

# AR22052 : Reviving the Hand-Drawn Redlines

Aubrey Tucker

Regional BIM Lead : Stantec

[@SanguineEntity](#)

# Class summary

As technology continues to advance for architecture and engineering, a major practice component of quality assurance and quality control continues to be done by hand—**redlining**. The redlining process is as old as drawings are, and it is now locked in the ability of individuals who are not very adept in computer use of any kind. **These are the most experienced individuals** from whom we have everything to learn. Empowering the experienced practitioners has become a paramount topic within my firm, and we're using A360 cloud-based collaboration service coupled with a short projection throw monitor on a drafting table to enable them to redline drawings digitally. This session features A360 and Collaboration for Revit.



# AubreyTucker

**Regional BIM Lead**

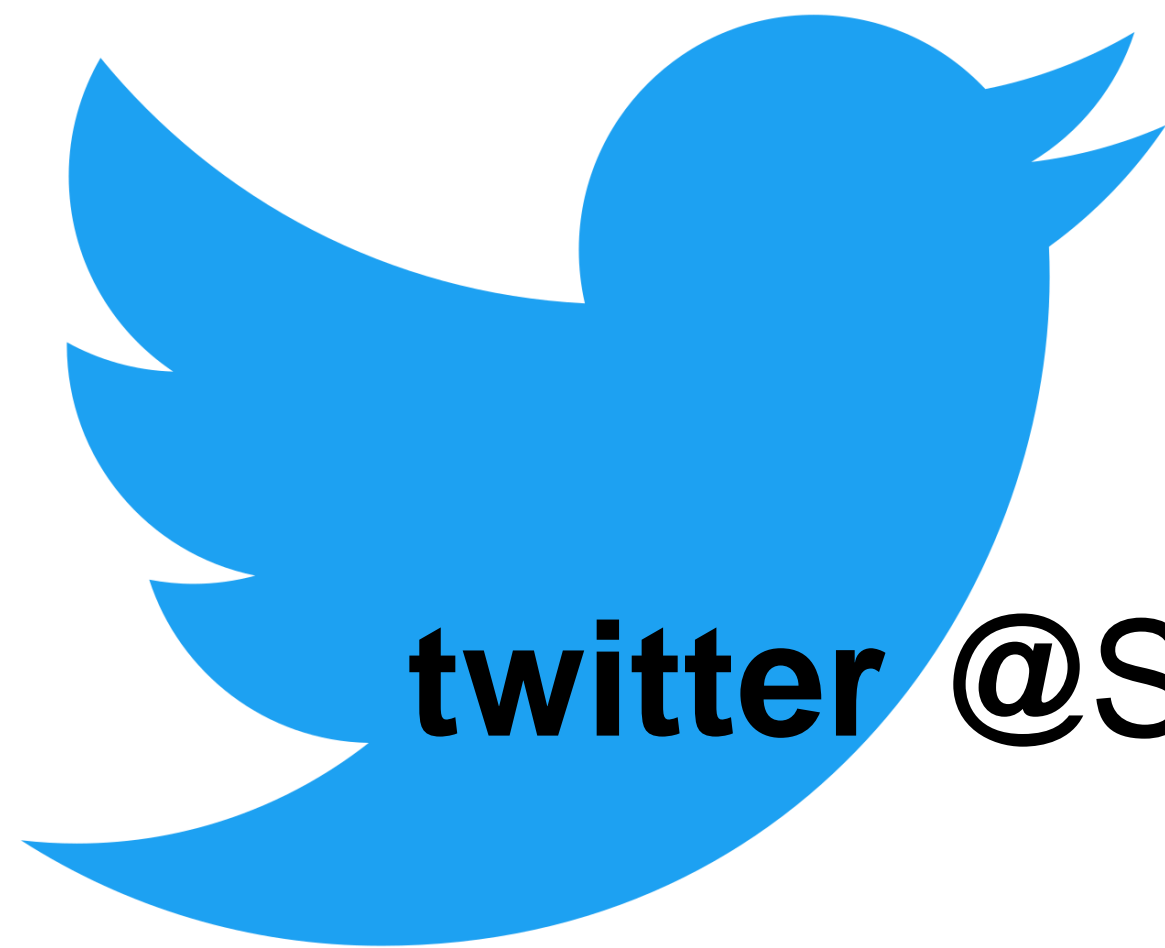
**Speaker** RTC, AU

**Lecturer** UBC

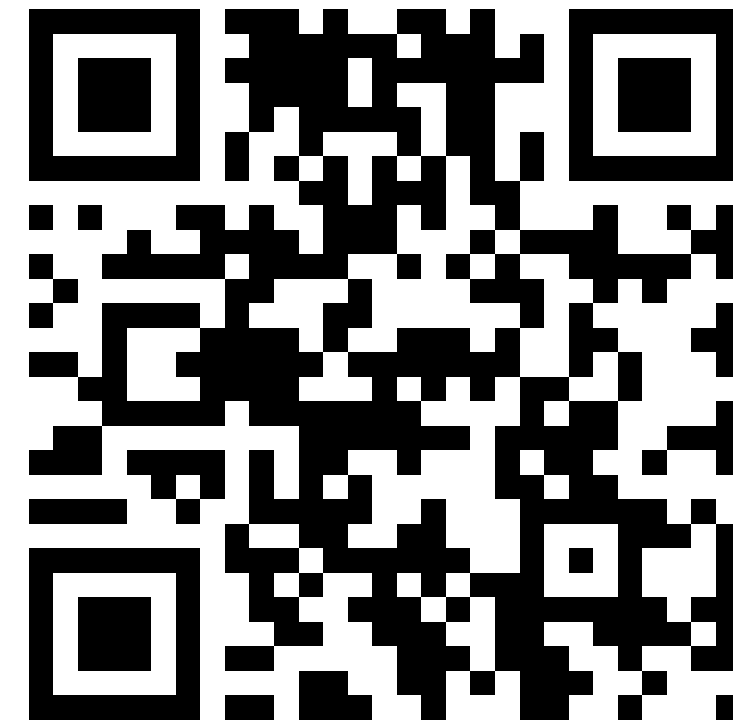
**Published**

Building Smart Canada (2016)

HOK: Global Design Portfolio (2010)



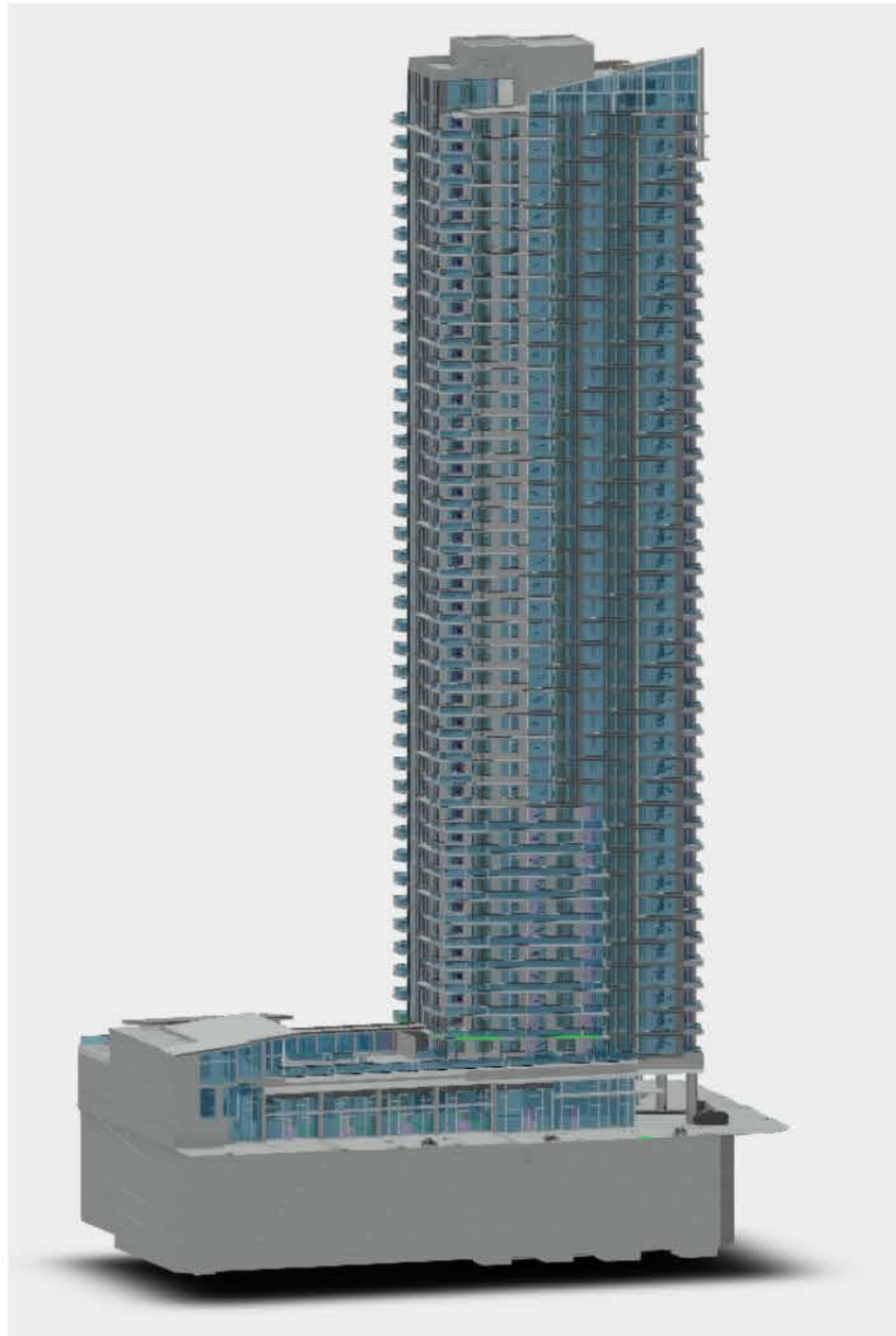
**twitter** @SanguineEntity



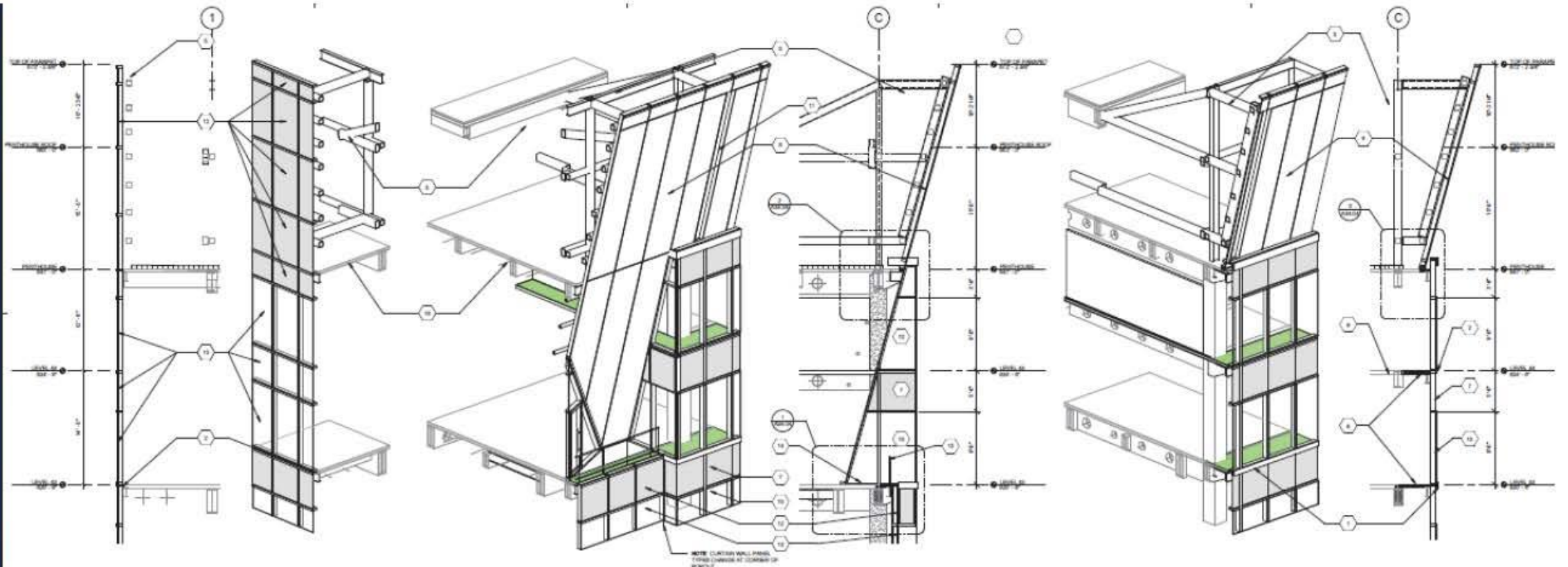
Download **QR Scanner App** to interact







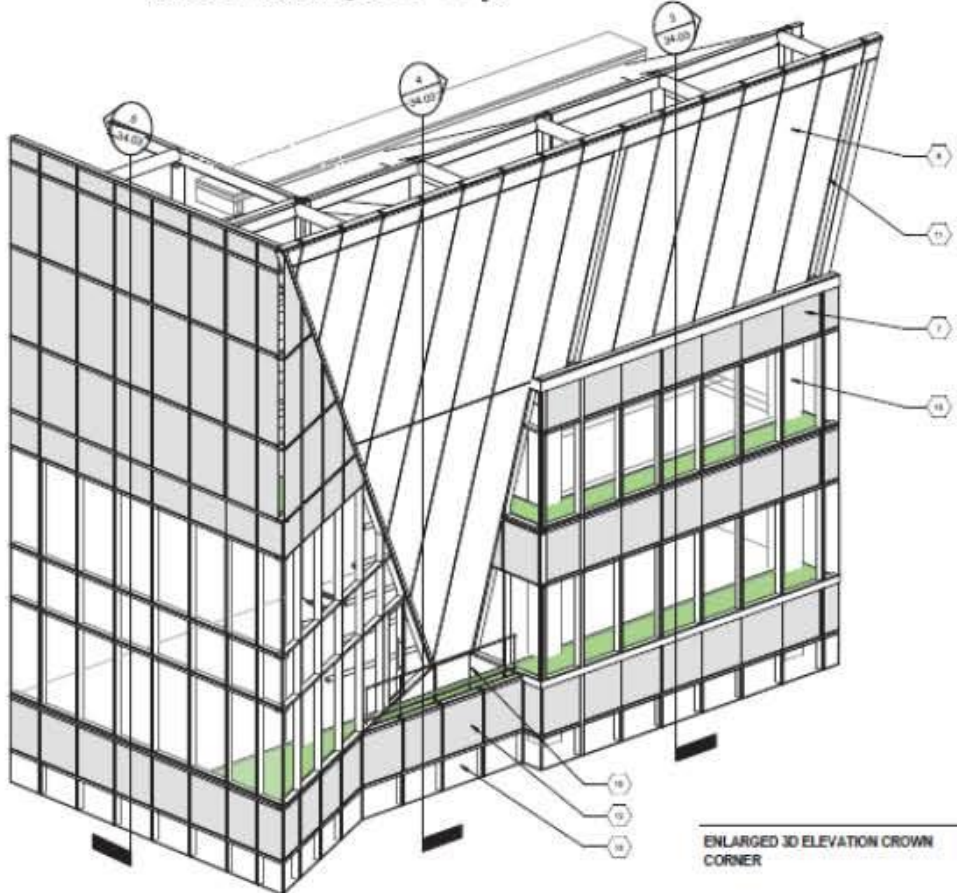




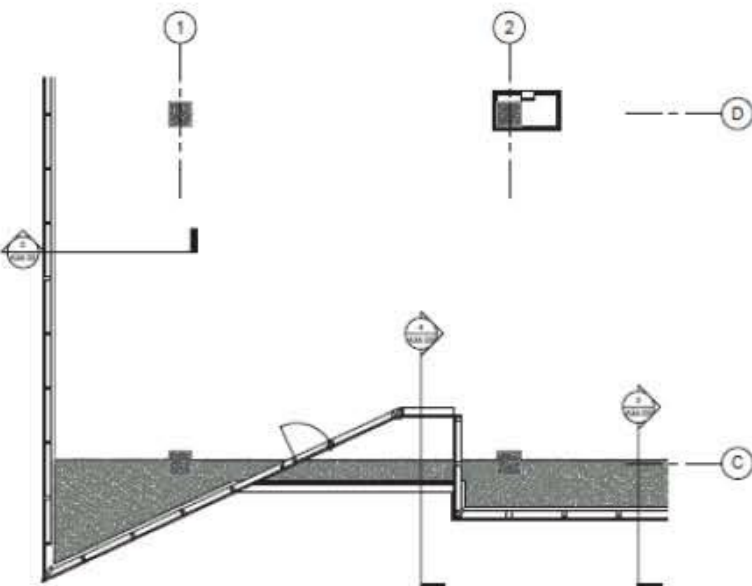
SECTION ENLARGED CROWN @ GL1 3/16" = 1'-0" | 5

SECTION ENLARGED CROWN @ GL2 3/16" = 1'-0" | 4

SECTION ENLARGED CROWN @ GL3 3/16" = 1'-0" | 3



ENLARGED 3D ELEVATION CROWN CORNER | 2



CORNER AT LV 43 3/16" = 1'-0" | 1

**KEYNOTE LEGEND**

- 1 EXISTING BRICK METAL PANEL
- 2 EXISTING BRICK METAL PANEL
- 3 EXISTING BRICK METAL PANEL
- 4 EXISTING BRICK METAL PANEL
- 5 EXISTING BRICK METAL PANEL
- 6 EXISTING BRICK METAL PANEL
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- 15 EXISTING BRICK METAL PANEL
- 16 EXISTING BRICK METAL PANEL
- 17 EXISTING BRICK METAL PANEL
- 18 EXISTING BRICK METAL PANEL

**GENERAL NOTES**

1. REFER TO ARCHITECT FOR PROJECT GENERAL NOTES, SPECIFICATIONS & DETAILS.
2. EXISTING CONSTRUCTION TO REMAIN TO BE SHOWN IN TYPICAL DETAIL.
3. REFER TO STRUCTURAL DRAWINGS FOR SLAB AND STRUCTURAL FRAME RESPONSES.
4. REFER TO ARCHITECT FOR CURTAIN WALL TYPICAL DETAILS.

**AXO KEY LEGEND**







# Key learning objectives

At the end of this class, you will be able to:

- Learn as an experienced practitioner how to use A360 markup tools
- Learn how to track markups as complete or incomplete
- Learn how to delegate tasks from markups in Revit schedules
- Learn how to make use of scanned images in the Revit environment



# Primary learning objective

I want to make the case for a real digital redline solution

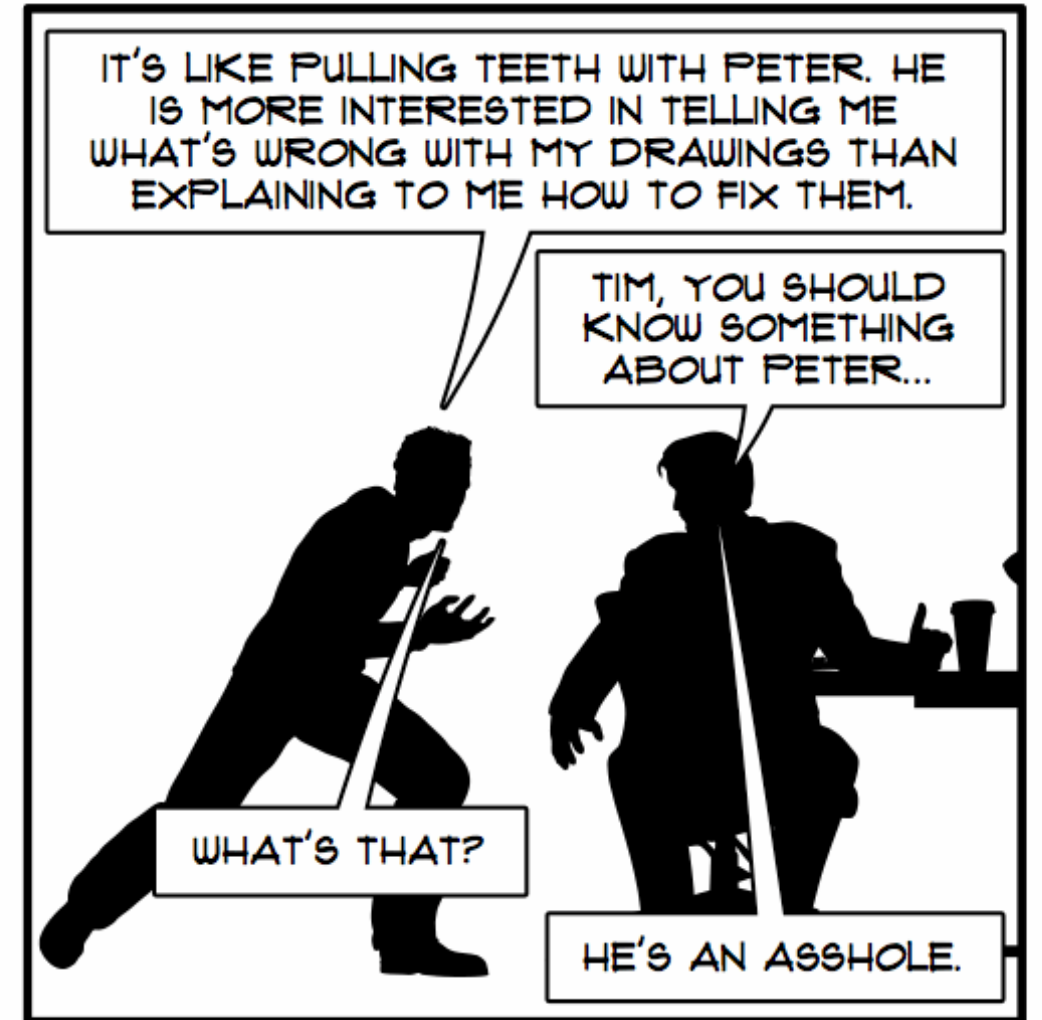
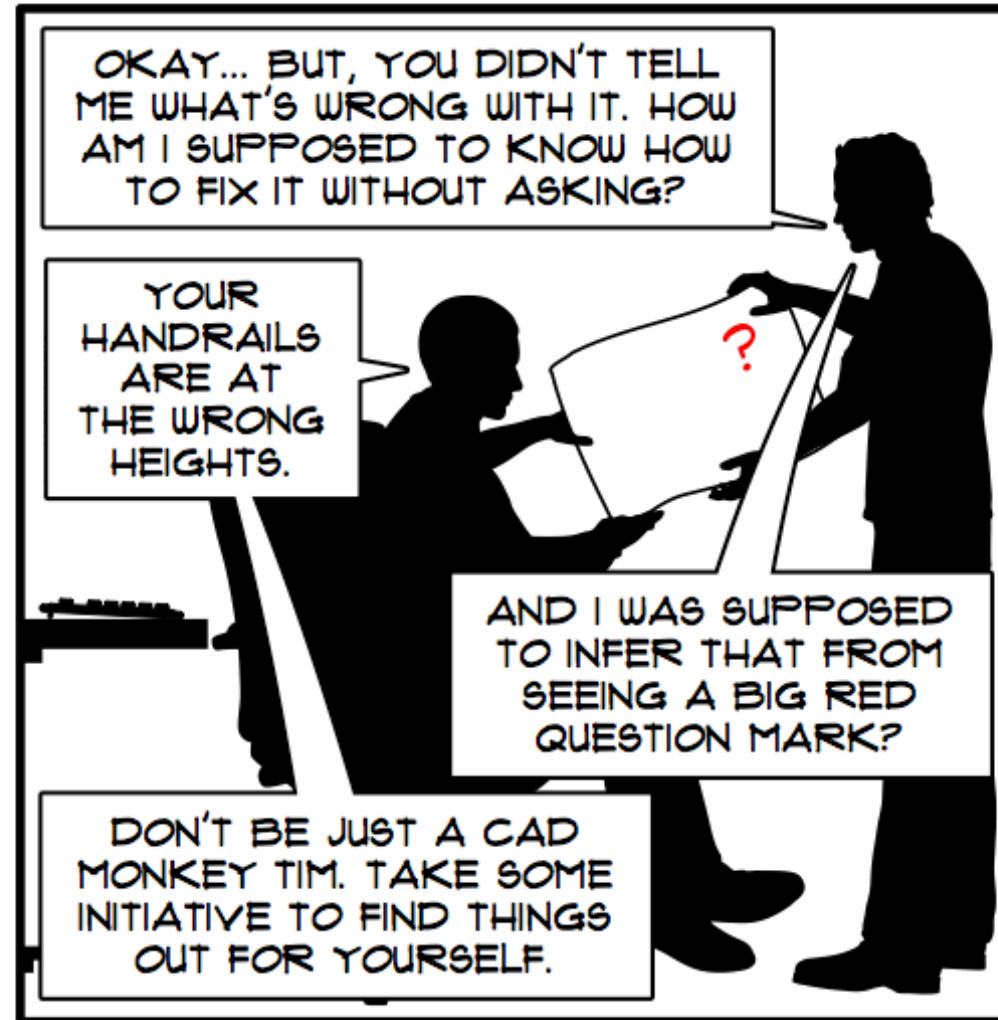
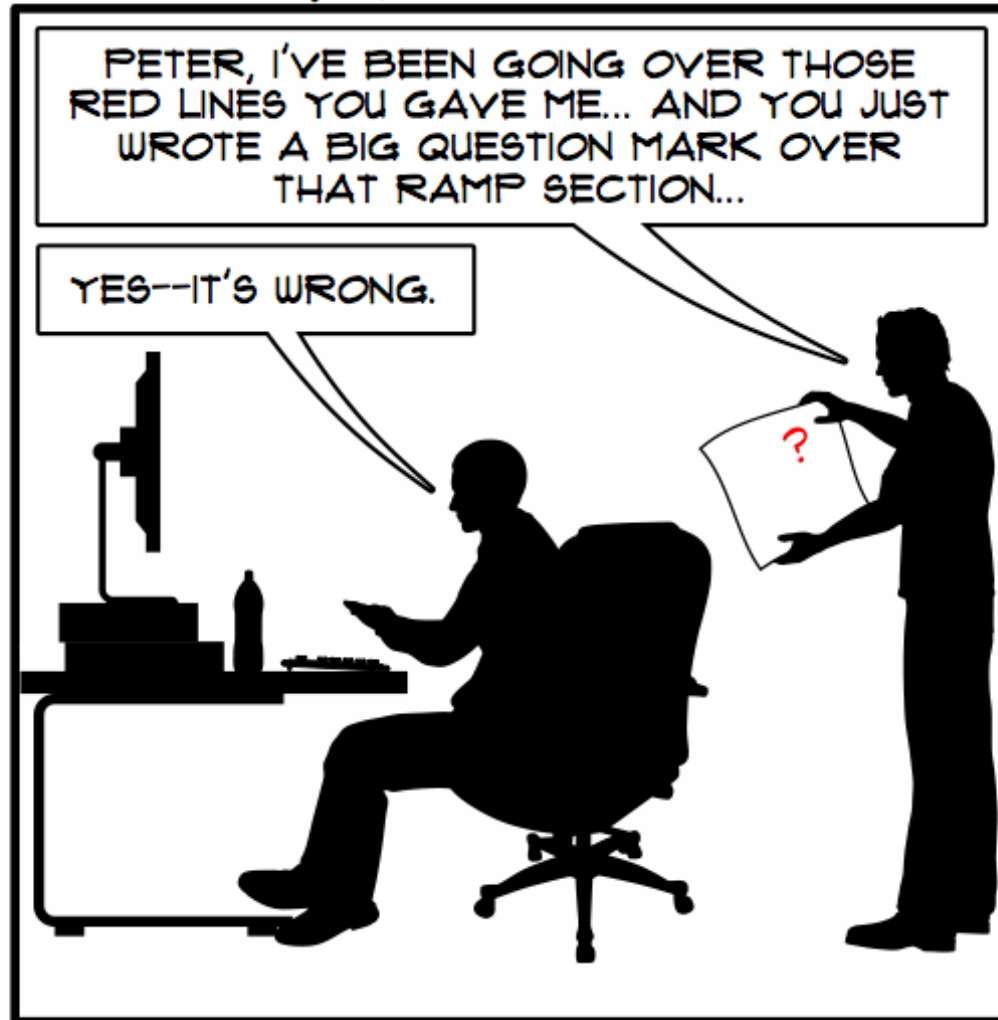
- This is a cultural shift
- To make this work you will have spend a lot of one on one time with reviewers
- This isn't easy

Together we can change the industry.

# The world we live in today...

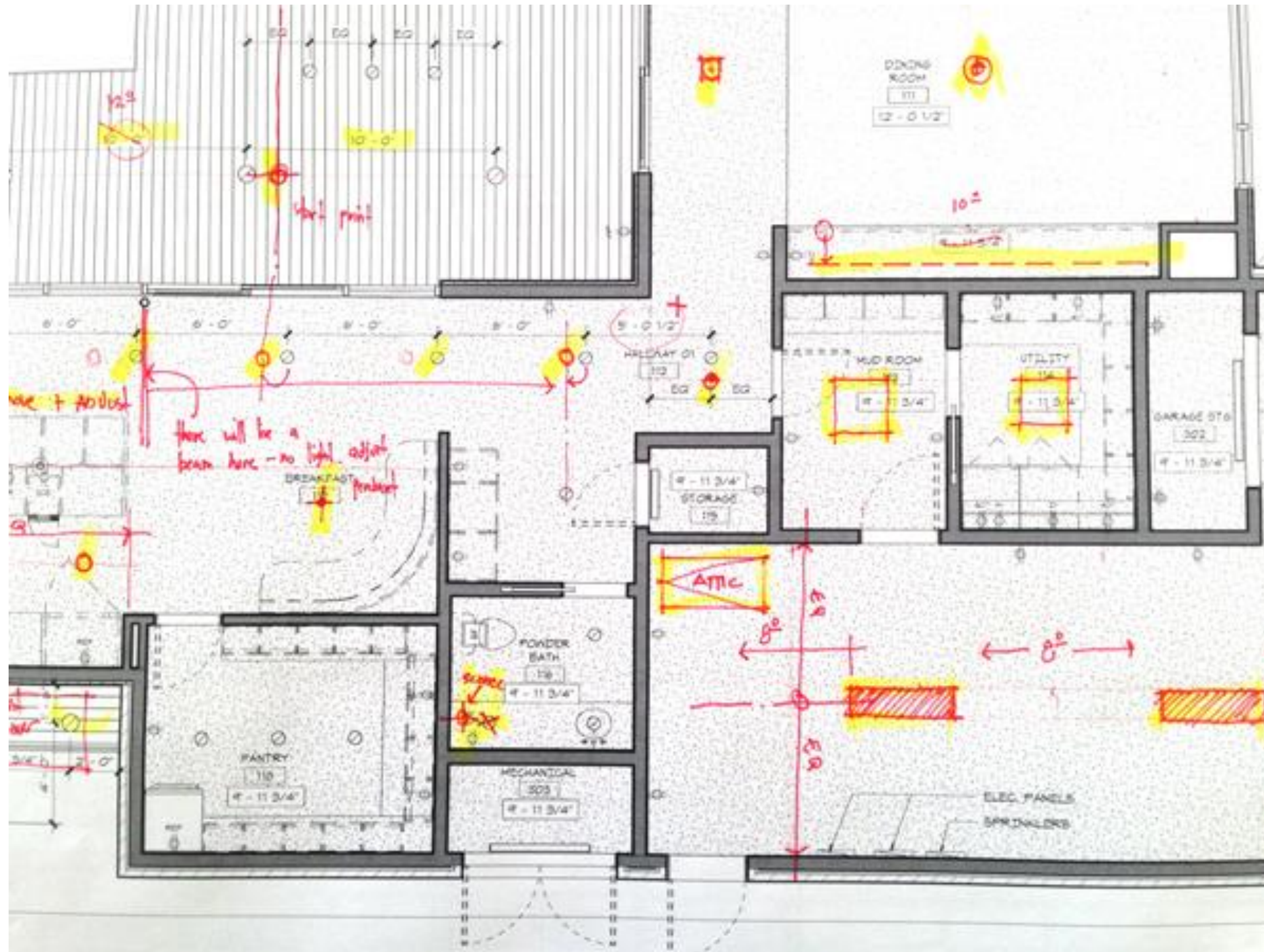


# ARCHITEXTS

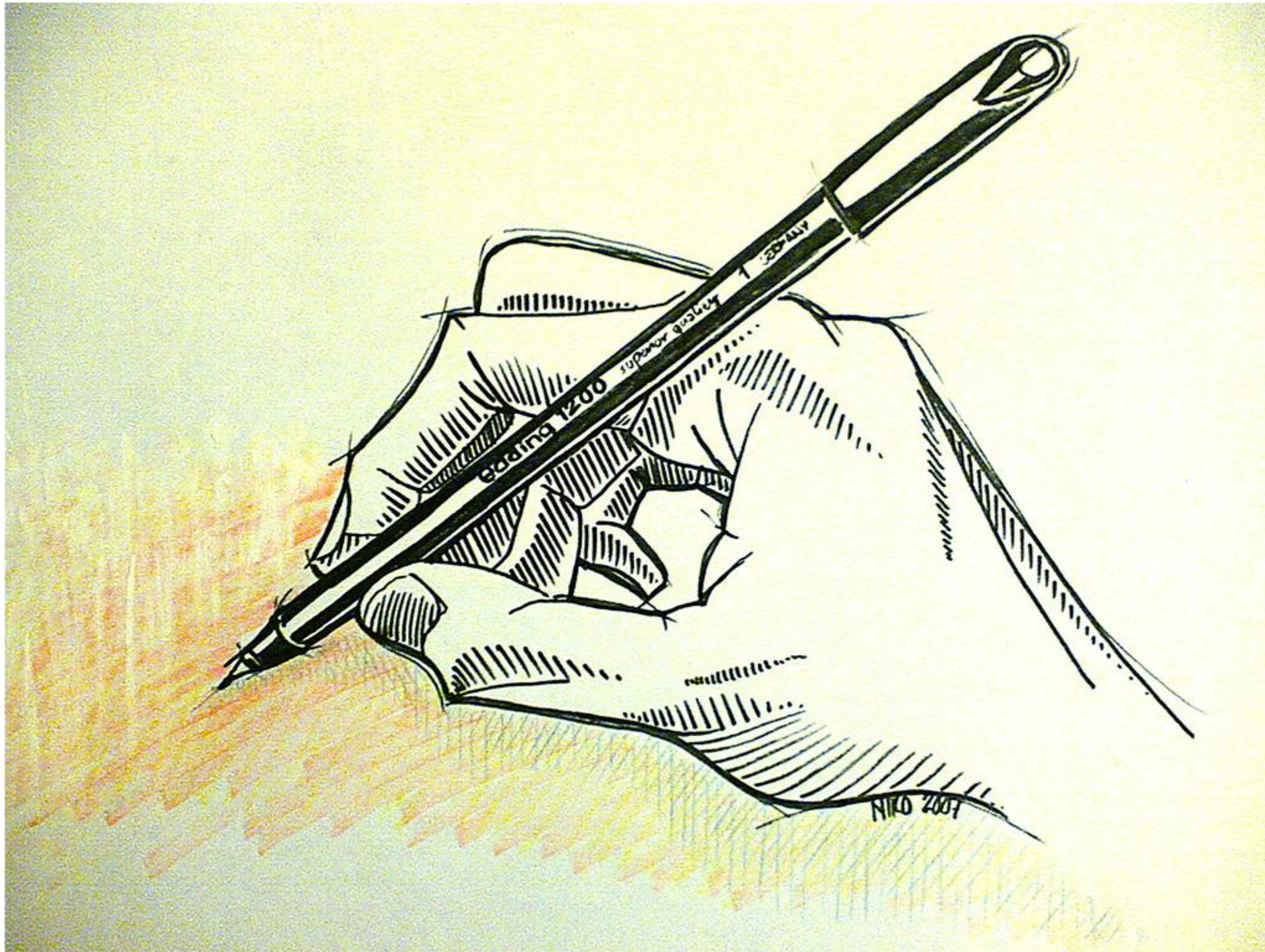


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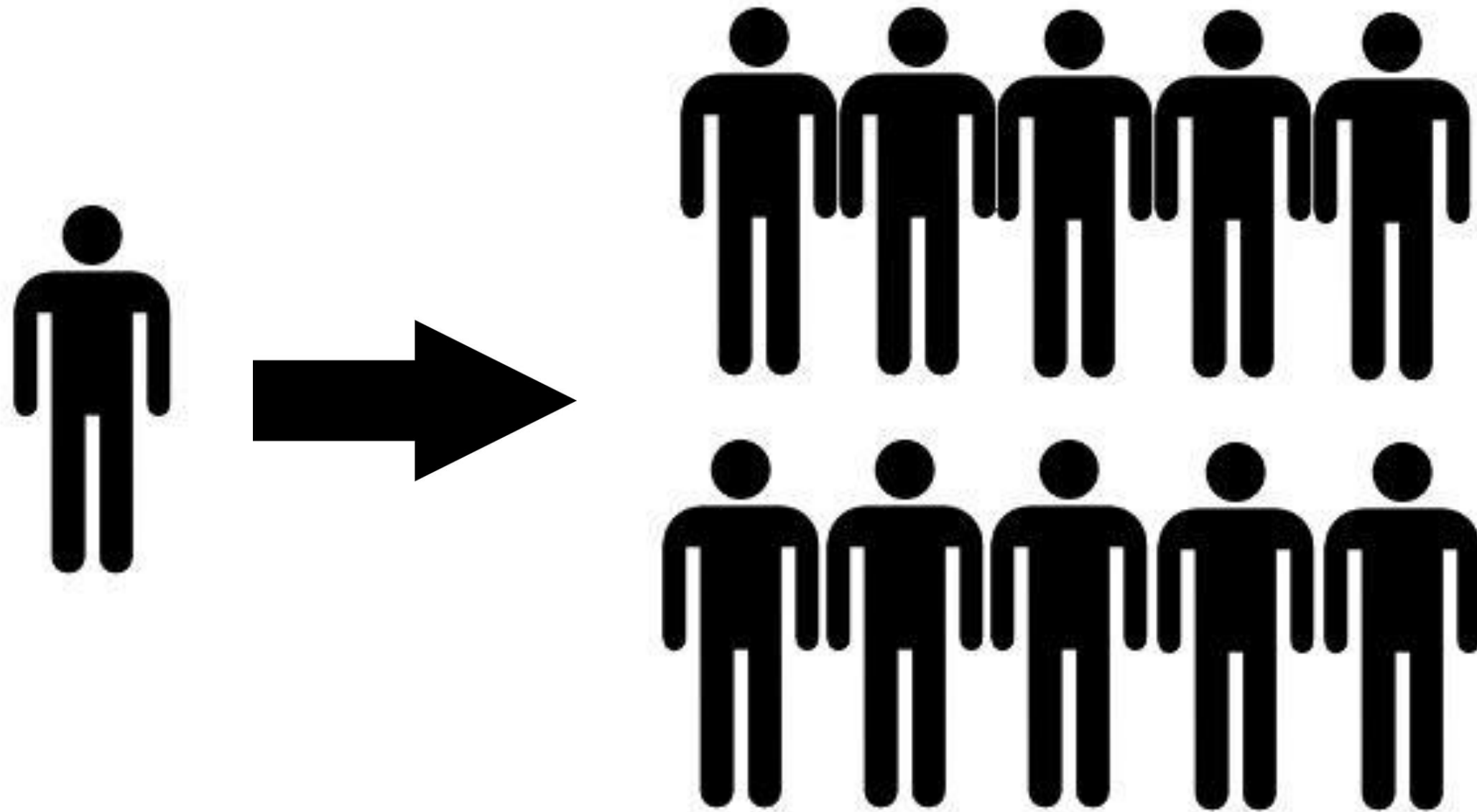








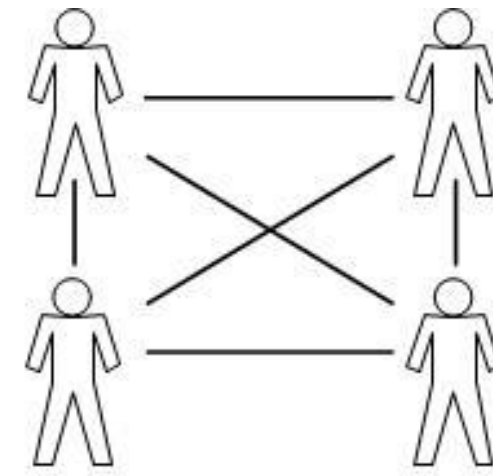




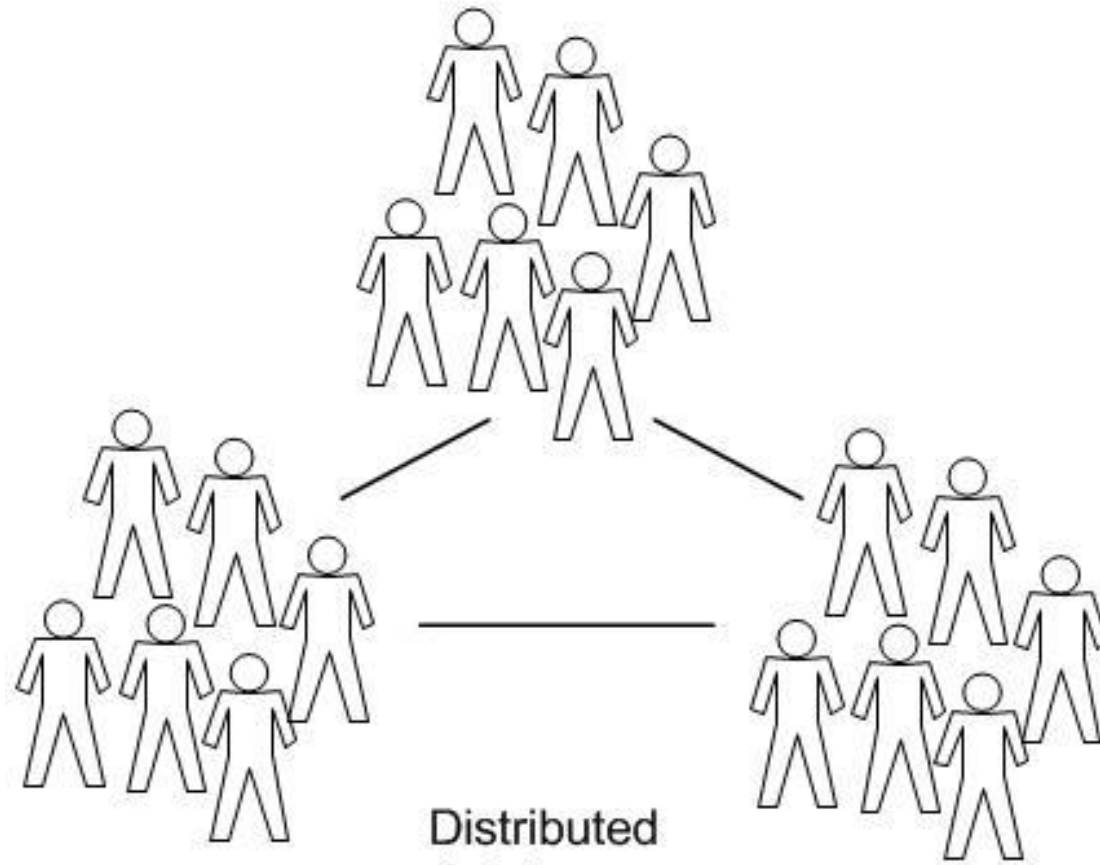




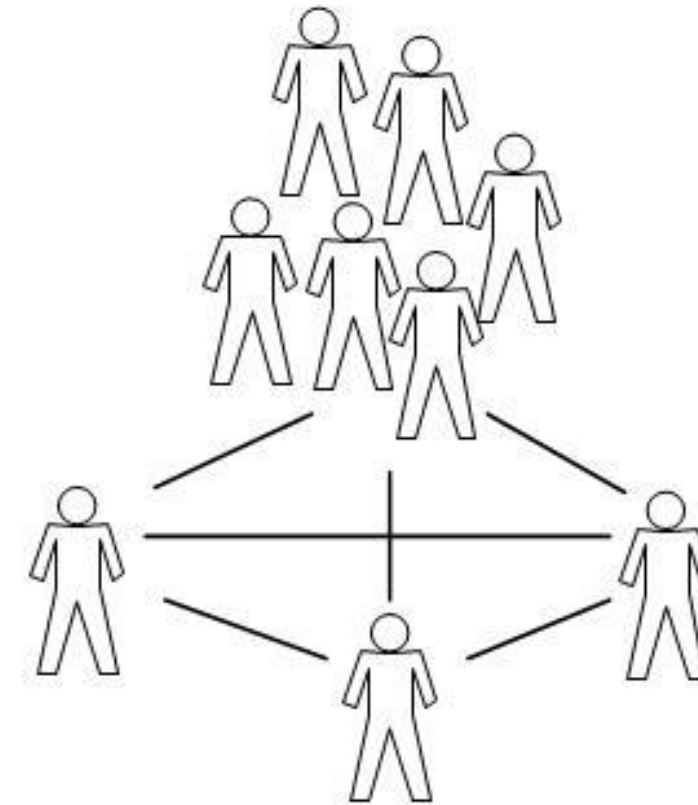
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Fully Dispersed



Distributed  
Subteams

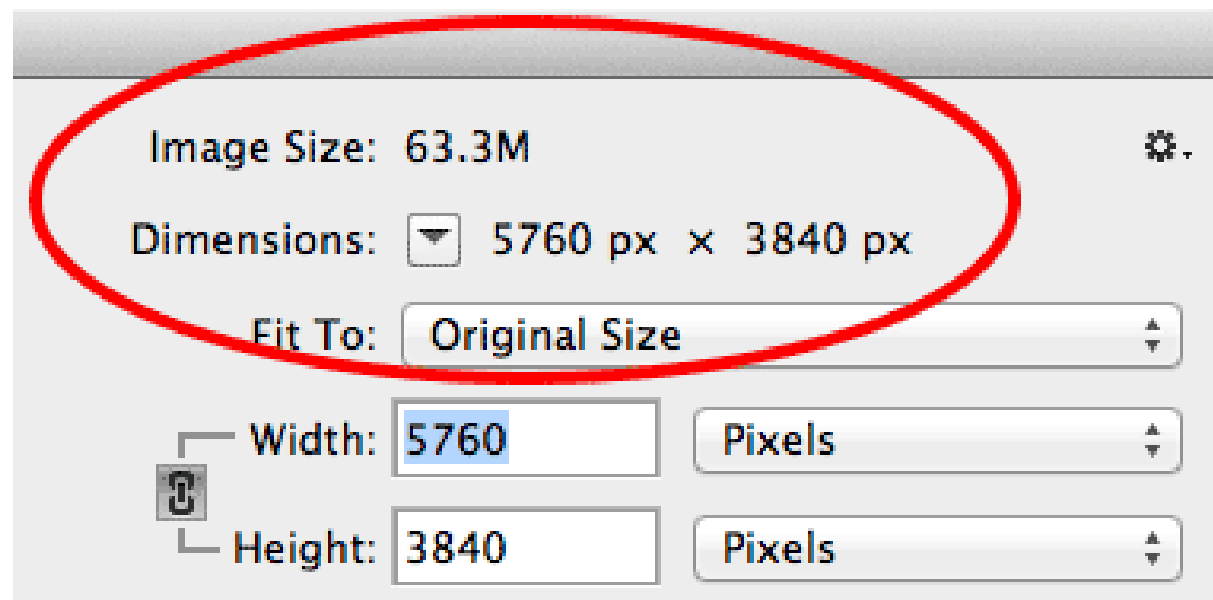


Partially Dispersed



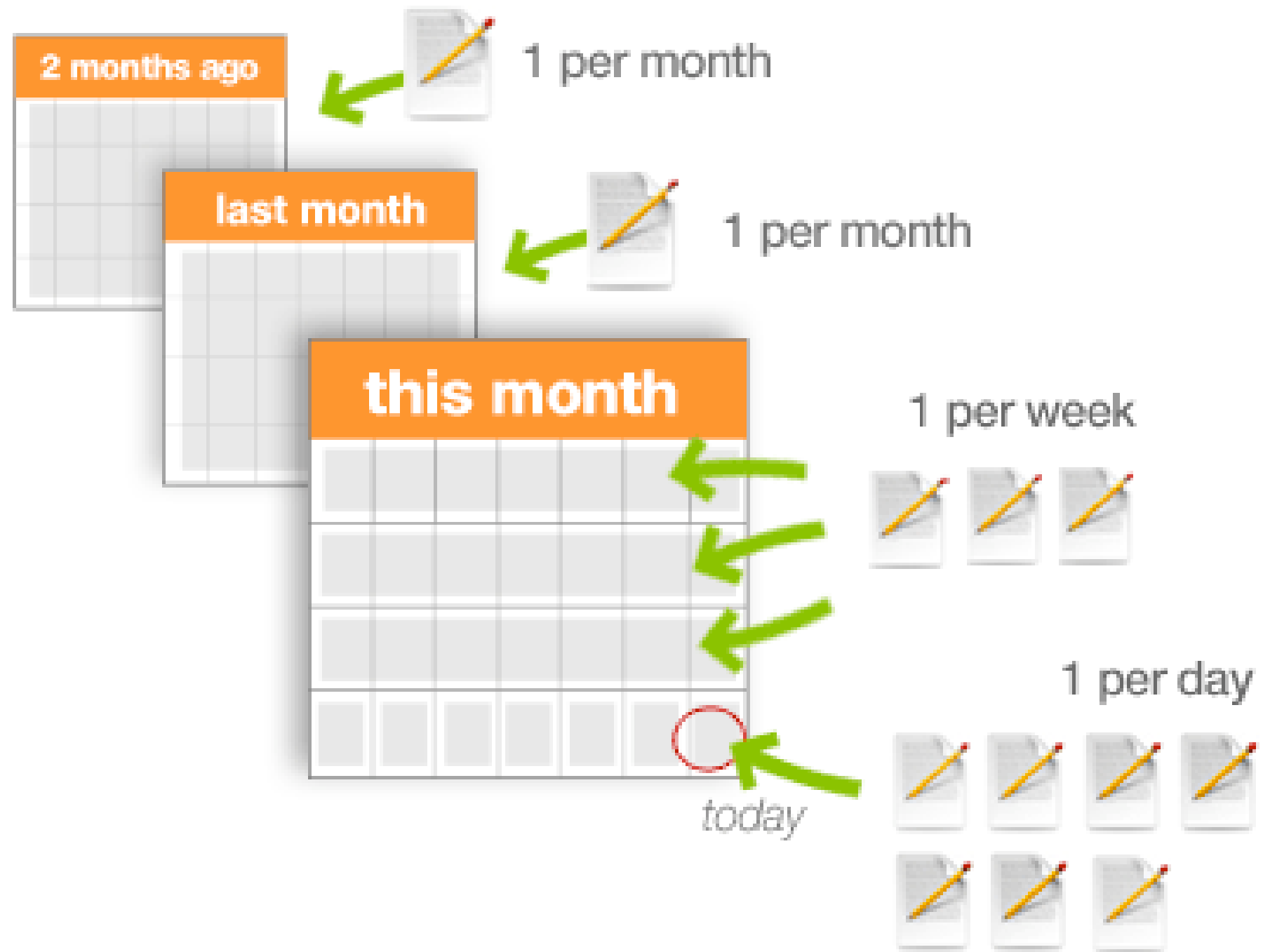






X

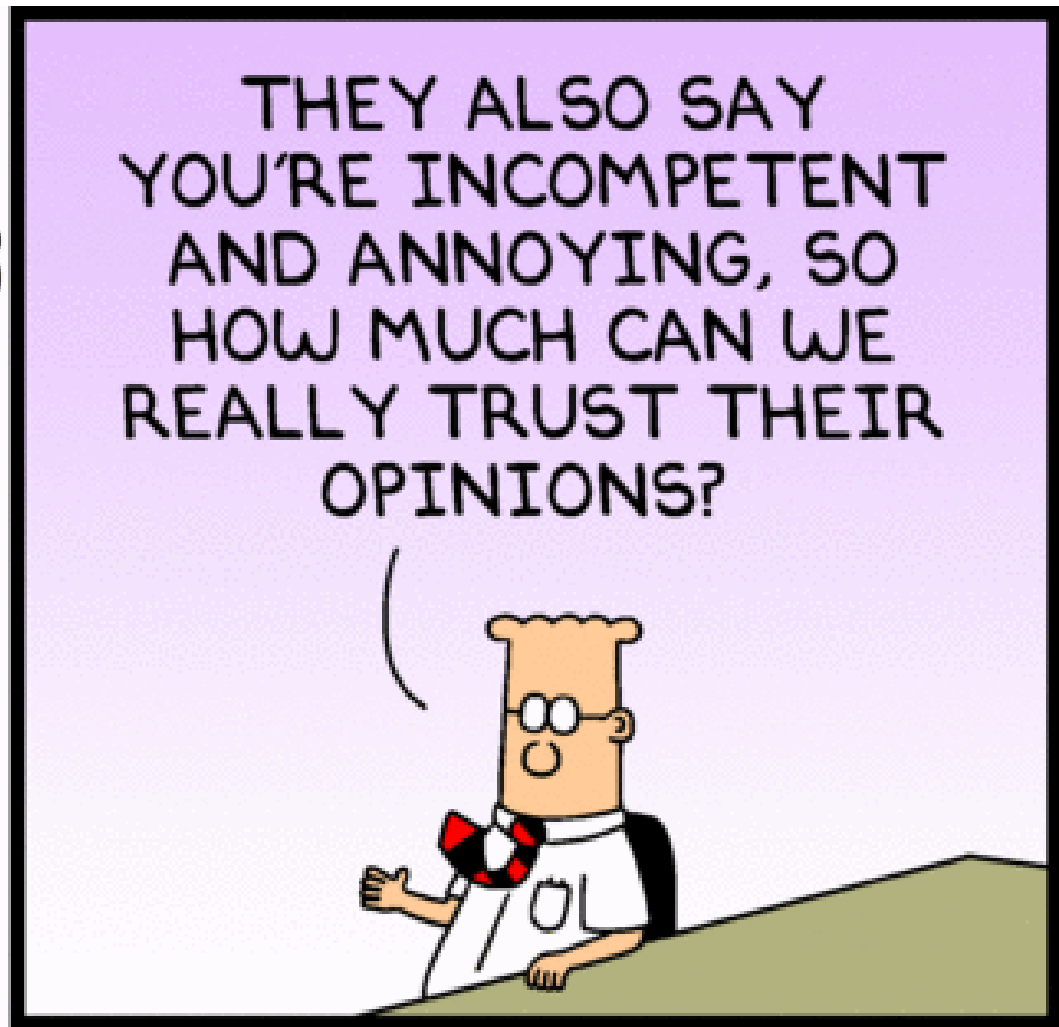
every page in the set



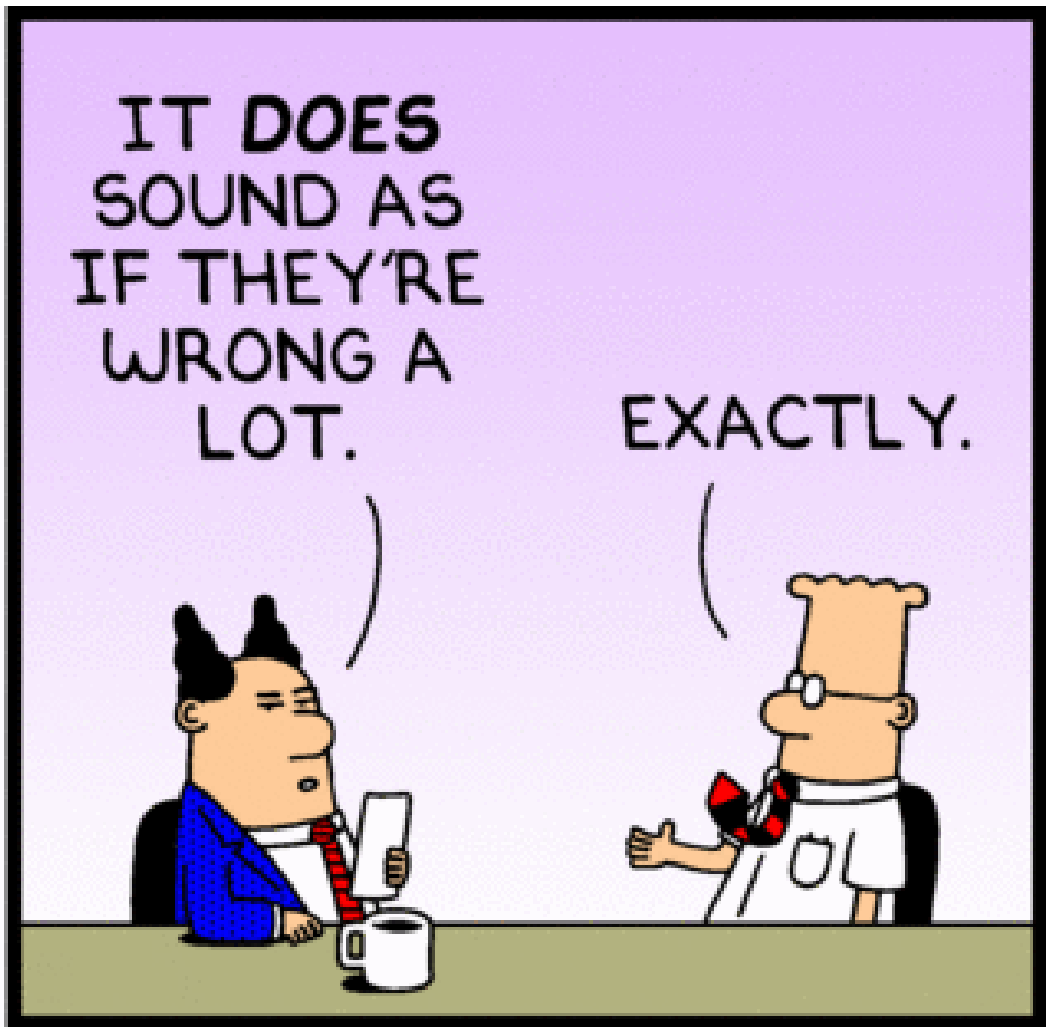




Dilbert.com DilbertCartoonist@gmail.com



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# What was A360 and what is BIM 360





AUTODESK®  
**CLOUD SERVICE  
SUBSCRIPTION**







**This is Bélo.**



AUTODESK®  
**BIM 360™**



AUTODESK®  
**BIM 360™ TEAM**



AUTODESK® REVIT®  
**COLLABORATION  
SUITE 2017**



 AUTODESK®



AUTODESK UNIVERSITY 2016

 AUTODESK®



Home - A360

https://myhub.autodesk360.com/g/all\_projects/shared

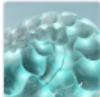



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A360

3


PINNEDALLOWNED BY MESHARED WITH ME

Create Project

Name	Owned By	Created On
 Arbutus & 32nd	Kim Glauber	Apr 12, 2016
 Demo Project	A360 Autodesk	Dec 1, 2015
 Roman's First Project	Roman	Dec 6, 2015
 Stantec Test REVIT Model	Adrian Hobden	Mar 11, 2016


Activity

CW scan Full.pdf



Aubrey Tucker uploaded to BIM Tech Research - Aubrey  
Apr 26, 2016



stn\_Arbutus\_Rezoning\_144312105.rvt



Kim Glauber updated to Arbutus & 32nd  
Apr 14, 2016

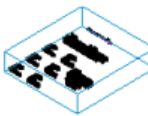
Aubrey Tucker is added to Arbutus & 32nd project

Kim Glauber has created Arbutus & 32nd project






joined Stantec Test REVIT Model

RevitSampleProject.rvt



Adrian Hobden uploaded to Stantec Test REVIT Model  
Mar 11, 2016

Adrian Hobden has created Stantec Test REVIT Model project



joined Robson Square

STA\_ARCH\_RobsonSquare-Central.rvt



4:34 PM  
11/14/2016

Team Stantec - BIM 360





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Team Stantec

8

SHARED WITH ME

Name	Owned By	Created On
 144315047_11_and_11_calgary_tower	Al Thibault	Mar 11, 2016
 144315056_BTC_Tower_3	Al Thibault	Feb 5, 2016
 holborn_little_mountain	Al Thibault	May 13, 2016
 stn_project_admin_doc	Al Thibault	Jun 3, 2016

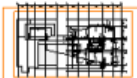
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Al Thibault changed allOxygenGroups, Project type:, data and more of 144315056\_BTC\_Tower\_3 project

Shandra Vedress is added to 144315056\_BTC\_Tower\_3 project

Al Thibault changed allOxygenGroups, Project type:, data and more of 144315047\_11\_and\_11\_calgary\_tower project


IGD\_11-11\_STN\_ARCH.rvt



**Aubrey Tucker** added a comment 11 hours ago

**Anita Moghadasian** updated to 144315047\_11\_and\_11\_calgary\_tower Oct 20, 2016


BTC-T3\_STN\_ARCH-Content.rvt



**Raed Alkhateeb** commented "Katherine Kimdoor..." Oct 25, 2016

**Usman Aziz** updated to 144315056\_BTC\_Tower\_3 Oct 18, 2016

BTC-T3\_STN\_ARCH-Document.rvt



**Raed Alkhateeb** added a comment Oct 17, 2016

**Usman Aziz** updated to 144315056\_BTC\_Tower\_3

Windows taskbar with icons for Internet Explorer, File Explorer, Google Chrome, Microsoft Word, PowerPoint, and others. System tray shows the time as 4:35 PM on 11/14/2016.

Team Stantec - BIM 360





https://stantec.autodesk360.com/g/all\_projects/shared

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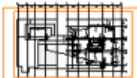
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Shandra Vedress is added to 144315056\_BTC\_Tower\_3 project


Al Thibault changed allOxygenGroups, Project type:, data and more of 144315047\_11\_and\_11\_calgary\_tower project

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BTC-T3\_STN\_ARCH-Content.rvt

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BTC-T3\_STN\_ARCH-Document.rvt

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Team DIALOG

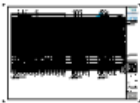
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SHARED WITH ME

Name	Owned By	Created On
 01290E ICE District	DesignTech Support	Mar 20, 2016

Activity


DLG\_01290E\_AR\_BlockBG\_PodiumG.rvt



Elyssa Bradshaw updated to 01290E ICE District Nov 10, 2016


Krigh Bachmann has joined 01290E ICE District project

HPA\_1219\_AR\_BlockBG\_TowerB\_FrontEnd.rvt



Vera Djurdjevic updated to 01290E ICE District Nov 9, 2016


STA\_ARCH\_TowerE\_Spheres.rvt



Sri Kalyan Thontepu commented "Clash" Nov 9, 2016


Felix Tan updated to 01290E ICE District Nov 4, 2016

mech\_towerE\_4330.rvt




Felix Tan uploaded to 01290E ICE District Nov 4, 2016

structure\_towerE\_tower\_4330.rvt



Felix Tan uploaded to 01290E ICE District Nov 4, 2016



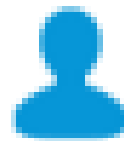
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# Markup Tools

 **AUTODESK.** ACCOUNT

PROFILE

MANAGEMENT



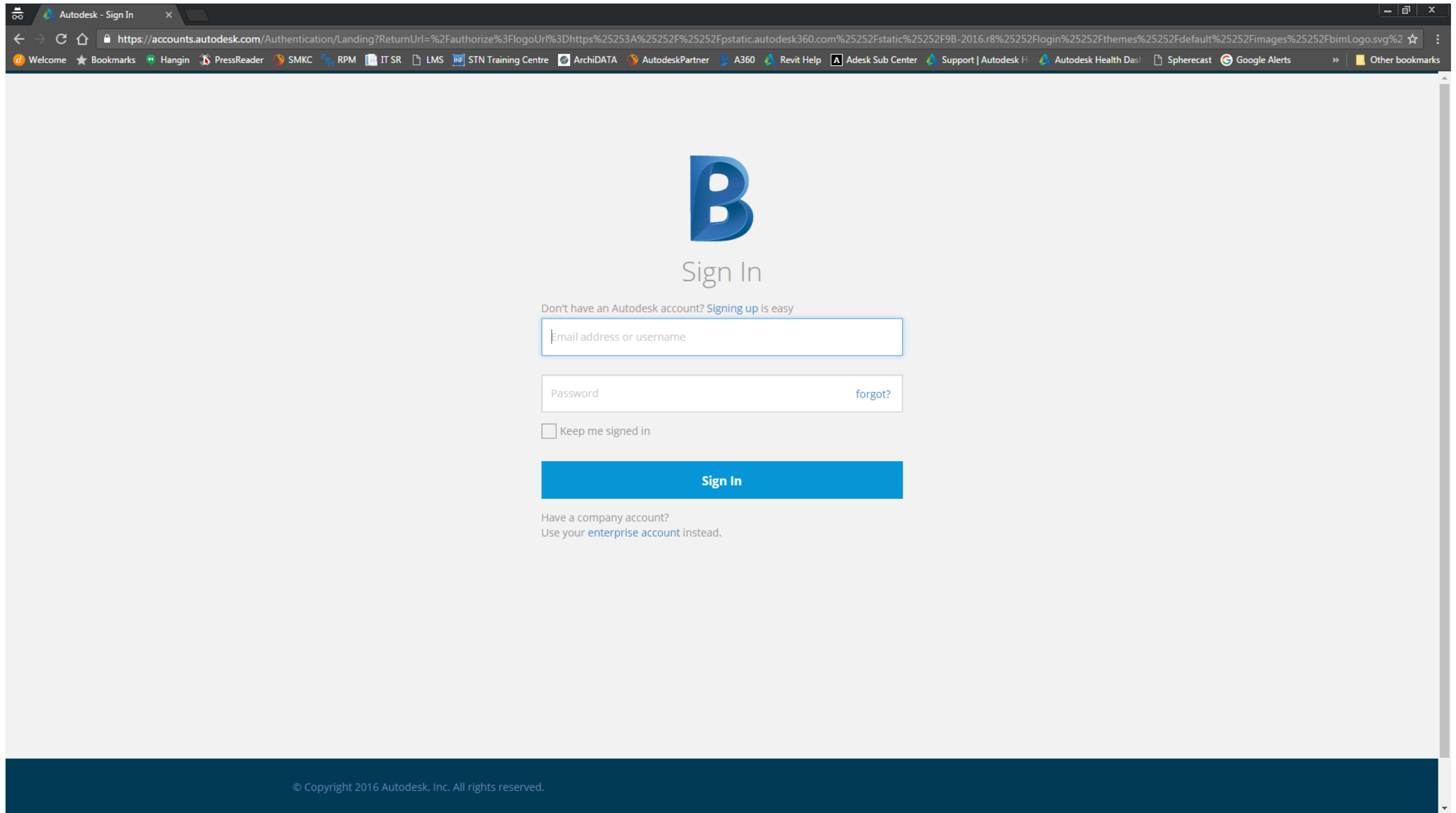
my profile



security settings







Who do you want to invite to this project?

Email addresses or names of the people you'd like to invite(required)

Access Level

Editor ▼

(Don't use mailing lists.)

Project Contributors are allowed in this Project.

Users you invite will be invited as Project Contributors into this hub.

Cancel

Send Invitations



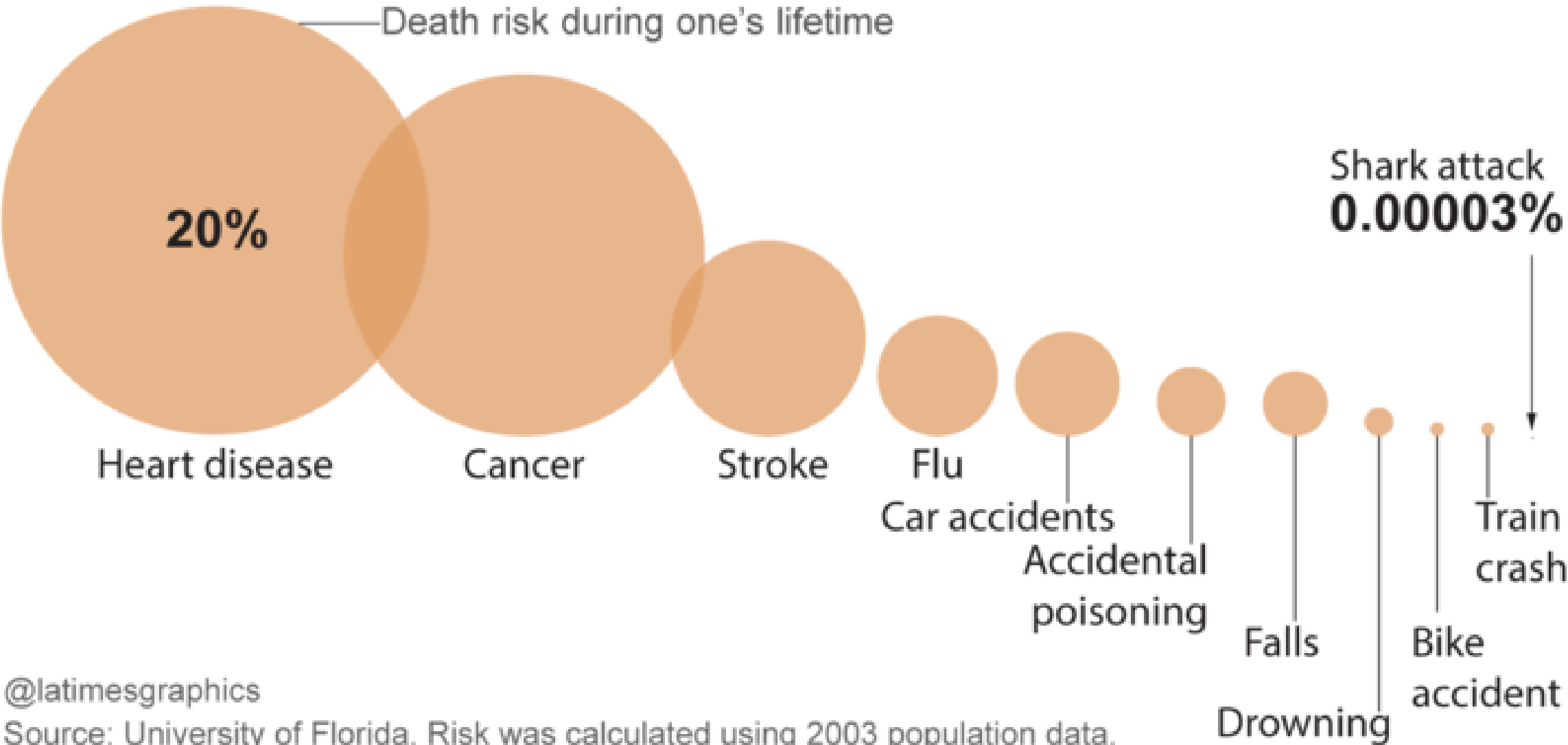
V







# How likely is death by shark attack?



**A01.01**





[illegible][illegible]

Figure 1 displays two scatter plots. The left plot, titled 'Line color', shows a positive correlation between the variable and the 'Line color' variable. The right plot, titled 'Line width', shows a positive correlation between the variable and the 'Line width' variable.

[illegible]



# Tracking Markups





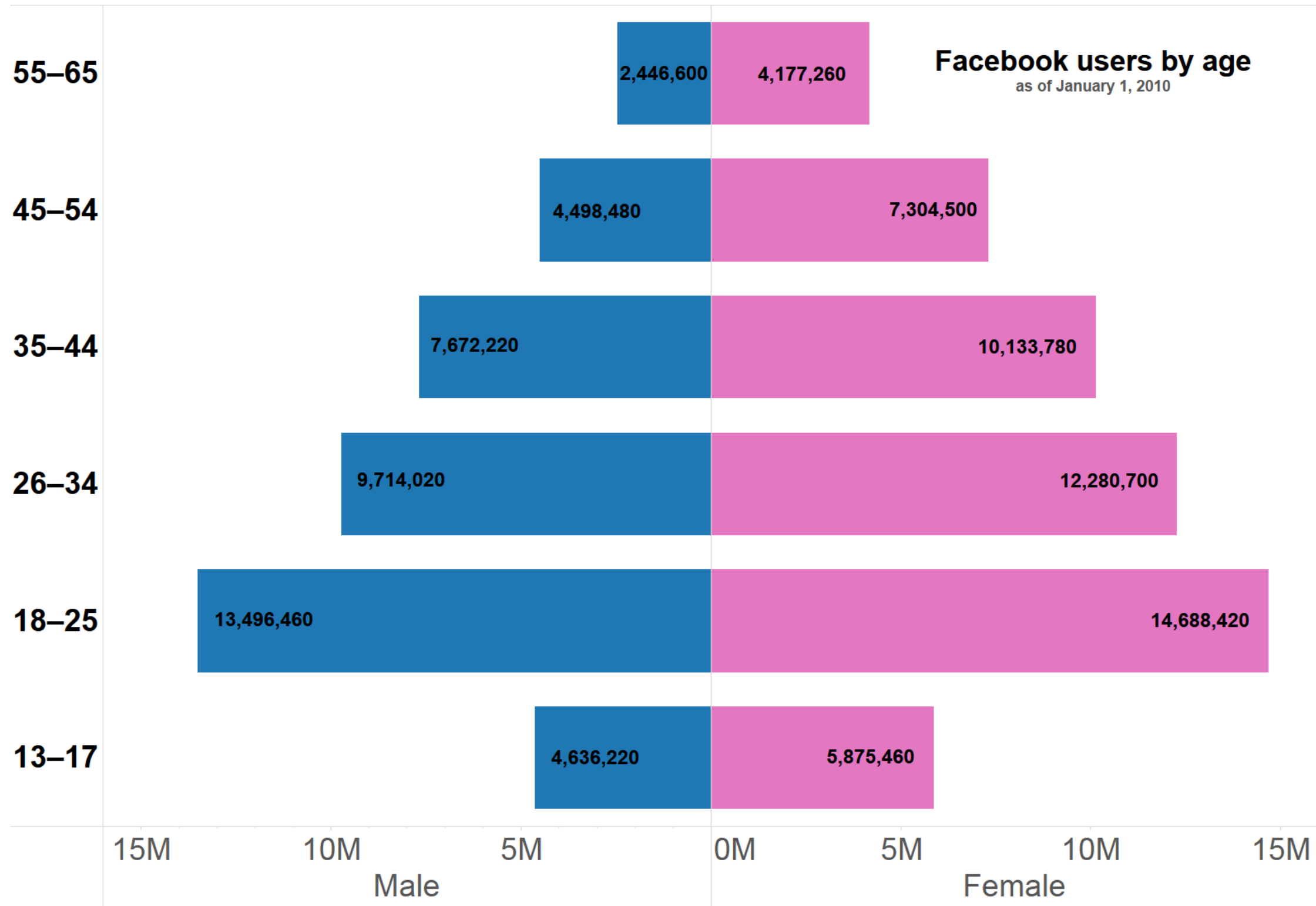
Drawing List & Team Assignment List				
Id	Sheet Name	Team Member	View Temp.	Percentage Complete
A03.04	Residential Tower Elevation - Brentwood (north)	Kat	Kat	90
A03.05	Residential Tower Elevation - Alpha + (east)	Kat	Kat	90
A03.06	Enlarged Podium Elevations	Kat	Kat	90
A03.07	Enlarged Podium Elevations	Kat	Kat	90
A03.08	Enlarged Tower Elevations	Kat	Kat	90
A03.09	Enlarged Tower Elevations	Kat	Kat	90
A03.10	Enlarged Tower Elevations	Kat	Kat	90
A03.11	Enlarged Tower Elevations	Kat	Kat	90
A04.01	Section A-A	Kat	Kat	80
A04.02	Section B-B & C-C	Kat	Kat	80
A04.03	Section D-D	Kat	Kat	80
A04.04	Enlarged Podium Sections	Kat	Kat	80
A04.05	Enlarged Tower Sections	Kat	Kat	80
A04.06	Enlarged Tower & Below Grade Sections	Kat	Kat	80
A05.01	Wall Sections - Tower - West	Kat	Kat	20
A05.02	Wall Sections - Tower - South & North	Kat	Kat	20

# Delegating Tasks













MANAGE PROJECT MEMBERS

Project Members

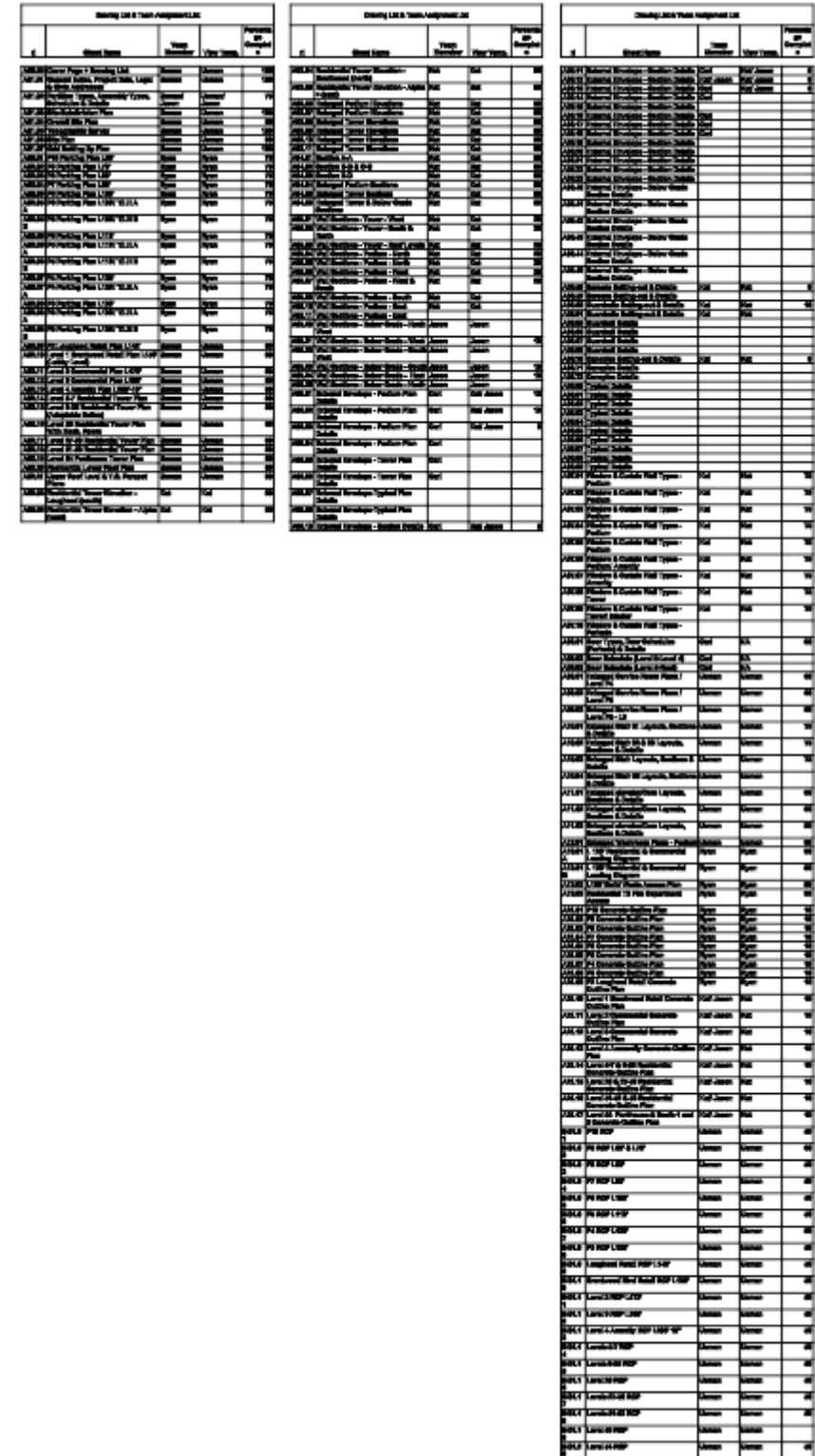
Join Requests

Invite

NAME AND EMAIL	TITLE	COMPANY	ROLE ?	
<div>AG</div> <div>Adam Gaynor</div> <div>adam@nemetz.com</div>			<div>Editor</div>	<div></div>
<div>EC</div> <div>Estella Chan</div> <div>estella@nemetz.com</div>			<div>Editor</div>	<div></div>
<div>RH</div> <div>Ruth Herrera</div> <div>ruth@nemetz.com</div>			<div>Editor</div>	<div></div>
<div>WF</div> <div>Wayne Field</div> <div>wfield@glotmansimpson.com</div>			<div>Editor</div>	<div></div>
<div>MO</div> <div>Micheál O'Keeffe</div> <div>okeeffe@glotmansimpson.com</div>			<div>Editor</div>	<div></div>
<div>FC</div> <div>Frank Chen</div> <div>frank.chen@stantec.com</div>			<div>Editor</div>	<div></div>
<div></div> <div>Darren Burns</div> <div></div>				



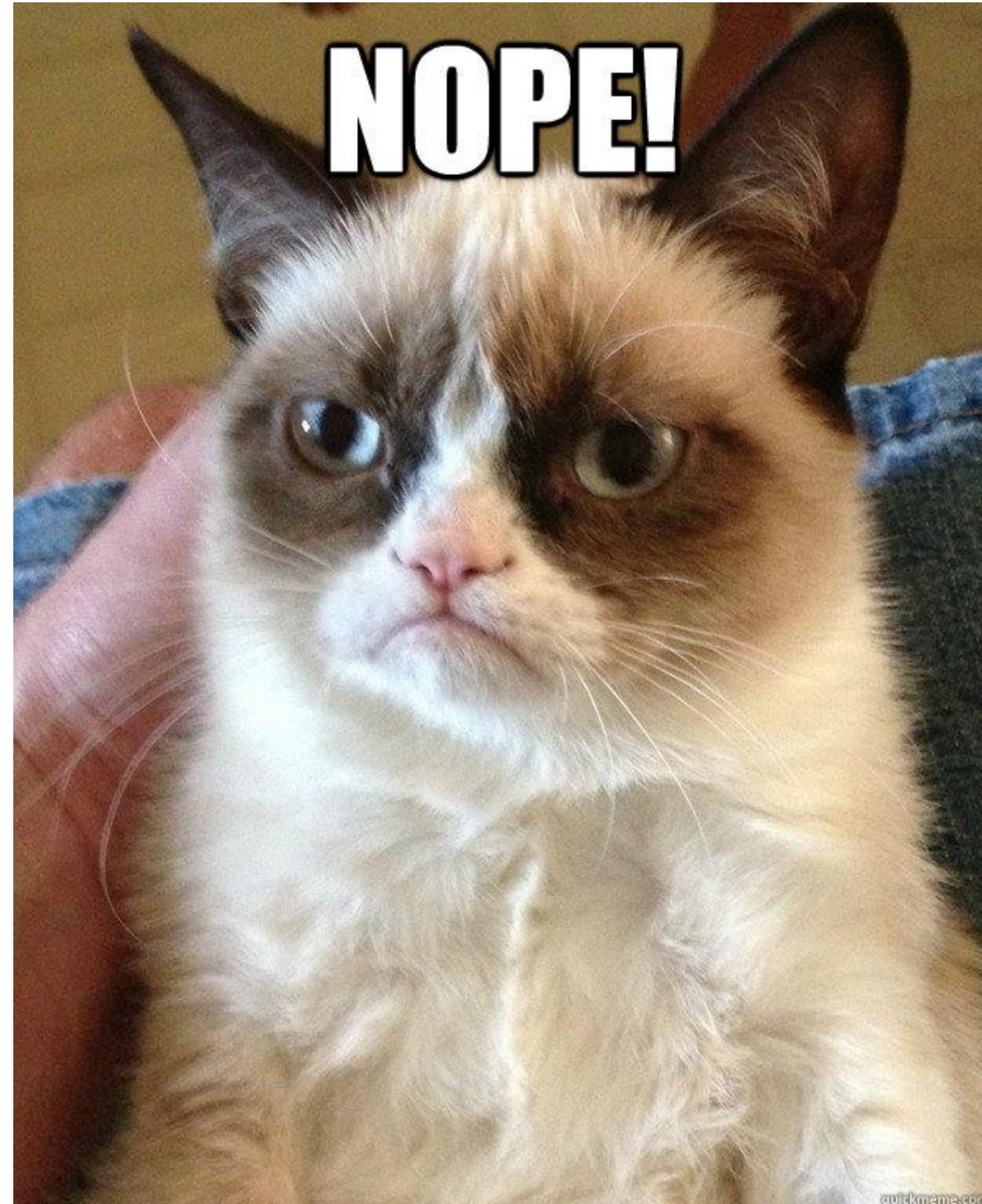






# Making use of scanned images









**AUTOCAD**



Container  
File



Project



**BONUS :**

The inevitable cloud server  
security questions you will  
encounter

# BONUS :

## Getting participation



# Thanks!

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