COMPUTER HARDWARE + SOFTWARE

B1 ORIENTATION WORKSHOP

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COMPUTER HARDWARE

THE BIG QUESTION: MAC OR PC?

SHORT ANSWER... Whatever you feel most comfortable with

LONG ANSWER... Each system has its own advantages

MAC

Simple/elegant design
Can run Windows with bootcamp
More popular at school
Plays nicely with your iPhone/iPad
Good with graphics software

PC

Can run all programs
Easier to customize and upgrade
Generally cheaper
More common in offices
Easier workflow with school computers

UPGRADE OR BUY?

SHORT ANSWER...

If you already have a laptop, keep it for now, figure out which programs you use the most and whether your current setup works well

LONG ANSWER...

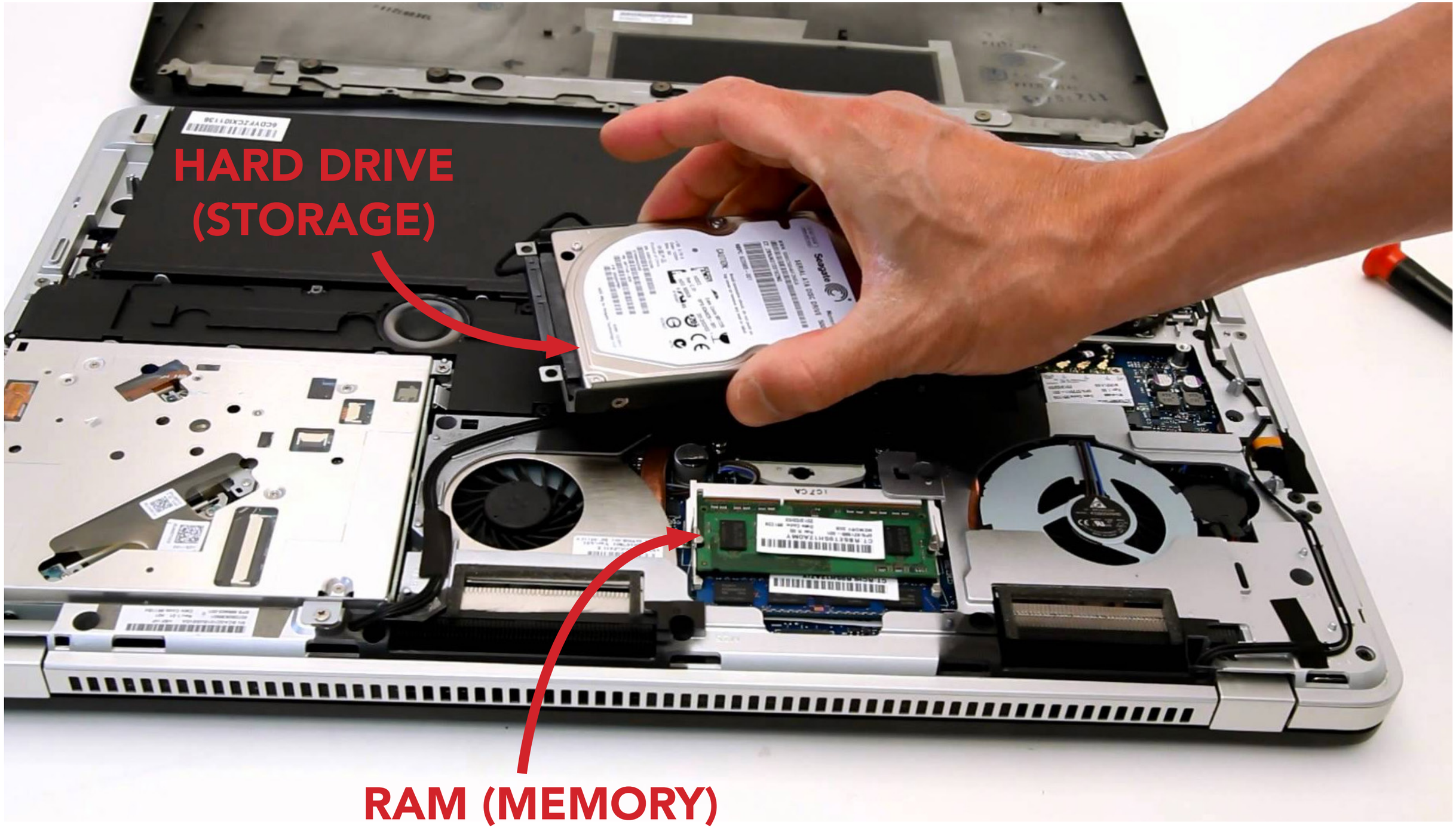
How old is it?

– Older than 4 years maybe time to buy a new computer

Can you upgrade storage and memory?

– Most PCs can be upgraded easily

– Most newer Macs can’t (check if it has screws on the bottom)


HARD DRIVE
(STORAGE)
RAM (MEMORY)

WHAT DO I LOOK FOR?

THE PROCESSOR (CPU) IS THE BRAIN

- It performs all the basic operations of a computer based on the instructions it receives
- The processor is one of the most important factors affecting your computer's overall performance

MINIMUM

Intel Core i5 (or equivalent)

RECOMMENDED

Intel Core i7 processor or better

WHAT DO I LOOK FOR?

RAM IS THE SHORT-TERM MEMORY

- It determines how many programs you can have running at the same time
- It is easy to upgrade on some systems
- RAM is cheap, max it out!

MINIMUM

Intel Core i5 (or equivalent)
16GB RAM

RECOMMENDED

Intel Core i7 processor or better
32GB RAM

WHAT DO I LOOK FOR?

STORAGE IS THE LONG-TERM MEMORY

- It determines how many files you can keep on your computer
- Flash drive (SSD) storage is more expensive than hard drive (HDD) storage but faster and more durable

MINIMUM

Intel Core i5 (or equivalent)
16GB RAM
256GB storage

RECOMMENDED

Intel Core i7 processor or better
32GB RAM
512GB SSD storage

WHAT DO I LOOK FOR?

THE GRAPHICS PROCESSOR (GPU) IS THE VISUAL SYSTEM

- It takes output from the CPU and translates it into the images on your display
- Integrated or shared graphics use the system's RAM, while a dedicated graphics card uses its own memory

MINIMUM

Intel Core i5 (or equivalent)
16GB RAM
256GB storage
1GB dedicated graphics
(except Macbook Pro)

RECOMMENDED

Intel Core i7 processor or better
32GB RAM
512GB SSD storage
4GB dedicated workstation graphics

WHAT DO I LOOK FOR?

EXTRAS YOU SHOULD HAVE...

- Wireless mouse with scrollwheel
- External hard drive
  (1TB recommended for backups and additional storage)
- USB stick
- External monitor (optional)

SOME IMPORTANT TIPS

Backup your work!!!

– Ideally in two places: cloud and external hard drive
– This cannot be emphasized enough

Never ever ever ever leave your computer unattended

– Even just to go to the washroom
– Buy a lock OR get a friend to watch it OR bring it with you
– Computers get stolen frequently by people wandering into the school

Label your USB stick

– Reformat it with your name or email address
– That way it might be returned to you if it gets lost

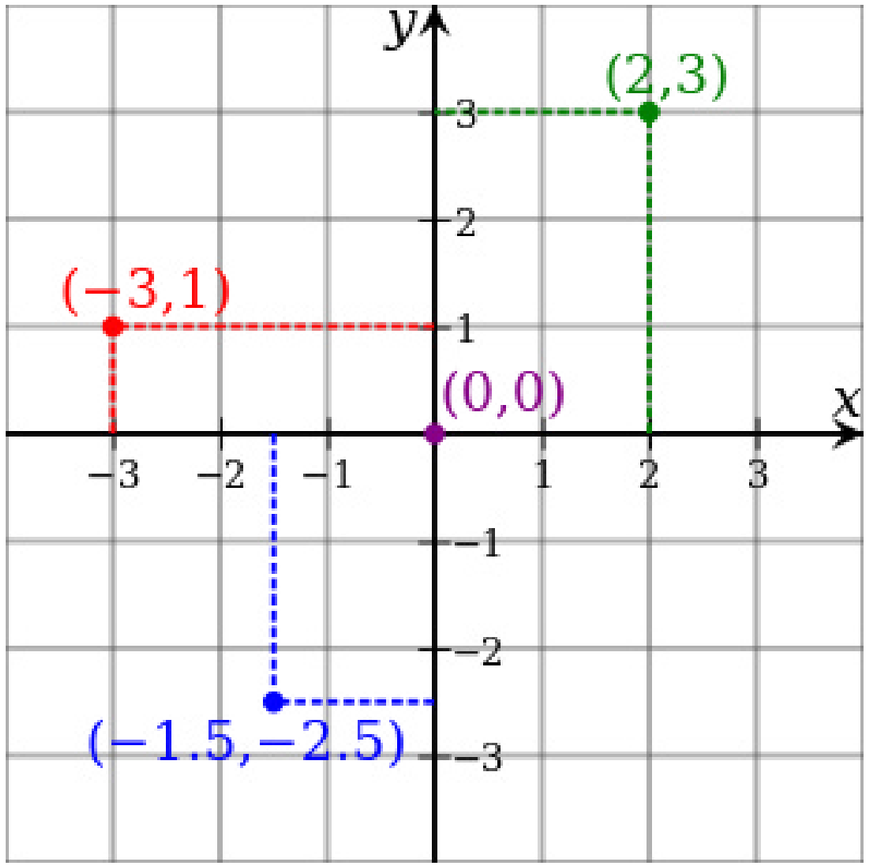
TL;DR

There are a lot of different opinions about what kind of laptop you should have...

- You'll want a high quality machine capable of handling complex graphics software
- Get the best computer you can afford (most manufacturers have discounted student pricing)
- Go for a mobile workstation PC or a Macbook Pro
- Treat your laptop as if it were your first born child

COMPUTER + SOFTWARE

2D vs. 3D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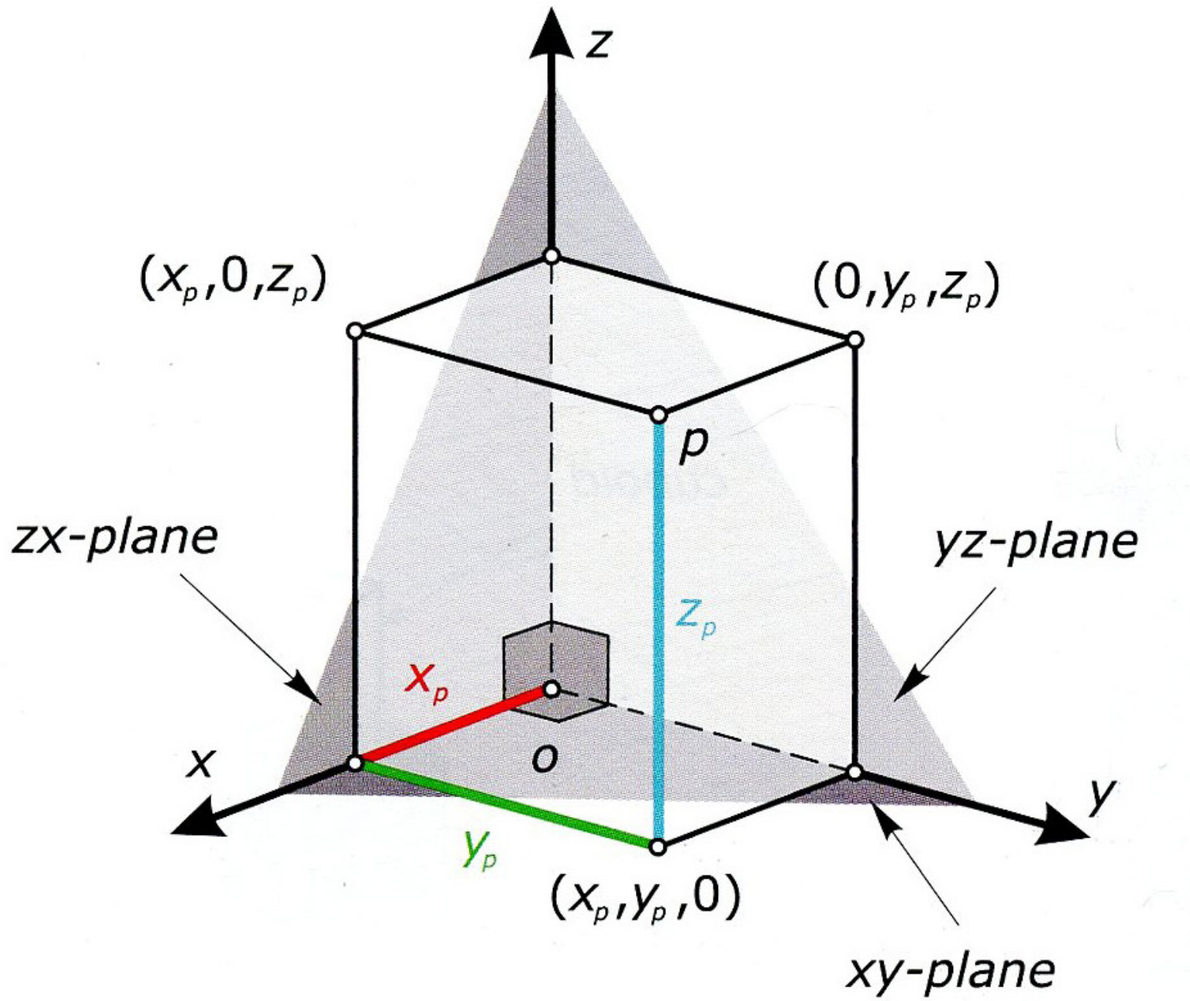
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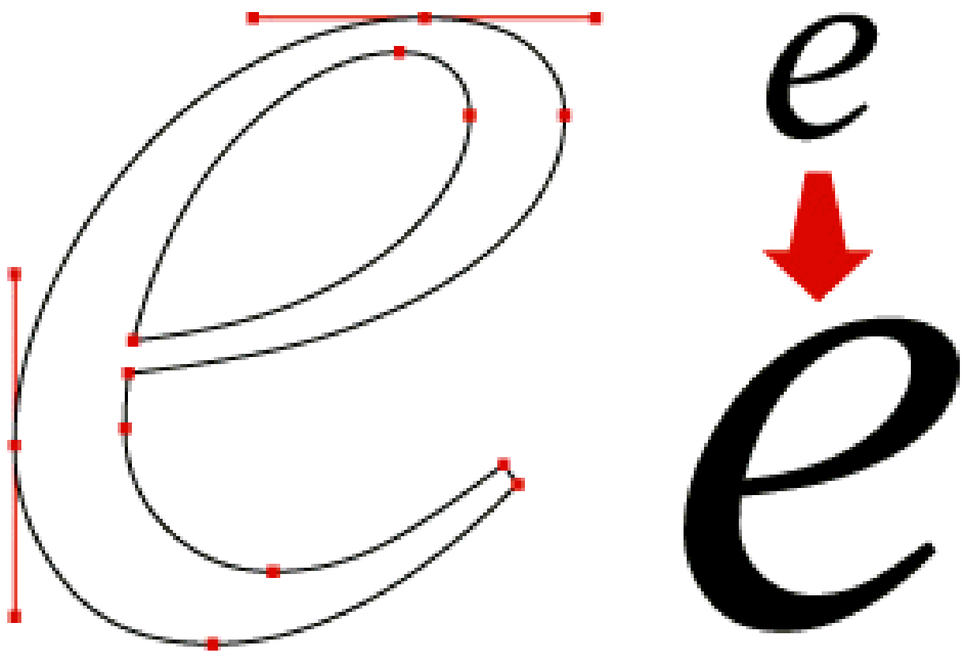
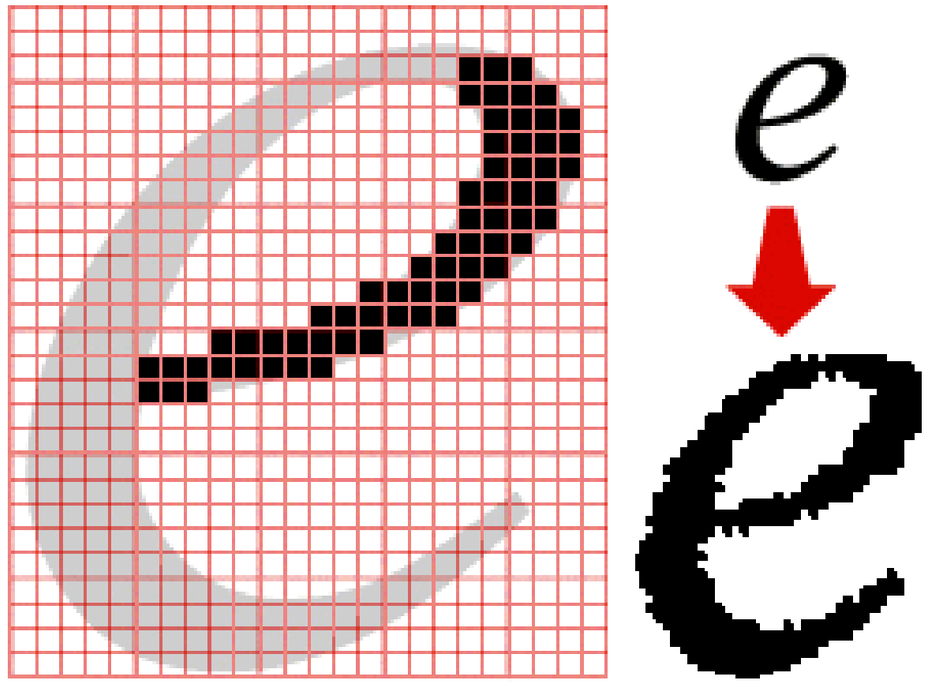
VECTOR vs. PIXELS

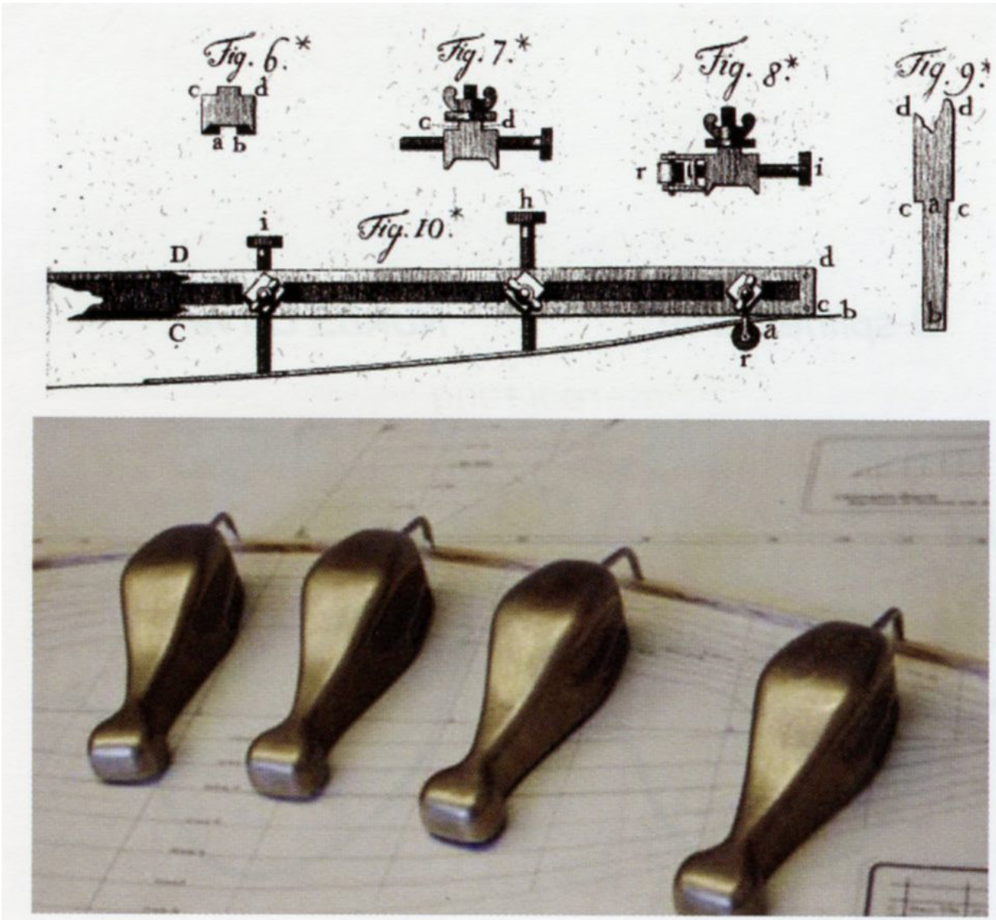
VECTOR GRAPHICS

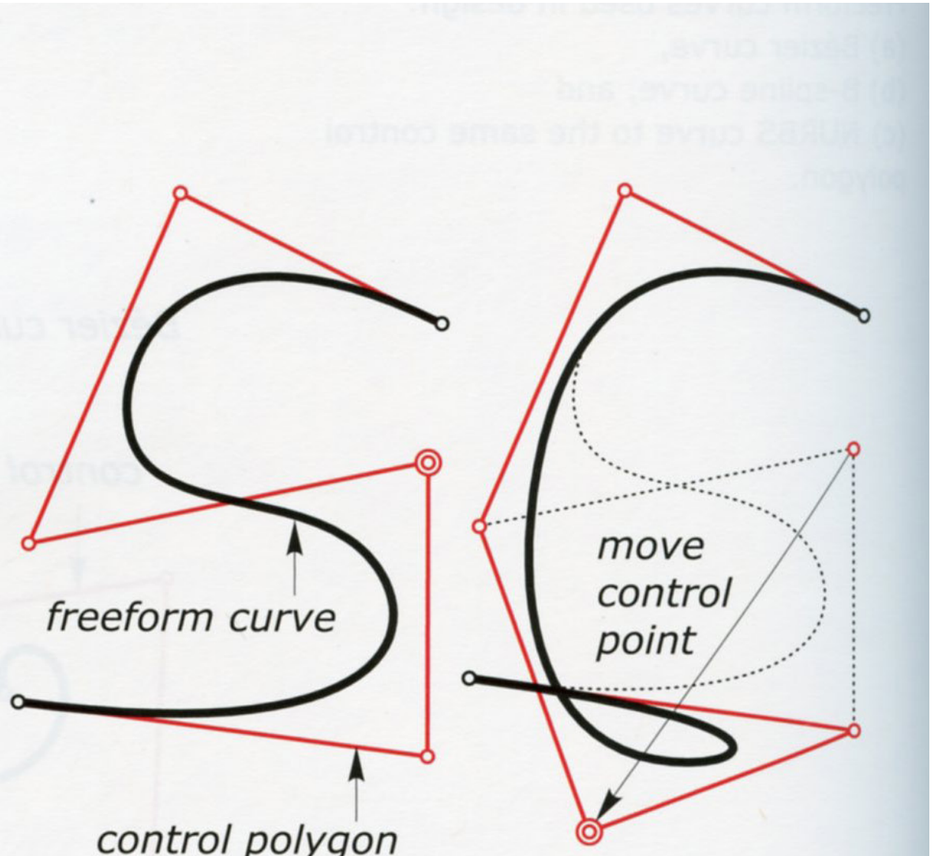


BITMAPPED (RASTER) GRAPHICS

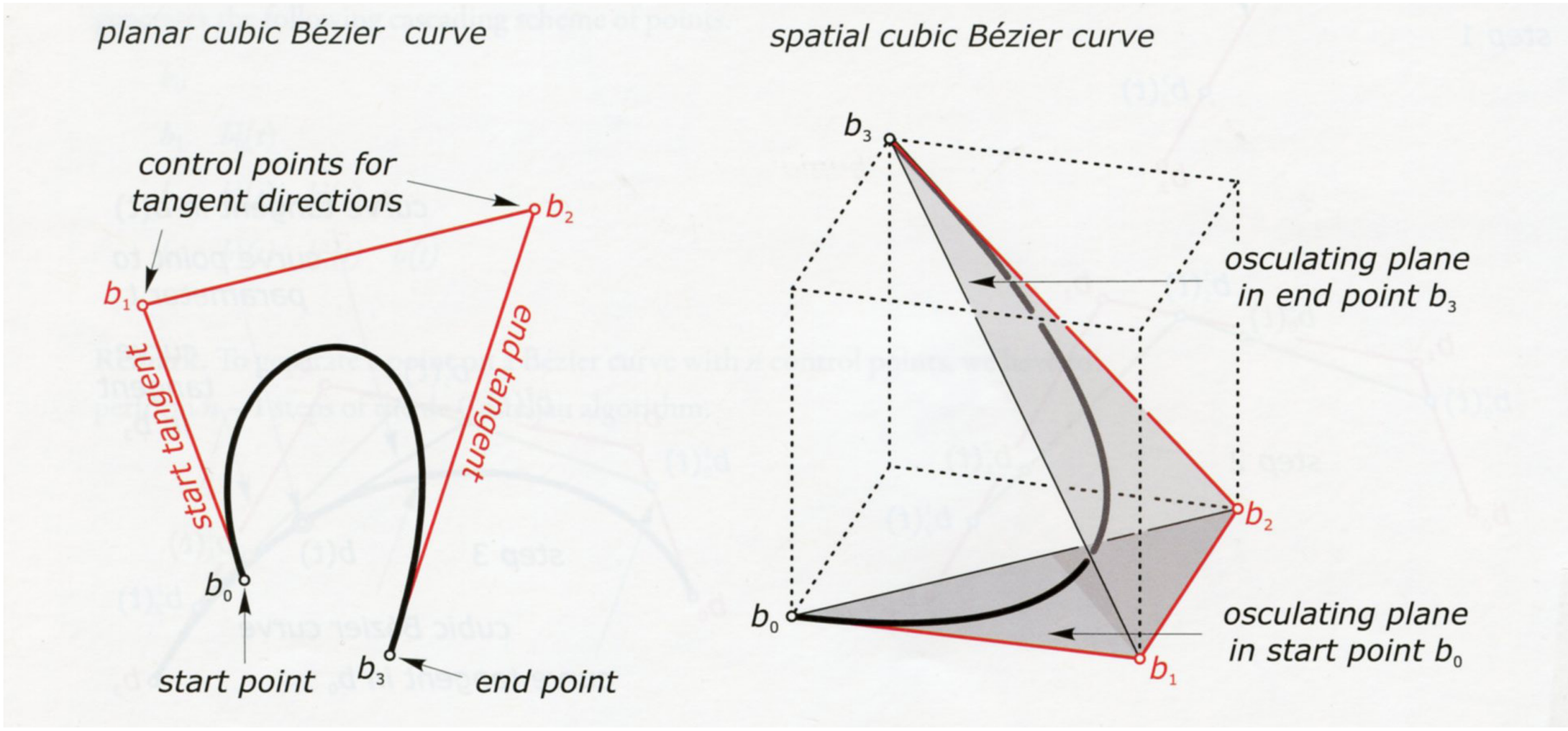


VECTOR CURVES (2D)



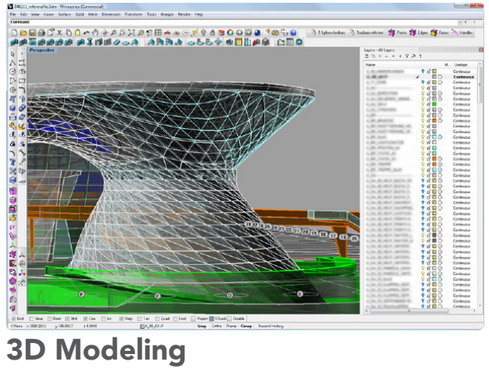


VECTOR CURVES (3D)

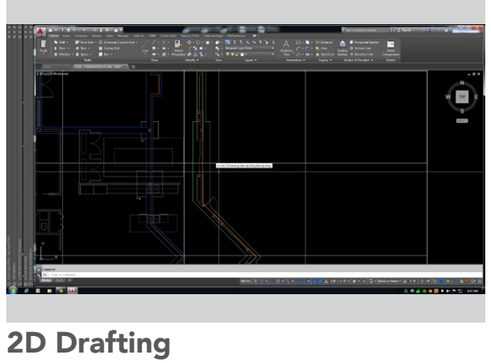


DIGITAL WORKFLOW*

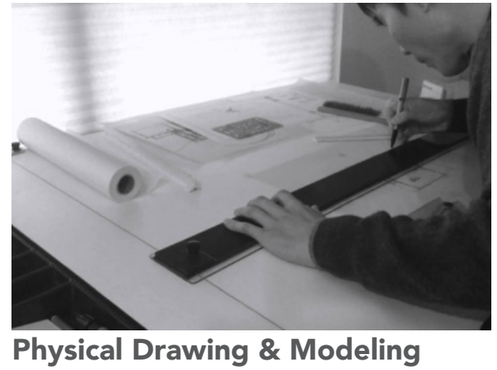
Pre-Production



3D Modeling

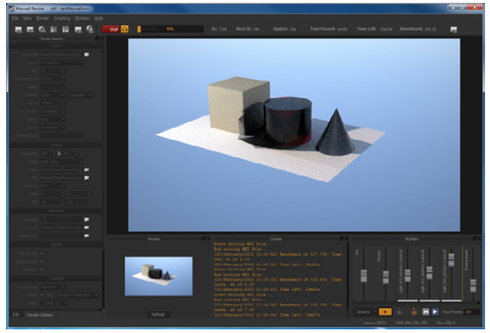


2D Drafting

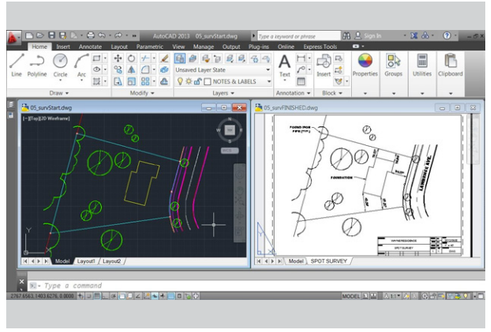


Physical Drawing & Modeling

Image Production



Rendering



Exporting

Scanning & Photography

Post-Production

***This is a simplified workflow. In reality the process is not linear, but iterative and cyclical. Design happens at all stages!**

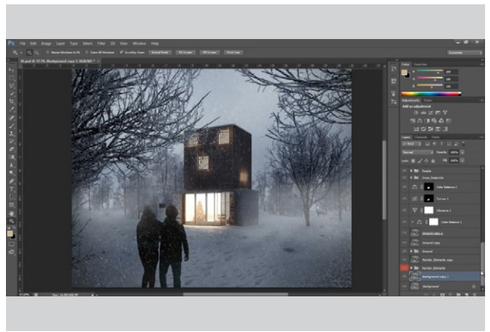
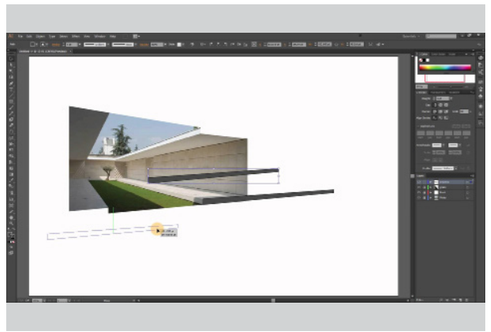
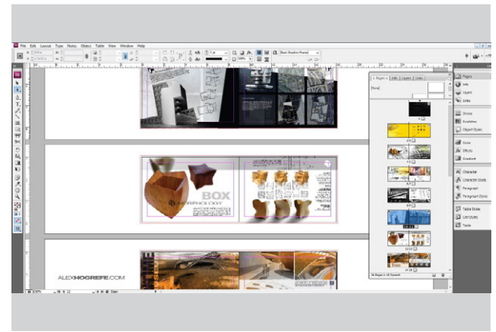


Image Editing



Diagramming



Layout & Printing

OFFICE365

When you will use it...

Writing essays, basic excel work, online file storage, Dalhousie email and calendar

How you can get it...

- Online version (free)

  http://my.dal.ca
- Desktop version (free)

  http://www.dal.ca/dept/its/its-services/Office365.html

GRAPHICS (Adobe Creative Suite)

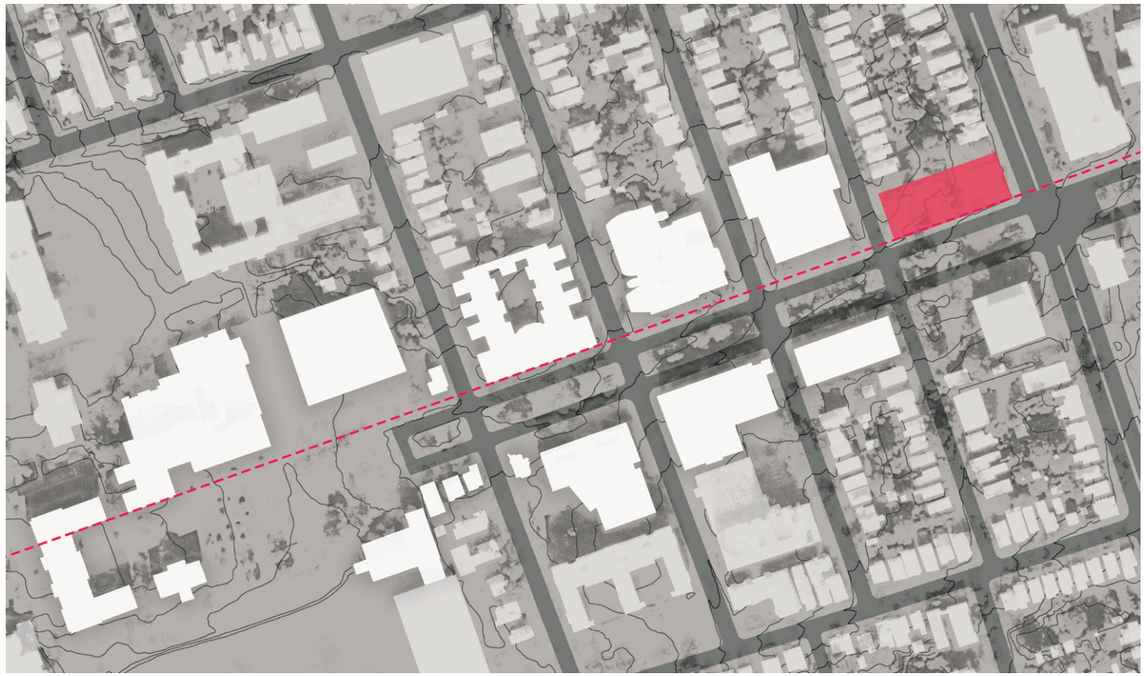
When you will use it...

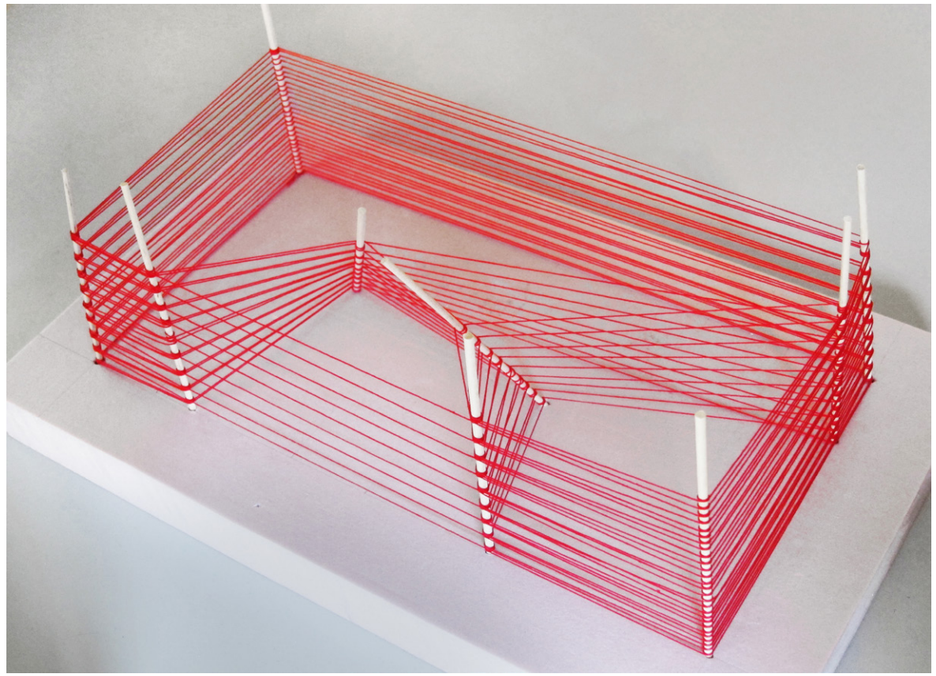
Photoshop: Editing photos and images
Illustrator: Creating vector graphics, diagrams, and maps
InDesign: Layout of digital and print presentations

How you can get it...

- Creative Cloud (student subscription) $19.99 USD per month
  http://www.adobe.com/ca/creativecloud/buy/students.html
- Try to get an older version if you don't want to pay a subscription

ILLUSTRATOR vs. PHOTOSHOP





DRAFTING (AutoCAD, VectorWorks)

When you will use it...

Technical and presentation drawings

How you can get it...

AutoCAD

– Free student license
  http://www.autodesk.com/education/free-software/autocad

Vectorworks

– Free student license
  https://student.myvectorworks.net

3D MODELING (SketchUp)

When you will use it...

Design and representation in three dimensions

How you can get it...

- Free version

  http://www.sketchup.com/download
- Pro version (1-year student subscription) $49 USD

  http://www.creationengine.com/html/sketchup.html

3D MODELING (Rhino)

When you will use it...

Design and representation in three dimensions, especially complex geometry and curved forms

How you can get it...

- PC version is required for Grasshopper (parametric plugin)
- Free 90-day trial
  https://www.rhino3d.com/download
- Student licence $95 USD (Mac) $195 USD (PC)
  https://www.rhino3d.com/sales/north-america/Canada

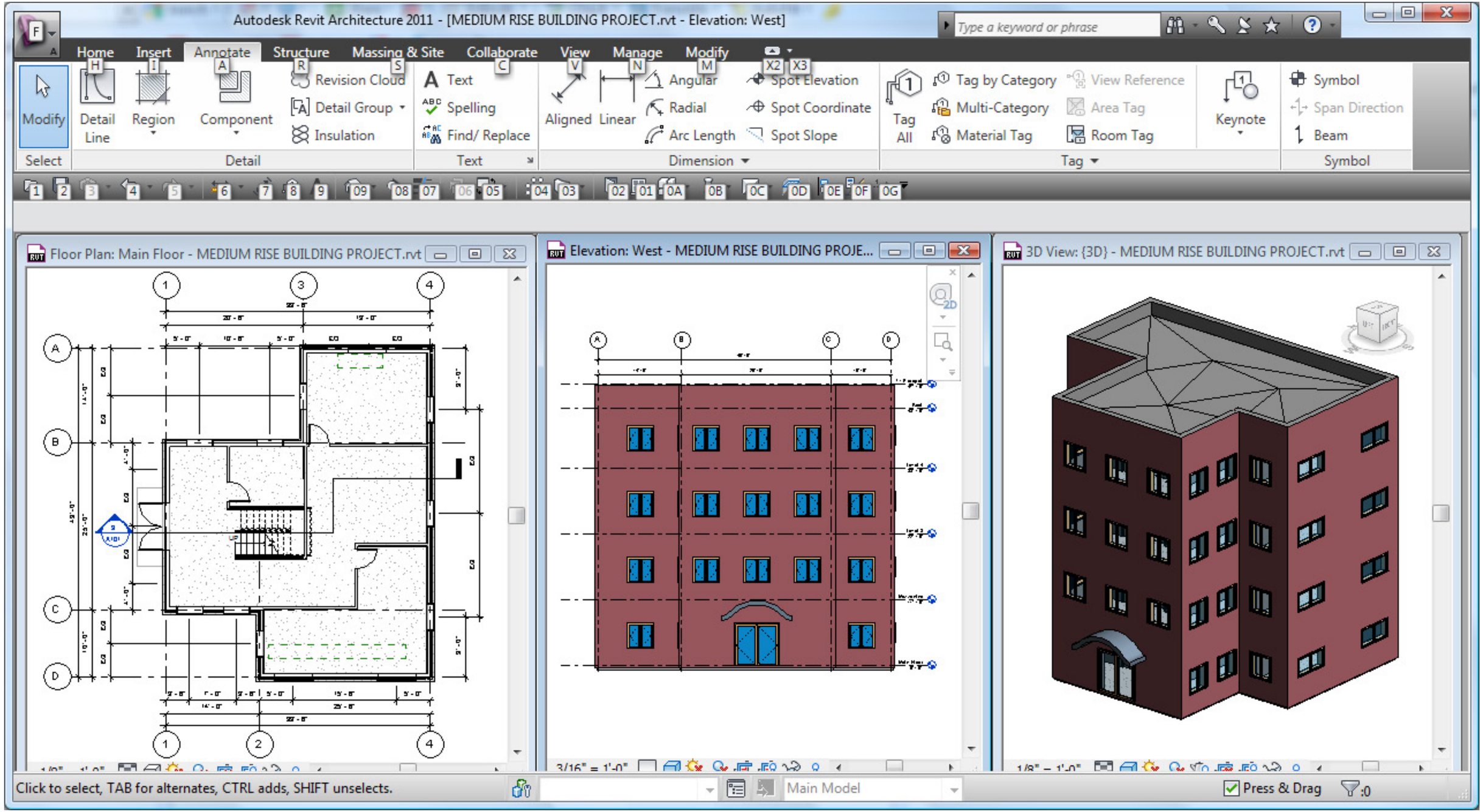
BIM (Revit)

When you will use it...

Not so much in the design studio because it is less flexible and more industry-oriented, but you may use it on work term so its good to become familiar with it

How you can get it...

- Free student licence
  http://www.autodesk.com/education/free-software/revit


Autodesk Revit Architecture 2011 - [MEDIUM RISE BUILDING PROJECT.rvt - Elevation: West]
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Home
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Modify
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Detail Line
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Revision Cloud
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Find/ Replace
Aligned
Linear
Angular
Radial
Arc Length
Spot Elevation
Spot Coordinate
Spot Slope
Tag All
Tag by Category
Multi-Category
Material Tag
View Reference
Area Tag
Room Tag
Keynote
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Floor Plan: Main Floor - MEDIUM RISE BUILDING PROJECT.rvt
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Click to select, TAB for alternates, CTRL adds, SHIFT unselects.
Main Model
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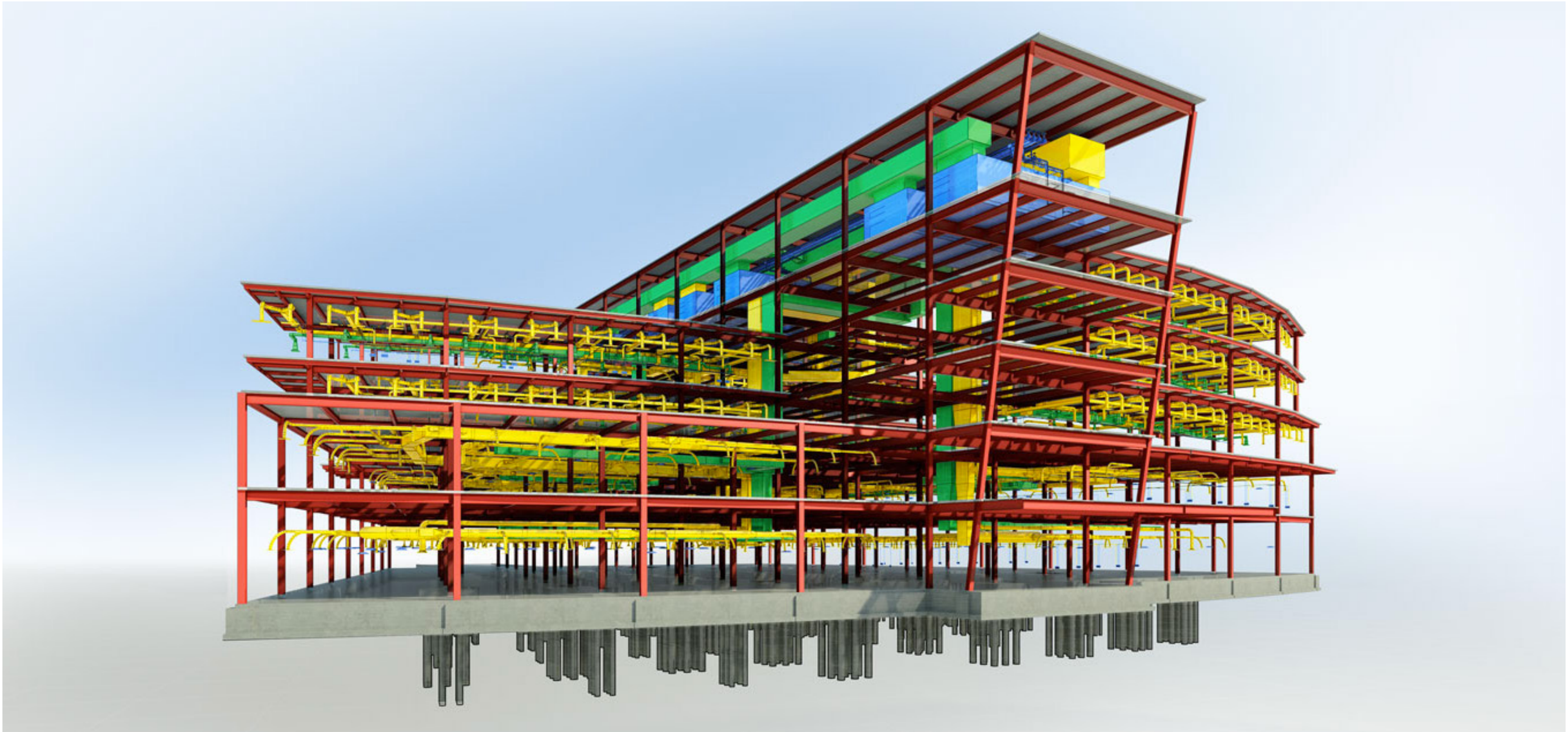


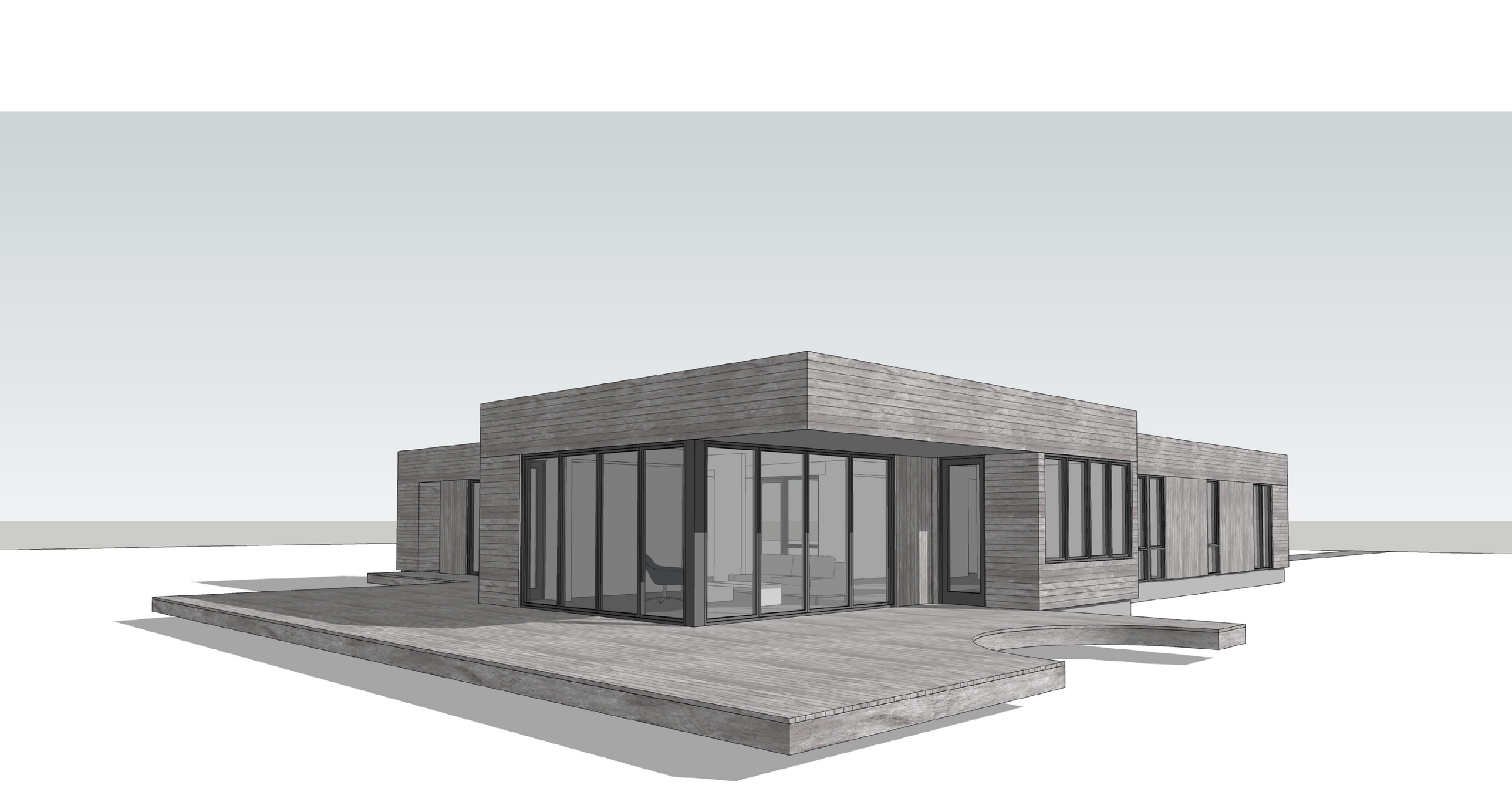
RENDERING (VRay, Maxwell)

When you will use it...

Representation of 3D models with realistic* materials and lighting

How you can get it...

- Individual licenses are expensive :(
- VRay and Maxwell are both installed on the school computers
- Maxwell for SketchUp is free, and they provide a free student license for Rhino if you are enrolled in a course that requires it
- There are some other free rendering plugins for SketchUp (Kerkythea, Indigo, and others... ask around!)



TL;DR

For this semester, you should set up Adobe Creative Suite and Office365 on your laptop...

- You should also try out some of the other programs by downloading a student version or a free trial, but don't worry about learning them in depth just yet
- The best way to learn a new program is by applying it in one of your projects
- Help menus/forums/online tutorials are your friend
- The computer help team is also your friend (we get paid to answer questions, so there are no stupid ones, seriously)

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