# cadalyst

## CAD Manager's Newsletter

### STRATEGIES AND SOLUTIONS FOR THE REAL WORLD
*By Robert Green*

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# The False Economy of Old Computers

## Relying on your old computer may seem like a good idea, but will cost you more in the long run.

As offices have gone back to normal operation, I've been visiting clients just like I did before COVID-19. And while it's great to be with people again, I must admit I'm a little concerned at all the ragged old computers — laptops and workstations alike — that I'm seeing on my travels. As a result, I've been talking to company owners and CAD managers about what I call the false economy of cheap computers and how those ragged old computers are actually costing them money.

Ever have trouble getting your company to update your old computers to modern workstations? Ever been told by accounting that it is always better to save money than spend money? In this edition of the CAD Manager's Newsletter, I'll share my methodology for making your company understand that "saving" money by using old computers actually costs more than it saves. Particularly when the cost of high value labor is considered. Interested? Here goes.

*Image source: vejaa/stock.adobe.com.*

## What is False Economy

The dictionary defines false economy as an action that costs less at first but results in more money being spent later. If you ask an accountant, they'll likely bristle and say that spending less is always better than spending more. But, I doubt they've ever had to model a large BIM project on a 5-year-old CAD machine.

Rather than diving into a complex discussion of CPUs, RAM, SSDs, and GPUs — which the accountants won't understand anyway — it is far better to start talking about practical examples like these:

- How a $150 tune up on your car can save many times that amount in gas consumption.
- Replacing old light bulbs with $4 LED bulbs to save $7 in electricity each year.

Do the tune up and light bulbs cost money? Yes. But does the cost of the tune up and light bulbs make sense given the savings? Absolutely!

## People Are Expensive — Workstations Are Cheap

I know some accountants and company owners will disagree with me, but workstations really are cheap. In fact they are dirt cheap considering everything they do.

In a world of $1,000-dollar desks and $6 lattes, a workstation that cranks out high volume production CAD work for $3,000 (or less) is not just cheap, it is an insane bargain. So, if workstations are cheap, then what is expensive you may ask? Answer: the person who sits at the workstation!

"How in the world does this relate to CAD," you ask. Let's examine the case of Jim — a civil engineer who does massive projects like airports and shipping terminals, to illustrate.

### Jim's Story

Jim does a great deal of work on Civil 3D, supporting major projects. He's often in the critical path of project completion and as such must deal with pressure and deadlines. On an almost daily basis, Jim deals with a variety of computer-related problems that stem from his 4-year-old computer with a generic graphics card, small SSD, and just 16GB of RAM. These problems include:

- Slow processing and plotting.
- Graphics problems due to lack of hardware acceleration.
- Crashes during rendering and analysis operations.
- Reboots required due to above problems.

In fact, these problems are so common that Jim figures he spends a minimum of 30 minutes (0.5 hr) per day dealing with them.

### Analysis of Jim's Situation

Jim is a well-compensated ($95,000 a year) individual with a benefits package that costs his company 20% above his salary. This means that Jim really costs his company $114,000/year (1.2 * $95,000).

And, since Jim works 48 weeks/year (240 days/year) at 8 hrs/day that means he works a total of 1,920 hours per year. If you divide Jim's annual cost by 1,920, that results in a cost of $59.38/hour to keep Jim on staff. Or stated as an equation:

$$Jim = \frac{\$114,000}{1,920} = \$59.38/hour$$

### The ROI of Wasted Time

Using the hourly cost value computed for Jim's labor and a 30-minute (0.5 hour) per day waste of Jim's time (due to crashes, reboots, and slow performance) we can calculate the true cost of Jim's wasted time like this:

Time waste per year = Time waste per day * 240 days/yr
= 0.5 hrs/day * 240 days/yr
= 120 hrs/yr

And, as we all know, time equals money, so the 120 hours Jim wastes each year comes out to $7,126/yr or when tallied over the three-year life of a typical workstation a staggering $21,378!

### The Workstation Cost

Now let's consider the cost of a workstation that Jim can use for 3-years to speed up his Civil 3D work. If the workstation costs $3,000 and it takes $300 of IT labor to install the workstation the total cost will simply be $3,300.

Why is it that Jim's company is happy to pay him $21,378 over three years to reboot a computer 30 minutes a day but is too cheap to buy a $3,300 workstation? Well, the simple answer is that management didn't understand how much money they were really losing. Let's examine this problem from a return on investment (ROI) point of view.

*Let's dig further into Jim's situation and review how this wasted time adds up and build an ROI (return on investment) that shows why you MUST upgrade your workstations now.* **Read More >>**

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# Tools & Resources



**Case Study:**
**Reimagining City Living to Foster Nature, Sustainability, and Community**
At KING Toronto, a new urban landscape comes to life with BIM. Read how Diamon Schmitt Architects is using Autodesk Revit and BIM 360 to a design and build a multi-use urban development. **Read the Case Study >>**

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**Podcast:**
**Digital Twins and Bentley, an Infrastructure Engineering Company**
Discover the value of open, scalable, vendor-neutral foundation to digital twin solutions. Connect the physical and virtual world — synchronize work, gain greater visibility, and make sense of the right data at the right time. Learn how you can empower people to do more with digital twins. **Listen to the podcast >>**

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**Video: 3D Plant Design Software**
CAD Schroer's M4 PLANT factory layout and plant design software has a modular structure and can be tailored to meet your requirements. The individual modules cover a wide range of design disciplines. The software also offers a comprehensive range of advanced functionality to improve your designs. **Watch video >>**

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**Webinar:**
**How Geospatial Data is Helping Us Understand the Climate Emergency**

When: June 7, 2022, 11am (EST)
The Association for Geographic Information is hosting a this webinar that will feature three expert geospatial speakers and will focus on cutting edge uses of GIS and geospatial information in the ongoing fight against climate change. Geospatial technology has quickly become a key weapon in understanding climate change, how policy changes impact the environment and how professionals in the natural and built environment can ensure development, and in some cases, coastal protection is in line with government net zero, environmental protection, and biodiversity targets. **Register for webinar >>**



**Autodesk's Make It Real Program**
Autodesk's *Make It Real* program encourages young people to engage with their communities by applying the design thinking process to real problems related to construction and the built environment. It also offers inspiration, learning, and funding opportunities. Autodesk is partnering with football star James Develin, who is finding new purpose as an entrepreneur and builder after retiring from an eight-year NFL career with three Super Bowl championships. Join James for the "Make It Modular" web series, featuring the skilled craftspeople and designers making his latest venture a reality. **Watch the series >>**

# What's New from Our Sponsors
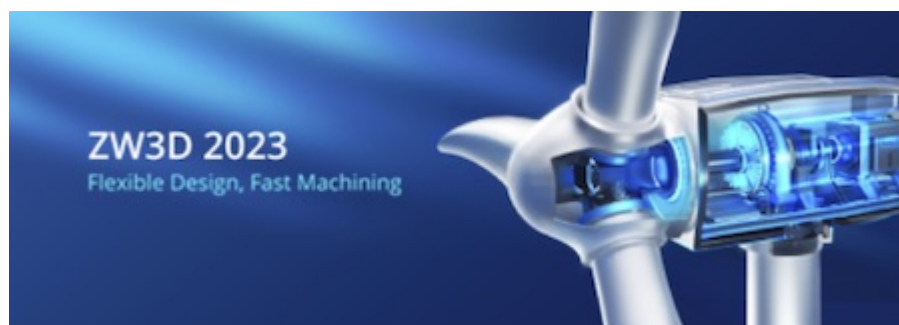
**ZW3D 2023: Becomes the Launching Pad for New Possibilities**
ZWSOFT releases new version of its 3D program. **Read more >>**

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**VinZero Brings Four CAD Entities Together**
New company formed to assist AEC companies to implement Net Zero goals.
**Read more >>**

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**Equipped Mold Designer Series:**
**NX Mold Connect Streamlines the RFQ Process**
Read the next installment of the Equipped Mold Designer Series: *NX Mold Connect Streamlines the RFQ Process: Access to faster, more accurate quotes ensures more timely production launch.* Follow one mold designer's path to success and find out how Siemens NX Mold Connect helps get products to market faster and easier.
**Read more >>**

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# What's New at Cadalyst



**Additive Manufacturing, Part 3.**

**Back to the Moon with Implicit Modeling and Additive Manufacturing**
Case Study: Aerojet Rocketdyne uses metal 3D printing technology from Velo3D
and implicit CAD modeling from nTopology to make a critical flight component
lighter, smaller, and much less expensive than its predecessors. *By Cadalyst Staff*
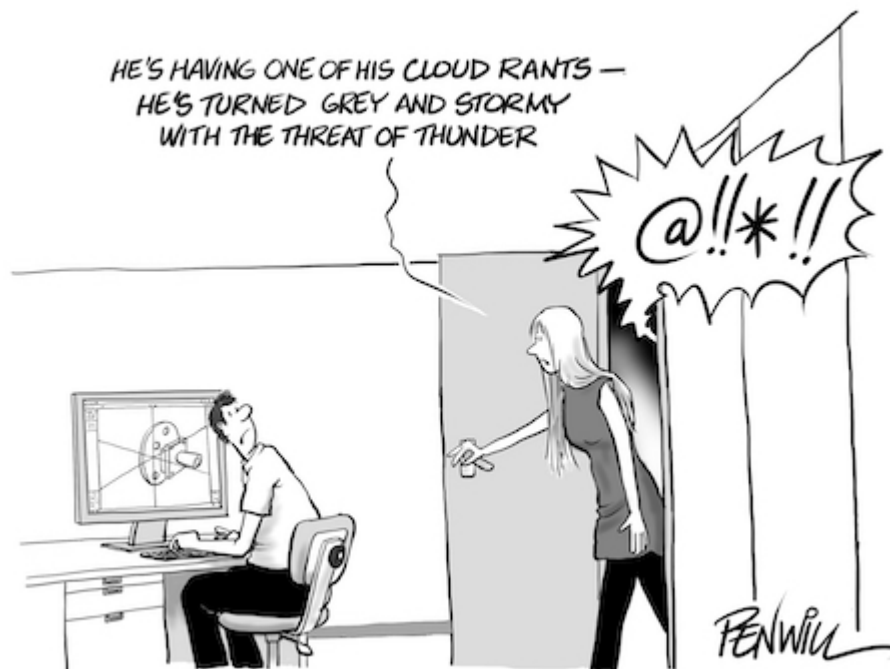**Read more >>**

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**NEW COLUMN: Leveraging BIM Data Throughout Project Lifecycles**
AEC Solutions: Designers and builders collaborate to build more efficiently using
BIM data. *By Andrew G. Roe*  **Read more >>**

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# CAD Cartoon



— By **Roger Penwill**                                      **Keep on laughing!**

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# Free Resources



## White Paper

## Mobile vs. Desktop Workstations for CAD
*The Evolving Role of the Mobile Workstation*
It comes down to physics — a deskside can always outperform a mobile workstation. Cadalyst hardware expert, Alex Herrera, looks under the hood of both to break down the pros and cons of each form factor.

**DOWNLOAD NOW**

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## Cadalyst Pro Tip:

## Training Checklist for CAD Managers
Training is an essential task on every CAD manager's to-do list. But with all those little details to remember, preparing a clear, informative training session can ve overwhelming. Use this handy checklist from CAD management expert Robert Green to help you be successful.

**DOWNLOAD NOW**

# More Digital Design Solutions

**Product Design**

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