



The Craft of Project Scheduling

"Scheduling provides a basis for management of the work, improves communications, and facilitates coordination."

(AACE International Skills & Knowledge of Cost Engineering–Scheduling)



The Craft of Project Scheduling

Why is a Schedule Important?

- Key tool for monitoring and controlling projects
- Important and integral part of the planning process

What are some of the Benefits of Scheduling?

- Forecasting tool
- Baseline for recording progress
- Improves communications
- Facilitates coordination



Craft of Project Scheduling

Session 1 – Scheduling Requirements (eBuilder System Reporting)

- Promote Consistency
- Developing Reporting Structure
- Leverage eBuilder "As a Power User"

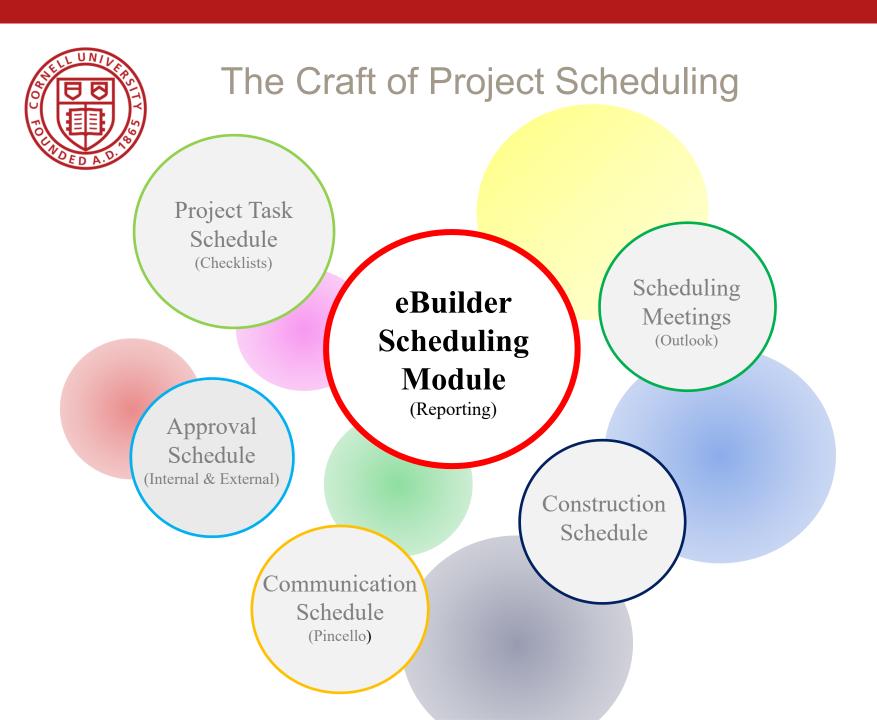
Session 2 – Scheduling Tools & Resources (Next PMPD)

- Promote Consistency
- Promote Best Practices



VS



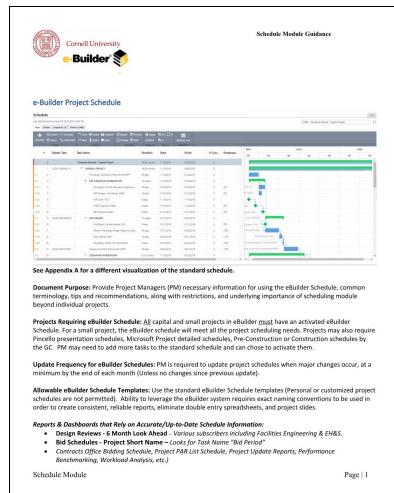




eBuilder Scheduling Module: (Guidance)

Schedule Module Guidance:

- Purpose
- Project Requirements
- Update Expectations
- Templates
- Reports
- Timeframe Expectations





eBuilder Scheduling Module: (Template)

Schedule Template: (Appendix A)

- Rules of Use:
 - i. Do not rename items that contain (*).
 - ii. Tasks that contain an (*) can be deleted if not required for your project.
 - iii. Activate all tasks with an (*) that apply to your project.

Project Types: (Template Modifications)

 How to use the template for various types of projects.

2 3 4 4 5 5 6 6 7 7 7 7 1 1 1 1 1 1 1 1 1 1 1 1 1 1		Reporting Significance	e-Builder Process Alignment			Is Milestone
3 6 6 7 7 7 7 7 7 7 7	PROJECT OVERALL PROJECT	FCS		10.16.2018	09.17.2021	No
4	Pre-Design Consultant Procurement/RFP*	FC			11.27.2018	No
6 7 9 PRE-DESIGN 10 11 13 13 14 15 15 15 15 15 15 15 15 15 15 15 15 15	PRE-DESIGN AUTHORIZATION*	UA + E&PM		10.16.2018	12.26.2018	No
6 7 9 PRE-DESIGN 10 11 13 13 14 15 15 15 15 15 15 15 15 15 15 15 15 15	Pre-Design Contract Request & Approval (CRP & CA)*	FCS	Contract Request & Preparation (CRP)	11 20 2010	12.26.2018	No
7 6 9 PRE-DESIGN 10 10 11 11 11 11 11 11 11 11 11 11 11	PAR Process - Pre-Design (PAR)*	FCS	Project Approval Request (PAR)	11.28.2018	12.11.2018	No
9 PRE-OESION 10 11 12 13 13 ARCHITECT 14 SELECTION 15 16 18 18 18 18 18 18 18 18 18 18 18 18 18	PAR Due in FCS*	FCS	Project Approval Request (PAR)		10.16.2018	Yes
9 PRE-OESION 10 11 12 13 13 ARCHITECT 14 SELECTION 15 16 18 18 18 18 18 18 18 18 18 18 18 18 18	CF&PC Approval Date* B&P Approval Date*	FCS FCS	Project Approval Request (PAR)		10.16.2018	Yes
10 11 11 12 12 13 14 14 15 16 16 16 16 16 17 17 18 18 18 18 18 18 18 18 18 18 18 18 18		FCS	Project Approval Request (PAR)		03.01.2019	No
12 13 14 14 15 16 16 17 16 16 17 16 16 17 17 18 18 18 18 18 18 18 18 18 18 18 18 18	Pre-Design Contract Award (CA)*	FC	Contract Approval (CA)	12.27.2018	12.27.2018	Yes
12 13 14 14 15 16 16 17 16 16 17 16 16 17 17 18 18 18 18 18 18 18 18 18 18 18 18 18	Perform Pre-Design Scope (Feasibility Study, Space					
13 ARCHITECT 14 SELECTION 14 SELECTION 14 SELECTION 15 SE	Programming, Concept Study) Pre-D Review (DR)*	UA + E&PM	2	12.27.2018	02.28.2019	No No
14 SELECTION 14 SELECTION 15 SELECTION 15 SELECTION 15 SELECTION 16 SE	Pre-Design Scope Final Deliverable	UA + E&PM	2 weeks - update predecessors	03.01.2019	03.01.2019	No.
15 16 17 17 17 17 17 17 17	CT					
16 17 18 18 18 18 18 18 18 18 18 18 18 18 18		UA + E&PM + FC			05.03.2019	No
17 17 18 18 18 18 18 18	DESIGN AUTHORIZATION*	FCS FCS	Contract Request & Preparation (CRP)	05.06.2018	06.03.2019	No No
192 27 DEESIGN 28 DEESIGN 29 DEESIGN 20 DEESIGN 2	Design Contract Request & Approval (CRP & CA)* PAR Process - Design (PAR)*	FCS	Project Approval Request (PAR)		05.03.2019	No.
200 200	PAR Process - Design (PAR)* PARs Due in FCS*	FCS	Project Approval Request (PAR)	10.16.2018	10.16.2018	Yes
21 DESIGN 22 DESIGN 23 DESIGN 24 DESIGN 26 DESIGN 27 DESIGN 28 DESIGN 28 DESIGN 29 DESIGN 20 DES	CF&PC Approval Date*	FCS FCS	Project Approval Request (PAR)		10.16.2018	Yes
22 22 24 24 24 24 24 24 25 25 25 25 25 25 25 25 25 25 25 25 25	B&P Approval Date* DESIGN*	FCS FCS	Project Approval Request (PAR)		10.16.2018	Yes No
22 24 24 25 26 26 26 26 26 26 26	Design Contract Award (CA)*	FC	Contract Approval (CA)	06.04.2019	06.04.2019	Yes
25 26 27 27 27 27 27 27 27	Schematic Design*	E&PM		06.04.2019	07.16.2019	No
261 277 278 289 289 289 289 289 289 289 289 289 28	SD Review (DR)*	FE	Design Review (DR)		07.30.2019	No
272 283 283 283 283 283 283 283 284 285 285 285 285 285 285 285 285 285 285	Schematic Design Approval (AAC / ILPC Reviews)* Design Development*	FCS E&PM			07.31.2019 09.12.2019	No No
290 301 302 303 303 304 304 305 305 305 307 307 306 306 406 401 401 404 400 405 404 400 405 405 406 407 406 407 407 407 408 408 408 408 408 408 408 408 408 408	DD Review (DR)*	FE	Design Review (DR)	09.13.2019	09.26.2019	No
30 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	50% Construction Documents*	E&PM			11.07.2019	No
31 33 DD 33 DD 33 DD 33 DD 34 SE	50% CD Review (DR)* 100% Construction Documents*	FE E&PM	Design Review (DR)	11.08.2019	11.21.2019 01.07.2020	No No
32 33 BD 34 SD 35	100% CD Review (DR)*	FE	Design Review (DR)	01.08.2020	01.07.2020	No.
34 35 35 36 36 37 36 37 36 37 37 37 37 37 37 37 37 37 37 37 37 37	Final CD Due to Owner*	E&PM + College		01.22.2020	01.22.2020	Yes
35 36 37 37 38 39 40 41 41 41 41 41 41 41 41 41 41 41 41 41	BID*	FCS		01.22.2020	03.03.2020	No
36 37 38 38 40 40 41 42 42 43 44 40 CONSTRUCTION 45 46 47 47 48 COMPLETION 51 52 CLOSE OUT 54 54 54 55 56 67 77 Ruites of Use: 1. Do not rename 2. Tasks that cont	Bid Document QA Check-Project Team* Bid Documents Preparation-Contracts*	E&PM FC	Bid Preparation (future)	01.22.2020	01.27.2020	No No
37 38 39 40 41 41 42 42 43 44 44 CONSTRUCTION 45 46 58 SUBSTANTIAL 49 COMPLETION 50 50 50 50 50 50 50 60 70 70 60 60 60 60 60 60 60 60 60 60 60 60 60	Bid Period*	FC + E&PM	Bidding Module (future)	02.05.2020	02.04.2020	No No
39 40 41 42 42 43 44 44 40 CONSTRUCTION 45 46 47 47 49 50 SUBSTANTAL 49 COMPLETION 50 51 52 CLOSE OUT 53 55 57 Rules of Use: 1. Do not rename 2. Tasks that cont	Scope Validation*			02.26.2020	03.03.2020	No
40 41 42 43 44 CONSTRUCTION 446 46 47 47 48 SUBSTANTIAL 49 COMPLETION 50 51 52 CLOSE OUT 53 54 55 77 Rules of Use: 1. Do not rename 2. Tasks that cont	CONSTRUCTION AUTHORIZATION*	FCS		10.16.2018	03.31.2020	No
40 41 42 43 44 CONSTRUCTION 446 46 47 47 48 SUBSTANTIAL 49 COMPLETION 50 51 52 CLOSE OUT 53 54 55 77 Rules of Use: 1. Do not rename 2. Tasks that cont	Construction Agreement Request & Approval (CRP & CA)*	FCS	Contract Request & Preparation (CRP)	02.04.2020	03.31.2020	No
42 43 44 CONSTRUCTION 45 46 47 48 5UBSTANTIAL 49 COMPLETION 51 52 52 53 64 65 67 71 Rules of Use: 1. Do not rename 2. Tasks that cont	PAR Process - Construction (PAR)*	FCS	Project Approval Request (PAR)	02.26.2020	03.10.2020	No
43 44 CONSTRUCTION 45 46 47 47 48 58 IBSTANTIAL 49 COMPLETION 50 51 52 CLOSE OUT 53 54 66 67 77 Rules of Use: 1. Do not rename 2. Tasks that cont	PAR Due in FCS*	FCS	Project Approval Request (PAR)		10.16.2018	Yes
44 CONSTRUCTION 45 46 47 48 SUBSTANTIAL 49 COMPLETION 51 52 CLOSE OUT 53 54 55 56 57 7	CF&PC Approval Date* B&P Approval Date*	FCS FCS	Project Approval Request (PAR) Project Approval Request (PAR)		10.16.2018	Yes
45 46 47 47 48 SUBSTANTIAL 49 COMPLETION 50 51 52 CLOSE OUT 53 54 55 66 77 Rules of Use: 1. Do not rename 2. Tasks that cont	UCTION CONSTRUCTION*	FCS	Project Approval Request (PAR)	04.01.2020	10.20.2020	No
47 48 SUBSTANTIAL 49 COMPLETION 50 51 52 CLOSE OUT 53 54 55 56 67 Rules of Use: 1. Do not rename 2. Tasks that cont	Award/NTP (CA)*	E&PM + College	Contract Approval (CA)	04.01.2020	04.01.2020	Yes
48 SUBSTANTIAL 49 COMPLETION 55 55 55 52 CLOSE OUT 53 54 55 56 57 Rules of Use: 1. Do not rename 2. Tasks that cont	Abatement*	E&PM + College			05.27.2020	No
SUBSTANTIAL SUBSTANTIAL 49 COMPLETION 50 51 52 CLOSE OUT 53 54 55 56 57	Demolition Activities* Construction Activities*	E&PM + College E&PM + College			06.10.2020 09.03.2020	No No
50 51 52 CLOSE OUT 53 54 55 56 57 Rules of Use: 1. Do not rename 2. Tasks that conf	NTIAL					140
55 52 CLOSE OUT 53 54 55 56 57 <i>Rules of Use</i> : 1. Do not rename 2. Tasks that cont		E&PM + College			09.14.2020	Yes
52 CLOSE OUT 53 54 55 56 57 Rules of Use: 1. Do not rename 2. Tasks that conf	Beneficial Occupancy*	E&PM + College			09.15.2020	Yes
53 54 55 56 57 Rules of Use: 1. Do not rename 2. Tasks that cont	Final Completion* CLOSE OUT*	E&PM + College FCS		10.20.2020	10.20.2020 09.17.2021	Yes No
54 55 56 57 <i>Rules of Use</i> : 1. Do not rename 2. Tasks that conf	As Built and O&M's Complete*	FM	FM Turnover (future)		08.20.2021	Yes
Rules of Use: 1. Do not rename 2. Tasks that cont	Commissioning Follow-Up*	FM		08.20.2021	08.26.2021	No
Rules of Use: 1. Do not rename 2. Tasks that cont	A/E Warranty Walkthrough Within One Year* Archive Activities (C)*	FM E&PM	Closeout (C)		08.26.2021 09.10.2021	No No
Rules of Use: 1. Do not rename 2. Tasks that cont	Final Financial Closeout (C.)*	FCS	Closeout (C.)		09.10.2021	No.
Do not rename Tasks that cont			June 10 /			
Do not rename Tasks that cont	= Important reportable dates					
2. Tasks that cont						
Tasks that cont Activate all tas	t rename items that contain an asterisk (*)					
v. Acutate an las	that contain an asterisk (*) can be deleted if not required for you te all tasks with an asterisk (*) that apply to your project	r project.				
	tie an tasks with an asterisk () that apply to your project					
chedule Mod						Page 4



eBuilder Scheduling Module: (Template)

Appendix A

Seq No	Master Task Name	Task Name	Reporting Significance	e-Builder Process Alignment	Start Date	Finish Date	Is Mileston
	OVERALL PROJECT	OVERALL PROJECT	FCS		10.16.2018	09.17.2021	No
2		Pre-Design Consultant Procurement/RFP*	FC		10.16.2018	11.27.2018	No
3		PRE-DESIGN AUTHORIZATION*	UA + E&PM		10.16.2018	12.26.2018	No
4		Pre-Design Contract Request & Approval (CRP & CA)*	FCS	Contract Request & Preparation (CRP)	11.28.2018	12.26.2018	No
- 5		PAR Process - Pre-Design (PAR)*	FCS	Project Approval Request (PAR)	11.28.2018	12.11.2018	No
6		PAR Due in FCS*	FCS	Project Approval Request (PAR)	10.16.2018	10.16.2018	Yes
7		CF&PC Approval Date*	FCS	Project Approval Request (PAR)	10.16.2018	10.16.2018	Yes
8		B&P Approval Date*	FCS	Project Approval Request (PAR)	10.16,2018	10.16.2018	Yes
9	PRE-DESIGN	PRE-DESIGN*	FCS		12.27.2018	03.01.2019	No
10		Pre-Design Contract Award (CA)*	FC	Contract Approval (CA)	12.27.2018	12.27.2018	Yes
11		Perform Pre-Design Scope (Feasibility Study, Space Programming, Concept Study)	UA + E&PM		12.27.2018	02.28.2019	No
12		Pre-D Review (DR)*		2 weeks - update predecessors	02.28.2019		No
13		Pre-Design Scope Final Deliverable	UA + E&PM		03.01.2019	03.01.2019	No
	ARCHITECT SELECTION	Design Consultant Procurement/RFP*	UA + E&PM + FC		03.04.2019	05.03.2019	No
15		DESIGN AUTHORIZATION*	FCS		10.16.2018	06.03.2019	No
16		Design Contract Request & Approval (CRP & CA)*	FCS	Contract Request & Preparation (CRP)	05.06.2019	06.03.2019	No
			_				No

Yes

Yes

Yes

= Important reportable dates

Rules of Use:

- 1. Do not rename items that contain an asterisk (*)
- 2. Tasks that contain an asterisk (*) can be deleted if not required for your project.
- 3. Activate all tasks with an asterisk (*) that apply to your project



eBuilder Scheduling Module: (Reporting)

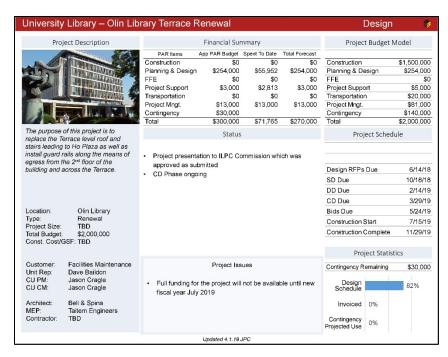
Reports & Dashboards:

Monitoring & Project Control

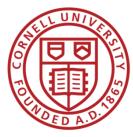
- eBuilder Power User
 - Project Status Reports

Forecasting & Coordination

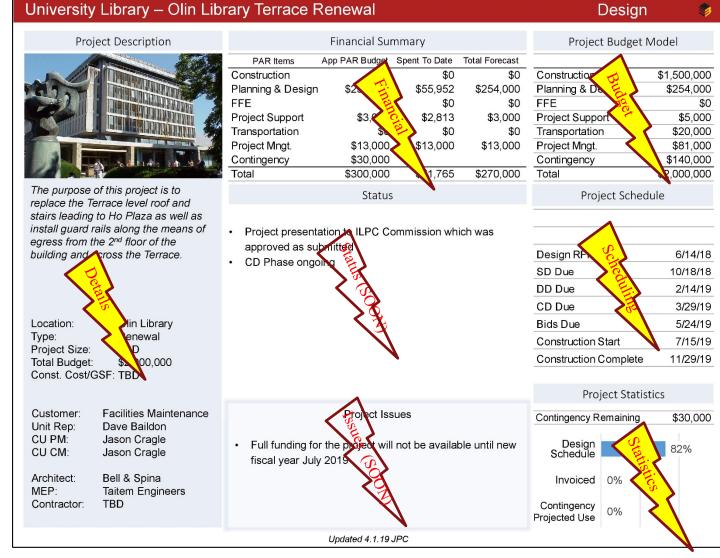
- Design Reviews
- Bid Schedules
- Project PAR List Schedule
- Workload Analysis



Transitioning from monthly Project Slides to Dashboards and eBuilder Reporting



"POWER eBuilder User" Getting eBuilder to work for us





Forecasting & Coordination – Sample Reports



Bid Phase Tasks

FCS PM Project Schedules - Various Bid tasks

Filter By:

Project Status equals Active

Project Category (Project Custom Field) equals Capital Project, Small Project (non-capital; less than \$100K; no PAR)

Task Name contains Bid Period, Documents Sent to Bidders, Receive Bids, Issue Request for Bids, Received Bids, "Bid Phase (Pre-Bid, RFI's, Addendum)", Bid Phase

PM Group (Project Custom Field) equals FCS PM A, FCS PM B, FCS PM C

Project Phase (Project Custom Field) not equal to Closeout, Complete

Short Name	Task Name	% Complete	Start Date	Finish Date	Duration	Sequence Number
M Group: FCS PM A (14 records)						
Baker Institute W Humidifier	Bid Period*	0%	06.04.2019	07.02.2019	21d	1
Barton Floor Refinish	Bid Phase - NYS Bid Process	0%	05.24.2018	06.22.2018	20d	1
Building Controls Upgrades 2	Issue Request for Bids	0%	11.20.2017	11.20.2017	1d	1
Building Controls Upgrades 2	Received Bids	0%	12.14.2017	12.14.2017	1d	1
Building Controls Upgrades 2	Issue Request for Bids	0%	10.23.2017	10.23.2017	1d	3
Building Controls Upgrades 2	Received Bids	0%	11.15.2017	11.15.2017	1d	3
Building Controls Upgrades 2	Issue Request for Bids	0%	10.23.2017	10.23.2017	1d	5
Building Controls Upgrades 2	Received Bids	0%	11.15.2017	11.15.2017	1d	6
Carpenter B05 Code Compliance	Bid Period	0%	01.23.2019	02.12.2019	15d	
LED Lighting Ph 2	Bid Period	0%	03.28.2018	04.26.2018	21d	
Thurston Hall VAV/Controls	Bid Period*	0%	12.04.2018	03.14.2019	71d	2
Uris Lib Addition Study Area	Received Bids	0%	12.20.2017	12.20.2017	1d	1
VMC AHU Rehab	Original Bid Period	100%	03.28.2017	04.19.2017	16d	1
VMC AHU Rehab	Kick-Off Meeting for Second Bid Phase	100%	03.19.2018	03.20.2018	1d	-
M Group: FCS PM B (40 records)						
Baker 200 Auditor Reno	Documents Sent to Bidders	0%	08.07.2020	08.07.2020	1d	2
Baker 200 Auditor Reno	Receive Bids	0%	09.03.2020	09.03.2020	1d	2
BTI Parapet & Roof	Documents Sent to Bidders	0%	06.12.2018	06.21.2018	8d	2
BTI Parapet & Roof	Receive Bids	0%	06.25.2018	07.09.2018	10d	3
CALS Greenhouse Modern	Documents Sent to Bidders	0%	05.07.2020	05.13.2020	5d	3
CALS Greenhouse Modern	Receive Bids	0%	05.15.2020	05.28.2020	9d	3
Campus Rd/Teagle Steam Line	Bid Period	0%	01.18.2019	02.21.2019	25d	
CCC Academic Support	Bid Period	0%	01.28.2019	02.15.2019	15d	
Central Campus Pipe Line	Documents Sent to Bidders	0%	11.01.2018	11.14.2018	9d	
Clark Basement Lab AEP	Documents Sent to Bidders		03.15.2019		1d	,
Clark Basement Lab AEP	Receive Bids	0%	04.05.2019	04.05.2019	1d	- 2
Corson E231 Educ Research Lab	Bid Period	0%	12.03.2018	01.03.2019	4.20w	
	D	201	10.00.0010		1.4.4	



Forecasting & Coordination – Sample Reports

Contracts Bid Reviews

Contracts Bid Reviews - Using new schedule module; looking for tasks containing "Bid Documents Preparation-Contracts" - no results because PMs are either not using the new naming convention of have not activated the Bid Period task in their schedules



Contracts Bid Reviews - Active Projects (Real Data)

Filter By

Project Status equals Active

Project Category (Project Custom Field) equals Capital Project, Small Project (non-capital; less than \$100K; no PAR)

Task Name contains Bid Documents Preparation-Contracts

Start Date in the next 12mo

Project Name	Short Name	Task Name	% Complete	Start Date	Finish Date	Duration	Project Manager	PM Group	Sequence Number

Contracts Bid Reviews - Using new schedule module; looking for tasks containing "Bid Documents Preparation-Contracts" - How it should look



Contracts Bid Reviews - Sample

Filter B

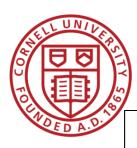
Project Status equals Administrative

Project Category (Project Custom Field) equals Capital Project, Small Project (non-capital; less than \$100K; no PAR)

Task Name contains Bid Documents Preparation-Contracts

Start Date in the next 12mo

Project Name	Short Name	Task Name	% Complete	Start Date	Finish Date	Duration	Project Manager	PM Group	Sequence Number
Project Manager: Project Manager (3						25d			
Schedule Module - Small Project		Bid Documents Preparation-Contracts	0%	05.02.2019	05.08.2019	5d	Project Manager	IPP Project Administration I	17
*Testing Two General Contractor On One									
Project		Bid Documents Preparation-Contracts*	0%	01.23.2020	02.05.2020	10d	Project Manager		35
Schedule Module - Capital Project		Bid Documents Preparation-Contracts	0%	03.23.2020	04.03.2020	10d	Project Manager	IPP Project Administration I	35
Grand Totals (3 records)						25			



Forecasting & Coordination – Sample Reports

Design Review Report - Using new schedule module; looking for tasks containing (DR) - minimal results because PMs are either not using the new naming convention or have not activated the DR tasks in their schedules



Design Reviews

Design Reviews - 6 Month Look Aheac

Filter By:

Project Status equals Active

Task Name contains (DR)

Task Name does not containCost, Bid, Contracts, Cornell, Report

Start Date in the next25.71w

Project Name	Task Name	% Complete	Start Date	Finish Date	Duration	Project Manager	Last Updated	Project Category	PM Group
Master Task Name: (3					40d				
Baker Institute West Wing							Secure services		
Humidifier Replacement	DD Review (DR)*	0%	04.11.2019	04.24.2019	10d	Darlene Hackworth	04.01.2019	Capital Project	FCS PM A
Baker Institute West Wing									
Humidifier Replacement	90% CD Review (DR)*	0%	05.09.2019	05.22.2019	10d	Darlene Hackworth	04.01.2019	Capital Project	FCS PM A
Balch Hall Renovation	SD Review (DR)	0%	06.18.2019	07.16.2019	20d	Christopher Davenpor	03.05.2019	Capital Project	FCS PM C
Grand Totals (3 records)					40	0			



Design Review Report - looking for taks with the word "Review" - results include many more items than just Design Reviews andn also omits (DR) tasks that are not activated

Project Name	Task Name	% Complete	Start Date	Finish Date	Duration	Project Manager	Last Updated	Project Category	PM Group
Master Task Name: (22					150d				
Plant Breeding Seed Storage Study	Review w/ Sponsor	0%	04.18.2019	04.19.2019	2d	Linda Adams	03.19.2019	Small Project (non- capital; less than \$100K; no PAR)	FCS PM E
Baker Institute West Wing Humidifier Replacement	DD Review (DR)*	0%	04.11.2019	04.24.2019	10d	Darlene Hackworth	04.01.2019	Capital Project	FCS PM A
West Campus Restoration - Gothics Building Envelope Phase 2 Study & 2019								- Capital Viagos	

