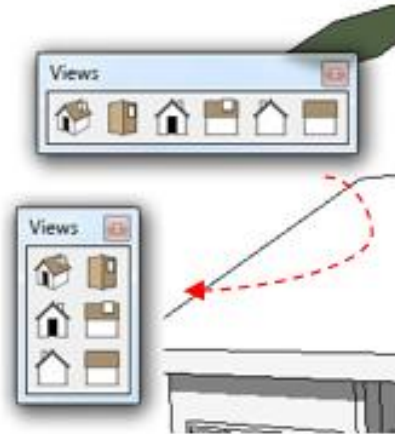
Appearance and components of the program

Appearance and components of SketchUp when opening the program accordingly. The SketchUp window contains the following components:

Changing a view to a view from another side Changing views like this requires a tool in the Views suite:

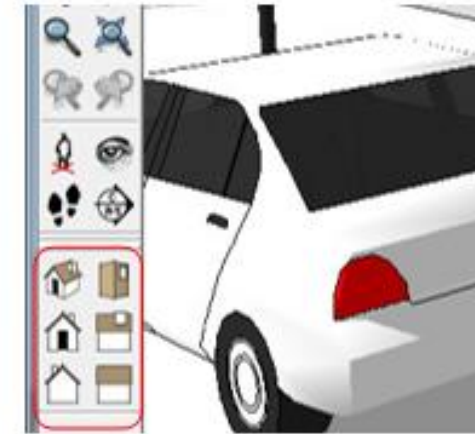


01.คลิกเมนู View > Toolbars > View



02.เลื่อนเมาส์มาที่ขอบของชุดเครื่องมือ แล้วแทรกเมาส์ย่อขนาดให้เป็น

๕๕



03.แตรกเม้าส์นำไปใส่ในกล่องเครื่องมือ เราจะได้ชุดเครื่องมือ View ที่พร้อมใช้งาน

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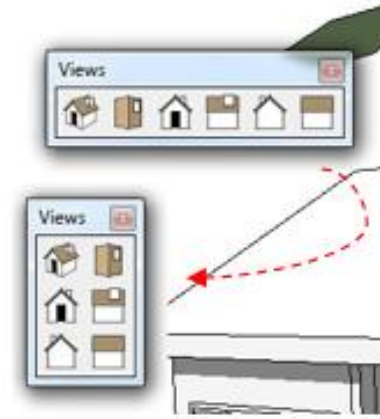
Appearance and components of the program

Appearance and components of SketchUp when opening the program accordingly. The SketchUp window contains the following components:

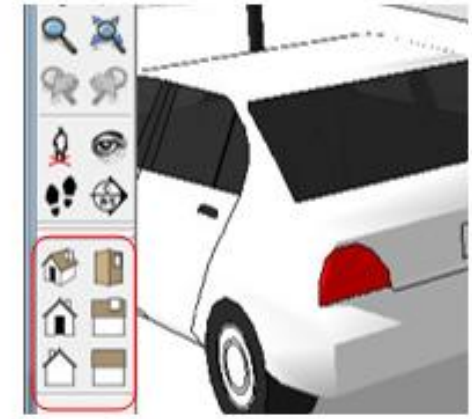
The Views toolkit contains the following views:>Front is the view from the front.>Left is the view from the left.>Back is a view from behind.>Isometric is a 3D view.>Right is the view from the right side.>Top is the view from above.



01.คลิกเมนู View > Toolbars > View



02.เลือกเมาส์มาที่ขอบของชุดเครื่องมือ แล้วแทรกเมาส์ย่อขนาดให้เป็น



03.แทรกเมาส์นำไปใส่ในกล่องเครื่องมือ เราจะได้ชุดเครื่องมือ View ที่พร้อมใช้งาน

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Appearance and components of the program

Appearance and components of SketchUp when opening the program accordingly. The SketchUp window contains the following components:

There are two types of perspectives in SketchUp: Perspective and Parallel Projection. Whether it's left, right, front, back, Perspective will see the model in a way that has depth. As for the view that is Parallel Projection, it is like a side view that is seen as a flat 2D image.



มุมมองด้านหน้า หรือ Front View แบบ
Perspective



มุมมองด้านหน้า หรือ Front View แบบ Parallel
Projection

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11

หน้าตาและส่วนประกอบต่าง ๆ ของโปรแกรม

This course is a subject that focuses on practical work in most classrooms. There will be learn together in the room using a computer as a learning medium Teaching how to create works in the classroom Learning materials will be Teaching and demonstration models with explanations in the classroom.