

Team SIR^3

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IntroCS pd5

Team SIR^3 would like to present...

Computer Goibniu

00. Architect

Tyrone is an architect. He is currently working with a computer that runs AutoCAD 2017; however, he wants to purchase and run AutoCAD 2020.

Tyrone needs you to design a new computer to make his designs come to life.


Background/Guidelines:





Making 3D Photorealistic rendering in AutoCAD2020




Access to industry-specific toolsets, including:





- Architecture
- Electrical design
- Map 3D
- Mechanical design
- MEP (mechanical, electrical, and plumbing)
- Plant 3D, including P&ID functionality
- Raster design

Tyrone does not want to spend more than \$3,000 (including peripherals, but not software)

Part	Photo	Significance	Price	(Notes) Meets Requirements?
<b>CPU:</b> Intel Core i9-9900K 3.6 GHz 8-Core Processor		This is one of the best processors available. It is an 8-Core processor, meaning that it can run 8 tasks at the same time with no problem. This processor is efficient and the fastest one available. This processor is certainly worth the price, you won't be disappointed.	<b>\$504.99</b>	It satisfies both the required 2.5 GHz and the recommended 3+ GHz. This CPU has 3.6 GHz.

<b>CPU Cooler:</b> Corsair H100x 57.2 CFM¹ Liquid CPU Cooler		A water-cooling system allows you to cool specific system components to a greater degree compared to the use of fans. It also requires much less space.	<b>\$115.75</b>	There is no recommended CPU cooler, so our team picked the best one available.
<b>Motherboard:</b> Asus PRIME Z390-A ATX LGA1151 Motherboard		This motherboard delivers sharp and clear graphics that are essential for an Architect. It consists of AI overclocking², cooling capability, and an enhanced power solution.	<b>\$174.99</b>	There are no motherboards specifically needed to be able to use AutoCAD 2020, however, a 1920 x 1080 resolution with true color is necessary. The motherboard that we chose supports Intel HD Graphics³ with HDMI⁴ and DVI⁵-D which both meet the requirement.
<b>Memory:</b> Corsair Vengeance RGB Pro 64 GB (4 x 16 GB) DDR4-3200 Memory		Since the motherboard that we chose can support up to 64GB of RAM with 4 slots they work perfectly. With an anodized aluminum heat spreader, this will help improve the thermal conductivity for memory cooling even when overclocked. This is perfect for Tyrone's busy nights.	<b>\$342.99</b>	In order to have all the features of AutoCAD 2020, 16GB memory is required. This meets the requirements with up to 4x the required memory.
<b>Storage:</b> Samsung 970 Evo 500 GB M.2-2280 NVME Solid State Drive		This storage, with 500GB, is guaranteed to run programs extremely fast. It will support any large files that an architect like Tyrone will create, no problem.	<b>\$99.99</b>	In order to have all the features of AutoCAD 2020, 16GB disk space is required. This meets the requirements with a whopping 500GB.

<p><b>Video Card:</b> AMD Radeon Pro WX 5100 8 GB Video Card</p>		<p>This is one of the recommended graphics cards for AutoCAD. It has a bandwidth of 106 GB/s and is 8GB. There's no way Tyrone can go wrong with this card.</p>	<p><b>\$340.95</b></p>	<p>It satisfies the required 4 GB GPU with 106 GB/s Bandwidth and DirectX<sup>®</sup> 11 compliant. This video card is 8GB GPU with 106 GB/s Bandwidth.</p>
<p><b>Case:</b> Corsair SPEC-OMEGA RGB ATX Mid Tower Case</p>		<p>This case is fashionable and modern, with a tempered glass side panel and lighting profiles, perfect for an architect like Tyrone. It will hold all of the computer parts, including the motherboard, video card, CPU, etc.</p>	<p><b>\$139.99</b></p>	<p>There is no recommended case, however, this case is big enough that it will hold all the parts.</p>
<p><b>Power Supply:</b> Corsair RMx (2018) 550 W 80+ Gold Certified Fully Modular ATX Power Supply</p>		<p>This power supply is 80 plus gold certified<sup>7</sup> and is efficient in keeping your energy consumption, noise, temperatures, and your power bill low. It is also tuned with a fan so that noise is kept to a minimum, perfect for a hard-working architect like Tyrone.</p>	<p><b>\$108.98</b></p>	<p>There is no recommended power supply, so our team picked the best one available.</p>

<b>Operating System:</b> Microsoft Windows 10 Pro OEM 64-bit		This operating system is perfect if you run a business and want enhanced functionality. It comes with built-in security and speed. This is perfect for a busy architect!	<b>\$139.99</b>	It satisfies the required Microsoft Windows 10 (64-bit only) (version 1803 or higher).
<b>Monitor:</b> Asus ROG Strix XG49VQ 49.0" 3840x1080 144 Hz Monitor		This monitor is ideal for a busy architect, allowing for multiple projects to be shown in 1080p <sup>8</sup> resolution. Being a single monitor, it does not have a visual 'gap' like dual monitors would. In addition, it curves, allowing for easy viewing.	<b>\$842.99</b>	It satisfies the 2880 x 1800 with Retina Display recommended. This monitor is 3840 x 1080.
<b>Input Peripherals:</b> Microsoft Desktop 900 Wireless Standard Keyboard With Optical Mouse		These input peripherals, your keyboard and mouse, will leave any user satisfied. The keyboard is smoothed around the edges, allowing for more comfortable hand positions, and has a satisfying 'click'. The mouse is smooth and shaped for ideal hand gripping. (Plus, it works regardless of hand orientation)	<b>\$32.84</b>	The mouse satisfies the requirement of being MS-Mouse compliant
<b>External Storage:</b> Samsung T5 250 GB External SSD		This is simply just a hard drive for extra storage. Our team decided that since you, Tyrone, would be hard at work, you might be needing extra storage. This is portable, perfect if you want to move your projects. It has 250 GB and is compact and light.	<b>\$99.99</b>	In order to have all the features of AutoCAD 2020, 16GB disk space is required. This is an additional 250GB to the main 500GB.

**Total Price:** \$2967.06, \$2827.07 not including the operating system

## Selling Points/Pitch

- ❖ Our team reads the fine print - we make sure everything is up to standard. Other teams may claim that their offer will support AutoCAD 2020 and its additional toolsets, but can they? No.
- ❖ As a fellow AutoCAD 2020 user, I guarantee that this computer will support the program.
- ❖ Every single piece was handpicked specifically for Tyrone
- ❖ All pieces are of the best quality, so you will get your money's worth.
- ❖ The computer will have a modern look

## Glossary

**CFM**<sup>1</sup>- Cubic Feet per Minute

**Overclock**<sup>2</sup>- Action of increasing a component's clock rate, running it at a higher speed than it was designed to run. [whatis.techtarget.com]

**Intel HD Graphics**<sup>3</sup>- a series of Intel's integrated graphics processors [www.intel.com]

**HDMI**<sup>4</sup>- HDMI - High Definition Multimedia Interface [www.itpro.co.uk]

**DVI**<sup>5</sup>- Digital Video Interface [www.itpro.co.uk]

**DirectX**<sup>6</sup>- Microsoft uses DirectX to describe a group of application programming interfaces (a system of tools/resources in an operating system, allows developers to make softwares; aka API) used for multimedia and video applications. [howtogeek.com]

**80 plus gold certified**<sup>7</sup>- 80 plus is a certification organization. The gold award means that there is 87% efficiency at 20% load, 90% at 50% load, and 87% at 100% load. [velocitymicro.com]

(**Load** is the maximum operation ratings of the power supply). [jameco.com]

**1080p**<sup>8</sup>- 32:9 aspect ratio; nonstandard.

**Bandwidth**- The quantity of information that our wi-fi connection (and other types of connection) can transmit and process. [CS jargon glossary]

## Notes/Questions

Input peripherals: MS-mouse?

- Initially, when I saw this I was confused, but when I decided to search up what it looks like on the internet, we discovered that the one we had picked out originally meets the requirements.

Video card: 4 GB GPU with 106 GB/s Bandwidth and DirectX 11 compliant required

- I'm not too sure what 106GB/s Bandwidth and DirectX 11 compliant means... I trust my team will understand

Before our video graphics card was DirectX 12, and then we learned that it won't be compatible with softwares using DirectX 11, so we had to change it.