



# Getting Started with Takt Planning

BUILD WITH FLOW



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Through over fifteen years of scheduling experience on many billions of dollars' worth of construction projects, I have dedicated myself to mastering CPM scheduling and have passionately taught it to hundreds of professionals. However, after delving into the principles of takt planning through numerous takt trainings and extensively reading books, papers, and articles on the subject, I have become converted and now embrace takt planning as an improved methodology.

My fervor for the future of takt in our industry has led me to dedicate my time and resources to assembling a formidable team to develop inTakt ([www.intakt.app](http://www.intakt.app)), a dedicated takt planning platform. Over the past few years, we have created the most robust yet intuitive tool for takt planning on the market. Our commitment to continuous improvement has driven our rapid development.

This concise guide to takt planning aims to efficiently teach the basics and illustrate the principles I now firmly believe in. While there are more comprehensive materials available elsewhere, I intend to spare you countless hours of research and study by providing you with the core essentials.

# The Bare Basics:



## Rhythm

Takt planning creates rhythm by breaking work into equalized batches.



## Continuity

It creates uninterrupted trade flow through balanced work areas.



## Consistency

It makes the plan easier to understand and brings issues to the surface.

# Born from Manufacturing



**“Takt” is German word; meaning “Rhythm”, “Cadence”, or “Beat”.**

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Takt planning in construction draws inspiration from the principles and methodologies that have been developed and refined in manufacturing over the recent decades. Construction has historically lagged behind manufacturing in terms of processes and technology. However, we are now witnessing the beginning of a revolution involving prefabrication, automation and robotics on job sites.

By applying manufacturing principles to construction, takt planning seeks to create a steady and balanced rhythm of work, similar to an assembly line. However, Instead of products moving down an assembly line, installers move through the job site, following a synchronized and optimized workflow.







I want to emphasize that this guide is not intended to discredit Critical Path Method (CPM) scheduling but to expand upon its foundations. Throughout my career, I have experienced many successes, and some failures, on large projects while adhering to its principles. The knowledge and experience I gained in CPM scheduling continue to hold immense value.

# Traditional CPM Scheduling



It is important to acknowledge that CPM schedules still offer numerous benefits when it comes to managing massive and complex projects. Here are some of the strengths of CPM:





# Challenges with CPM Scheduling



Despite the significant contributions that CPM scheduling has made over the past half century, it is important to acknowledge that it also has inherent weaknesses.

These challenges stem from both the tools and methods used in CPM scheduling. Here are some of the key challenges that CPM scheduling faces on projects:

Difficult to spot issues, easy to bury problems

Constant pushing and burnout with unrealistic expectations

Erratic durations and complex relationships add complexity

Focus on early dates makes consistent delays probable

Fluctuating resource requirements cause inefficiencies





**Takt planning directly addresses the weaknesses of CPM mentioned earlier.**

It should not be considered a direct replacement of classic CPM scheduling but rather represents a logical progression in the evolution of planning. CPM scheduling has provided a solid foundation for methodical planning, and takt planning now takes that foundation and optimizes it for better flow. Here are some ways in which takt planning builds upon the foundation laid by CPM:

# How Takt Scheduling Helps



Organized structure with equalized zones and activities

Easy to understand, single-page plan

Correct logic can be easily verified

Provides a steady and sustainable pace

Creates a steady rhythm and natural trade flow



Levels resources and improves trade efficiency

Uniform structure brings problems to the surface

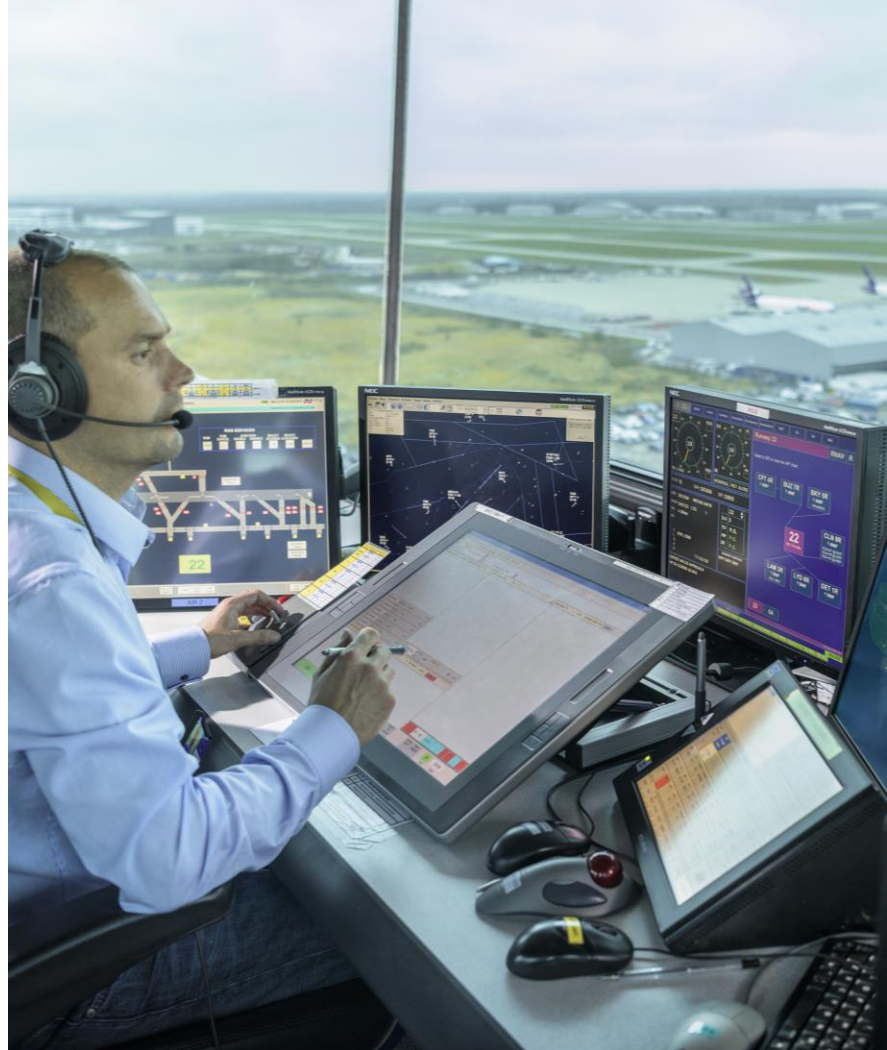
# Schedule Safety

Predictable patterns play a crucial role in eliminating confusion and significantly reducing human error.

Air traffic controllers rely on pre-defined "traffic patterns" to safely and efficiently manage high volumes of flights, where there are substantial risks and unpredictable variables.

Drawing parallels between air traffic control and construction management, we recognize the need for structure and stable patterns.

While air traffic controllers manage complex airspace, construction management deals with intricate project logistics and coordination.

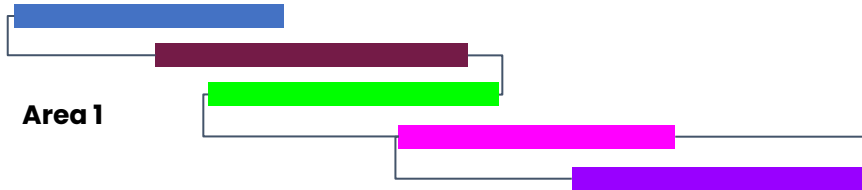


# Comparison



Traditional CPM schedules are broken down into tasks with varied durations and relationships. In contrast, a takt schedule breaks down the scope into equalized work zones and tasks. This allows for a more balanced distribution of work for better flow.

## Traditional CPM



- ✗ Varied durations and lags
- ✗ Progress can be subjective
- ✗ Delays are fluid
- ✗ More complex and sporadic

## Takt Planning



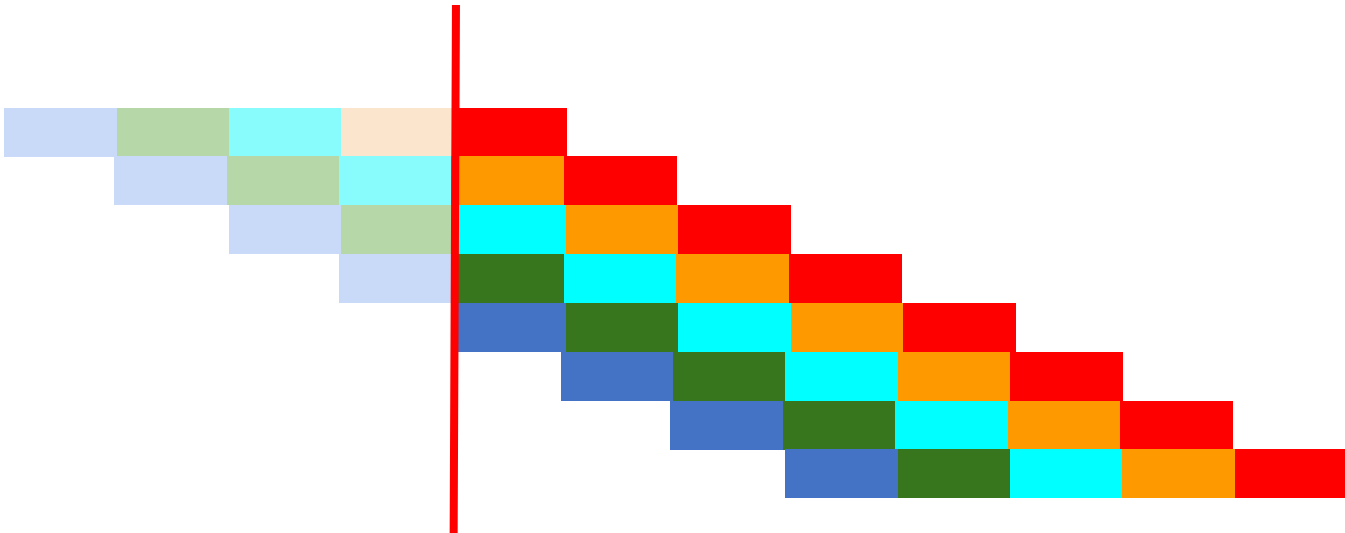
- ✓ Smaller, balanced areas
- ✓ Balanced scopes and crews
- ✓ Clearly-defined flow
- ✓ Easily understood and controlled

# Easy to See Progress



Takt plans offer a unique advantage in visualizing the past, present, and future of a project on a single page. This condensed representation allows for a quicker understanding and internalization compared to traditional schedules.

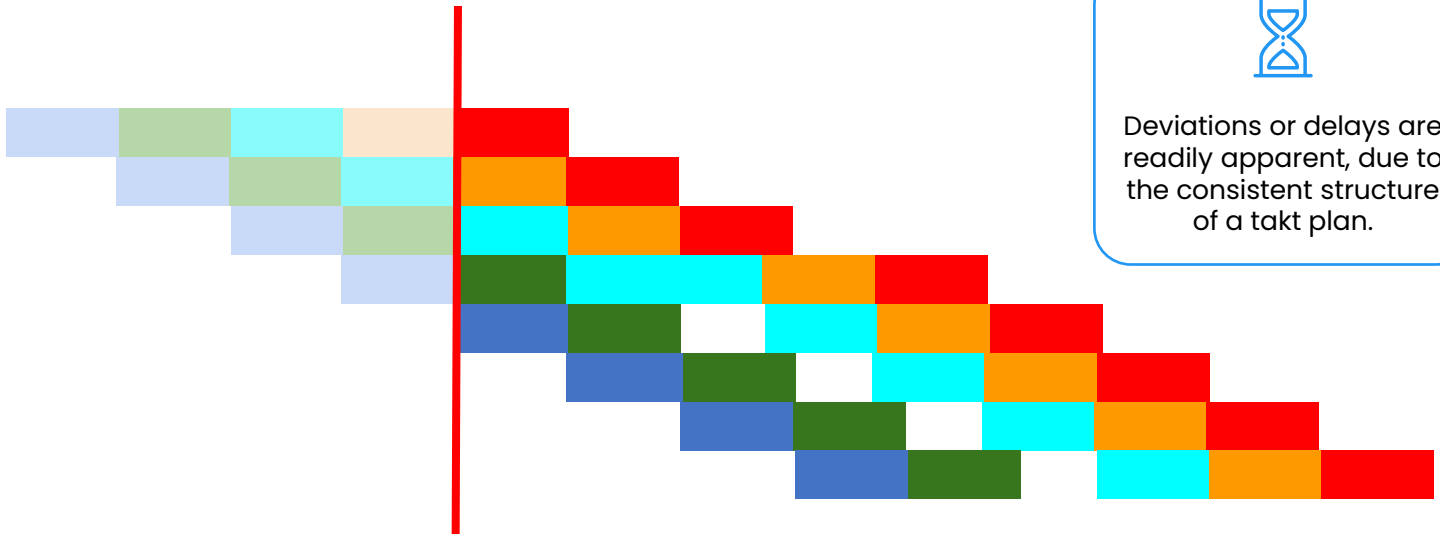
By presenting the project timeline in a concise format, takt plans provide a holistic view of the project's progress and future milestones. This enables project stakeholders to easily grasp the overall project status and anticipate upcoming work.



# Easy to Spot Issues

Baseline comparison tools are unnecessary in takt planning. The uniformity created by a takt plan allows any variances and issues to stand out prominently, providing a clear picture of the project's status and history.

With inTakt, stakeholders can tap on specific activities to access detailed information regarding the reasons for variance and any accompanying notes about delays or issues.

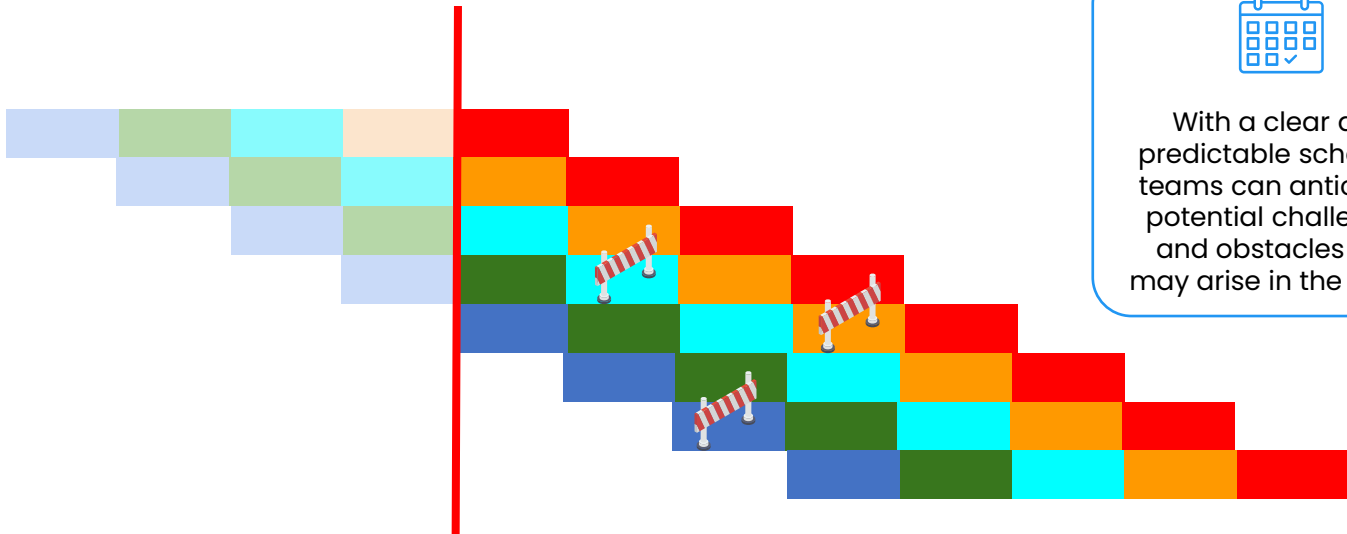


Deviations or delays are readily apparent, due to the consistent structure of a takt plan.

# Focus is on Future Roadblocks

With the high visibility and easy maintenance of takt plans, project teams can shift their focus towards identifying and proactively removing future roadblocks. More time is dedicated to studying the future and less time is spent on maintenance and reactive problem-solving.

With a clear and predictable schedule, teams can anticipate potential challenges and obstacles more easily. This enables them to take proactive measures to address these roadblocks before they become fires to put out.



With a clear and predictable schedule, teams can anticipate potential challenges and obstacles that may arise in the future.

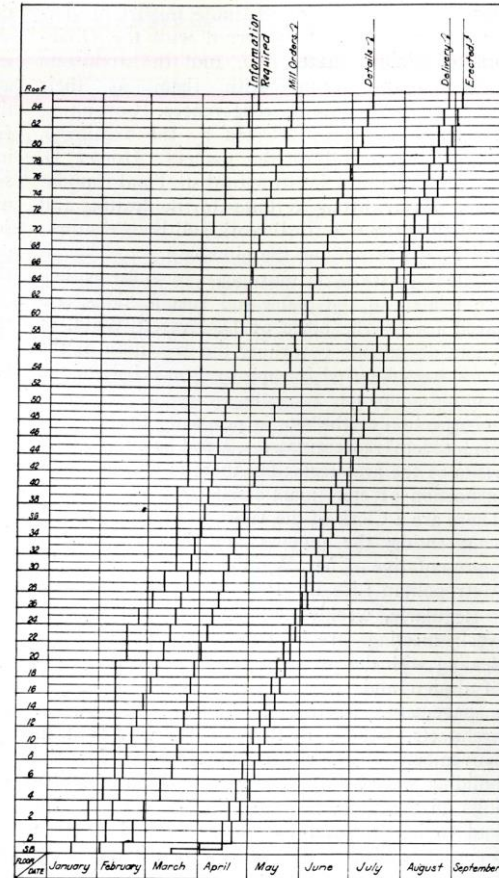


# Empire State Building

- ✓ **410 days** - start of steel to completion
- ✓ **7M+** man hours
- ✓ **4.5 stories/week**
- ✓ **Fastest** of its type
- ✓ Used a **Takt Schedule**

The Empire State Building in New York City serves as an exemplary early example of takt (“pacemaker”) scheduling.

Takt planning can be applied to various project types and construction methodologies. While projects with repetitive tasks may initially lend themselves more easily to takt planning, the principles and benefits extend well beyond repetitive projects.



# Principles To Preserve Project Flow:

In addition to takt planning, there are many other manufacturing principles that apply well to construction scheduling. Many individuals can get caught up in the intricacies of "Production Laws" and the "Eight Wastes."

Instead of overwhelming you with an extensive list of laws and theories, I would like to share a few of the principles that I have found to be the most impactful and useful.

## Focus on overall throughput.

Think of the big picture, rather than on individual efficiency.

## Limit work in process and finish as you go.

Think of the big picture, rather than on individual efficiency.

## There is always variation.

Accept that variation occurs regularly and unpredicted events occur. Add sufficient buffers.



## Overproduction is wasteful.

One trade finishing work early does not help the project if other trades are not also early.

## Smaller batch sizes increases throughput.

Smaller work zones will let you stagger trades more closely and finish sooner.

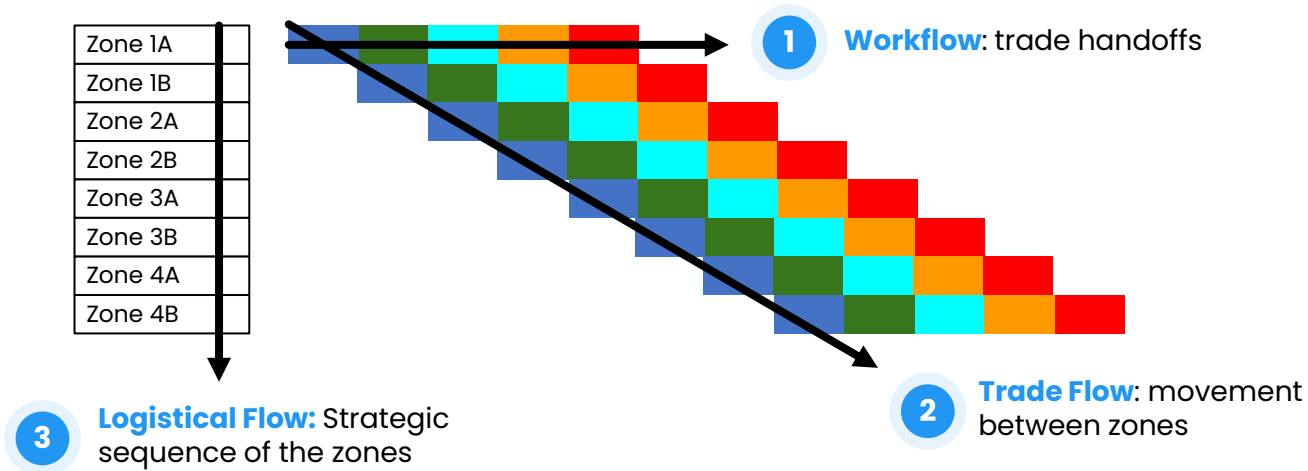
## There is always a bottleneck.

Identify it. If you can improve it, find the next bottleneck.

# Three Types of Flow:

There are three types of flow to consider:

- 1. Workflow:** This refers to the smooth handoffs between trades within a zone. It ensures efficient coordination and collaboration between trades.
- 2. Trade Flow:** Trade flow pertains to the movement of a single crew or trade through the zones of a project, minimizing unnecessary disruptions.
- 3. Logistical Flow:** Logistical flow involves strategically sequencing the zones to maintain an organized and methodical project flow. It aims to optimize access to resources, materials, and equipment.



# Creation Process – Per Phase

Here is the basic process for creating a takt plan. As with any plan, it starts by carefully studying the drawings and scope of work to determine the required workload in each zone (1). The next step is to divide the project into zones, ensuring they contain equal amounts of work. It is crucial to carefully sequence these zones to effectively support site logistics (2). Collaboration with the trades is essential for the next step, where you work together to pull plan a single zone, defining the sequence of detailed subtasks (3). Afterward, you can package these subtasks into tasks of equal duration (4). Exploring options to optimize the number of tasks and zones to meet project objectives comes next (5). Conducting a thorough analysis of risks and potential variances and adding appropriate buffers to the plan is highly recommended (6). Once each phase is complete, it is important to integrate it with other project phases (7). Lastly, gathering the entire team to review the plan, identify weaknesses, and make necessary improvements is crucial (8). The following pages will provide a more detailed description of these steps.

**Analyze plans  
and work density**



**Pull-plan subtasks**



**Optimize  
the plan**



**Tie to other  
phases**



**Determine  
zones and  
sequence**



**Package  
subtasks into  
tasks**



**Add buffers**

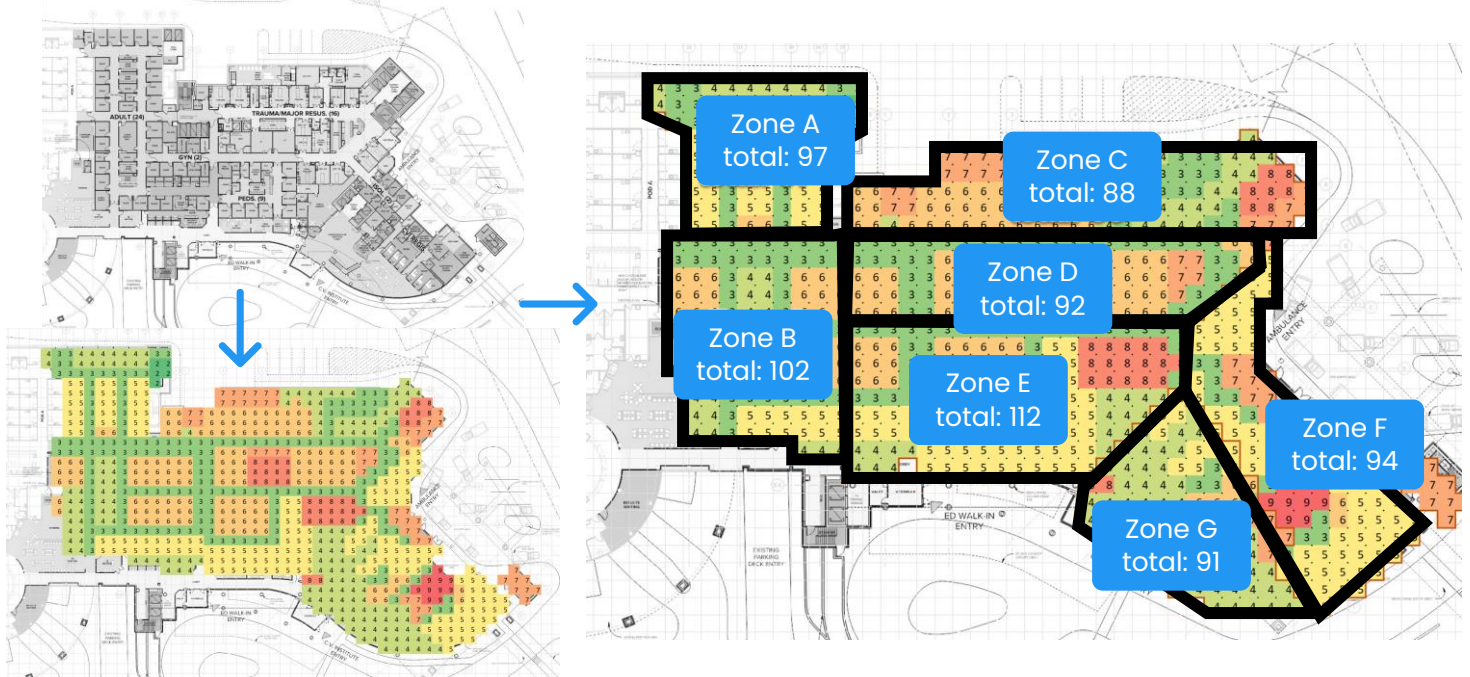


**Analyze and  
improve**



# 1 Analyze Plans and Work Density

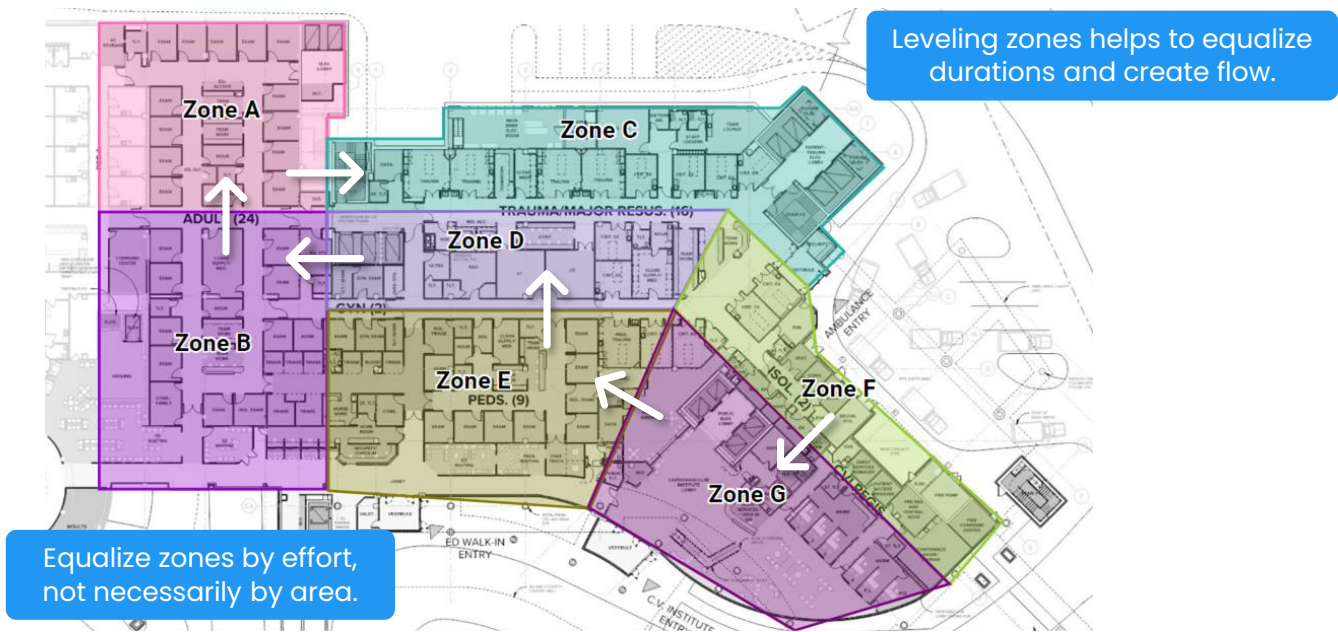
Start by thoroughly examining the contract documents to gain a deep understanding of the scope. This involves analyzing the work involved within each area of the project. Once you have this understanding, create a detailed heatmap that quantifies the effort (between 1-9) required for each section of the project. This heatmap, known as the Work Density Map, serves as a valuable tool to guide the process of creating equalized zones. Sum the numbers in each zone of the heat map to see how balanced they are and adjust accordingly. It is a good practice to find intuitive and natural dividing lines between zones.



## 2 Determine Zones and Sequence

Creating properly balanced zones is a crucial aspect of a takt plan. By carefully dividing the project into balanced zones, you can achieve more consistent and predictable durations. When balancing zones, it is important to focus on key trades to ensure a smooth flow through bottlenecks.

Additionally, it is crucial to pay careful attention to the sequence of zones. This ensures that critical access to deliveries, resources, and equipment is not hindered during the process of construction. The logistical sequence of zones is detrimental to the flow of the project.

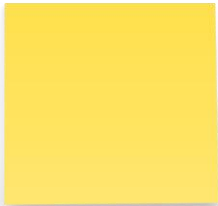


# 3

## Pull Plan the Subtasks



Select a representative zone and facilitate a collaborative pull planning session involving all trades. During this session, work collectively to list out all the detailed tasks, including their respective durations and crew sizes. Together, arrange these tasks into a logical sequence that garners consensus and agreement from all participants. The aim is to create a plan that everyone can buy into.





Next, identify a natural cadence within your subtasks to establish your takt period, which is your standardized task duration. Typically, a takt period of four or five days is common, although this can vary greatly, depending on the specific project needs.

Carefully package the detailed subtasks into tasks with durations equal to the takt period; ensuring a balanced workload for each task. This helps to establish a steady rhythm.

You can combine various work items within tasks, including concurrent, non-conflicting subtasks. Where possible, it is good to have one trade take ownership of each task. Though, trades often need to share task periods. Visualize the handoffs between trades and consider the flow of crews from one zone to the next.

It is advisable to incorporate reasonable buffers within less-predictable tasks to account for potential variations.

By establishing a consistent takt period, organizing tasks appropriately, and incorporating buffers, you will enhance the efficiency and flow of work within each zone.





1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Task A				Task B				Task C				Task D			
[Task A Progress Bar]				[Task B Progress Bar]				[Task C Progress Bar]				[Task D Progress Bar]			
[Sticky Note]	[Sticky Note]	[Sticky Note]	[Sticky Note]	[Sticky Note]	[Sticky Note]	[Sticky Note]	[Sticky Note]	[Sticky Note]	[Sticky Note]	[Sticky Note]	[Sticky Note]	[Sticky Note]	[Sticky Note]	[Sticky Note]	[Sticky Note]
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# Balancing Tasks

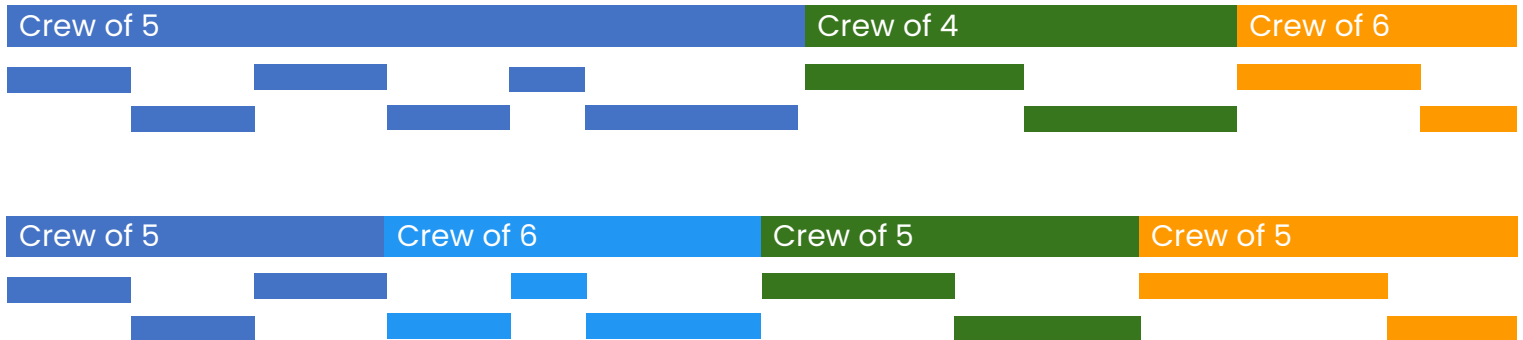


You can adjust scope and crew sizes to balance tasks.

To address bottlenecks, or slower operations within the system, you should break down larger tasks to fit within the takt time. Adjusting the scope included in each task, along with crew sizes, can help balance their durations.

In this example, the first task encompasses an excessive amount of scope, which necessitates splitting it into two separate tasks. This division allows for better balance and control. The subsequent tasks required slight adjustments in crew size to equalize their durations, ensuring a balanced workload across tasks.

By strategically dividing tasks and optimizing crew sizes, project teams can alleviate bottlenecks and maintain a consistent project flow.



# Packaged Subtasks

This is an example of how a task with subtasks and a “task buffer” is presented within inTakt.

### Add Default Subtasks


Day 1	Day 2	Day 3	Day 4	Day 5	Day 6
<b>MEP Fixture Install</b>					
Install lights and electrical fixtures			buffer		
		Mechanical ceiling drops			

+ -

### Mechanical ceiling drops

Subtask Name  
Mechanical ceiling drops

Parent  
MEP Fixture Install

Responsible  
 **Steve Moore**  
steve.moore@intakt.app

Coordinate with electrical crew working in the same zone. Electrical will have two days of head start.

Subtask Period ◀ 2 ▶

*i* Subtasks longer than 1 day will be split if they extend over weekends or holidays.

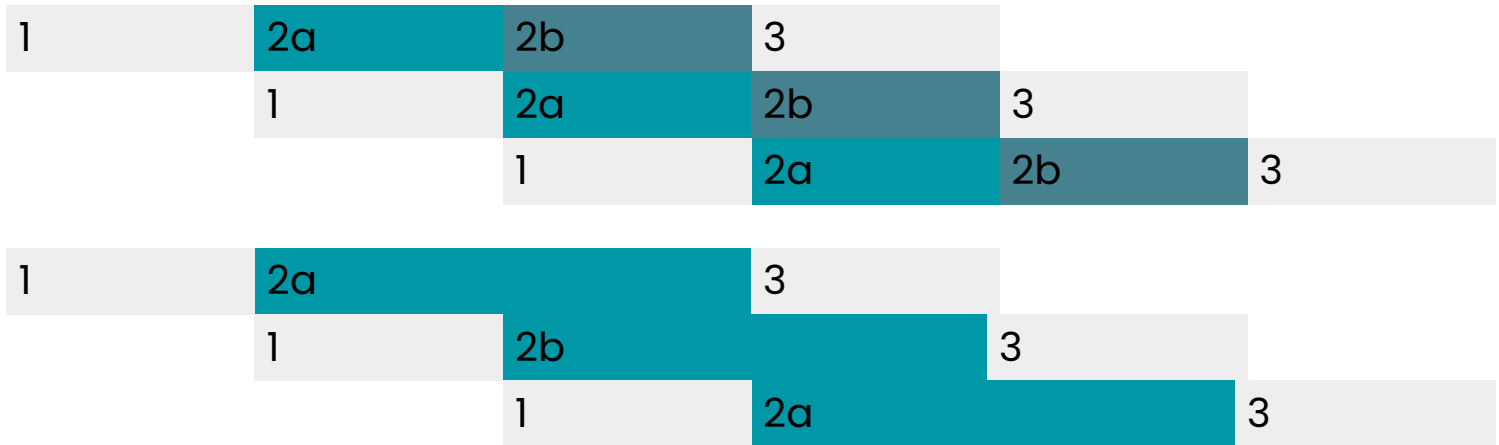
# Balancing Tasks



## Larger scopes can be accommodated in other ways

Trades with longer scopes can be broken down into multiple tasks, each assigned to separate crews and run sequentially. This approach ensures the integrity of the takt time rhythm. It also allows crews to specialize in part of the scope and benefit more from learning curve. Shorter tasks also allow progress issues to be noticeable earlier.

Another option is to utilize leapfrogging crews. With this method, each crew remains in the same zone until their entire scope is completed, over the span of multiple takt periods. Then they skip over the next zone where a second crew is already working. This method reduces the number of handoffs required. inTakt easily accommodates both methods.



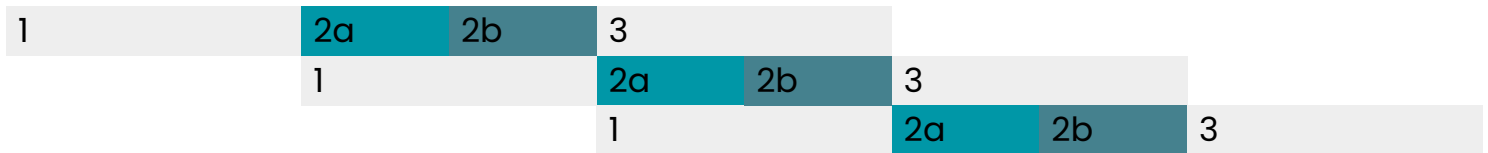
# Balancing Tasks



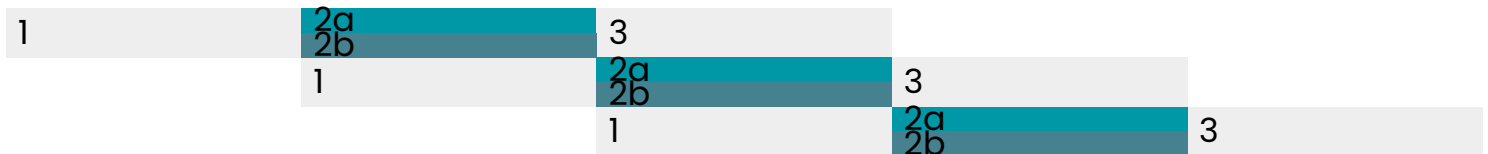
## Shorter scopes can combine

Trades with shorter scopes can share a takt period with another trade. These shorter trades can split the duration. Though, it is important to note that this approach may create gaps in work for these trades from zone to zone, which may need to be balanced using other methods.

Alternatively, trades with smaller, non-conflicting scopes can combine within a takt period and coordinate their work together within the same space.



OR



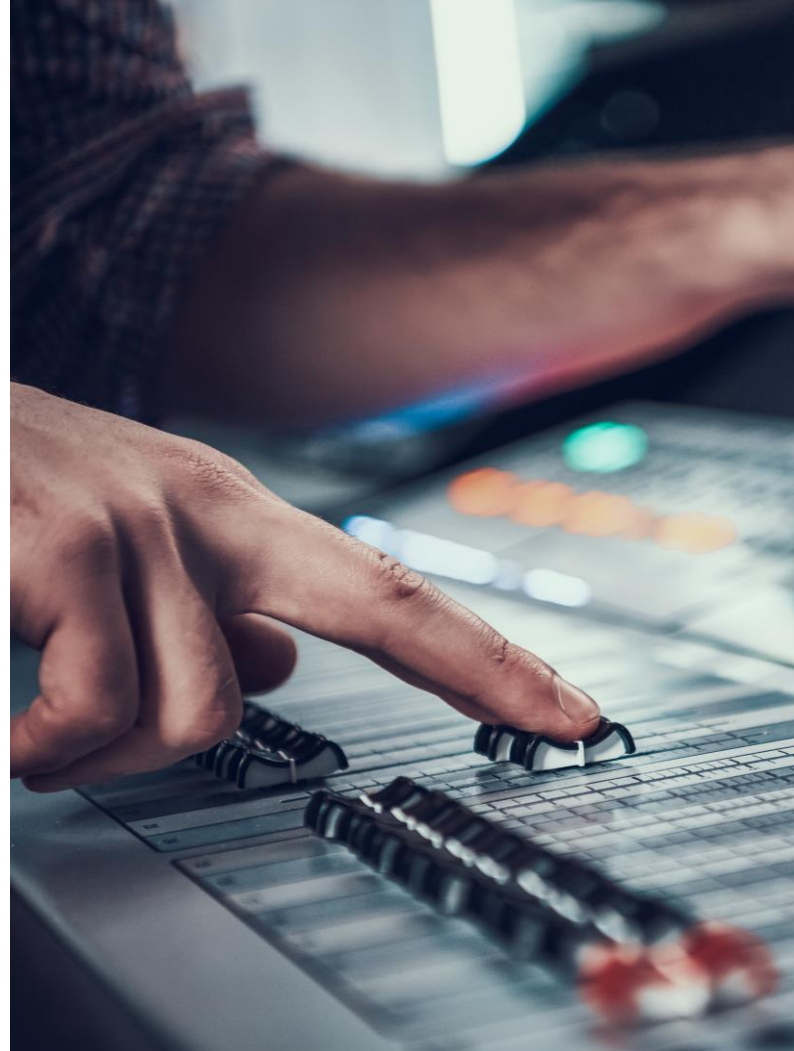
# 5

## Optimize the Plan

Once you have established your balanced zones, tasks, and takt time, it is important to take a step back and assess what you have created. Take note of the overall phase duration and the duration for each trade. Perform sanity checks to evaluate the plan. Does it align with the project requirements? Can it be further optimized?

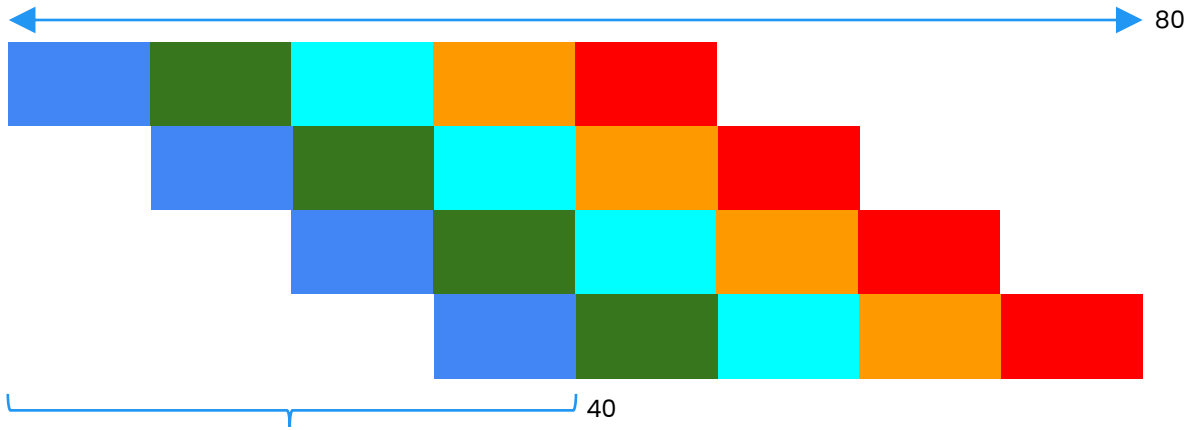
Explore various schedule options by adjusting the number of zones, takt time, and crew sizes. With tighter staggering (smaller zones), you can reduce your overall phase duration without compromising trade durations.

It's worth noting that these incremental adjustments may not produce linear outcomes, due to whole-day rounding.

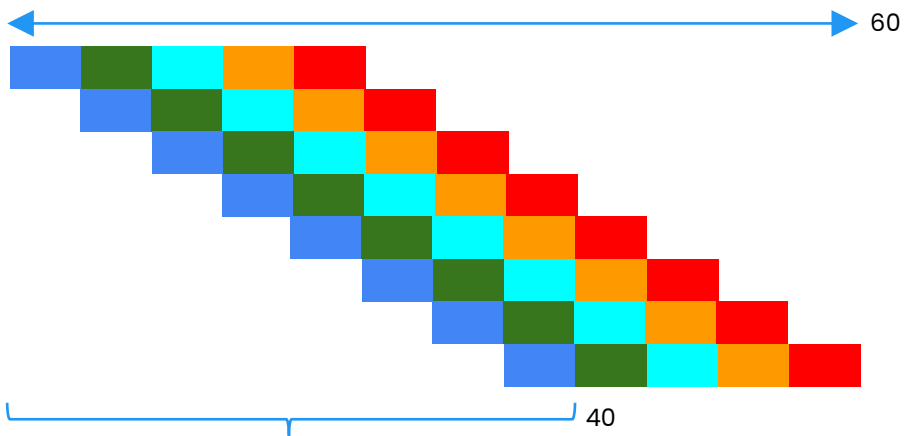




**4 ZONES**



**8 ZONES**





In the previous example, doubling the number of zones while cutting the takt time in half leads to the same trade duration (40 days), but with a 25% reduction in the overall phase duration (reduction from 80 to 60 days). This works because smaller work zones allow the trades to follow each other more closely.

However, it is important to note that there is a reasonable limit to how small zones can be. Creating too many zones can become unmanageable and restrictive. This situation is commonly referred to as "over-taking."

The optimization process may involve multiple iterations and require you to revisit previous steps of the takt-creation process. A delicate balance needs to be achieved to ensure the plan is both efficient and practical for implementation.



# Unique Tasks

Although takt planning aims to standardize tasks and zones, there are instances where unique tasks are necessary, especially for activities like inspections or unique features of work. Pictured is a unique (“one-off”) task that has been added to inTakt.

The screenshot displays the inTakt software interface. At the top, the header includes the inTakt logo, navigation icons, and user information. The main area shows a Gantt chart for a project from October 2023 to June 2024. The chart is organized into zones: Procurement, Phase One, Floor 2, and Stairs. A red task bar labeled 'Inspect...' is highlighted in the Gantt chart, spanning from April 22, 2024, to April 25, 2024. A sidebar on the right shows the details for the 'Inspection Prep' task, including its name, phase, zone, and start/end dates.

Zone	Task Name	Start Date	End Date
Zone 1	Install Floor...	April 22, 2024	April 23, 2024
Zone 2	Final Paint a...	April 23, 2024	April 24, 2024
Zone 3	Install Millw...	April 24, 2024	April 25, 2024
Zone 4	MEP Fixture...	April 25, 2024	April 26, 2024
Zone 5	Paint and Cel...	April 26, 2024	April 27, 2024
Zone 6	Insulation, Fi...	April 27, 2024	April 28, 2024
Zone 7	Frame Walls...	April 28, 2024	April 29, 2024
Zone 8	Frame Walls...	April 29, 2024	April 30, 2024
Stair A	Insulation, Fi...	April 30, 2024	May 1, 2024
Stair B	Paint and Cel...	May 1, 2024	May 2, 2024
	MEP Fixture...	May 2, 2024	May 3, 2024
	Install Millw...	May 3, 2024	May 4, 2024
	Final Paint a...	May 4, 2024	May 5, 2024
	Install Floor...	May 5, 2024	May 6, 2024
	Rough Clean...	May 6, 2024	May 7, 2024
	Corrections...	May 7, 2024	May 8, 2024
	Inspect...	April 22, 2024	April 25, 2024
	Corrections...	May 8, 2024	May 9, 2024
	Corrections...	May 9, 2024	May 10, 2024
	Corrections...	May 10, 2024	May 11, 2024
	Corrections...	May 11, 2024	May 12, 2024
	Corrections...	May 12, 2024	May 13, 2024
	Corrections...	May 13, 2024	May 14, 2024
	Corrections...	May 14, 2024	May 15, 2024
	Corrections...	May 15, 2024	May 16, 2024
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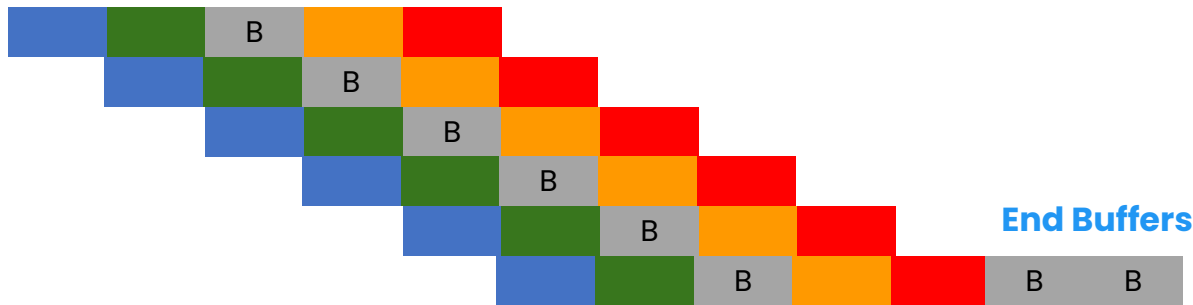
## 6

# Add Buffers – For risk and variation



To mitigate risks and account for the inherent variability in construction, it is crucial to incorporate buffers into your takt schedule. These buffers serve as pockets of contingency, absorbing impacts and safeguarding milestone dates while maintaining the rhythm and flow of your takt plan.

## Buffer Tasks



## Task Buffers



**Capacity Buffer**  
Excess Resources



**Backlog Work**  
To Utilize Excess

# There are various options for buffers, including:



**End Buffers:** These buffers are positioned after the final activity of a phase.

---

**Buffer Tasks:** By inserting buffer tasks within the task sequence, you can create a protective firebreak after riskier scopes of work.

---

**Task Buffers:** Adding reasonable buffers within your subtasks allows for some natural variations.

---

**Capacity Buffers:** Capacity buffers involve allocating additional resources, such as labor and equipment, beyond what is theoretically required. This surplus capacity acts as a safeguard.

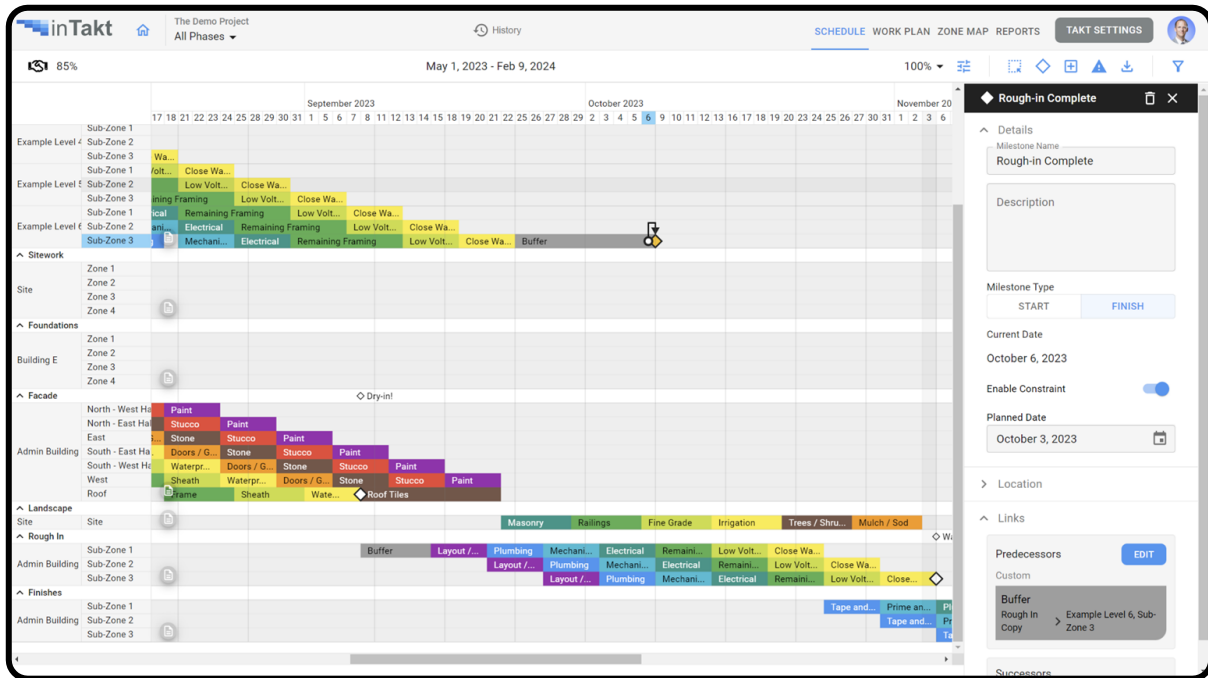
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**Backlog Work Areas:** Less critical areas can be designated as backlog work areas which can absorb excess capacity.

# Create Milestones

Milestones play a crucial role in providing context and highlighting key dates that hold significance for the project. This screenshot from inTakt shows a few key milestones.

Milestones serve as important markers, representing significant events, achievements, or project goals. They help project teams monitor critical deadlines and maintain alignment with project objectives.

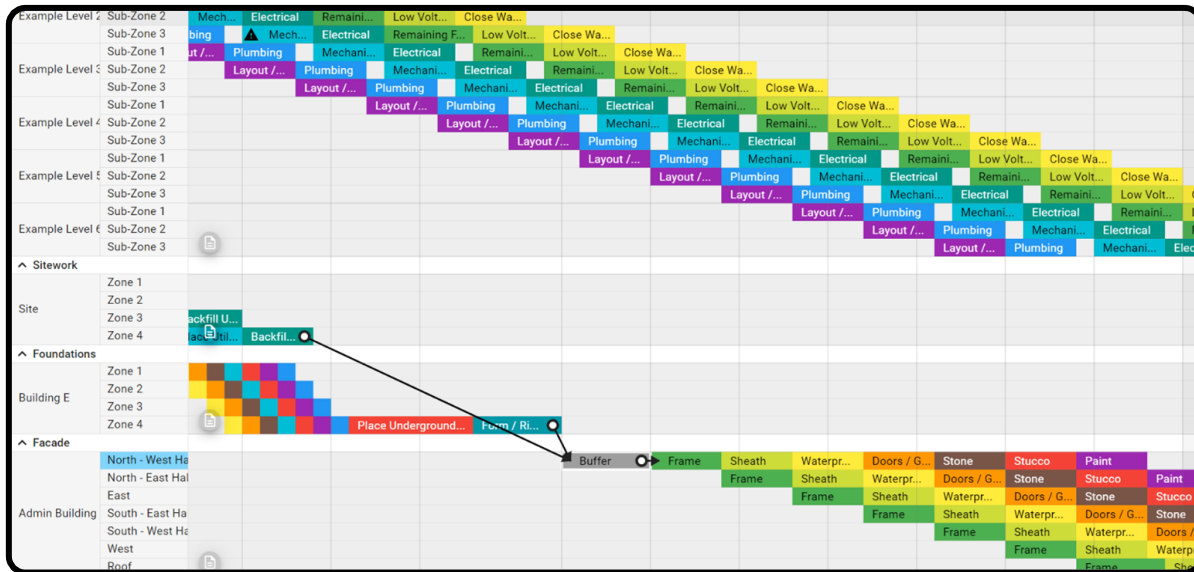


# 7 Tie to Other Phases

Different phases are established to accommodate distinct flows of work. These phases can encompass a range of unique sequences, such as sitework, structural work, exteriors, rough-ins, finishes, and more.

Each phase can feature a unique set of zones, takt periods, and tasks. Once each phase is built, it is crucial to establish logical connections with the other phases to create a cohesive project plan. This ensures a smooth transition from one phase to another.

In the provided example from inTakt, multiple phases are linked together, though individual logic ties.



# Analyze and Improve

At this stage, you have now developed a comprehensive takt plan. It is now time to conduct a final sanity check in collaboration with the entire team. This is the opportune moment to raise questions, challenge assumptions, and thoroughly evaluate the plan before it is finalized and published. Take the time to critically assess the plan from various perspectives.

During the team review, encourage open discussion and seek input from all stakeholders involved. This collective examination of the plan allows for the identification of any potential weaknesses, gaps, or areas that require further refinement.



# Takt Schedule Maintenance



Having successfully built your project's takt plan, it is now time to focus on its maintenance. Fortunately, maintaining a takt plan can be a streamlined process. However, it is important to consider how to handle various situations when work deviates from the original plan. In the remaining pages, we will cover the following topics:

Updating Schedule  
Status



Weekly Work Plan



Metrics and Reporting



Focus During  
Execution



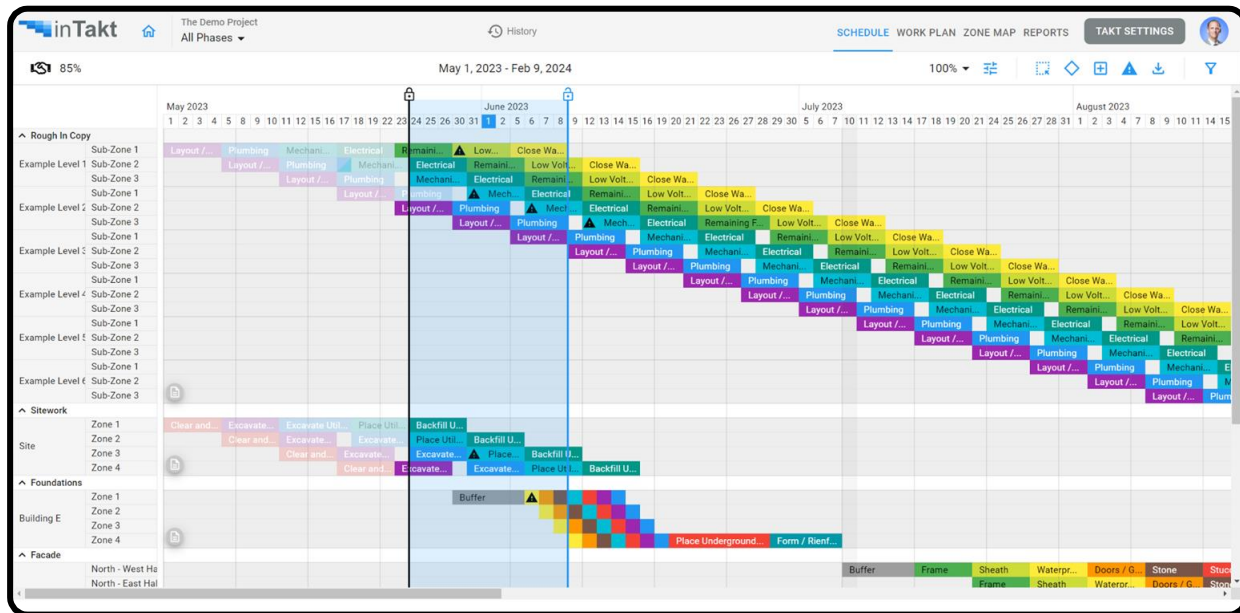
Managing Change



# Status Updates

Similar to other scheduling methods, it is crucial to track the progress of your takt plan to identify any deviations. Regular updates enable early detection of issues and facilitate timely corrections, if required.

In the provided example from inTakt, completed tasks are visually grayed out on the left side of the screen. The center section displays a blue area representing the current work period. Any delays occurring within this period will prompt for an associated delay reason, for reporting purposes.





# Focus During Work

## Identification and removal of roadblocks

Due to the standardized nature of takt schedules, the process of analyzing and maintaining them is relatively straightforward. Takt planning shifts the focus away from managing complex schedules and directs attention towards proactively identifying and eliminating future roadblocks well in advance.

In the provided example, roadblocks are highlighted with a hazard symbol on upcoming tasks, enabling clear visualization of upcoming issues that require resolution. In inTakt, these roadblocks are directly linked to a roadblocks log, allowing for comprehensive tracking and management of issues.

No.	Resolved	Title	Description	Tasks	Responsible	Created On	Finish
1	<input checked="" type="checkbox"/>	Utility Contract	Need a contract before we can start	Excavate Utilities Sitework > Site, Zone 1	Steve Moore steve.moore@intakt.app	Dec 2, 2022	May 9, 2023
2	<input type="checkbox"/>	Wire delay		Low Voltage Rough in Copy > Example Level 1, Sub-Zone 1	Jordan Christensen jordan.christensen@intakt.app	Dec 2, 2022	May 26, 2023
3	<input type="checkbox"/>	RFI 199	Level 2 Duct location	Mechanical Rough in Copy > Example Level 2, Sub-Zone 1	Steve Moore steve.moore@intakt.app	Dec 2, 2022	May 25, 2023
4	<input type="checkbox"/>	RFI 178	Fire Hydrant distance off curb	Place Utilities Sitework > Site, Zone 3	Steve Moore steve.moore@intakt.app	Dec 2, 2022	May 26, 2023
5	<input type="checkbox"/>	Foundations Contract		Excavate Foundations > Building E, Zone 1	Jordan Christensen jordan.christensen@intakt.app	Dec 2, 2022	Jun 1, 2023

Floor Prep, L...	Fire Sprinkler...	Overhead M...	Install Overh...	Frame Walls...	Frame Walls...	Insulation, Fi...	Paint and cei...	MEP Fixture...	Install Millw...
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		Floor Prep, L...	Fire Sprinkler...	Overhead M...	▲ Install O...	Frame Walls...	Frame Walls...	Insulation, Fi...	Paint and cei...
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								Floor Prep, L...	Fire Sprinkler...
									Overhead M...

# Weekly Work Plan



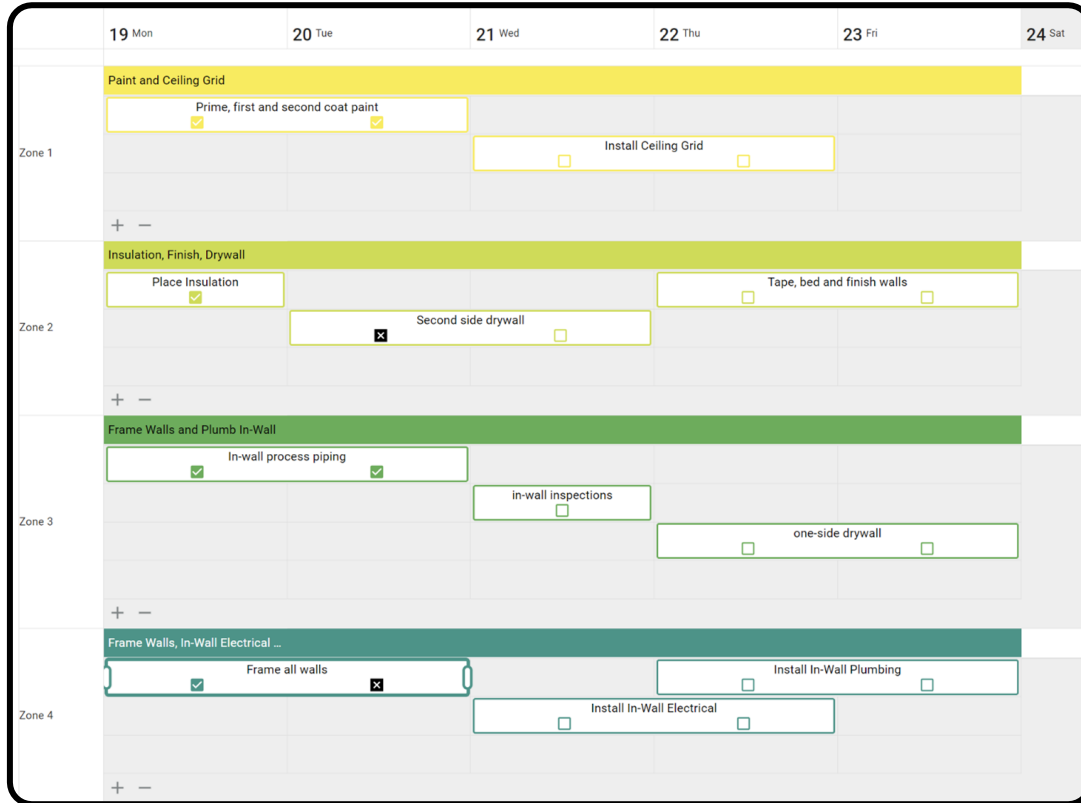
Implement short-interval planning techniques to effectively manage subtasks. Utilizing tools like inTakt (depicted in the following image), you can streamline the process by automatically populating your weekly work plan with the standard subtasks established during the initial pull planning session.

Once created, these standard subtasks will pre-populate under each task in the schedule, eliminating the need for repetitive data entry. These subtasks can later be individually added, modified, or deleted, as necessary, on a regular basis.

With inTakt, the process of managing subtasks becomes remarkably user-friendly, particularly for crew leads. They can easily drag and drop tasks, assign them to team members, and update the status by simply tapping checkboxes each day from any device.

This user-friendly interface simplifies the daily management of tasks, empowering superintendents and foremen to efficiently plan and track detailed progress.

# Weekly Work Plan



# Managing Change



Despite our best efforts, delays and unexpected events will still occur. Takt planning offers various strategies for addressing such delays.

It is essential to analyze tasks that frequently experience challenges in meeting their deadlines and identify any bottlenecks to these operations. You should always explore options to increase the capacity of these bottlenecks.

When necessary, you can overlap with or delay subsequent tasks to accommodate late work.

In situations where an unresolved issue hinders the completion of a specific zone, you can proceed to the next zone while creating a small exclusion area to return to once the issue has been resolved.

Adjusting logic ties between phases can sometimes absorb impacts. However, it is important to preserve reasonable separation between phases and not make a habit of this practice.

You can recover a badly-impacted takt schedule by breaking down your zones further, allowing trades to stagger their work more closely. This, of course, has its limitations. On some occasions it may be necessary to re-sequence remaining work.

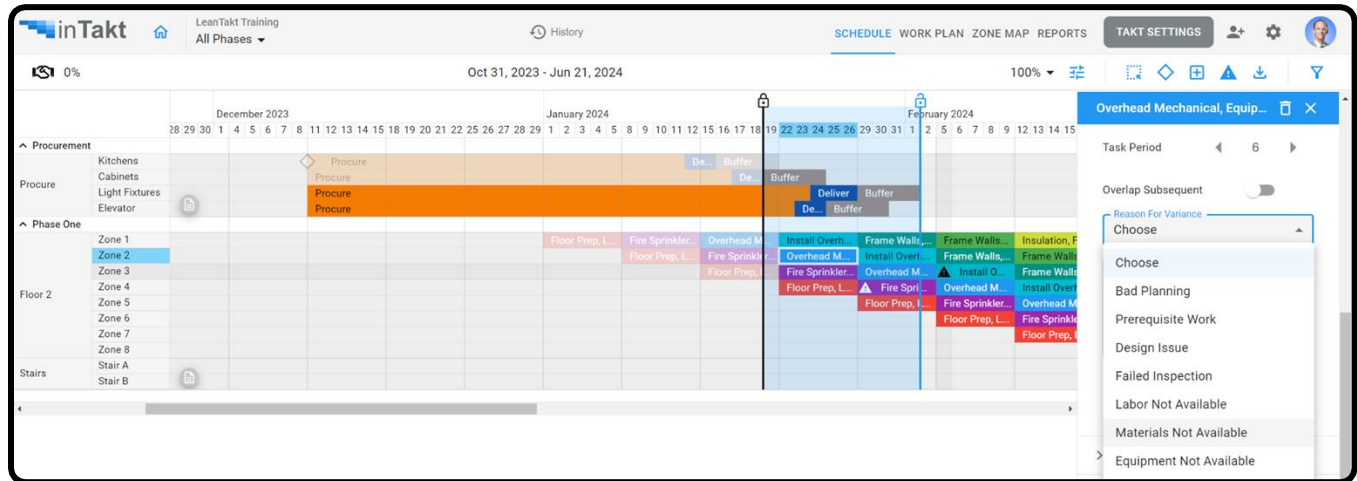
If necessary, project buffers can be drawn down to absorb impacts. These buffers serve as a safeguard to mitigate the effects of unforeseen delays or disruptions. Though, buffers, like money, can only be spent once.



# Managing Change

In this scenario, we observe an Overhead Mechanical task that has exceeded its takt duration. The user is presented with two options: either push the subsequent tasks to accommodate the delay or overlap them.

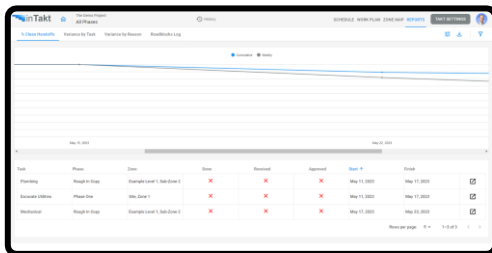
Overlapping means allowing the next trade to commence work in the same zone while the previous trade wraps up their activities. Although this approach is not ideal, it can help prevent rippling delays and the utilization of project buffers. It is important to note that in either case, the trade experiencing the delay must provide a reason for the delay, which will be documented in the reports to facilitate continuous improvement efforts.



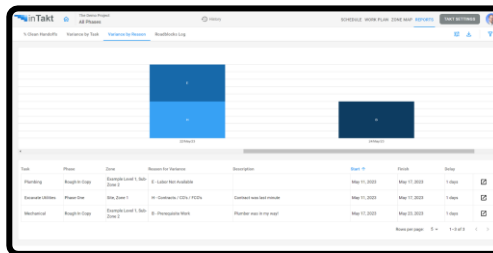
# Metrics and Reporting

Metrics play a vital role in identifying issues and recognizing trends. They provide visibility into challenges, enabling effective problem-solving. Takt plans themselves act as a powerful dashboard, encapsulating the entire project history in a single-page view. However, there are additional metrics that can be utilized:

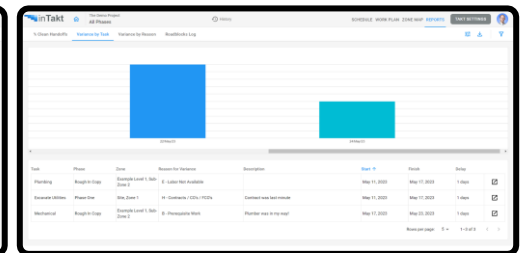
- **Clean Handoffs:** This metric tracks the percentage of times a trade successfully hands over their zone to the next trade on-time and with a clean transition. It provides insights into the efficiency and effectiveness of coordination between trades.
- **Variance Reasons:** This metric, familiar to Lean construction professionals, highlights the leading reasons behind task delays. It helps identify the root causes of variations, enabling targeted improvements and proactive mitigation strategies.
- **Task Variance:** Unique to takt planning, this metric leverages the standardized and repetitive nature of tasks in the schedule. It assists in identifying which tasks and trades face challenges in keeping up with the planned takt time on a regular basis.



Clean hand-offs



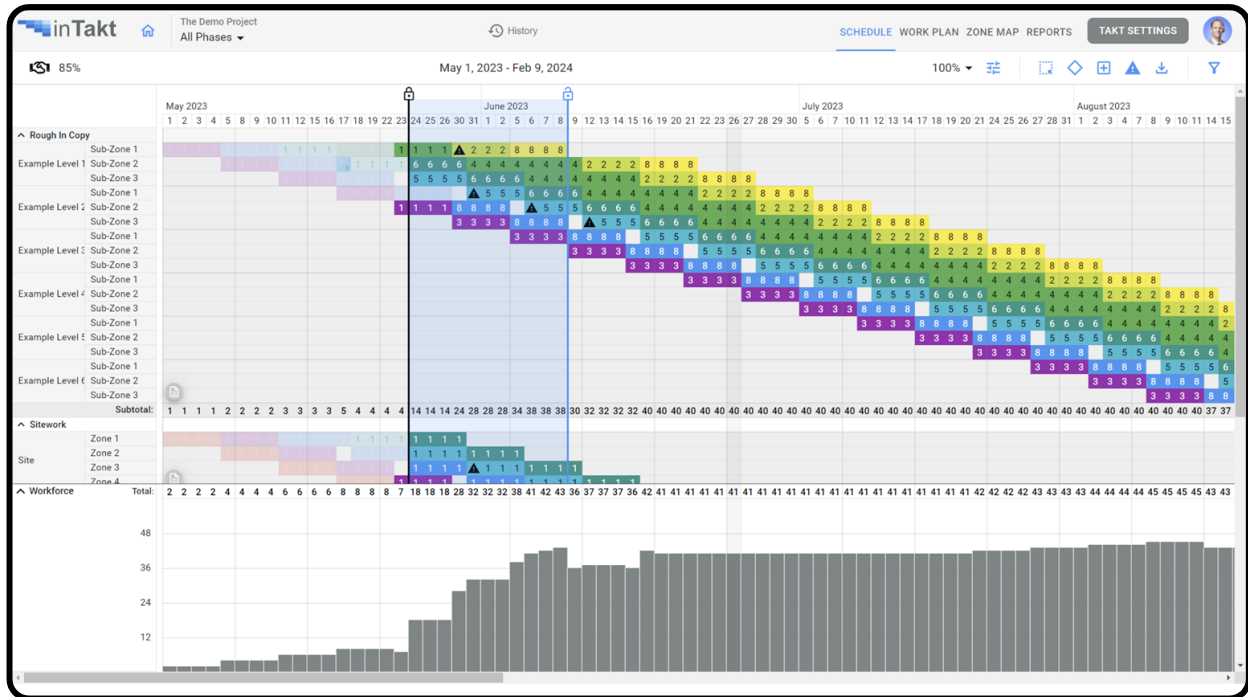
Variance Reasons



Task Variance

# Workforce Leveling

Similar to CPM schedules, takt plans can be resource-loaded and enable workforce analysis. Though, due to the great care taken to balance tasks and zones, takt plan histograms are predictably flat and ideal.





# Takt Planning



In summary, takt planning transforms what could be a chaotic mix of tasks, durations, and relationships into a structured and controlled process with a steady rhythm.

By establishing a clean flow between tasks and zones, takt planning ensures continuity for trades, enabling them to work efficiently at a sustainable pace.

Moreover, takt planning provides consistency and clarity, making the schedule easily understandable for everyone involved. Takt plans are typically concise and fit on a single page, allowing for a holistic view of the project. Any issues or anomalies can be quickly identified and addressed, promoting timely resolution and effective decision-making.



## Rhythm

Takt planning creates rhythm by breaking work into equalized batches.



## Continuity

It creates uninterrupted trade flow through balanced work areas.



## Consistency

It makes the plan easier to understand and brings issues to the surface.

# Meeting Project Requirements



Many project owners have specific scheduling requirements outlined in their specifications, which typically call for CPM scheduling.

However, there is no need to worry. If your project requires a CPM schedule in a traditional format for reporting purposes, inTakt can generate an XML file that can be imported into most major scheduling software. This export functionality allows you to comply with the specified requirements while benefiting from the advantages of takt planning within inTakt.

Furthermore, inTakt's CPM export functionality can lead to outstanding scores if the project undergoes automated CPM schedule quality checks. With low durations and a perfectly balanced network of finish-start relationships, takt schedules will rank high in CPM quality metrics. When overlaps occur, inTakt even handles the closure of "danglers" using both start-to-start (SS) and finish-to-finish (FF) logic.

# Meeting Project Requirements



The background image shows a Gantt chart with various task bars in different colors (purple, blue, green, yellow, red) and labels such as 'Mechani...', 'Electrical', 'Remaining Framing', 'Low Volt...', 'Close Wa...', 'Plumbing', 'Layout /...', 'Excavate...', 'Place Util...', 'Backfill U...', 'Buffer', 'Place Underground...', and 'Form / Rief...'. A white dialog box is centered over the chart.

### Export Takt Schedule

Select export type

- Export to Excel
- Export to Primavera P6

**CANCEL** **EXPORT**

# More Takt Benefits to Consider



At the conclusion of this basic guide, I am filled with a strong sense of passion for the transformative impact that takt planning is already having on our industry.

It is truly exciting to witness the evolving landscape as takt planning approaches a tipping point in adoption and industry recognition. The potential benefits it brings to our teams and projects are immense.

With takt planning gaining momentum, we can anticipate a paradigm shift in how construction projects are planned and executed.

The principles of takt planning, rooted in manufacturing methodologies, are revolutionizing the way we approach scheduling and workflow management.

The emphasis on standardization, predictable rhythms, and proactive problem-solving is reshaping the industry and paving the way for increased efficiency, improved productivity, and enhanced project outcomes.

Together, let us embrace the power of takt planning and unlock a new era of scheduling in construction.

# More Takt Benefits to Consider



Predictable project outcomes  
with greater schedule certainty



Cost and Schedule  
savings that ultimately  
benefit everyone



Less stressful working  
conditions with  
reasonable expectations



Fewer wasted resources  
and less firefighting



Better work/life balance  
achievable for all involved



# Acknowledgements



This guide is a product of my personal beliefs, reflecting the core principles of takt planning that I have internalized and wholeheartedly embrace. My understanding of takt planning has been shaped by a variety of sources, including trainings, books, papers, videos, and insights shared by colleagues and notable experts in the field.

I would like to specifically acknowledge the valuable contributions and influence of the following experts who have significantly increased my understanding of takt planning:

- Jordan Christensen (my partner at inTakt)
- Jason Schroeder
- Spencer Easton
- Adam Hoots
- Eliyahu M. Goldratt
- Adam Frandson

While these experts may not necessarily endorse every thought expressed in this guide, their expertise and knowledge have played a pivotal role in shaping my belief in the foundational principles of takt planning. It is upon these principles that inTakt has been developed, with the goal of driving transformative change in the industry.

# About the Author



## Steve Moore

### Founder of inTakt

PMP, PSP, PMI-SP, LEED AP, GCMP, GPSP

Steve is a dedicated professional who possesses a deep passion for scheduling and innovation within the construction industry. His extensive experience includes leading scheduling efforts on many billions of dollars of projects across various sectors.

Recognized for his expertise, Steve holds multiple credentials in project planning and has presented at countless conferences, including international engagements. His contributions have also been featured many times in reputable industry publications.

In addition to his project work, Steve has provided consulting services to multiple construction software companies, leveraging his expertise to enhance their products and workflows. He has also made notable contributions to the industry through the invention of many physical construction products, digital hardware, and software now widely used on construction projects.

Steve continues to drive advancements and seek opportunities to make a profound impact on the construction field. His dedication to pushing the boundaries of scheduling and technology underscores his commitment to transforming the industry for the better.



**inTakt**

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