AUTODESK UNIVERSITY

IT21156

Habits of Highly Effective BIM Managers

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Learning Objectives

- Understand various roles for Design Technology leadership and support
- Create effective training material for every learning style
- Improve troubleshooting skills for complex technology
- Develop effective plans for technology implementation

Description

Inspired by the book "7 Habits of Highly Effective People" by Stephen R. Covey, this presentation will highlight a collection of tips to improve your role as a BIM manager in an architecture, engineering or construction company. From over 20 years of experience, you will learn how to streamline your time, better understand the needs of your users, and much more. Whether you are a full-time or part-time technologist or if you are considering BIM management as a career path, this presentation aims to be fun and inspiring.

Your AU Expert

James is the Director of Design Technology at HOK – a global architecture, engineering and planning firm that is consistently ranked as one of the top influencers in design technology. He has lectured at many events including AIA National Convention, COAA Leadership Forum, ENR FutureTech, and at Revit User Groups across the United States. James maintains involvement in many industry-shaping initiatives to promote innovation and best practices. He serves on the board of directors for BIMForum and has fulfilled leadership roles in the development of both the National BIM Standard-US and the Level of Development (LOD) Specification.

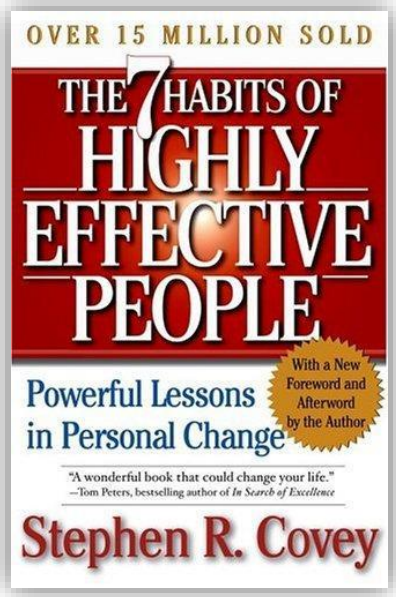
James has also authored the top-selling technical book series, “Mastering Autodesk Revit Architecture” with Eddy Krygiel and Phil Read. He has also served as an adjunct lecturing professor for continuing education and undergraduate classes at New York University.

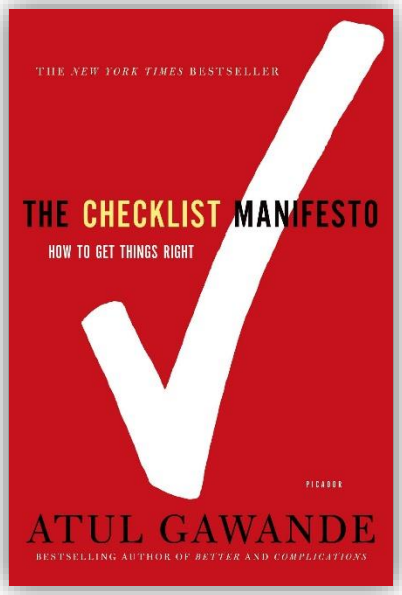
Structure of this handout

The learning objectives stated on the previous page are more of a generic overview of the benefits I hope you extract from this class. The AU norm is to match the major headings with each learning objective, but in this case each major heading will be tied to a “habit.”

I created the structure for this class in the spirit of the popular book "7 Habits of Highly Effective People" by Stephen R. Covey - one of my favorite self-help titles. Mr. Covey's recommended 'habits' can serve you well in your personal and business life. I have adapted the concepts from the book to be tailored specifically for those of us working in or interested in a career in design technology management.

In addition to Mr. Covey's excellent book, I highly recommend "The Checklist Manifesto" by Dr. Atul Gawande. We'll talk about that later in the class material.





https://www.stephencovey.com/7habits/7habits.php

http://atulgawande.com/book/the-checklist-manifesto/

Roles for Design Technology Leadership & Support

Before we dive into the "habits," I'd like to address the notion of identity - who we are. With a lack of consistency in job titles, we find it difficult to hire, to maintain morale, and to communicate to our practice leaders the value we bring to a company.

From a quick glance at this class attendance roster, here is a sampling of some titles I observed:

CAD/BIM Manager
Digital Design Director
Design Technology Specialist
BIM/VDC Coordinator
Integrated Practice Leader
CAD Designer
Process Manager
BIM Technologist
Digital Implementation Manager
Virtual Designer
BIM Strategy Manager
BIM Modeler

As you can see, there may be confusion with such a wide variety of functional descriptions; however, I will not try to suggest complete uniformity. Instead, let's look at some parts of today's job description.

BIM – most people tend to equate "BIM" with Revit. Therefore, a BIM Manager is essentially seen as a "Revit Manager."

VDC – (Virtual Design and Construction) is the contractors' take on BIM, even though from a technology skills perspective, the roles are almost identical.

Digital Design/Design Technology – commonly used as a broader definition that allows focus on more than just BIM.

In defining roles within my own teams, I have found it to be relatively clear to define the following functional roles:

Director/CTO – Defines the strategy, creates budgets, recommends/purchases software, develops standards & procedures.

Manager (*broad and shallow*) – wide responsibility for implementation of training, standards, etc. General knowledge on most systems with ability to train and troubleshoot.

Specialist (*narrow and deep*) – usually focused on a few projects with expert knowledge of a few systems.

Whatever your situation may be, give some thought to how you describe your own functional role and whether it fits the expectations of your organization. Some level of alignment across the industry will help strengthen our opportunities to grow.

Now, let's move on to the habits…!

Habit 1: Be Proactive

Your life doesn't just "happen." Whether you know it or not, it is carefully designed by you. The choices, after all, are yours.

One of the core concepts to a happier and more productive personal life and in business management is to be more *proactive* than *reactive*. This habit is pretty easy to understand, but sometimes difficult to practice. Each one of the subsequent habits we talk about in this class will have a foundation in being proactive.

"OWNERSHIP"…the big concept

My first and foremost recommendation in personal and business environments is to understand and embrace the concept of "ownership." This term doesn't have anything to do with possessions, rather it's about responsibility, dedication, and caring. I think the best way to further explain this important character trait is with an example scenario.

Someone comes to you and says their laptop is not functioning…how do you react?

> "That's not my department…see the IT Manager."
> - or -
> "Sure, let me see if the IT Manager is available right now."

In either scenario, you are not going to fix the laptop, but there is a subtle difference in how you are perceived. If you take 'ownership' in an overall standard of professionalism, your success will be accelerated.

In summary, you should:

- **Own issues brought to you**, even if they are not in your domain of expertise
  - That means, directing the colleague to the appropriate resource and following up to make sure they were satisfied.
- **Own the decisions you make**
  - Some may not be successful (see Archiving and Version Management tips later), but be honest and learn from your mistakes

Working up to management, the C suite

Another important aspect of being proactive is learning how to 'work up to' or 'talk up to' higher levels of management. Unless you are the founder of your own consulting firm, it is likely you will need to submit a business plan or a budget to the leaders of your firm for approval.

In my experience, people in the C-suite – chief executives, partners, and so on – have quite a bit on their plates at any given time. I've worked at companies where the leadership doesn't care that much about technology, but I'm now lucky to be a part of a progressive firm that embraces technology as an integral part of the development and delivery of great design.

Even at HOK, there is a language used within the technology team and a different dialect when we collaborate with the C-suite. On a personal note, I owe much of my insight in this respect to Carl Galioto, Patrick MacLeamy and Ken Young.

Here are a few key concepts you should remember when you are pitching a new business plan or your annual technology budget:

Bring solutions, not questions

Don't go to a C-suite meeting asking for answers to your questions. WE are the experts in terms of design technology. Take you best guess (if necessary) and put forth a proposed answer/budget/plan. If you get a 'yes,' go celebrate. If not, learn from your mistakes and try again.

Just say 'yes'

This is a favorite saying of our former CEO, Patrick MacLeamy. He has been known to utter the phrase when he asks a question of me or my team and we start a detailed and technical explanation of why his question may or may not be valid. Just saying 'yes' doesn't make your thoughts about a C-suite request less valid – it merely acknowledges the request so you can move on and get more results out of the valuable time with your firm's leaders.

Understand your audience

This is another important concept whether you are preparing a user group presentation or a business plan pitch for your C-suite. If you are pitching your idea to a CFO, make sure you focus on dollars-and-cents productivity. If you are presenting a new BIM platform to your global design director, you should focus on how it will help the firm generate great designs.

Another important aspect of developing presentation material is to first understand the **PURPOSE**. Is your presentation meant to inspire to action, inform, train, sell…? After you define the purpose of your presentation and understand your audience, you will always succeed in delivering your message and connecting with your peers.

Habit 2: Begin with the end in mind

Whether your firm is big or small, technology management needs to be conducted with effective planning. Developing both strategic and tactical plans will help you keep leadership informed and will give you a tool to measure success.

"Plans are worthless…planning is essential."
- Dwight D. Eisenhower

Each year you should develop a plan that encompasses multiple years. The further out the plan, the less specific it will be; however, the long-term strategic view can help you think creatively about how your design technology goals map to your company's overall goals.

3-5 year planning

- Big ideas
- Follow trajectory of tech trends
- Higher risk to invest early, but possible greater rewards

2 year planning (year after next)

- Carry-over of long tactical items from previous year
- Beginning of development for 3-5 year items
- Looking at current cutting edge tech

1 year plan (next year)

- What worked/didn't this year?
- What wasn't finished this year?
- Specific development
- Specific implementation (rollouts, timeline?)
- Pilot testing of tech in 3-5 year plan

Don't worry about striving for perfection in your planning process. A plan is designed to be measured against actual outcomes so your processes will refine year after year.

"A good plan today is better than a perfect plan tomorrow."
- Gen. George S. Patton

Develop SMART goals

As you develop long-term and short-term goals, they should always conform to the SMART concept[1]:

Specific – target a specific area for improvement
Measurable – quantify the improvement or at least suggest an indicator
Assignable – who will take action
Realistic/Relevant - Not "achieve world peace"
Time-based – specify when the results can be achieved

[1] https://en.wikipedia.org/wiki/SMART_criteria

“Plans are only good intentions unless they immediately degenerate into hard work.”
- Peter Drucker

Taking action on plans - effective meetings

The tactical part of your planning usually involves conducting meetings with your team or other stakeholders related to design technology management. Such stakeholders might include your company leaders, software vendors, or consultants. One important lesson I have learned through the years is the importance of organizing effective meetings. It is easy to select a date and time for a meeting and invite participants; however, that does not constitute an effective meeting.

Before the meeting:

- Establish a clear agenda (why are we meeting, expected outcomes)
- For recurring meetings, tailor the agenda so that the content fits; attendees will get frustrated if there's never enough time to complete the agenda.
- Make sure the RIGHT people are invited

During the meeting:

- Keep good notes; capture who commented, if comment is an action item
- Moderate the discussions, don't allow too much scope creep; use the Parking Lot concept or "ELMO"
- Review open action items from previous meeting (see Task Management)
- Assign responsibility and due dates for every action item
- Recap at conclusion the action items

After the meeting:

- Send a summary of notes and action items (remember SMART)
- Make sure there is an ongoing system to track action items (see “Manage your projects” in the next section)

Habit 3: Put first things first

Maintain balance, don't over-extend yourself.

Time management is crucial for anyone in the business world - this is not a unique problem for Design Technology professionals. Some of the tips I offer in this segment are learned from my team experience and from personal habits.

Plan your time (well)

Look back at your planning as we discussed earlier in this document. Understand what you can accomplish in a normal work week and make sure that your supervisors or company leaders know the limits of what you can accomplish. Despite how we may feel from time to time - we are NOT super heroes!

Because some of our work planning relates to unknown task duration, I like to use a 5 day work week as a general guideline. I'll divide that up into 20% chunks, which equate to what I can usually get done in a work day. This seems to work well in terms of managing multiple running tasks simultaneously - because we rarely get to work on only one task to completion before moving on to the next. With the 20% guide, I can look at a task and estimate that I will work on it one day a week for a month. That's 4 work days, or if I roll it up to a monthly summary, it's still a 20% task. Something that's a high priority might also be 4 days of work, but I'll schedule it for 80% of one week.

In the end, our profession isn't based on exact timing, but you will eventually understand whether you are over-worked or not by tracking projected versus actual task labor.

Plan your time, put blocks of WoW in your calendar

In addition to planning your task work and managing a team (if applicable), I recommend using WoW blocks in your calendar. *No, not World of Warcraft!* WoW means "Work on Work" - I even have a dedicated category (tag) in Outlook for such items. Empty slots in your calendar can be dangerous for professionals who have a wide variety of support and management responsibilities - they can invite scope creep. "Can we have a conference call to talk about the such-and-such event?" - "Sure! My calendar is free all day.." Is it really?

When the WoW time comes:

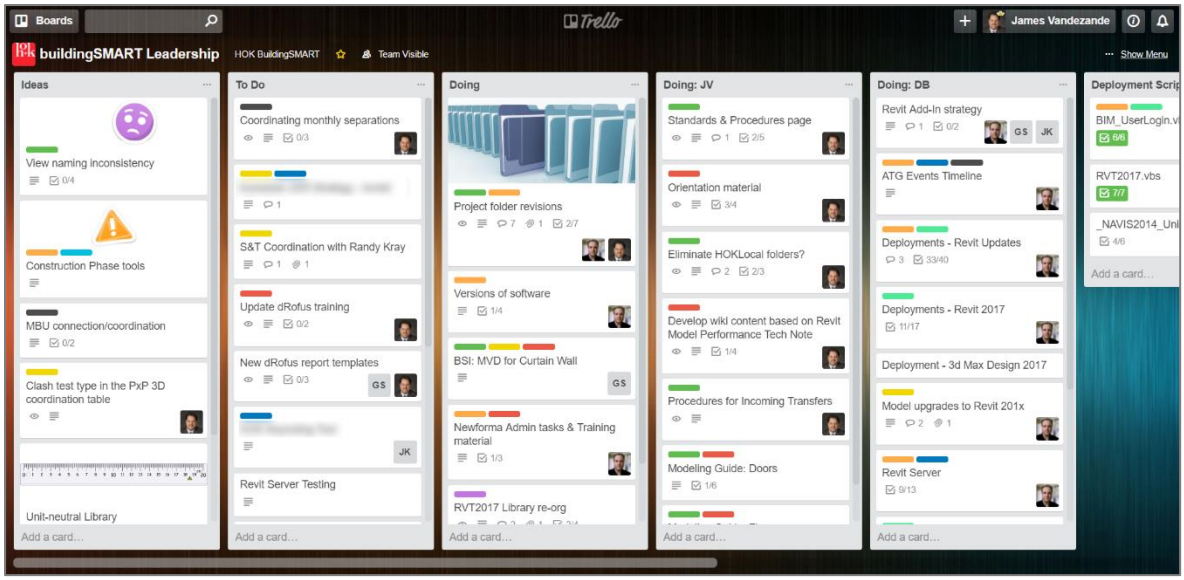
- Don't answer the phone
- Don't check your inbox/Facebook/Twitter (minimize the Windows!)
- Focus

Manage your projects

Whether you are a sole technology professional or you have a large team, there are various software applications available to help manage teams, plans and projects. I have experimented with some of these platforms and will offer my opinions in the following few pages, but this is not an exhaustive list or review of all available systems.

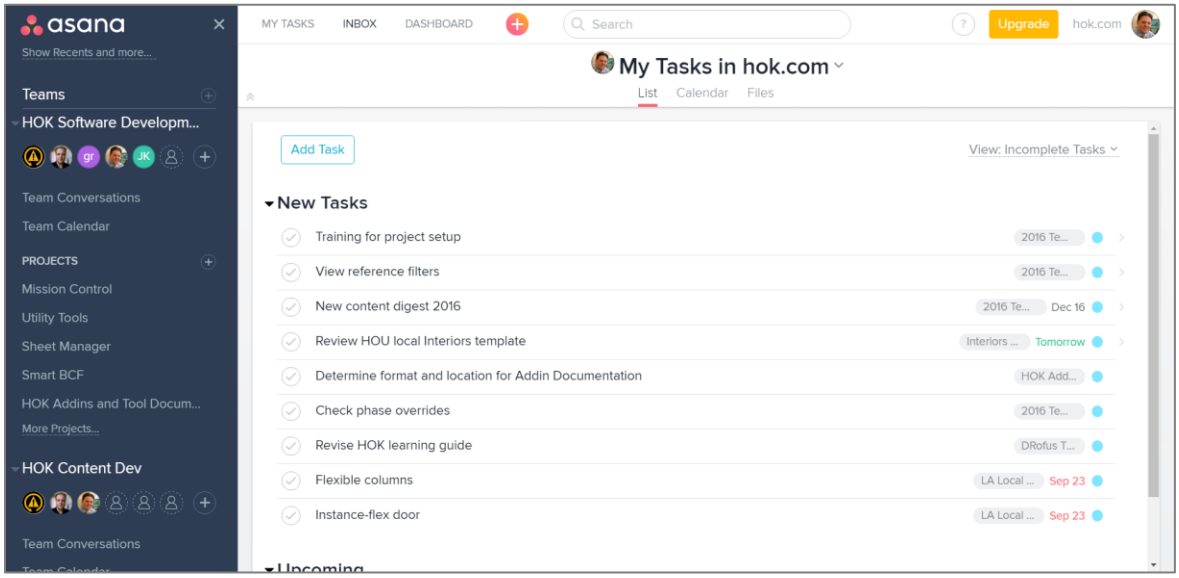
Trello, www.trello.com - web-based, iOS/Android apps

- Intuitive UI, drag and drop, checklists
- Card filters, discussion threads, file attachments
- Due dates on cards, not action items; completing checklist items doesn't stop the clock on due date
- Mostly free



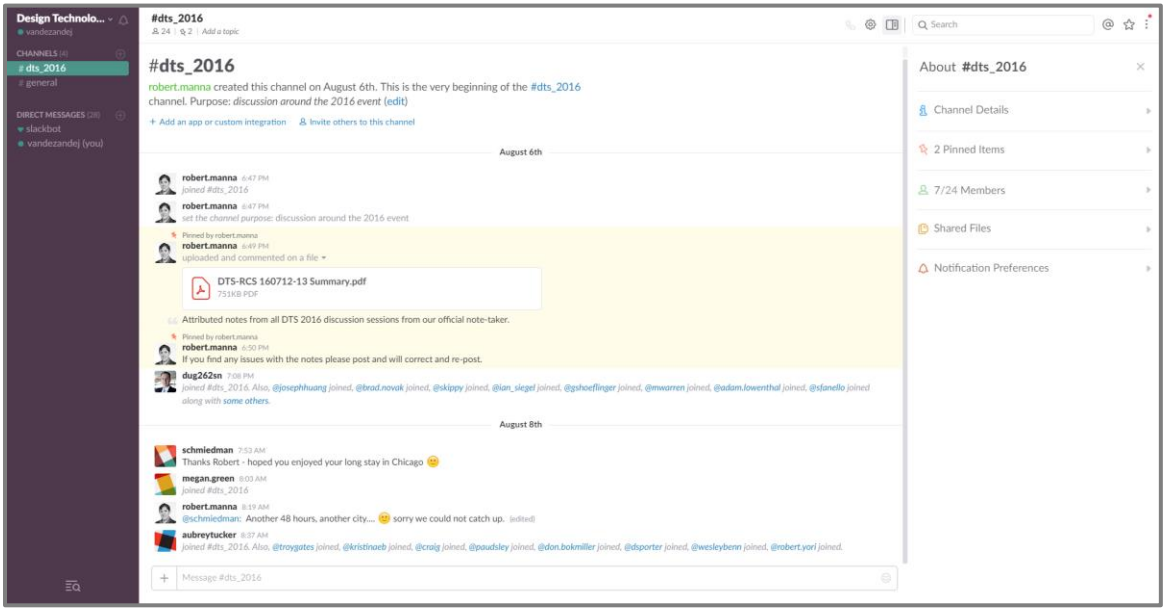
Asana, www.asana.com - web-based, iOS/Android apps

- Define Projects with assigned tasks (due date on tasks)
- Dashboard to check progress on due items
- Email reminders
- File attachments, comment threads
- Free for small teams; around $8/mo per user



Slack, www.slack.com - web-based, iOS/Android apps

- Track team conversations & files around subjects (projects)
- No action items, no due dates
- Free to try; around $8/mo per user for standard account

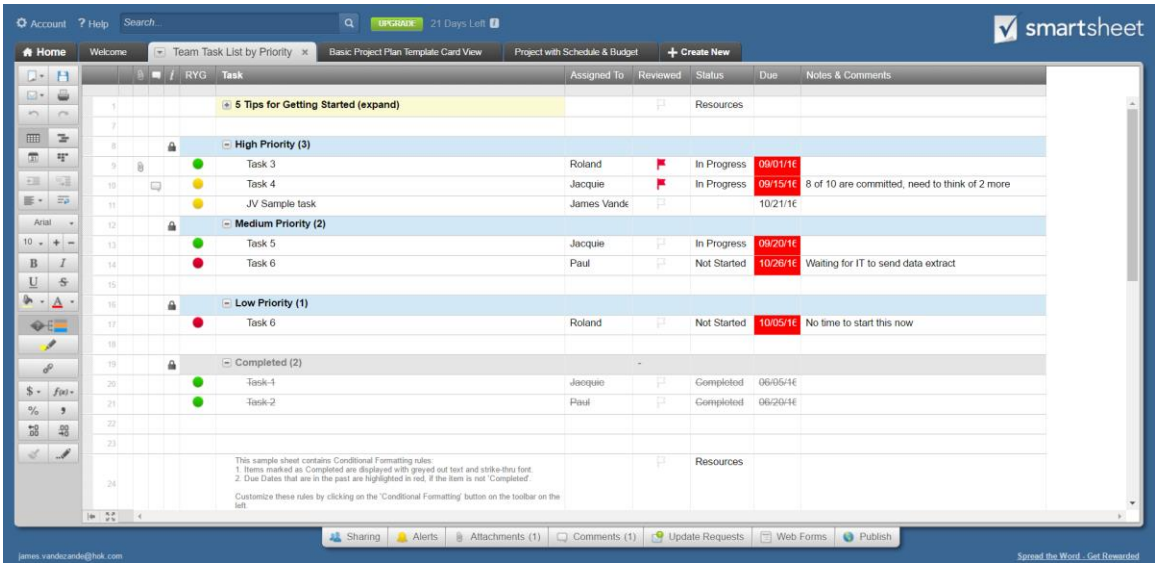


MS Planner, tasks.office.com – Similar to Trello and Asana

- Create plans with tasks and assignments
- View as boards or progress charts (dashboard)
- Multi-project/plan overview
- Part of Office 365 subscription

MS Excel – or with SmartSheets (www.smartsheet.com) - using a project management template - desktop app, iOS/Android apps available with Office 365.

- Spreadsheets can be shared with others via Office 365 or One Drive account
- Google Docs as alternative to One Drive
- SmartSheet free to try; $10/15/25 per month per user



With all of the above applications, I have found the most effective way to use ANY of them is to think of your work in terms of reasonable checklists. I won't get into the complete breakdown of how to develop effective checklists, but please read "The Checklist Manifesto" by Dr. Atul Gawande for inspiring examples – including in the construction industry!

Take notes on your own procedures

This habit might seem trivial, but I have found that no matter how much I understand the process I'm working on at any given time - someone else might need to use that process or improve it, or enough time passes between cycles of that task that I forget all the steps. This phenomenon will happen more frequently in our business because more technology is being implemented every year. As more technology comes to our users, each tool is used less frequently. In 1999, I used AutoCAD and MS Office. Today, I use MS Office, Revit (+ over 30 add-ins), dRofus, Solibri, Newforma, Rhino, and so on.

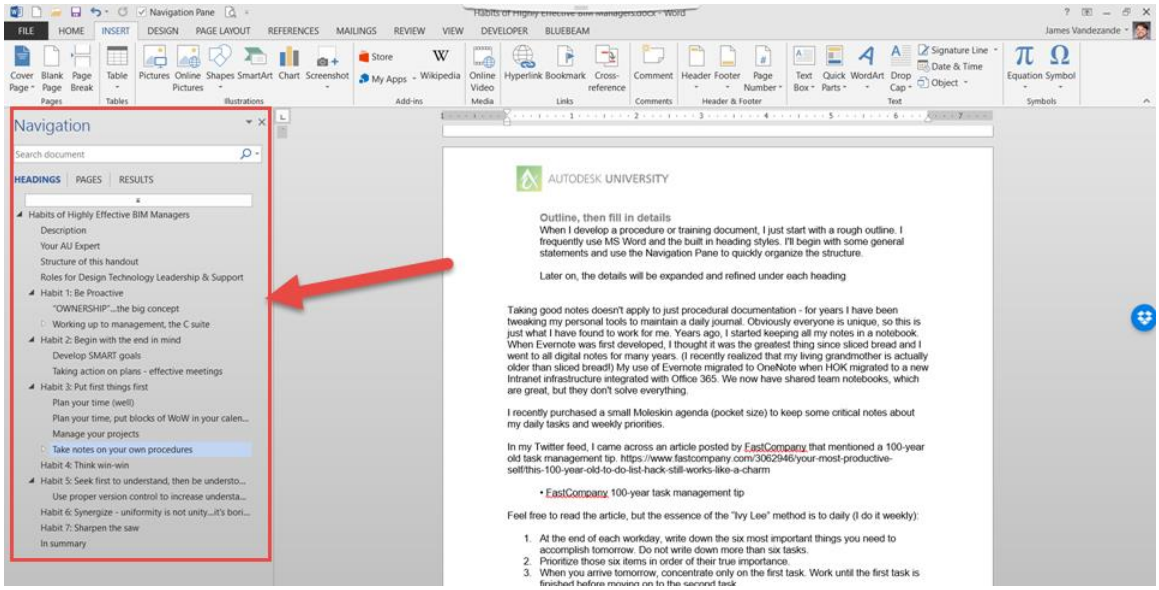
Here are some tips for taking effective notes:

Note taking apps

Evernote (evernote.com)
OneNote (www.onenote.com)
Pen + paper (not an app!)
Google Docs (docs.google.com)

Outline, then fill in details

When I develop a procedure or training document, I just start with a rough outline. I frequently use MS Word and the built in heading styles. I'll begin with some general statements and use the Navigation Pane (shown below) to quickly organize the structure.



Later on, you can fill in the details under each heading.

Taking good notes doesn't apply to just procedural documentation - for years I have been tweaking my personal tools to maintain a daily journal. Obviously everyone is unique, so this is just what I have found to work for me. Years ago, I started keeping all my notes in a notebook. When Evernote was first developed, I thought it was the greatest thing since sliced bread and I went to all digital notes for many years. (I recently realized that my living grandmother is actually older than sliced bread!) My use of Evernote migrated to OneNote when HOK migrated to a new Intranet infrastructure integrated with Office 365. We now have shared team notebooks, which are great, but they don't solve everything.

I recently purchased a small Moleskin agenda (pocket size) to keep some critical notes about my daily tasks and weekly priorities.

In my Twitter feed, I came across an article posted by FastCompany that mentioned a 100-year old task management tip.[2]

Feel free to read the article, but the essence of the “Ivy Lee” method is to do the following steps every day (I do it weekly):

1. At the end of each workday, write down the six most important things you need to accomplish tomorrow. Do not write down more than six tasks.
2. Prioritize those six items in order of their true importance.
3. When you arrive tomorrow, concentrate only on the first task. Work until the first task is finished before moving on to the second task.
4. Approach the rest of your list in the same fashion. At the end of the day, move any unfinished items to a new list of six tasks for the following day.
5. Repeat this process every working day.

[2] https://www.fastcompany.com/3062946/your-most-productive-self/this-100-year-old-to-do-list-hack-still-works-like-a-charm

Habits 4 & 6: Think win-win & Synergize

Operate in a cooperative way, not win-lose or lose-win. Convention dictates that you be nice OR tough. You can be BOTH. Uniformity is not unity…it's boring!

This habit can be interpreted for Design Technology professionals in many ways. I think of "win-win" scenarios when I develop standards and procedures (quality assurance) for my company as well as the implementation (quality control) aspects.

I remember this habit when I conduct conversations with my firm's leaders about bridging the gap between traditional processes and the way software applications work best. Simply put, these are the conversations that start with, "*I refuse to let Autodesk tell me how to put together a set of drawings based on how Revit works!*"

Knowing how to approach these conversations will bring you successful compromises when you can address simple facts and metrics about productivity, quality control, and contractual obligations.

Related to this habit, see Habit 5 and Habit 6.

Standards development

When developing standards for larger firms, I have found it difficult to avoid "NIMBY-ism" or regionalism, but I urge you to fight for sanity. After many years of keeping "Local" content folders in each of our 24 offices, we realized that over 99% of our content could be used globally. (*Is a toilet in NY really that different than one in LA?*)

In discussing the normalization of content and templates throughout a firm, the most difficult aspect to overcome is the human one. We must recognize our differences and embrace creative solutions to old problems. To paraphrase Mr. Covey, uniformity is not the same as unity, uniformity is BORING!…to find creative solutions amongst a diverse team, we must all strive to achieve the following:

- Allow all ideas to be expressed
  - Agree on a fair process to reach conclusions
  - Proposal, review period, voting, implementation
- All standards must include rigorous documentation
- Understand what is a “standard” and what is education & training.
  - Standards should be simple facts, settings, conventions, etc.
  - Easy to find and reference in the context of ongoing operations
- Be firm, but open to suggestions
  - Own the decisions, but admit if a flaw is found; be quick to adapt.
- There is only one "standard" to be measured against
  - No rogue 'pilots' without consulting the group
  - All other one-office ideas are just experiments
  - They are OK, but should be limited to one project and communicated to the leadership team

Quality control, procedural enforcement

In my opinion, your standards should be easier to use than not following them. That might be an over-simplification, but it is an important goal when you craft procedural guidelines or customize your project templates.

As you develop standards, think about the process you will employ to measure compliance with the standards. A source of inspiration I use is “Checklist Manifesto” by Dr. Atul Gawande. Simple and concise steps can aid in understanding procedural standards and to track them.

Habit 5: Seek first to understand, then be understood.

To me, this habit needs to complement 'thinking win-win.' As we discussed in the introduction to this material, the value of a Design Technology professional is to blend our industry knowledge with technology expertise. That said, most of us are not expert Architects or Engineers - else we probably wouldn't be in this class!

We must develop a keen sense of understanding the needs of those we serve, then ensuring they understand us. (See Habit 4: Think win-win)

Listening

- Be seen, schedule a regular time of day to get up and walk the floor.
- If you support multiple offices, make sure you plan an annual budget for regular travel to each office.
    - Virtual communication is OK, but I'm always surprised at how much more feedback I get from an office visit (2x to 3x more notes from a one-day office visit than the equivalent time in web meetings and video conferences).
- Encourage feedback
    - Don’t judge suggestions without proper vetting.
    - Remember to acknowledge the contributors.

Speaking (all forms of outgoing communications):

- Be succinct, ‘5x7 rule’
    - In presentation slides, there should be no more than 5 bullet points, each with no more than 7 words.
- Explain why, not just how
    - With any form of education and training, you will drive better knowledge retention when you start your material with an explanation of the purpose of the tool.
    - Explain how the tool fits into the overall mission or goals of the company before you dig into the picks and clicks of the software.
- Be firm, state what needs to get done
    - In meeting notes, standards, and so on – avoid non-assertive language such as “should” or “may” or “best practice.” Get to the point and use terms like “is” and “will.”
- Proofread your emails
- Don’t mix emotions with business
- Highlight what actions are required in any emails
    - I like to use style headings and numbered/bulleted lists in emails so that the recipients can easily distinguish what I am asking or assigning.
    - Don’t write a lengthy paragraph with an important question or action item buried in the text.

Use proper version control to increase understanding

This topic is so important, yet difficult to categorize as a habit. For now, I will classify it as an ‘understanding’ or communication best practice, but it relates equally to being proactive.

Whether your company is ISO-certified or not, there is no substitute for proper document control. ISO 9001:2008 is an international standard for quality management and a complete description of it is outside the scope of this class; however, it is worthwhile to discuss effective document control.

With an increasing number of software applications and platforms - most with associated libraries, templates and settings - you may not realize a modification broke a process or created disruption until weeks or months later. Documenting the WHY, HOW, and WHAT of your revisions will make it easier to troubleshoot problems and to understand future improvements.

- Understand WHY you are revising something
  - If it's to improve a process or quality goals, that should be documented and measured if applicable.
- Document HOW you changed something
  - Refer back to my documentation tips in "Habit 3: Put first things first"
- Document WHAT changed
  - Use a revision table or CHANGELOG.txt file.
  - Keep a simple text file in each major folder such as for project templates.

For standards and procedures:

- Maintain a version number or at least a modified date. The date should NOT be the automatic date field. Use document property fields so that the data is consistent throughout your documents in headers and footers.
  - Version numbers help understand whether changes are major or minor. For example, using a *major.minor* versioning system[3] allows easy understanding of the difference between 2.6 to 2.7 with minor changes, and 2.7 to 3.0 with major changes.
- Maintain a revision log at the front of each document. Explain the changes for each revision, be specific and use hyperlinks to the affected sections of the document.
  - If your documentation is web-based, make sure to enable a draft/approved option with comments. Use the comments field as you would a revision table, or document revisions in a side bar for more discoverable access.

- Archive - don't delete
  - Maintain an audit trail of what changed and when
  - Web systems usually have version control
  - Content folders should have an understandable archive

[3] https://en.wikipedia.org/wiki/Software_versioning

Habit 7: Sharpen the saw

As I stated earlier in this document, I strongly believe that we need to move away from job titles like CAD Manager and BIM Manager. Right now, they serve as attractors - perhaps many of you would not have recognized this class if it didn't refer to "BIM Managers"… However, such titles can limit our ability to grow. The ranks of Design Technology teams at most firms are somewhat constrained, so we need adequate room to grow within limited positions. In other words, there aren't many firms with **junior > intermediate > senior** BIM Managers.

Hopefully, your firm will recognize these constraints of professional development and will offer an equivalent track for tenure such as officer status (Associate, VP, Principal, etc.). Just remember, you should perform at the next level up BEFORE being recognized with a promotion. It is rare and puts team leaders in an uncomfortable position to 'request' a promotion before earning it through actions. On the other hand, if you feel your actions and work ethic are not being recognized, be sure to communicate with the appropriate leadership in terms of facts and achievements. Don't determine the conclusion for your supervisors.

Stay ahead of the curve

- Take some time to learn a completely new tool. Rhino, Grasshopper, Dynamo, Solibri… Understand how it might improve your company's procedures and how you might explain it to your staff. What's the "elevator pitch?"[4]
- Find and read industry standards and owner requirements. They will give you important insight into the expectations of potential clients.

Get involved

- Organize or at least participate in local user groups.
- Learn about the important efforts in your country chapter for buildingSMART International.[5]

[4] https://en.wikipedia.org/wiki/Elevator_pitch
[5] www.buildingsmart.org

In summary

I hope this class material will serve to improve your effectiveness whether you are in a Design Technology career or not. Here are a few takeaways from my personal notes:

Don't get type cast

- Be versatile
- If your only tool is a hammer, every problem will look like a nail.
- Learn new tools and techniques every year and track your improvement.

Don't be afraid to delegate

- Trust in others; share your knowledge and do good deeds.
- Teaching someone how to do something rather than doing it for them will expand your reach and the student will be more likely to engage you in the future when you need them.

Recognize your worth, but also that of your company

- Your employment should be a symbiotic relationship; you should feel worthy, but you should also value the well-being of your colleagues.
- Maintain an adequate life-work balance. Work hard and play hard, too. If you haven't seen it, go watch "Yes Man" starring Jim Carrey.