Cleveland Clinic

OLED ᔆᴹ

Owner-Led Project Delivery

Guide & Playbook

Edition #2
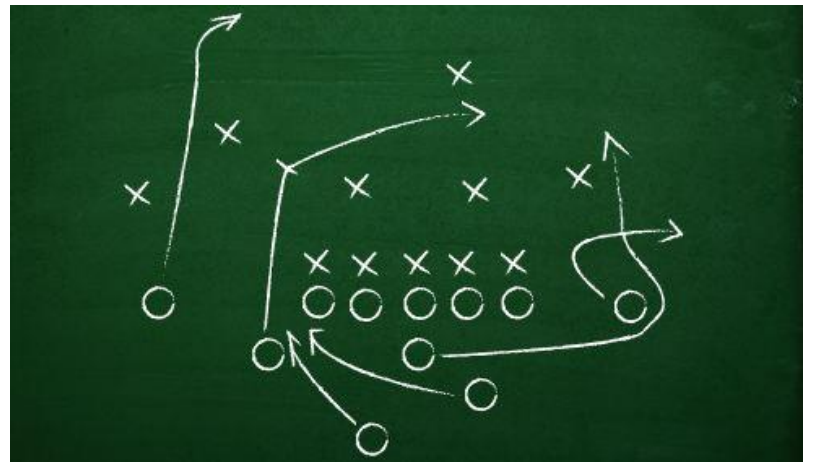
October 2023

The reader may see references to OCTPD^{SM} and Owner Controlled Team Project Delivery. These were the previous acronym and name for what is now OLED^{SM} and Owner-Led Project Delivery.

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PREFACE
OLED^{SM} GUIDE AND PLAYBOOK

The following information represents Cleveland Clinic's Buildings + Design Owner Led Project Delivery's (OLED^{SM}) Guide and Playbook. More specifically, the OLED^{SM} Guide and Playbook is designed to answer the following two (2) questions:

- What is OLED^{SM}?...and
- How do you do it?

The Guide and Playbook is divided into 8 chapters, with one supporting piece of reference material, providing descriptive language on what is OLED^{SM}. Also included are thirty-three (33) example "plays" authored by Buildings + Design Owner's Reps and project team members in a customized A3 format, which describe how to implement OLED^{SM}. For ease in locating and accessing the "plays", they are listed below with their corresponding page number.

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It is critical to understand that this OLED^{SM} Guide and Playbook is not an all-encompassing project manual on how to implement a Cleveland Clinic healthcare construction project. Therefore, there is not a section on topics such as Interim Life Safety, Infection Control, monthly reports, submittal logs, or interaction with Purchasing / Supply chain. Rather, as the name of OLED^{SM} suggests, this Guide and Playbook focuses on what makes OLED^{SM} special - teams, developing teamwork and long-term relationships, special organizational structures, and communication methodologies which together creates the unique culture of each project under the OLED^{SM} umbrella.

Lastly, the OLED^{SM} Guide and Playbook is purposefully designed to be illustrative in explaining what OLED^{SM} is and how to do it. It is the authors' intent to be descriptive and not completely prescriptive in explaining OLED^{SM} (like providing a cookbook with recipes). The reason for this is that while the authors want to create some greater understanding across all project team members about OLED^{SM}, it is their firm belief that there is not one way, and one way only, to implement OLED^{SM}. We know this to be the case because OLED^{SM} has been used in a number of forms by different CCF Owner's Reps to deliver successful results on projects totaling over $2.5 Billion.

CHAPTER 1

Defining OLED^{SM}

1A.   DEFINITION OF OLED^{SM}

1B.   WHAT IS OLED^{SM}?

1.A

DEFINITION OF OLED^{SM}

DEFINITION OF
OWNER LED PROJECT DELIVERY (OLED^{SM})

Owner Led Project Delivery (OLED^{SM}) is a practice model for creating a culture where people in different roles relate to each other so that they put the collective purpose of the construction project first. A practice model entails an overarching set of ideas and values that guides team practices, or specific actions, in specific situations. The practice model for healthcare delivery at the Cleveland Clinic arranges the relationships among roles so that the patient is put first. In parallel, the OLED^{SM} practice model provides Cleveland Clinic's Planning, Design, and Construction Teams the management approach required to achieve successful project outcomes in support of the Cleveland Clinic's mission.

"Owner Led" does not connote authoritarian leadership, it's instead meant to emphasize the owner's ultimate responsibility for project success, through ensuring team development and leadership provided. For the terms **OWNER LED and TEAM,** which lie at the core of the OLED^{SM} practice model that we are advancing, does not exist **in practice** in the current design and construction industry. Quite the opposite is true. The industry is driven, neither by owners who lead nor by teams working in close unison with understood purpose statements, measurable goals, and interests. The industry is driven by the self-interests of the firms which offer design and construction services to owners and by the industry's severely fragmented structure which much of the literature indicates causes it to operate in a highly dysfunctional manner.

OLED^{SM} changes the way we think about and manage the design and construction of projects. OLED^{SM} <u>offers a logical foundation and provides the business processes and technology tools</u> **to bend the cost curve** of an industry that has been unable to break away from its costly practices.   OLED^{SM} shifts conventional thinking in the design and construction industry to a new "mindset." A mindset that places the interests of the **Owners first** and supports by action the concept of highly skilled and carefully selected teams brought together to **"work as a unit."** This is the way Cleveland Clinic functions as a world class leader in the delivery of healthcare by "acting as a unit" in clinical settings.

Under OLED^{SM} all selected team members will work in a transparent and collaborative team fashion to deliver the optimum project which is exceptional in terms of safety, quality, value, efficiency, and user satisfaction.

OLED^{SM} is not dictatorial. It relies on the selection of the best professionals the industry has to offer and blends them into a high-performance team. In fact, as will be discussed throughout this Guide and Playbook, teams are established at every level among participating organizations to maximize participation and to leverage team skill sets.

1.B

WHAT IS OLED^{SM}?

WHAT IS
OWNER LED PROJECT DELIVERY (OLED^{SM})?

OLED^{SM} is a practice model that assists Cleveland Clinic's Buildings + Design Owner's Reps in the development of a construction project culture that encourages continuous improvement in the development of individual team members, teams, and the overall "Team of Teams". Some of the concepts, processes, and tools ("big ideas") that have been used to date in the continuous improvement of OLED^{SM} include:

- Direct and continuous involvement from the Owner
- Purpose statement development, along with project specific measurable goals (safety, budget, schedule, quality, diversity / participation, sustainability)
- Transparency
- Open communication, including early identification and action on project issues as they arise
- Elimination of silos, in part by the use of "big rooms" and co-location of all project team members
- Lean concepts and practices
- Team organizational structures
- Team building and relationship building structures
- The benefits of "repeat" team members to the OLED^{SM} project team
- The organizational constructs of Relational Coordination (RC) and Appreciative Inquiry (AI).

While it's important to articulate what OLED^{SM} is, it is also important to articulate what it is not:

- OLED^{SM} as a practice model **is not** a specific process, but process thinking is important to the success of OLED^{SM}
- OLED^{SM} as a practice model **is not** a specific tool, but productivity tools are important to the success of OLED^{SM}

- OLED^{SM} **is not** Lean, but the Lean ideas, related processes, and tools are important to the success of OLED^{SM}

These defined and yet-to-be defined concepts, processes, and tools assist and outline the management direction, team environment, and project culture required within OLED^{SM} to establish "Teams of Teams" that "Work as a Unit" to achieve successful project outcomes in support of the Cleveland Clinic's institutional interests.

CHAPTER 2

Why OLED^{SM}?

2A.   IMPORTANCE OF OWNER LEADERSHIP

2B.   IMPORTANCE OF TEAM RELATIONSHIPS

2C.   RELATIONAL COORDINATION "PLAY"

2D.   TRANSPARENCY "PLAY"

2.A

IMPORTANCE OF OWNER LEADERSHP

IMPORTANCE OF OWNER LEADERSHIP

Over the last several decades of the construction industry, multiple disciplines including architects, engineers, general contractors, construction managers, specialty consultants, trade contractors, etc. have each attempted to successfully manage the construction process on a given project. Each of the disciplines involved have their own specific goals and outcomes that they desire to achieve, and typically do not make any effort to align their goals and outcomes with the other participants required to complete the construction process. As a result of all or the majority of the disciplines putting their concerns and interests first, the construction industry's historical record for successful performance in maintaining budget[1] and schedule[1] on a percentage basis is only 28% and 30% respectively. In addition, this management approach creates excessive construction waste in three areas namely: material waste[1] at 30%, rework[1] at 10%, and construction labor inefficiency[1] anywhere from 30% to 70%. Based on these statistics, it is evident that a new approach to managing construction projects that will provide avenues to reduce risk is required. Therefore, with Cleveland Clinic starting $1 Billion worth of projects in 2004, the birth of Owner Led Project Delivery (OLED[SM]) occurred.

The Owner Led Project Delivery practice model for managing construction projects provides an approach that eliminates the historical "silo" effect (one's protection of only their own interests and goals) and places the control of the project with the Owner. This is appropriate because, ultimately on any given project, it is the Owner who has the power to maintain order, who ultimately shoulders the risk, and who pays all the bills.

In order to control a project, the Owner must remain constantly active in the project from conception through completion. It is the Owner who establishes the "TEAM" approach with all of the disciplines involved on the project. He orchestrates the Team's efforts in developing the projects' purpose statement and measurable goals, coordinates/attends and leads the various team meetings, ensures all parties tear down their communication silo's and maintain an open and honest / accurate line of communication.

[1.] The Commercial Real Estate Revolution

2.B

IMPORTANCE OF TEAM RELATIONSHIPS

IMPORTANCE OF TEAM RELATIONSHIPS

The word "Team" can be defined as a small number of people with complementary skills who are committed to a common purpose, set of performance goals, and approach for which they hold themselves mutually accountable[1]. A key step in the formation of a "Team" is the development of mutual respect and trust between all of the members. Mutual respect and trust mean more than you liking me and me liking you; it means I trust and respect you will do your job, so that we are all successful[2]. "Respect" for people means recognizing the worth of those involved in terms of team members' minds and capabilities for your team members mind and capability[2].

Making TEAM / TEAMWORK the foundation of a Project opens the door for all Team members to think gain not blame[3], identify problems early on, collectively strategize timely and effective solutions[3], and give their hearts and souls to make the project successful[2].

In order to improve the construction industry's poor history of completing projects on time and within budget, it is important that all of the disciplines involved in a project, including the Owner, establish a common purpose statement and defined goals required to achieve the same. This process begins the relationships necessary to establish a team that will be willing to be transparent, communicate, cooperate, and collaborate openly with each other and share their ideas and concerns. This aspect of a TEAM is what is truly important and beneficial to a project, everyone "rowing the boat in the same direction" and willing to "put the monkey on the table."

One of the distinguishing features of OLED[SM], if not the most distinguishing when comparing to other project delivery models, is its focus on <u>team member roles and relationships</u>. OLED[SM] has identified the following 6 strategic roles within Cleveland Clinic's Buildings + Design construction projects:

- Owner (C Clin)
- Architect (Archi)
- Engineer (Engin)
- CM (CMngr)
- Trade Contractor (TradeC)
- Consultants (Cnslt)

1. Discipline of Teams (HBR Article)
2. Toyota Way
3. No Surprise Design (The Construction Lawyer)

Focusing on these roles over the last 5 years, and in collaboration with the Department of Organizational Behavior of the Weatherhead School of Management / Case Western Reserve University (CWRU), a series of academically rigorous measurement techniques have been employed to actually measure the real time health of the relationships between roles during the project. CWRU's Professor John Paul Stephens actually embedded into the project big rooms at both HEC and Taussig Cancer Center for months. He gathered hundreds of hours on-site observing team member behavior and relationships, and conducted individual surveys (by project role) which generated the following relationship scoring diagram below:

	Within Workgroups	Between Workgroups
Weak	<4.1	<3.5
Moderate	4.1-4.6	3.5-4.0
Strong	>4.6	>4.0
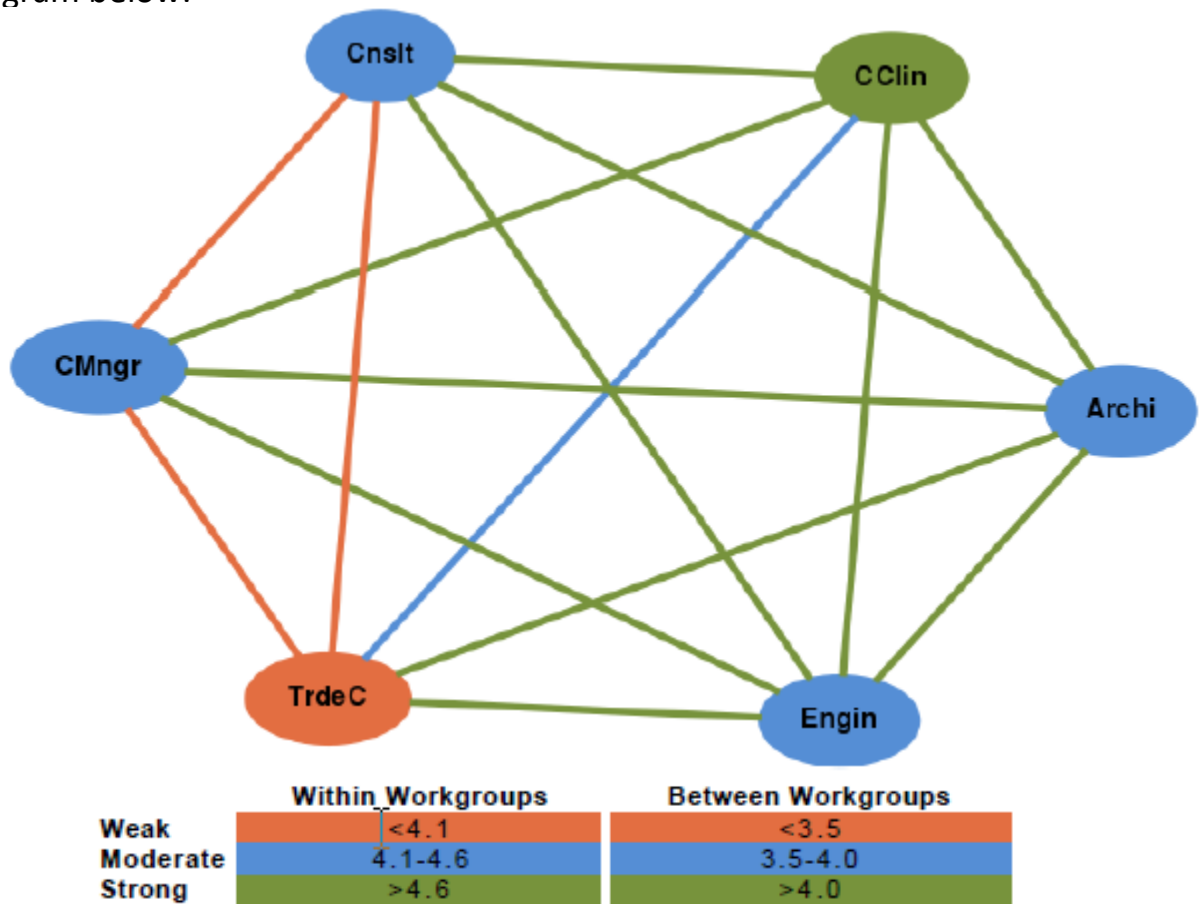
This tool represents an integral component of the future of OLED^{SM}. OLED^{SM} analysis of team member's roles and relationship status during the planning, design and construction of the project is factually and academically based, while all other delivery practices in the industry are anecdotal and not defendable! The above example from the Taussig Cancer Center project comes from Cleveland Clinic / CWRU's application of the concept of Relational Coordination. Note some strong relationship ties, and other relationships between roles that need focus and improvement.

To briefly further explain Relational Coordination (RC), it is a mutually reinforcing process of communicating and relating for the purpose of task integration measured between workgroups and/or individuals. The seven dimensions of the Relational Coordination measure are:

- Frequent Communication
- Timely Communication
- Problem-Solving Communication
- Shared Goals
- Shared Knowledge
- Mutual Respect

Each dimension is measured on a five-point scale. Relational coordination is an equally weighted average of all seven dimensions.

	Within Workgroups	Between Workgroups
Weak	<4.1	<3.5
Moderate	4.1-4.6	3.5-4.0
Strong	>4.6	>4.0

Relational Coordination is being used as a research tool and academic proof of OLED's success, as well as a diagnostic tool by the Cleveland Clinic and CWRU team. It enables organizations to create the desired project culture and better achieve their desired outcomes, including efficiency, quality, customer satisfaction and employee well-being. Note some strong relationship ties, and other relationships between roles that need focus and improvement. For a summary of the theory and evidence, visit the Relational Coordination Analytics website (rcrc.brandeis.edu), but for an extremely comprehensive summary of the Cleveland Clinic / CWRU collaboration, the OLED[SM] Research Initiative Summary: CWRU Contribution and Impact Memo, is a must read. <u>Due to its significance, this Research Initiative Summary Memo is included in the Reference Material after Chapter 8</u>. An overview of the memo is presented below.

CWRU OLED[SM] RESEARCH SUMMARY MEMO OUTLINE
Part 1. CWRU Research Team Strengths and Broad Framework for the Study
Highlights the strengths our CWRU research partners have brought to the table. Briefly defines and explains High Performance Teams operating within Multi-Team Systems environment, Relational Coordination, and Appreciative Inquiry. These three major components underpin the thinking critical to our efforts to continually improve Cleveland Clinic's OLED[SM] practice model for planning, design, and construction.

Part 2. **CWRU Research Question Presented**

Question: What are the _relational mechanisms_ that explain how OLED^{SM} works, and do they predict savings in time and money?

Part 3. **CWRU Research Design and Resulting Developments**

Discusses the CWRU research design within the context of the overall OLED^{SM} practice model research program, including comments on what CWRU developed.

Part 4. **Preliminary Findings**

Identifies CWRU research team's preliminary findings across the Cancer Building and HEC project sites.

Part 5. **Initial Response to the OLED^{SM} Research Study Central Question**

How can Cleveland Clinic reduce costs on planning, design, and construction projects, while at the same time meet the organization's quality objectives, and reduce the risks inherent in the planning, design, and construction process?

Part 6. **Practical Applications of CWRU Research Findings To-Date**

Discusses a preliminary list of "to do's" recommended by the CWRU research team based on their research experiences on the Cancer and HEC projects that can be applied to the improvement of the OLED^{SM} practice model for planning, design, and construction.

As a final team roles and relationship measurement tool, OLED^{SM} employs a monthly or bi-monthly, eight question team survey which has been internally and organically developed by Buildings + Design over the last 15 years. Chapter 4.B4 provides details on this specific OLED^{SM} team measurable approach.

A foundational component of a team's internal relationships is its adherence to a culture of transparency which OLED^{SM} unconditionally embraces. In the next section of this Chapter, Section 2.C, the Lakewood Family Health and ED project developed a "Play" explaining what efforts they made to increase the transparency of all key aspects of their project.

2.C

RELATIONAL COORDINATION "PLAY"

Play: <u>Diagnosing Teamwork through Relational Coordination</u>

<u>Cleveland Clinic Project: Taussig, Samson Pavilion, Neurological Institute, Cole Eye, Innovation District</u>

Date: October 2016-September 2023

![Cleveland Clinic logo]

SECTION – CURRENT STATE

- For OCTPD^{SM} to foster a culture of teamwork across projects, it is important to adequately assess the current quality of that teamwork. While assessment tools established within the construction industry exist, it is important to use validated measures of team quality that have undergone scientific peer review. Relational coordination is a scientifically-validated theory and measure.

- Relational coordination defines and measures coordination in terms of two sets of dimensions – the quality of relationships and communication patterns among different roles. Taken together, these two dimensions (and their seven constituent elements) have been demonstrated to predict quality, efficiency, individual worker benefits, and learning and innovation across a range of industries.

- The quality of relationships and communication are quantitatively assessed using the validated Relational Coordination Survey, along with other validated measures of important relational and communication elements (e.g., trust and psychological safety).

- The Relational Coordination Survey can be deployed across project personnel at various points across a project's lifespan, to assess how teamwork quality varies in relation to key events or interventions.

SECTION – FUTURE STATE GOALS

- Earmark specific project phases and events for Relational Coordination Survey measurement across projects (e.g., EMP or GMP validation, construction start, building handover).

- Assess relational coordination over time, within and between projects to identify associations with project outcomes.

SECTION – WHAT THE PROJECT TEAM DID

- **The OCTPD Study Team engaged Case Western Reserve University researchers** to develop a Relational Coordination Survey for OCTPD^{SM} projects. Researchers first observed and interviewed project personnel to distinguish key project roles (owner, architect, construction manager, engineer, trade contractor and consultant).

- **Next, researchers engaged Relational Coordination Analytics** to develop electronic and paper-based versions of the Relational Coordination Survey to distribute across project personnel.

- **Then, researchers recruited survey participants** through meeting announcements and. Office- or trailer-based project personnel (e.g., those in owner, architect, construction manager, engineer or consultant roles) were invited to the survey via email. Through coordination with trade contractor foremen, those in job-site-based trade contractor roles were invited to "pizza lunches" where they could complete paper surveys during their lunch break.

- **Relational Coordination Analytics compiled survey results and provided a Relational Map** (see below) that visually reflects varying quality of teamwork (in terms of relationship and communication strength) among project roles. These Relational Maps were presented at OCTPD^{SM} Summits and fostered collective dialogue around building on teamwork strengths and addressing weaknesses.
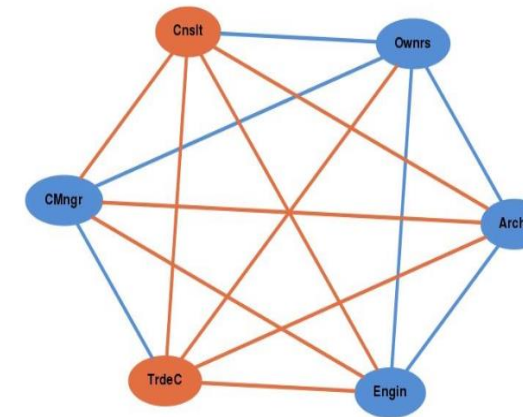
SECTION – LESSONS LEARNED

- The Relational Coordination Survey and resultant Relational Map provide data that can be used to foster dialogue among project roles about the relative strengths and weaknesses of their relationships.

- Dialogue over the Relational Map, as well as interview and observational data, can flesh out key issues (events, behaviors and situations) that tie relational coordination to key project outcomes.

2.D
TRANSPARENCY "PLAY"

PROJECT: LAKEWOOD FAMILY HEALTH CENTER & EMERGENCY DEPARTMENT (PROJECT 0015173)

SECTION - CURRENT STATE

- Decisions made in best interest of individual/company
- Budgets set as quote and details not shared
- Scope assigned not always practical
- Users involved too late to make changes
- CM/Trades not involved with Design and Users
- Personnel changes / hand offs set project back

SECTION - FUTURE STATE GOALS

- Decisions made in support of project
- Budgets established, shared, adjusted and agreed upon as group
- Financial reports done monthly to see how budget is tracking
- Scope in budgets discussed and changed as best for project
- End users and decision makers involved early in design
- CM/Trades involved with design and Users early and on-going
- Minimize Personnel changes to keep group stable. including designers, trade partners, CM and owner

SECTION - WHAT THE PROJECT TEAM DID

- Identify issues early, discuss solutions and act before issues become problems
- Core Team had visibility of project budget from the start of design. Information was shared on a weekly basis during core team meeting.
- Deviation Log reviewed weekly - All changes approved by consensus of core team.
- Share budget information with entire group - monthly financial reports to show status
- Risk pool created and used
- Team operated as a single organization
- Users involved early and CM involved early, budgets taken into account with changes requested
- Maintained a high level of continuity of personnel and involvement from all personnel
- Coordination done early and prior to construction start
- Constraint log shared with entire team. Reviewed at both core team meeting and project meeting. Kept on wall of big room
- Established trust among the team. All of the above are key elements in establishing that trust.

SECTION - LESSONS LEARNED

- Shop drawings should have been reviewed collectively with multiple trades, engineers and architects. All in the same room; cross component teams
- For example: trade review of structural once detailed - found no support under curbs for RTU's. However issue was corrected prior to equipment delivery and minimized schedule and cost impact through a component team meeting and an A3. (Architect, Mech. Engineer, Structural Engineer, Steel Contractor, Mech. Contractor & CM)
- CM involvement with Users found valuable to monitor requests with regard to budget and project intent
- Should have developed individual trade partners scope/budget tracking process that feeds into the overall project budget throughout design through construction.
- If personnel changes were needed, the impact to the project was minimized due to foreman and other team members being involved from the beginning of the project and having the knowledge to help new team members get up to speed

CHAPTER 3

TEAM ORGANIZATION

3A. OLED^{SM} PROJECT TEAM ORGANIZATIONAL CHARTS

3B. OLED^{SM} TEAM ORGANIZATIONAL STRUCTURES

3C. OLED^{SM} TASK TEAM TYPES

3D. FOCUS TASK TEAM "PLAY"

3E. TACKLERS (TASK TEAM) "PLAY"

3.A

OLED^{SM} PROJECT TEAM ORGANIZATIONAL CHARTS

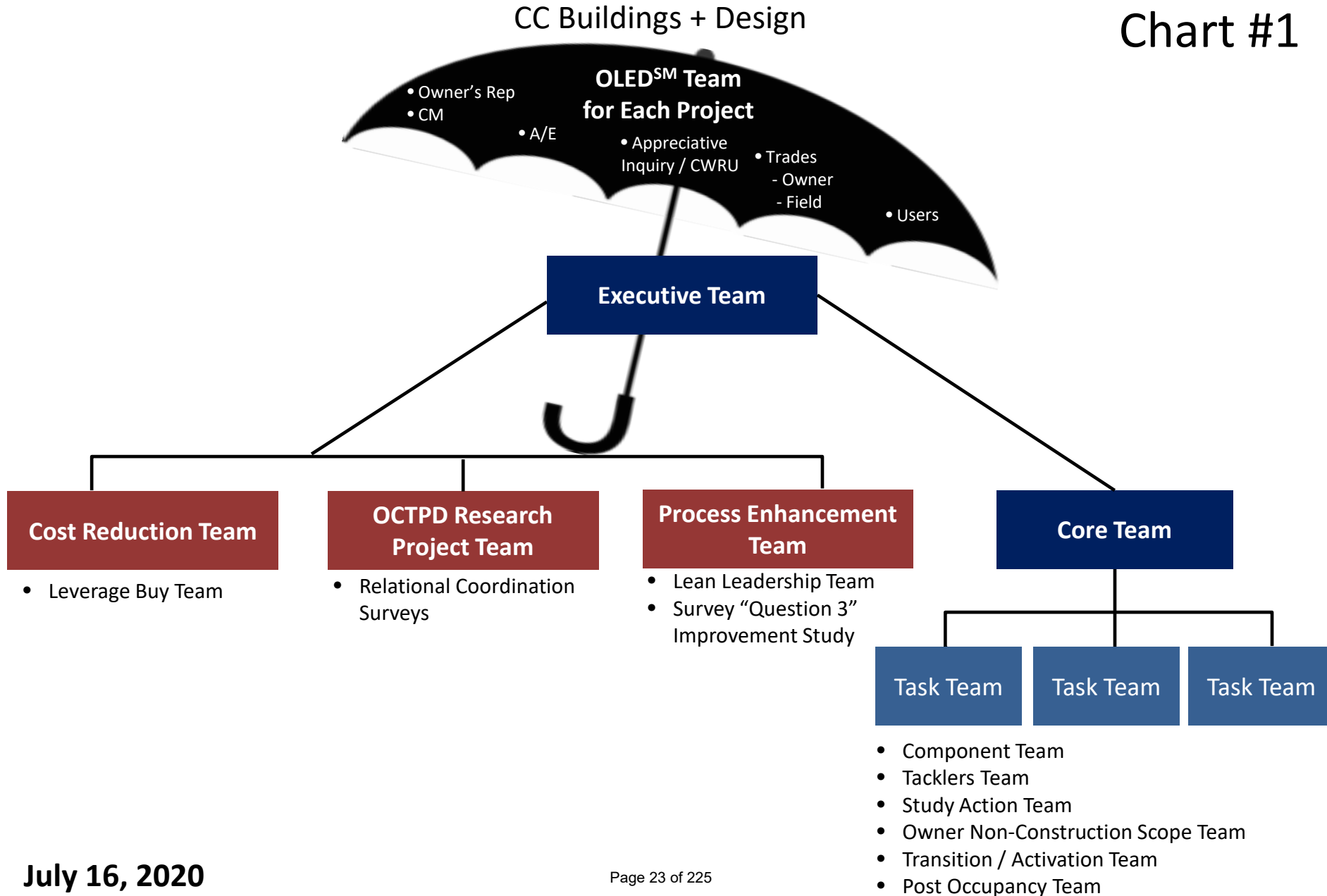# OLED^{SM} TEAM PROJECT ORGANIZATIONAL CHARTS

The following hierarchical model of the OLED^{SM} Project Organizational Chart (Chart #1) will provide an introduction to the standard/typical teams established on Cleveland Clinic's Owner Led Project Delivery projects and their relationship to each other. Within section 3A and 3B of this chapter you will be provided information on when to establish each team, who are the members of each team, each team's function / responsibility on a project, and the frequency of the meetings to be held by each team. Chapter 4 - OLED^{SM} Team Member Selection & Development will provide, a description on how to best select individual members for the teams and various approaches to enhancing the culture of team throughout a project's duration.

Although the hierarchical organization structure does remain in effect throughout the course of a project, every effort is made to operate day-to-day on a "Circular" project organizational model (Chart #2), similar to the Cleveland Clinic's Group Practice of Medicine's Model. With the "Circular" project organization model, the Owner, Cleveland Clinic, being the hub of the circle with all other team members radiating out from the central hub of this organizational structure. This eliminates the hierarchical lines of communication on a project and allows open lines of direct communication between all project teams and team members including direct communication to the owner from all roles and "levels".

The Circular project organizational model encourages and supports the team's understanding of the Cleveland Clinic's mission and the mission of OLED^{SM} program, the ability of leadership to clearly explain their vision, the desire to do what is best for the institution and each individual project, the confidence in team members' integrity, the "esprit de corps" of the group, and finally an unceasing commitment, "the will" to make it work. (ref: William Kiser and paraphrase from "To Act as a Unit, by Alexander T. Bunts M.D. and George Crile, Jr., M.D., 1971, p.147).

Cleveland Clinic Project Organizational Chart Example

CC Buildings + Design

Chart #1

OLED^SM Team for Each Project
- Owner's Rep
- CM
- A/E
- Appreciative Inquiry / CWRU
- Trades
  - Owner
  - Field
- Users

Executive Team

Cost Reduction Team
- Leverage Buy Team

OCTPD Research Project Team
- Relational Coordination Surveys

Process Enhancement Team
- Lean Leadership Team
- Survey "Question 3" Improvement Study

Core Team

Task Team **Task Team** **Task Team**
- Component Team
- Tacklers Team
- Study Action Team
- Owner Non-Construction Scope Team
- Transition / Activation Team
- Post Occupancy Team

July 16, 2020

Chart #2

CONVERGENCE

Cleveland Clinic Group Practice Models

Cleveland Clinic

OLED ℠
Owner-Led Project Delivery

Medicine

Planning, Design & Construction

Medicine, Research, Education Professionals
Board of Governors
CEO
Medical Institute Leaders
Nurses and Allied Health Professionals

CM - AE - Consultants
Design Assist Teams
Owner
Lump Sum Trade Contractor Teams
Activation Team
Facilities Management Teams
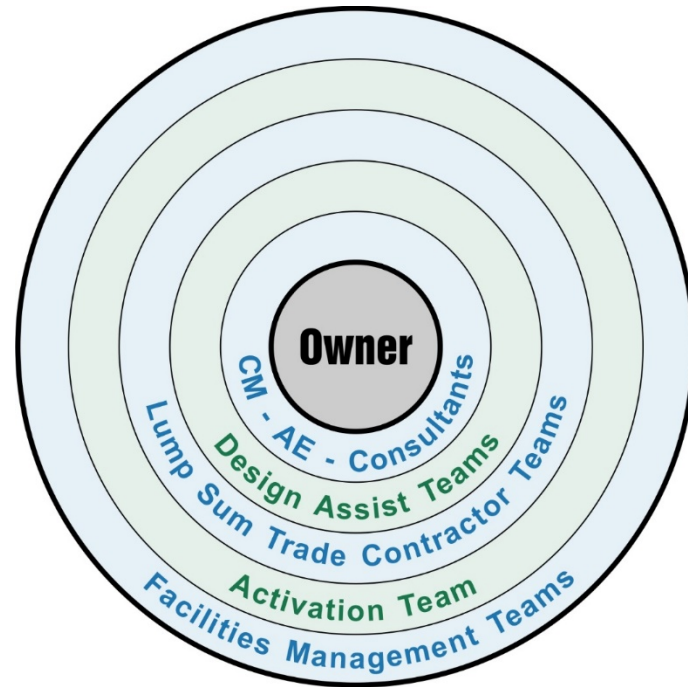
While the "umbrella" or overarching effort of OLED[SM] described in this Guide and Playbook deals largely with external team roles and re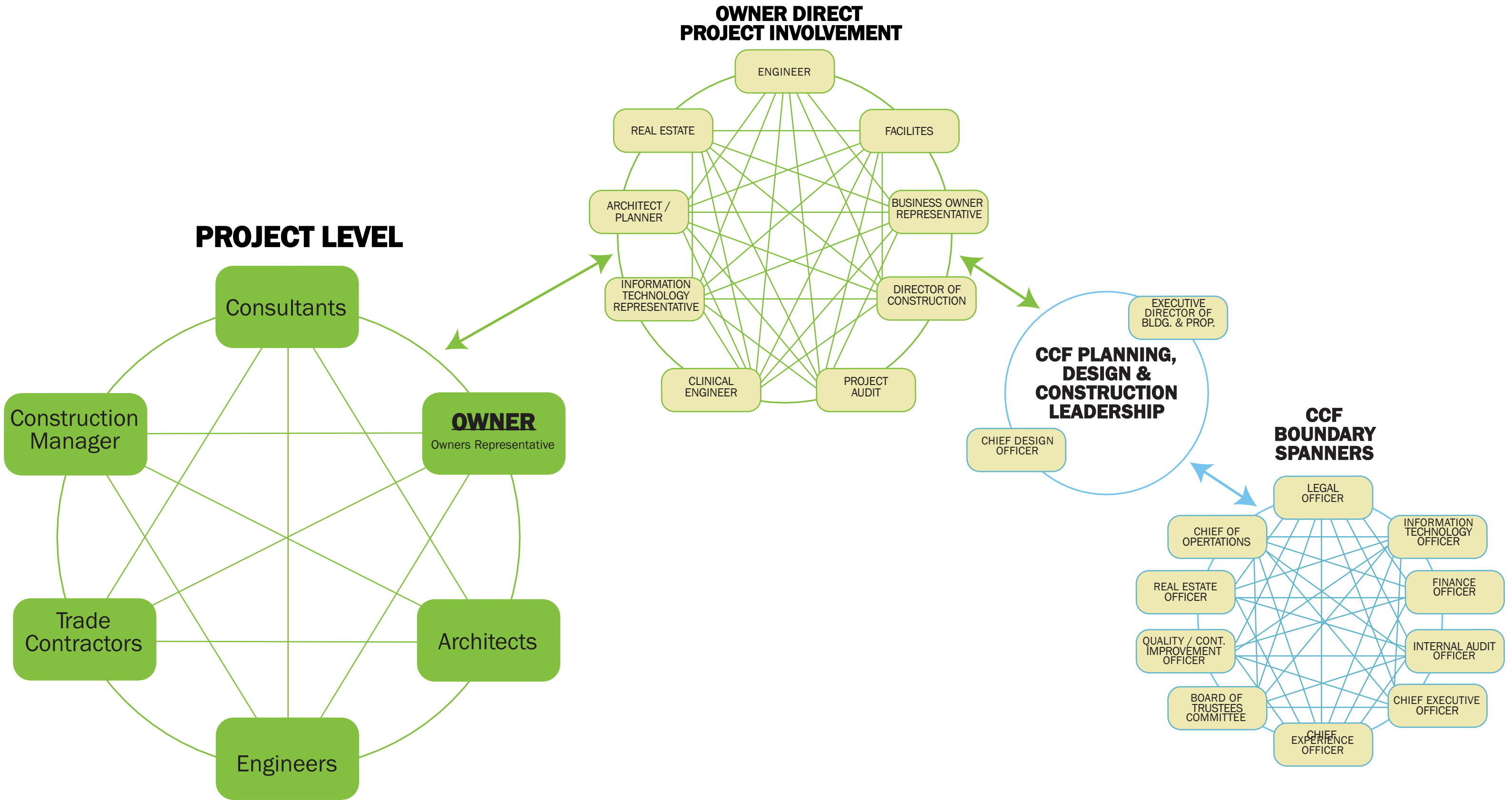lationships with Cleveland Clinic (architect, engineer, CM, trade contractors, and specialty consultants), it is also imperative that the OLED[SM] umbrella encompass internal Cleveland Clinic stakeholders. Please see Chart #3 of this Section on the following page. In it, the Project Level (green colored roles and relationships) are shown to interact with additional internal Cleveland Clinic departments/ roles, including clinical representatives, Facilities, Audit, and IT (called the "Owner Direct Project Involvement"). Collectively, both the Project Level and Owner Direct Project Involvement roles and relationships must also relate and interact with Cleveland Clinic "boundary spanners". The term boundary spanner references those that are indirectly involved with the project, but those that also play an important and supportive role in project success and overall institutional success.

The impact of Chart #3 demonstrates the complexity of the roles and relationships in our Buildings + Design program. OLED[SM], when shared and supported by all, will deliver the desired collaborative and transparent team culture leading to project success by any metric. This OLED[SM] concept of culture is the fundamental component of the OLED[SM] practice model and must be nurtured and developed during the entire planning, design, construction and activation phases for the success of the project as a whole.

OLED℠ Planning, Design, & Construction Practice Model
Project Relational Map

Chart #3

UPDATE : 3/18/20

OWNER DIRECT PROJECT INVOLVEMENT

ENGINEER

REAL ESTATE

FACILITES

ARCHITECT / PLANNER

BUSINESS OWNER REPRESENTATIVE

INFORMATION TECHNOLOGY REPRESENTATIVE

DIRECTOR OF CONSTRUCTION

CLINICAL ENGINEER

PROJECT AUDIT

PROJECT LEVEL

Consultants

Construction Manager

OWNER
Owners Representative

Trade Contractors

Architects

Engineers

CCF PLANNING, DESIGN & CONSTRUCTION LEADERSHIP

EXECUTIVE DIRECTOR OF BLDG. & PROP.

CHIEF DESIGN OFFICER

CCF BOUNDARY SPANNERS

LEGAL OFFICER

CHIEF OF OPERTATIONS

INFORMATION TECHNOLOGY OFFICER

REAL ESTATE OFFICER

FINANCE OFFICER

QUALITY / CONT. IMPROVEMENT OFFICER

INTERNAL AUDIT OFFICER

BOARD OF TRUSTEES COMMITTEE

CHIEF EXECUTIVE OFFICER

CHIEF EXPERIENCE OFFICER

Cleveland Clinic

OLED℠
Owner-Led Project Delivery

3.B

OLED^{SM} TEAM ORGANIZATIONAL STRUCTURES

OLED^{SM} TEAM ORGANIZATIONAL STRUCTURES

Once a project is identified, the Cleveland Clinic Owner's Representative should begin determining and forming the OLED^{SM} Team Organizational Structures that will best serve the project. This should be based on the type of project, i.e. ground up construction, major renovation, or minor renovation, as well as based on the scope variables that will exist on the project such as volume, site conditions, design complexity, square footage, infrastructure requirements, technology, etc.

Over the last 15 years of development and the continuous improvement process of OLED^{SM}, the following Team Organizational Structures have been established:
- OLED^{SM} Team
- Project Executive Team
- Project Core Team
- Summit Team
- OLED^{SM} Research Team
- Process Enhancement Team
- Cost Reduction Team
- Task Teams

OLED^{SM} Team
As an overachieving, strategic project initiative, the creation and commitment to a project specific OLED^{SM} Team is priority one. This team represents all of the roles on a project consisting of select Cleveland Clinic clinical leaders, Cleveland Clinic Design, all departments within Cleveland Clinic Buildings + Design, as well as members from the architect, engineers, construction manager, specialty consultants, and trade contractors. This team has to have vast representation as this team will collectively, at the onset of the project, define the project Purpose Statement and Measurable Goals, that if achieved, will lead to the successful implementation of the Purpose Statement.

The most important focus of the OLED^{SM} Team is just that...**TEAM**! This team does not solve project issues, rather it deals with team health (the quality of the relationships between team members and roles defined in Section 2), and how the team is tracking on its measurable goals. Team health includes such critical foundational OLED^{SM} topics such as team respect and trust level, transparency, and communication.

Please see Section 4C for two "Plays", entitled OLED^{SM} Team Meetings and OLED^{SM} Team Purpose Statements, which provide specific actions to take for the development of the OLED^{SM} Team's Purpose Statement and for the functioning of monthly OLED^{SM} Team meetings.

The Project Executive Team

The Project Executive Team is the priority two TEAM structure that should be formed. This Team is responsible to:

- Assist in establishing and approving a Purpose Statement that is specific to the project
- Assist in establishing individual goals that need to be accomplished for the Project to be deemed successful by the OLED^{SM} Team and the Owner
- Educate and assist all parties in the development of the OLED^{SM} Team concept and training in becoming true Team members
- Resolving project issues / concerns that can impact the project
- Implementation of the project strategies, and executive leadership (including providing the resources needed for team success)
- Approval of key Project related decisions

If the members of the Project Executive Team are not able to reach a consensus, the Cleveland Clinic Owner's Representative shall resolve the issue. In other words, Cleveland Clinic does retain "veto" power as the Owner, but rarely, if ever, has used it in the history of OLED^{SM}.

The members of the Project Executive Team, at a minimum, shall include: the designated Owner's representative, Cleveland Clinic's Owner Representative, Architect, Engineer(s), and Construction Manager or General Contractor. Dependent on, the Project type and scope variables referenced in the first paragraph of this Chapter, the decision of the existing Project Executive Team members, and the status of the Project it may be beneficial to add any of the following Project participants; Owner Consultants, Architect Consultants, Design Assist Contractors, other Trade Contractors (especially those on the critical path of the project schedule). The Project Executive Team members are upper management level individuals that reside in the organizations' home office with the ultimate responsibility for the project's success and are not stationed on the project site.

The Project Executive Team shall, at a minimum, meet monthly. The frequency of this team meeting should be adjusted based on the status and specific conditions of the

project. It's not uncommon for this Team to meet weekly or bi-monthly for short durations during critical phases of a project's development or when issues arise that need on-going attention.

The Project Core Team

The Project Core Team is the third TEAM structure that should be formed. The Project Core Team is responsible for:

- Assisting in establishing the Project's Purpose Statement and related goals
- Implementing the OLED^SM Team concept
- Providing the day-to-day management of the preconstruction and construction phases. These services include, but are not limited to, design, estimating, constructability, phasing, sequencing, pre-fabrication, safety, construction, schedules, budgets, changes and quality.

The Project Core Team shall report (at a minimum) the project status to the Project Executive Team on a monthly basis. During the course of a project, if the Project Core Team is unable to reach a unanimous solution on any issue that may arise, they should immediately present the issue and proposed solutions to the Project Executive Team for resolution. Some topics that could rise to Project Executive Team level are: contractual disputes, cost or schedule impacts, potential safety or hospital operational impacts, or other tangible project risks that must be communicated transparently "upstream" to Cleveland Clinic.

The members of the Project Core Team shall be individual(s) from each of the Project Executive Team member's organization that are given the authority to make decisions for their organization and manage the day-to-day operation of their services on the Project. Dependent on project type, scope variables, decisions of existing Project Core Team members, and project status it may be beneficial to temporarily or permanently add staff members from other participating project organizations to the Project Core Team.

In order to receive the maximum benefit of the OLED^SM team approach all Project Core Team members should be stationed at or near the project site in one location (i.e. a "Big Room"). The project office design shall provide space for all of the Project Core Team members. If, due to other circumstances, certain Project Core Team members are not able to reside at the job site full-time, a part-time residency schedule shall be established.

Pull Planning Session in Avon Bed Tower Project's "Big Room"

The meeting frequency of the Project Core Team typically is weekly. The Project Core Team should continuously monitor the project's status, schedule, unresolved issues, and adjust the Core Team meeting schedule accordingly.

All OLED^{SM} projects shall have as a minimum a management Team consisting of an OLED^{SM} Team, Project Executive Team, and a Project Core Team.

Summit Team

The fourth team structure that should be formed is the Summit Team. Summit Teams are established to:

- Create an environment to promote, grow and evolve OLED^{SM}
- Create an environment to promote a "Team of Teams"
- Evaluate, discuss, and establish processes to improve "Team" performance
- Enhance and strengthen project team members' relationships
- Assist in ensuring all teams have the same understanding of the project's purpose statement and measurable goals
- Create common communication forum to provide clear communications, project excitement, and continuous engagement of the entire project team from field individuals to principals of each firm
- Provide a forum for all team members to meet and talk with the Owner directly
- Provide a forum to conduct / discuss the team surveys to measure team health (see Chapter 4.B4 for a copy of the standard team survey)
- Provide an opportunity to recognize and/or award a team, team members, or individuals for outstanding team or work performance
- Provide participants the opportunity to develop an understanding of the work they are not responsible for and how it coordinates with their work

The Summit Team is organized, scheduled and typically facilitated by the Cleveland Clinic's Construction Owner's Representative on the project with input from members of the "Team of Teams" involved in the project. Based on the key topic of the Summit meeting, other project team members may be scheduled to facilitate a meeting or a portion thereof.

Summit Team participants typically include the Cleveland Clinic's Project's Owner, the Cleveland Clinic's Construction Owner's Representative, the Project Executive and Project Core Team members, project consultants, principals from the trade organizations currently on the project, the key trade project managers, superintendents, foreman, and select individuals from the trades. It is not uncommon to have more than thirty team members attending a Summit meeting.

Summit Team meetings have typically been scheduled on a quarterly basis at the end of the day so a team social may follow the Summit meeting. Similar to the scheduling of other Team Meetings, the scheduling of this meeting may need to be altered due to the status of the Project or the concerns/issues that are currently ongoing and not yet resolved.

OLED^{SM} Research Project Team

OLED^{SM} Research Project Team

Since 2014 the Cleveland Clinic's Buildings + Design has been teaming with the Department of Organizational Behavior of the Weatherhead School of Management | Case Western Reserve University to research and study the process / performance of the OLED^{SM} practice model of construction management. The goal is to identify why this "Team" approach to project delivery is successful and what behaviors should be implemented or eliminated to improve a project's team performance and a project's outcome.

The OLED^{SM} Research Project Team has participated on select OLED^{SM} managed projects in the following ways:

- Attended Project Executive and Project Core Team meetings
- Resided part-time in the Project's field office (the Big Room) and observe relationships and communication between teams and their individual members
- Observed, participated, and occasionally conducted a Team Summit meeting
- Prepared and sent out written survey material for team members to complete
- Conducted group and one-on-one surveys

- Prepared relational maps indicating the strength of the team relationship between the teams on the project
- Educated and assisted in the implementation of Appreciative Inquiry techniques
- Prepared summary reports documenting findings based on actual data received from the research and identifying what works and where / how improvements can be made in OLED^{SM}

The key members of the OLED^{SM} Research Project Team are retired Cleveland Clinic Trustee Dr. Steven Lau, Dr. John Paul Stephens from the Weatherhead School of Management | Case Western Reserve University, retired Cleveland Clinic Director of Construction Ron Lawson, Cleveland Clinic Director of Construction Pen Wolf, and Al McKinney, President of Concord Healthcare Development. Depending on the number of active projects involved in the research, doctorial students and/or undergraduate students may be assigned to assist Dr. John Paul Stephens.

For each project currently being reviewed, the OLED^{SM} Research Project Team and the Project's Project Executive Team meet on a bi-monthly or quarterly basis (usually as an agenda item on the Project's Project Executive Team monthly meeting) to discuss the status of the current research, address questions that may arise due to the research, and outline next steps in the continuous evolution and improvement of OLED^{SM}. In addition to the bi-monthly meeting, special meetings may occur with various individual teams or team members to provide specific updates and/or respond to specific question/concerns. *(Refer to Reference Material Tab after Tab 8 for detailed information on the CWRU / Cleveland Clinic collaboration.)*

Process Enhancement Team

The Process Enhancement Team is established for the benefit of all OLED^{SM} projects to initiate and implement a continuous improvement process within the OLED^{SM} practice model of construction management.

The Process Enhancement Team meets monthly. The members of this Team include: CC Director of Construction, select Owner Representatives, a representative from Lean Consultants, a representative from the Department of Organizational Behavior of the Weatherhead School of Management | Case Western University, representatives from Concord Healthcare Development, and representatives from Cleveland Clinic's key Construction Management and Architectural firms.

Examples of two improvements that have been established from past projects include:

- Lean Leadership Team – This Team was comprised of the following individuals from select active projects: CC's Director of Construction, multiple CC Construction Owner Representatives, and multiple Project Executive/Project Core Team members. The purpose was to educate and share the Lean Practices implemented on their projects allowing the knowledge gained to be presented to all their project organizations and Teams.

- Survey "Question #3" Improvement Study Team – Cleveland Clinic's OLED[SM] Team Survey form Question #3 states: "Concerns and problems are dealt with in a timely manner." On every OLED[SM] project this question receives the lowest score on every survey. That fact, when identified via the years and years of surveys, led to a Process Enhancement Team initiative to study the reason why this is the case. The Summit forum was selected as the vehicle to do so, since CWRU participated in the Summit Team meetings on HEC and Taussig Cancer Center and all roles of the project team attend Summit meetings. This process enhancement initiative remains a work in process, but as you can see in the following graphic, the effort to improve on Survey Question #3 is well underway.
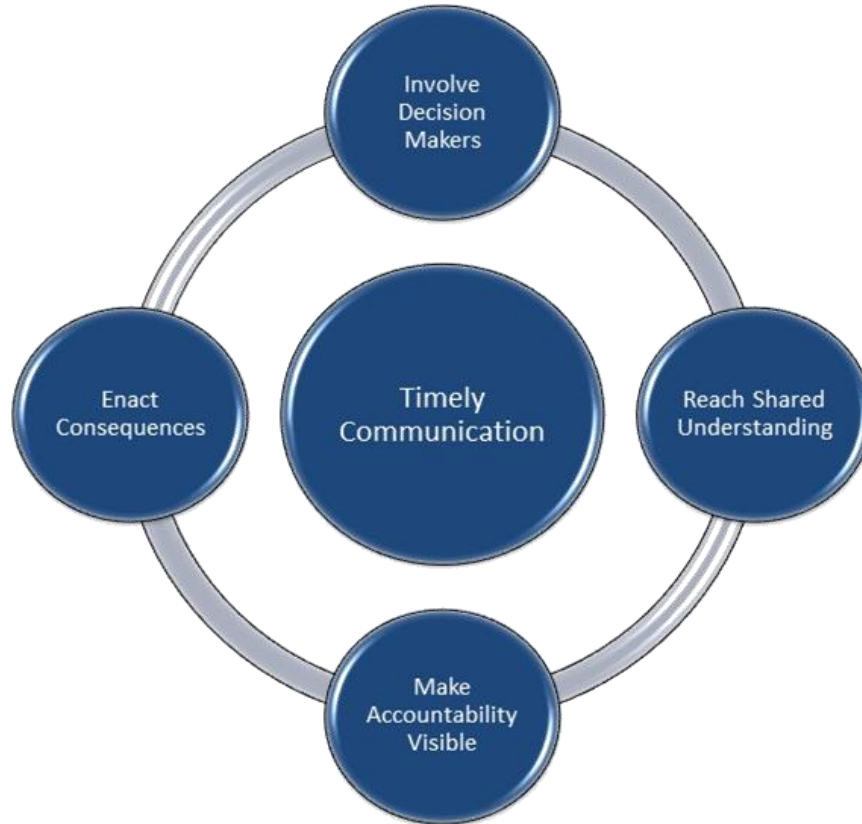
Graphic developed by Case Western Reserve University based on analysis of responses from Summit participants

Cost Reduction Team

Buildings + Design, along with the A&D Institute, is always tasked with reducing the cost of healthcare construction. Cleveland Clinic builds sophisticated facilities to a specific brand and quality level. Nevertheless, the challenge of best allocating the millions and millions of capital dollars spent to achieve the highest quality at lowest cost can be successfully managed. OLED^{SM} provides an excellent mechanism to do so…the Cost Reduction Team. The Cost Reduction Team forms when executive leadership identifies opportunities or initiatives (i.e. benchmarking needs; capturing historical actual construction costs; standardization practices to focus on cost of ORs, patient rooms, etc.). The Leverage Buy Team described below is one of the best cost reduction team efforts in the history of OLED^{SM}.

- Leverage Buy Team – This Team was comprised of the following individuals from select active projects whose construction schedules were reasonably aligned; CC Construction Owner Representatives, Project Executive/Project Core Team members, and Trade Contractor estimating/purchasing staff. The Leverage Buy was the bulk purchase of specific labor and/or specific materials purchased through one source for multiple projects (Cancer / HEC / Avon) to take advantage of large quantity discounts. Substantial savings in the amount of millions of dollars were achieved, mainly on the material purchases.

OLED^{SM} Task Teams

OLED^{SM} Task Team organizational structures are formed and disbanded by the Project Core Team based on a project's status and conditions. These Teams may include individuals from organizations involved in the project that are not members of the Project Executive or Project Core Team, as well as select Project Core Team members. In keeping with the OLED^{SM} concepts of "push it down" and "getting input from the doers" individuals from every level of the project's hierarchy including trade superintendents, trade foreman, office engineers, etc. with an understanding and knowledge of the subject/concern/issue to be addressed should be considered for inclusion on these Task Teams. The following are examples of the types of Task Teams that have been established on prior projects:

- Task Teams
  - Component Team
  - Tackler Team
  - Study Action Team
  - Owner Non-Construction Scope Team
  - Transition/Activation Team
  - Post Occupancy Team

These Teams meet either weekly, bi-weekly, monthly, or as needed dependent upon the subject/concern/issue to be addressed.

A team champion to lead each of the above teams shall be selected by the Project Core Team and the Task Team members. The team champion shall:

- Keep the Task Team focused and deliberate in resolving the constraint/issue timely
- Create an open communication environment fostering teamwork, transparency, and exercising listening skills without stymieing trade personnel participation

These Task Teams do not minimize nor replace the project staff's or trade's responsibility of addressing issues, due dates, or problem solving considered the "day job" of all parties.

3.C
OLED^{SM} TASK TEAM TYPES

OLED^{SM} TASK TEAM TYPES

Component Teams are formed both during the building design phase and construction phase to investigate, detail, and reconcile design details, the sequence and duration of work, coordination of trade installations of materials and/or systems, pre-manufactured items/systems, etc., thereby providing all participants with a clear direction in coordinating, scheduling, cost estimating / project budgeting (see Chapter 7) and constructing the work. Specific examples of work scopes typical for Component Team investigation include, but are not limited to:

- Pre-Fabrication
- Foundations/Underground Utilities
- Exterior Envelope
- Specific Structural Framing Requirements
- Building Infrastructure
- Doors/hardware
- Life Safety
- Commissioning
  - Equipment purchasing / installation coordination
  - Project close-out

Tackler Teams are formed to investigate and resolve constraints recognized as current field issues that are impacting scheduled construction progress and / or productivity on the jobsite. Identified constraints/issues are categorized into either Owner, Design, or Construction issues. If a particular Tackler Team has more than one identified constraint/issue they shall be prioritized and addressed by the Team accordingly. Examples of field issues addressed by Tackler Teams include, but are not limited to:

- Change Management (Hillcrest Hospital)
- Shear wall and foundation rebar placement (Avon Hospital)
- Construction interference with hospital operations (Lutheran Hospital)
- Identified constraints involving two or more trades (See Section 3.D "Play" – Tacklers – Hillcrest Expansion Project)

Study Action Teams are formed to assist in the education of the Project Executive Team, Project Core Team, and selected other project staff in the implementation of OLED^{SM} and a true TEAM approach. Educational processes which have been used to date include guest speakers; team related articles/ publications/white papers; books on Team philosophy, formation, structure, successes; Relational Coordination; and Appreciative Inquiry.

Owner Non-Construction Scope Team organizational structure is one that facilitates the coordination and implementation of non-construction activities involving Furniture, Fixtures and Equipment (FFE).

Its main purpose is to create an environment that fosters interactions among the team members to ensure visibility, alignment, and coordination on all aspects of non-construction FFE items within the specified constraints of scope, schedule, budget, quality and owner acceptance.

The objective of this organizational structure is to provide a formal environment that the project manager can use to influence team members to do their best in completing their roles and responsibilities. The structure is designed to:


- Help develop communication and collaboration among individual team members
- Management of action items
- Focus on what matters most
- Tracking of key milestones and adapting to changing conditions for an on-time, on-budget and fit-for-purpose outcome
- Organize and manage in a cost-effective way with a minimum duplication of efforts and overlap

Whether they are conducted in-person or by remote conference effective Owner Non-Construction Task Team meetings that allow for open conversation from each members' knowledge, skills, and perspectives to solve problems and to support one another is integral in achieving the team's collective goals and ensuring a successful project. Historically selecting the right meeting cadence for the team to maintain momentum, share information, raise and solve issues has been bi-weekly. Meeting preparation, facilitation, participation, and evaluation processes are essential Task Team Meeting elements crucial to guaranteeing productive outcomes. Based on experience, meetings with high yield value include:

- Relevant - clear, consistent and to-the-point agendas distributed in advance of each meeting
    - Coordination Items - Design, MEP, Construction, Owner
    - Project Executive Cost Update - Buyout Complete/Remaining, Pending ECR's and Current Savings projections
    - Schedule – Integrated Master Project Schedule (i.e. Summarizes and details key construction build-out tasks as they relate to FFE rough-in, pre-installation, installation, testing and training fit-out activities).
- Preparation – team members are prepared with relevant information and focus on providing specific updates
    - Status Report - Deliverables, Requisition Process, Receiving Report
- Facilitation – enabling everyone to participate in a balanced fashion (silence is consensus)
- Documentation – distribute promptly drafted meeting minutes, progress updates, decisions, follow-up items to team
    - Action Items Log – Priorities, "Owners" and Resolution Needed By
- Debrief - evaluate and plan for improvement
    - Recap follow-up items and next steps for consensus

Transition / Activation Team works with the Owner to determine the best format for the project setup based on project type and often the project size. The scope of work provided by the Transition / Occupancy Team typically includes:

- Defining, scheduling, coordinating, and management of the required Owner service lines needs in design and construction necessary to prepare the space for occupancy including IT/AV, furniture, security, artwork, medical equipment, housekeeping, facilities, signage, infection control, etc.
- Focus on the clinical and operational portion of the project's occupancy needs including but limited to badge access & office keys, training, policies, stocking, mock work scenarios, and any other direct preparation of the space required for its intended use.
- The planning, scheduling, and logistics of relocating occupants and delivery, receiving, and/or relocating of equipment.
- The development of various activation plans such as medical equipment training, building orientation, and/or occupancy schedules. Key outputs from this effort are usually schedules of activities and any appropriate content developed with educators and other institution subject matter experts. (See the following page for transition / activation plan schedule example.)

Health Education Campus
Activation Planning Tool April 3, 2019
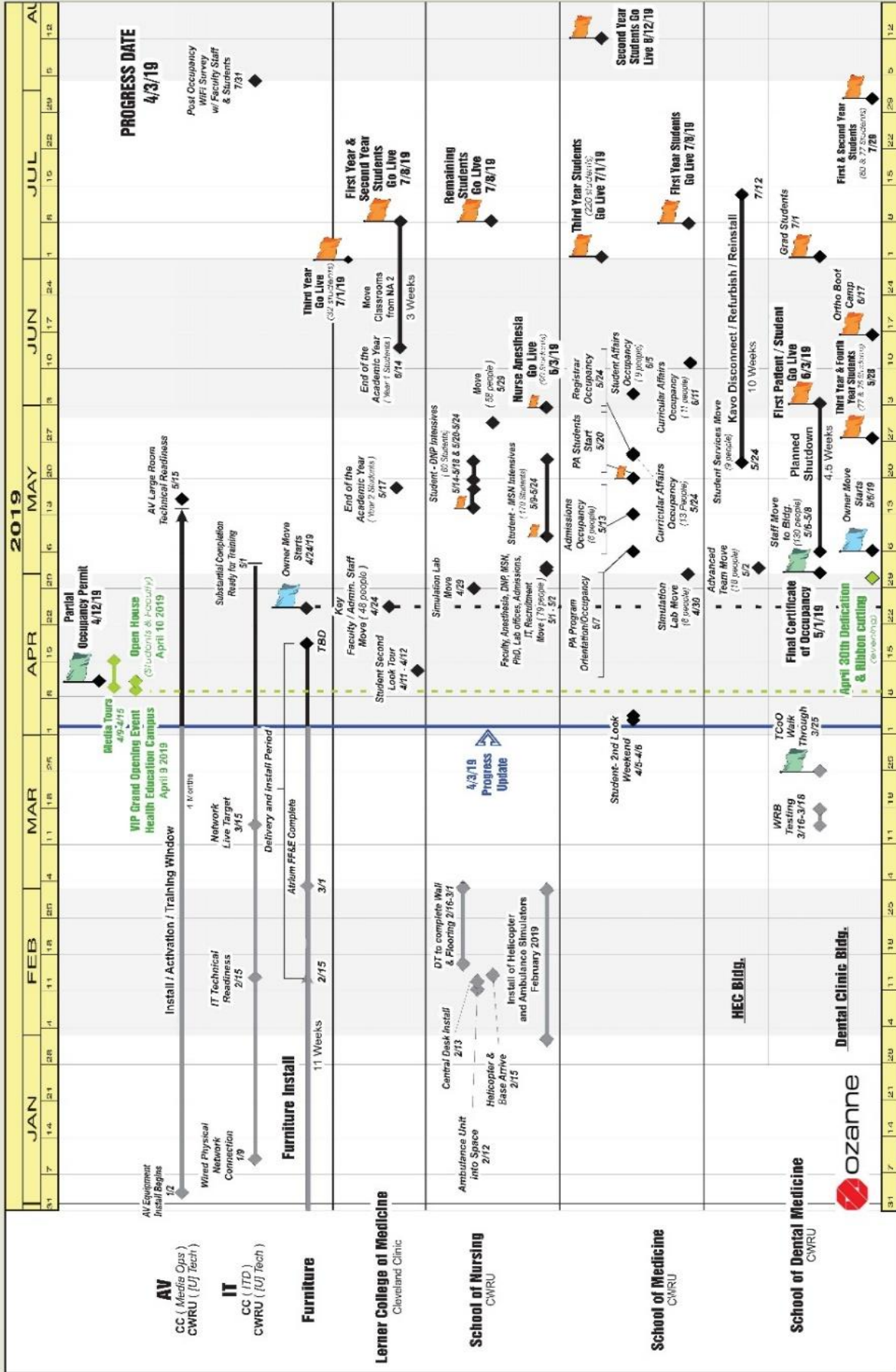
The Transition / Activation Team members should be communicative decision makers who share their thoughts and ideas to improve the project. Owner and User interests should be protected throughout the process and proper solutions to challenges should be created to support their needs.

Post Occupancy Teams are formed to document the success of the project from both the Owner's (users of the facility) and the Design and Construction Team's evaluation of the OLED^{SM} approach to the design and construction process and the achievement of the Project Purpose Statement and its associated Measurable Goals.

The Owner's (users of the facility) Post Evaluation Team

This Team should document in detail the success and shortfalls of the design process including such items as, workflow, space relationships, communication, knowledge of the project status, concerns addressed, timeliness, quality, etc. When documenting, suggestions for continuous improvement should also be included whenever possible.

The Design and Construction Post Evaluation Team

This Team's post evaluation should document in detail the success and shortfalls of the design & construction process including the achievement of the Project Purpose Statement and associated goals. In addition, such items as internal and external communications, the Team's ability to work as a "Team of Teams", Trade involvement, Team exercises, the ability to address project issues, resolution timeliness, schedule control, budget control, and quality should be evaluated and documented. Similar to the Owner's Post evaluation, suggestions for continuous improvement of the process in the form of an A3 should be included, whenever possible.

On the following page is the graphic prepared by the Cancer Building's Post Occupancy Task Teams presenting both the Owner's Post evaluation and the Design and Construction's Post Evaluation key questions that they committed to investigate. In addition, the measurements and topics to be pursued in order to successfully complete their respective team's evaluations are also identified.

3.D
FOCUS TASK TEAM "PLAY"

Play: Focus Task Teams

Cleveland Clinic

PROJECT: AVON BED TOWER (PROJECT 0013350)

SECTION - CURRENT STATE

Healthcare projects involve complex construction that requires that coordination for work of multiple trades. The current "normal" process for answering questions regarding scope responsibility, work sequence and detail clarification is through RFI's directed to the design teams and separate questions about scope and schedule that are often not coordinated. RFI's are answered and forwarded but only reviewed by the author and by the other trades involved with the assembly.

The Constraint Tracker frequently has items that are reported week after week with no progress.

Without establishing a clear strategy for sharing information valuable time is lost.

- RFI's are an ineffective process for multiple trade coordination issues.
- Email communication is handled differently by individuals and not effective for urgent issues.
- Electronic communication does provide a proper forum for decision making.

SECTION - FUTURE STATE GOALS

1. Facilitate decision making that is fully informed and does not affect the schedule.
2. Establish a communication strategy that ensures all parties share the most current information and are notified of changes and issues concurrently.
3. Break big problems down to their core components and next actionable task.
4. Solve important issues before they become crises. Prioritize based on the schedule and material lead times if applicable.

SECTION - WHAT THE PROJECT TEAM DID

1. Determined, for each issues, the correct list of stakeholders and decision makers to resolve the issue.
2. Scheduled recurring meetings with the focused purpose of establishing the last responsible moment a decision needs to be made and the next action item that must be addressed.
3. Get all parties in the same space with all the required information and graphics needed and break the constraint or issue down to its basic questions.
4. Establish and report dates to the owner or leadership for decisions that could affect the schedule.
5. Define desired outcome at the kick-off so everyone understands and its focused on the correct goals.

Task Teams focusing on building components and assemblies were formed so all involved trades could resolve issues.

- Exterior Envelope—Curtain wall, masonry, insulated metal panels, framing, sheathing and vapor barrier coordination
- Food Service Equipment Coordination—teams could be formed to coordinate any owner provided equipment coordination
- Constraints— separate teams were sometimes schedule for individual issues causing a constraint. The core issues was most often a decision about material or equipment that had not been finalized by users or owner teams. It was important to establish as a team when the last responsible moment was for a decision so the proper due diligence could be accomplished.

The "Big Room" concept was leveraged to provide the construction team ready access to the design teams. "Open Office" hours were scheduled to focus on RFI's or field questions real time.

Plan Grid and BIM360 Field were used to track issues and communicate immediately across the entire project team.

SECTION - LESSONS LEARNED

- Breaking down issues into actionable tasks that can be done within no more than one week provides progress and improves team morale
- Forming teams from every level of the project hierarchy empowers people and invites innovative thought
- Ideas for simplification and cost savings were a bi-product of the engaged multi-discipline teams
- Better team communication provided better quality and less frustration
- Having a problem for reinforcing the common shared goal and desired outcome produced better communication and cooperation in the daily workflows outside of the issues and constraint team meetings

3.E
TACKLERS (TASK TEAM) "PLAY"

Play: Tacklers

PROJECT: HILLCREST EXPANSION PROJECT (PROJECT 5106002) WRITTEN BY: LEON ROZIC

SECTION - CURRENT STATE

- Projects, in past, only had the traditional Owner, Architect, and Contractor (OAC) meeting to bring up and work thru challenges. In most instances these meetings are not frequent enough to ensure timely resolution of matters. Traditionally, issue resolution was handled via the RFI processes, which coincide with the OAC format. This process, typically, does not timely address issues and in most cases result s in schedule impacts. Additionally, this method, in most instances, creates silos and adversarial relationships which further compounds the team's ability to resolve said issues.

SECTION - FUTURE STATE GOALS

- Create a focused group of individuals (the Doer's) spanning all project stake holders (Architect, Owner, Trade Contractor, Engineers, other consultants) to identify and address "project issues" as they arise.
- Meeting is held outside of the traditional OAC meeting.

SECTION - WHAT THE PROJECT TEAM DID

- Bi weekly meetings set opposite of the traditional OAC .
- The "Do'ers" where selected by executive leadership project team members.
- Meetings were conducted first thing in the morning, with breakfast provided.
- Meetings were facilitated by executive project leadership team members.
- The selected "Do'ers" and executive project leadership team members would start off the meeting going around the room to list out project issues, as perceived by each attendee.
- With each issue listed, the attendee group would vote on its priority level and the issues were then distilled to a focused "Hot List".
- Once the "Hot List" was developed, each item would be assigned to a "Do'er" champion who was responsible to it to bring the item to resolution.
- Typical 3 to 5 items were identified to be resolved by the next meeting cycle.
- Meeting attendees changed as different issues were encountered.

SECTION - LESSONS LEARNED

1.) Trying to manage one priority over another was difficult since everyone has different priorities and level of urgency to their priority.

2.) Having executive project leadership across the project team spectrum was important to help understand how an issue relates to the "Big Picture" outcome of the project and to provide that guidance accordingly to the rest of the "Do'ers".

3.) Better understanding of individuals' skill sets to push items to conclusion could have been better handled.

4.) The meetings could have been started earlier in the project to be a proactive tool versus reactive.

5.) Providing more empowerment to the "Doers" on the ability to close out issues without going back to the executive project team members could have helped with expediting resolution implementation.

6.) Resolution information, at times, did not get rolled out to the field team members in adequate time (infrequent scenario).

7.) "Hot List" items should have been circulated, in a more timely fashion, to all project team members, not just the meeting attendees.

Play: Tacker Team (Seal Team)

CHAMPION: Joe Schilens—Turner Construction

Cleveland Clinic

PROJECT: Cleveland Clinic Taussig Cancer Center

PURPOSE STATEMENT: Create and Inspiring Environment

SECTION - CURRENT STATE

Often times large projects have many departments or areas varying in complexity and detail. In particular, areas with large quantities of owner provided items or areas with major medical equipment can have more complex schedules or required coordination. Typically these areas are just incorporated into the Master Project Schedule with perhaps little extra effort spent to insure all extra requirements of the space are met. In most cases, turn over of these spaces is done all at once with the remainder of the building.

SECTION - FUTURE STATE GOALS

Allow for large medical equipment to be installed while construction of other areas is being completed. Special attention is placed to the most critical areas, as determined by the Team and Owner, allowing for a smooth transition from Construction to Owner Operation.

SECTION - WHAT THE PROJECT TEAM DID

The Team early on determined the most critical area of the building to be Radiation Oncology that housed the 6 Linear Accelerators, Gamma Knife, High Density Radiation, and Imaging. A special meeting was set up, recurring weekly, with stakeholders from the Owner, Equipment Vendor, A/E Team, CM, and any key Subcontractors. It should be noted that meeting participants were all Decision Makers to allow for quick decisions to be made affecting Purchasing, Design, Construction, or Schedule.

The Seal Team, as it was called, first tackled all utility and infrastructure penetrations that were to be installed in critical concrete pours with walls ranging from 2' to 7' thick. Precise coordination was a must as core drilling or re-pouring concrete this massive is not an option.

In addition to pre-planning and coordination, the Seal Team followed through with the construction of the Radiation Oncology Department including field verification and quality control. All along, the Team maintained weekly focused meetings to stay on track.

Approximately mid way through construction it was determined that in order to commission 6 Linear Accelerators by project completion, the Owner would need to have the equipment delivered 4 months early. The Seal Team, by using LPS, was able to develop an accelerated schedule. This accelerated schedule went into great detail concerning the construction sequence to insure all necessary activities were covered. The schedule was captured as a break-out schedule in P6 Software. The Team accomplished the goal even though the adjacent areas to Radiation Oncology were still under construction. By utilizing temporary zip walls to separate from surrounding construction, the medical equipment was delivered, installed, and commissioned on time for overall building substantial completion.

SECTION - LESSONS LEARNED

Project teams should identify the most complex and longest lead items on the project as early as possible. In addition, it is important to understand Owner Start-up durations as well as commissioning of major medical equipment. Depending on scarcity of resources, the proper amount of time needs to be incorporated into the project schedule. If necessary, focused Tackler Teams can be developed to keep focus of these most complicated areas. It is imperative that Tackler Team members are decision makers. In this sense it may make sense for the Team to remain smaller to avoid wasting the time of many. As needed, Subject Matter Experts can be brought in to specific meetings to help, but these SMEs may not be required at all meetings.

CHAPTER 4

OLED^{SM} TEAM MEMBER SELECTION & DEVELOPMENT

4A. PROJECT TEAM MEMBER SELECTION
        4A.1 TEAM SELECTION "PLAY"

4B. PROJECT TEAM MEMBER DEVELOPMENT
        4B.1 TEAM BUILDING PURPOSE STATEMENT
                DEVELOPMENT AND OLED^{SM} TEAM MEETINGS
                "PLAYS"
        4B.2   TEAM BUILDING "PLAYS"
        4B.3   TEAM MEMBER RECOGNITION "PLAY"
        4B.4   TEAM SURVEY
        4B.5   TEAM MEMBER ON-BOARDING "PLAY"
        4B.6   ROUNDING "PLAY"
        4B.7   TEAM SUMMITS "PLAY"
        4B.8   TEAM MEMBER SPOTLIGHT "PLAY"
        4B.9   REFERNCE BOOKS AND ARTICLES
        4B.10 GUEST SPEAKERS

4.A

PROJECT TEAM MEMBER SELECTION

PROJECT TEAM MEMBER SELECTION

In order to receive the benefit of the OLED^{SM} approach it is imperative that the organizations and their participating staff that will become the Project TEAM have a management philosophy that is honest, open, collaborative, and cooperative. They must be willing to discuss not only their issues and concerns, but all team member and project issues openly with the entire total team, and assist in developing resolutions that benefit the project first, while minimizing or eliminating the risks of the project team.

Organizations and /or their participating staff that work within their "silo" and not openly with all project participants should not be considered for participation on the project, irrespective of their construction experience.

Project Executive Team Firm and Member Selection

As referenced in "Chapter 3 – OLED^{SM} Team Organizational Structures", the Project Executive Team, at a minimum, includes the designated owner representative, Cleveland Clinic's owner representative, architect / engineer, and construction manager or general contractor. In addition, the Project Executive Team may opt to include owner consultants, architect consultants, design assist contractors, and other trade contractors.

The Project Executive Team firm selection process, excluding the Cleveland Clinic's owner representative and owner representative, is often comprised of multiple steps including but not limited to:

1. An Introductory Review
2. A Request for Qualifications (RFQ)
3. A Request for Proposal (RFP)
4. Key Staff Interviews
5. A Final Interview
6. A Final Cost Proposal

The steps required to select the Project Executive Team firms, including the architect/ engineer design firms and the construction manager, who shall compete for the project is dependent on each organization's desire to or their actual experience working on projects managed by a "Team of Teams" which "Work as a Unit" for the success of the Project.

Each Project Executive Team firm that has the desire, but limited or no experience in this management approach, may be required to go through all six (6) of the selection process steps. This provides the Owner Representative and selection committee the opportunity to better understand the management philosophy and style of a firm and its key employees so that an informed decision is possible.

At the opposite end of the scale, if a Project Executive Team firm has experience on projects managed by a "Team of Teams" who "Work as a Unit" the Owner's Representative should recommend, based on that particular Project Executive Team Firm's organization and staff experience, which of the six (6) selection process steps should be implemented. The recommended selection process steps shall be reviewed and approved by the selection committee and Cleveland Clinic's Construction Management Oversight Committee (CMOC).

Note that the architect typically selects, with owner approval, the engineer(s) and includes their services within their proposal.

The designated Owner Representative and the Cleveland Clinic's Owner Representative are assigned to the project by a Hospital Department Leader that the project is being constructed for, and the Director of Construction, respectively.

Select Trade Contractors, that are not Design Assist Contractors, that become part of the Project Team through the competitive bid process as defined by CMOC can be asked by the existing Project Executive Team members to join the Project Executive Team.

Under certain circumstances i.e. special market conditions, project uniqueness, time, location, etc. and with the approval of the Director of Construction, Senior Director of Construction, and the Construction Management Oversight Committee (CMOC) any one of, or all of the above listed Organizations that are not part of the Cleveland Clinic may be selected via a negotiated approach based on qualifications, staff, and target estimate.

Immediately after each Project Executive Team firm has been awarded the work, they shall select the individual within the firm that they propose to be the Project Executive Team Member and submit their qualifications for approval by the Owner's Representative, the Cleveland Clinic's Owner Representative, and the awarded Project Executive Team firms. The Project Executive Team Members shall be leaders and key decision makers within their organization.

Project Core Team Member Selection
The members of the Project Core Team are selected individuals from each of the Project Executive Team Firms and, if determined beneficial by the Project Core Team, individuals from participating project organizations not included on the Project Executive Team. Each Project Executive Team firm and participating project organization should submit the qualifications of their proposed Project Core Team member(s) to the Project Executive Team for review and approval. As necessary, the Project Executive Team may wish to schedule interviews of all or selected proposed Project Core Team members prior to final approval.

Summit Team Member Selection
The Summit Team members include all the firms/individuals who are members of the Project Executive Team and Project Core Team. These Team members work with the Project's Cleveland Clinic Buildings + Design owner's representatives and the consulting owner representatives to determine the Summit agenda. Key individuals from all other active firms on the project should be included in the Team Summit. As stated in Chapter 3A, Summit Team Meetings typically include Cleveland Clinic Project Owners, Case Western Reserve University Weatherhead School of Management, project consultants, firm principles, trade organization executives, trade project managers, superintendents, foreman, and select individual trade workmen. In addition, based on the Summit agenda, select topic specialists may be invited to speak to the Teams.

OLED^{SM} Research Team Member Selection
In 2014, after ten years of successful experience in using and developing the OLED^{SM} practice model to manage Cleveland Clinic construction projects, it was determined that scientific data was required to substantiate the "Team" and "Team of Teams" approach and define what works and what does not work in establishing and maintaining team relationships. As a result of this identified need, the OLED^{SM} Research Team was established.

The current members of the OLED^{SM} Research Team, Dr. Steven Lau, Trustee Emeritus; Ronald Lawson, Director of Construction Emeritus; Dr. John Paul Stephens, Professor Organizational Behavior Weatherhead School of Management; Penrose Wolf, Director of Construction; and Alan McKinney, President Concord Healthcare Development were selected by Dr. Steven Lau and Ronald Lawson.

The current Director of Construction for the Cleveland Clinic shall always be a member of this Team and ensure that the Research efforts meet the needs of OLED^{SM} and the Cleveland Clinic. In addition, this Team shall always include a Cleveland Clinic Owner Representative that will be assigned by the Director of Construction. Dr. John Paul Stephens, six months before resigning, shall propose several candidates from the Organizational Behavior Weatherhead School of Management Department for review, selection, and approval by the remaining existing members. One month prior to the remaining two existing members of the OLED^{SM} Research Team resigning, Dr. Steven Lau and Alan McKinney, shall notify the Team and the Team shall mutually select their replacement. All members selected shall be signatory to the OLED^{SM} practice model of managing construction projects and exemplify a true team player.

Process Enhancement Team Member Selection
The Process Enhancement Team is comprised of two types of members, permanent members and project specific members.

Permanent members of this Team include Cleveland Clinic's Director of Construction, a representative from Lean Projects Consultant, a representative from the Case Western Reserve University Weatherhead School of Management, and a representative from Concord Healthcare Development. The individuals from these organizations assigned to the Process Enhancement Team are selected by Mr. Tom Richert of Lean Project Consultants, Dr. John Paul Stephens from Case Western Reserve University, and Mr. Alan McKinney of Concord Healthcare Development, with the review and approval of Cleveland Clinic's Director of Construction.

Project specific members of this Team include Cleveland Clinic's Owner Representatives, Architects, and Construction Manager Representatives which are selected from the current active projects selected by Cleveland Clinic's Director of Construction. Once a selected active project is complete and closed-out by the Cleveland Clinic, that project's specific members are no longer involved in the Process Enhancement Team.

Task Team Member Selection

- **Component and Tackler Team Members Selection**

  The Project Core Team selects the members for each of these Task Teams. Task Team members include one or more Project Core Team members and occasionally include a Project Executive Team member. Other Task Team members are selected from the organizations involved in the project. Team members should possess an understanding and knowledge of the subject / concern / issue to be addressed by the respective task team. It is not uncommon to have home office personnel and field personnel (Project Managers, Superintendents, Engineers, Foreman, and Tradesmen) as members of these task teams. A team champion to lead each task team shall be selected by the task team members and approved by the Project Core Team.

- **Study Action Team Members Selection**

  The opportunity to participate on a Study Action Team depends on the subject to be studied.

  If the subject matter of the Study Action Team is deemed beneficial to the success of the project and the OLED^{SM} process, then membership on this team is usually open to any project team member.

  If the subject matter of the Study Action Team is related to a subject that is focused on a specific concern, task, or concept that will be beneficial to specific project teams and team members, then membership would be limited to that select group. The individuals initiating this Study Action Team are responsible to list and invite the appropriate team members.

  Any member of the Project Executive Team or Project Core Team has the right to establish a Study Action Team. Project Core Team approval of the proposed Study Action Team's subject matter and attendees is required. The Study Action Team members should select their team leader.

- **Owner Non-Construction Team Members Selection**

  Successful projects not only focus on construction, but also place a spotlight on a project's Owner Non-Construction Furniture, Fixtures and Equipment (FFE) Team. OLED^{SM} creates a best practice for organizing a highly effective Non-Construction Team including involving the "right" subject matter experts who specialize or have unique expertise in a specific non-construction FFE field or niche, as early in the life of a project as possible.

The Non-Construction Team typically includes a collection of competencies and roles pertaining to the design, specification, coordination, procurement, budget, installation and acceptance of non-construction activities such as Artwork, Audio/ Visual, Medical Equipment, Technology, Security, Furniture and Signage, as needed per project. Based on project type, scale, and scope, the number and type of Non-Construction Team members is chosen based on the different roles at different project stages as needed to accommodate the project.

The project manager of the Non-Construction Team plays the primary role in the project and is responsible for its successful completion. Project managers make sure that projects are given sufficient resources, while managing in an OLED^{SM} fashion the relationships with contributors and stakeholders. A project manager's duties may include:

- Develop a project plan for non-construction scope
- Identify the specific non-construction experts to populate the team
- Manage procurement and deliverables according to the plan
- Lead and manage the project team
- Establish an all-inclusive and comprehensive Integrated Project Delivery Master Project Schedule, focusing on how non-construction work directly relates to the construction flow / schedule
- Assign tasks to project team members
- Manage constraints
- Manage the installation of all non-construction items
- Provide regular updates to upper management

The Non-Construction Project Team members are individuals who actively work on one or more phases of the project. They may be in-house Cleveland Clinic staff or external consultants, working on the project on a full-time or part-time basis. Team member roles vary according to the needs of each project. Project team member duties may include:

- Contributing to overall project objectives
- Completing individual deliverables
- Providing very specific non-construction expertise (i.e. IT; low voltage; medical equipment)
- Working with users to establish and meet business needs
- Documentation

- **Transition / Activation Team Members Selection**

  First, the Owner and the Construction Owner's Representative research Transition/Activation Vendor Organizations based on their overall qualifications including similar project experience, proposed staff, and compensation. The final selection may be via competitive bids submitted by multiple organizations that meet the transition / activation consultant qualification requirements or a negotiated approach. A negotiated approach must be approved by the Director of Construction, and Construction Management Oversight Committee (CMOC).

  Once the Transition/Activation Planner is on board, the Project Executive Team and appropriate Owner's Agent should in cooperation with the Transition/ Activation Planner select the additional team members necessary to represent the various service lines under contract to construct the space for occupancy (i.e. IT/AV, furniture, security, construction, artwork, medical equipment, etc.). The members assigned to the team are often the Project Manager / Engineer of the service line already assigned to the project. Meetings held regarding the construction of the space for occupancy can be run by the Transition/Activation Planner, CM/GC, or the Owner Representative.

  When the Transition/Activation Planner is focusing on the clinical and operational portion of the project, such as occupancy needs (i.e. badge access, office keys, training, policies, stocking, mock scenarios, relocation of occupants/equipment) the team should include nurse managers and designated leaders who have been selected by the Owners to represent their clinical area. Meetings held regarding the clinical and operational portion of the project are run by the Transition/Activation Planner.

  It is not uncommon for the Transition/Activation Planner to request assistance from select Transition/Activation team members to participate on Task Teams formed to develop a particular plan or schedule related to their work experience. Meetings are run by the Transition/Activation Planner or selected task team members.

- **Post Occupancy Team Members Selection**

  The Post Occupancy Team is divided into two groups of team members:

- The Owner's Representative's Team Members
  - The members of this team are selected by the Owner's Representative in cooperation with the Medical Director of the departments inhabiting the new space. Team members should include key individuals from the administrative staff, medical staff, nursing staff, and support staff.

- The Design and Construction Team Members
  - The key members of the Design and Construction Team are the Construction's Owner's Representative, the Project Core Team members, and if deemed appropriate/beneficial, select members of the Project Executive Team. In addition, the Team may choose to include select individuals from the project's trade contractors and third-party consultants, all of which are reviewed and approved by the Project Executive Team.

The members of each team shall select from their team a team leader.

4.A1

TEAM SELECTION "PLAY"

Play TEAM SELECTION

PROJECT: LAKEWOOD FAMILY HEALTH CENTER & EMERGENCY DEPARTMENT (PROJECT 0015173)

SECTION - CURRENT STATE

- Based on cost—Usually based on lowest cost not value

- Relationships not taken into account when selecting firms and personnel

- Lean practices and experience within companies not taken into account during selection

- No team involvement during selection process. (Owner/Architect for design; Owner/CM for construction)

- CM is solely responsible for the entire project. Individual trades primarily looking out for their scope of work.

SECTION - FUTURE STATE GOALS

- Flexibility– Working together requires compromise.

- Shared Responsibility—Everyone takes ownership of the entire project

- Commitments—Following through on promises

- Participation— Everyone has a turn running the Core Team meeting.

- Communication—Everyone has a voice on the Team and clearly communicates ideas and concerns.

- Individual Companies—"Top down buy-in" to the Lean process. Frorm the owner to the project members.

- Learn each others profession— through teaching and learning comes insight and innovation.

- Together—Working as a Team on the next project. This would allow for further successes.

- Repeat teams on another project

SECTION - WHAT THE PROJECT TEAM DID

- This project was allowed to form a team very early on in the process. Our team was assembled at the beginning of conceptual design

- Architect and MEPT Engineer Selected by Owner (Interviewed individuals from firms)

- CM was selected through an interview process with Owner and Architect. The team members from the CM were interviewed on an individual basis.

- Core Trade Partners were selected through an RFP/RFQ submission along with an interview including Owner, Architect, Engineer, and CM. In addition Choosing By Advantages was utilized in the selection process. Key criteria used in the selection process were interest in or ability to participate in lean/OLED/IPD and interviewing individuals working on the project. "NOT THE PRESIDENT OF THE COMPANY"

- Additional Trade Partners were selected through an RFP/RFQ submission along with an interview including Owner, Architect, Engineer, CM and core team trade partners. In addition Choosing By Advantages was utilized in the selection process. Key criteria used in the selection process were interest in or ability to participate in lean/OLED/IPD and interviewing individuals working on the project. "NOT THE PRESIDENT OF THE COMPANY"

- Remaining Lump sum contractors were bought out through a more traditional process and reviewed with the Core Team.

- Early Team Selection—This allowed for quicker decisions based on everyone understanding the history. Also early selection helps develop focused A3 due to understanding the design development. If possible bring more trade partners on earlier not just MEP.

SECTION - LESSONS LEARNED

- Engineer should be involved in the CM interview process or vice versa

- The individual assigned to the project is more important than just the firm assuming the firm is qualified.

- Both the firm and individual need to be open to progressive delivery methods.

- Depending on size of project (ie smaller) time requirements need to be understood during team selection.

- Evaluate which team members should be part of the risk pool. We should have included additional members (ie Low Voltage, Sitework)

4.B

PROJECT TEAM MEMBER DEVELOPMENT

PROJECT TEAM MEMBER DEVELOPMENT

As soon as the project team is selected, the growth and development of its team members (the relationships between project roles) and the desired OLED^{SM} culture must be created. This starts with the OLED^{SM} Team in the development of the team's Purpose Statement and Measurable Goals which, when accomplished, will lead to project success. Please see the attached Plays entitled "OLED^{SM} Team Purpose Statement" and "OLED^{SM} Team Meetings".

The careful nurturing of team member relationships is also a focus of OLED^{SM}. Getting to know each other in non-work, social environments can lead to faster development of trust and respect. While this team member relationship focus may sound very "soft" to some, project team member performance both professionally (e.g., accurate and accountable work product) and personally (e.g., behavior, positive attitude, and meeting actions) is carefully observed and managed by Cleveland Clinic. In fact, should either professional or personal behavior not be consistent with the desired OLED^{SM} team culture, those individuals not adhering are replaced.

Please see the other "Plays" on team member development under OLED^{SM}, including the unique concept of Rounding (different trade contractors walk through the job together so they understand the other's perspective) and project team building exercises ("To Build the Tallest Tower" and the "Game of Life" examples) all of which can be used to facilitate faster / more effective team member relationships.

4B.1

TEAM BUILDING - PURPOSE STATEMENT DEVELOPMENT AND OLED^{SM} TEAM MEETINGS "PLAYS"

PURPOSE STATEMENT DEVELOPMENT PLAY

The successful development of our OLED[SM] team depends upon aligning the interests of all selected team members by jointly developing a Purpose Statement and corresponding measurable goals. This Purpose Statement development process is described in the "Play" on the following pages. While the timely development of the TEAM'S Purpose Statement is critical, the development of it can take multiple meetings of the OLED[SM] Team to accomplish.

Examples of particularly strong OLED[SM] Purpose Statements include:

- "Creating an inspiring environment" (Taussig Cancer Center)
- "Transforming the continuum of care together" (Avon Bed Tower Project)

Note the "short" nature of these impactful purpose statements. Over the 25-30 projects where OLED[SM] purpose statements have been developed, it always seemed that short, concise memorable purpose statements were best.

Avon Bed Tower Project Purpose Statement

4.B1

PURPOSE STATEMENT DEVELOPMENT "PLAY"

Play: OLED Team Purpose Statements

Cleveland Clinic

PROJECT: ALL PROJECTS   **WRITTEN BY: AL MCKINNEY**

SECTION - CURRENT STATE

- At the commencement of the OLED Team meetings, the team's first activity is to develop a Purpose Statement for the project This sets the overarching objective for the OLED Team to accomplish, and allows for the Team to then set Measurable Goals, that when met, will deliver a successful project.

- Original thinking of the importance of the Purpose Statement concept was derived from a 1998 Harvard Business Review article which in part said:

"The best teams invest a tremendous amount of time and effort in exploring, shaping, and agreeing on a purpose that belongs to them both collectively and individually. "

SECTION - FUTURE STATE GOALS

- While the start up of OLED Team Meetings is standardized with the immediate development of the Purpose Statement and Measurable Goals, there is opportunity to improve this process by constantly looking for new methods to develop the Purpose Statement. New approaches are very important as many of the team members have been involved in other OLED projects and gone through the process in the past.

SECTION - WHAT THE PROJECT TEAM DID

- Once the OLED Team members are established by the Buildings & Properties Owner's Rep, an OLED Team Kick-off agenda along with 3 articles are sent to the team as pre-meeting read ahead materials. These 3 articles are attached (see Guide and Playbook Reference materials).

- At the initial OLED Team meeting, the team is split into small breakout groups to develop the Purpose Statement so input from all is included, The breakout groups are asked to answer: the question "What is the Purpose of this team?" After a 20-30 minute period of time to work on this question, each breakout group shares it's thoughts.

- As the breakout groups are sharing their responses, the facilitator looks for recurring themes to develop the Team's Purpose Statement.

- As the recurring themes are brought forward, the team collectively begins to craft the ideas into a statement that is understandable and to the point. Again, due to the number of iterations it may take to "get it right", this can take multiple meetings to get to the final Purpose Statement.

- Usual OLED Team Meetings are once a month, but rather than lose momentum and progress made on the Purpose Statement during each meeting, the frequency of the Team meetings is increased to one every two weeks.

- Once the "final" OLED TEAM Purpose Statement is agreed upon in person, typically we formally approve it at the following OLED Team meeting.

- (Note different facilitators successfully develop the Team's Purpose Statement in different ways. Above is one method to do so.)

SECTION - LESSONS LEARNED

Getting involvement from all team members in the development of the Purpose Statement is key to having a Purpose Statement that resonates with the entire team. This concept relates back to the original thinking derived from the HBR article.

Simple, short and understandable purpose statements are best. For example, "To create an inspiring environment" was the Purpose Statement for the Taussing Cancer Center Project. "Transforming the continuum of care" was the Purpose Statement for the Avon Bed Tower Project. Both were very impactful to those teams.

Successful OLED Teams continuously refer to the Purpose Statement they developed throughout the life of the job.

The use of the Purpose Statement in the Big Room has been successful in alerting others that on-board after the development of the Purpose Statement to the team's overarching mission.

4.B1
OLED^{SM} TEAM MEETINGS "PLAY"

Play: OLED Team Meetings

Cleveland Clinic

PROJECT: ALL PROJECTS

WRITTEN BY: AL MCKINNEY

SECTION - CURRENT STATE

- Presently all large scale Cleveland Clinic projects create an OLED Team which truly focusses on the state of the team, and not the specific challenges of the job (like an OAC team meeting would do). The objective of these meetings is for all of the roles involved in the project, including Owner (Construction and User), Architect, CM, Engineers, Trade Contractors and Consultants to get involved very early on in the project to establish the team's Mission Statement and Measurable Goals. Once these are established, these monthly meeting focus on how the team is doing in relation to the measurable goals and also on important team building initiatives. The team measures its progress though Team Surveys every other month.

SECTION - FUTURE STATE GOALS

- While the start up of the OLED Team Meetings is standardized with the development of the Mission Statement and Measurable Goals, there is opportunity to improve by setting a more standard list of those to include in the OLED team members (for example Avon had 30 team members that included an extensive care giver involvement where Cancer Building had little Institute involvement).

- The concept of defining the Owner and obtaining their commitment and involvement at the front end of the OLED Team meetings start up will need to be improved.

- The plan is for OLED to be used on all projects, not just large scale projects.

SECTION - WHAT THE PROJECT TEAM DID

- The Owner's Rep worked with the Director of Construction to set up the list of OLED team members

- Set OLED Team Meeting Kick-off date; send out agenda and OLED Team read ahead materials (see attached example articles)

- Meetings (multiple) to establish the team's Mission Statement

- Meetings ((multiple) to set team's Measurable Goals

- Monthly Team Meetings, (1 to 1.5 hours in length) typically set on a standard day of the month which mainly focused on how the team is performing in relation to the Measurable Goals and building team transparency, respect and trust.

- Created Team Building activities, outside of a standard meeting location, such as:

  - Team Socials and events (Taverns; Bowling; Ball games (Indians); Tours

  - Games (Build the Tallest Tower; Jeapordy)

- Rotated leadership of the Monthly OLED Team meeting

- Include videos such as the Cleveland Clinic Empathy Video; Pink Bat; others that come from team members

- Constantly looked for ways to keep the meetings fresh and of interest, such as 30 minute meetings instead of 1 hour; site tours; community engagement

- Use one of the monthly meetings for a project Summit,. Summits included a more diverse group more tradesmen), had a standard agenda that included participation by all in the room, team recognition and concluded each time with a social hour.

- All of this activity is measured on an every other month basis by the standard Cleveland Clinic OLED Team Survey Form (attached)

SECTION - LESSONS LEARNED

The most successful OLED Teams have a defined Owner to support Buildings and Properties OLED efforts to maximize teamwork and team results

It's easy to get involved with the project and allow yourself to skip an OLED Team Meeting. There is discipline required to do this successfully.

It is worth the 1 to 1.5 hours a month fo focus on the team. Great benefits can be received by the OLED Team Meetings being held. There are numerous examples of participants commenting on the value of these meetings to them, allowing them the freedom to have direct access to the owner and to have the freedom to identify the tough issues ("put the monkey on the table") that face the team..

Many of the OLED Teams are created and run differently, depending on the Cleveland Clinic Owner Rep. An opportunity for more standardization is available, but the desires of the Owner Rep and the specifics of the project (location, project size and duration, facility type, etc.) will likely lead to some continued individuality between projects.

Strong OLED Teams are in a better position to complete a Post Occupancy Study

Even if a project is having difficult times, OLED meetings should continue

Team surveys are extremely valuable to do on a bi-monthly bass. They have proven to accurately show the state of the team (i.e. HEC's improvement in scoring after GMP; Avon dip in scoring during shear wall).

4.B2

TEAM BUILDING "PLAYS"

- TEAM BUILDING EXERCISES
- TEAM SOCIALS

Play: Team Building Exercise

Cleveland Clinic

PROJECT: AVON BED TOWER (PROJECT 0013350)

SECTION - CURRENT STATE

A project team consisting of the owner, owner's representative, architect, engineer, construction manager, trade contractors, and consultants has been established with the goal to design and build a project together. Under traditional delivery methods each members works individually, meet and share progress but never really connect and share resources and truly communicate and collaborate and act as one team.

SECTION - FUTURE STATE GOALS

To build a true "team" that knows each other and can communicate and work together to solve or avoid problems throughout the project. The team members learn about the strengths and capabilities of each other and then will know who they can rely on for assistance for a specific issue when needed.

SECTION - WHAT THE PROJECT TEAM DID

During the first regular meetings that included all team members a task was undertaken that required all team members to participate. Many times the task involved breaking the team into smaller groups with each group comprised of one member from each of the aspects of the team (owner, architect, engineer, construction manager, owner's representative, trade contractors, and consultants) and each group worked to solve a problem or prepare a document with their individual group's ideas in all projects the first team building exercise has been to create a project purpose statement. Two or three sessions are usually required to fully develop and arrive at the purpose statement that the entire team agrees upon and adopts for the duration of the project. Other team building sessions have involved team building exercises that can be fun and challenging to require groups to work together with a common goal. One team building exercise should be completed for each quarterly OCPTDSM meeting as time permits. The team building exercise "The Tallest Tower" has been used on multiple OLED^{SM} projects. More suggestions for team building exercises can be found at https://www.teampedia.net/wiki/Main_Page .

SECTION - LESSONS LEARNED

Throughout the course of the project the various team building exercises accomplished will allow each individual to become acquainted with each other and develop a bond that will benefit the project by breaking down the silos or barriers. A greater level of collaboration and communication will be achieved once all team members know each other and what each other's strengths are.

Play: Team Socials - 1-7-2020

PROJECT: ALL PROJECTS

SECTION - CURRENT STATE

- Construction organizations on a project today rarely meet on just a social basis.
- Typical social events that do take place are for certain holidays with Christmas being the most common.
- Events held include only a select group of the organizations involved in the project.
- One group might include key office personnel from the project management organizations of the Architect's, Engineer's, CM's or GC's, and Owner's offices.
- Another group might include the key field personnel from the project management organizations of the CM's or GC's, Architect's / Engineer's, and Trade Contractor's.
- This approach to socialization does not eliminate "silos" or provide the opportunity to create team relationships for all involved.

SECTION - FUTURE STATE GOALS

- Schedule Team Socials quarterly or semi-annually as deemed appropriate.
- Team Social typically held late in the day or after hours in locations other than areas of work.
- Invite key individuals from all the organizations currently active on the project site.
- Avoid critical Project discussions
- Opportunity to recognize outstanding performers.
- Promote OLED^{SM} and reaffirm the project Mission Statement.
- Organizational hierarchy and titles are not relevant.
- Encourage everyone to gain personal insight into each other.
- Opportunity for all Team Members to meet the Owner.

SECTION - WHAT THE PROJECT TEAM DID

- Taussig Cancer Project
    - Multiiple Team Socials over the course of the Project
    - typically aligned with the OAC Team meetings in the Project Offices Big Room and started at conclusion of said event
    - Attendees included Owner's Rep, CM, Design Team, Trade Principles, Trade Foreman, Consultants
    - food and drinks were provided at all events
    - Several Socials held at local bowling alley
    - Ping Pong tournaments held in Big Room
    - results included excellent opportunity to network and getting to know all project team members

SECTION - LESSONS LEARNED

- Team Socials provide all individuals attending the opportunity to develop personal relationships with each other regardless of title or position
- The location, physical layout, and atmosphere definitely plays on the success of the relationship development process.
- The start time for a Team Social should be shortly before or immediately after the end of the Project's workday.
- Including both field and office personnel assists in opening the doors to and eliminating silos.
- Including select key project Trade Contractors (ie. design assist Trades) pushes the Team concept and open communication aspect down stream. Trade Contractors, Owners, Project Managers, and Superintendents should be considered.
- Executive Team members should casually encourage conversations between all Project Team members.
- Snacks and beverages encourages attendance.
- Limited and scattered seating helps in minimizing individuals from remaining in their silo.
- Owner, Owner's Rep, or Construction Mgr. should open the Social with a brief talk about OLED^{SM} and the benefits it has provided to date.

4.B3

TEAM MEMBER RECOGNITION "PLAY"

Play: TEAM MEMBER(S) RECOGNITION 12-17-29

PROJECT: ANY PROJECT

SECTION - CURRENT STATE

- Organizations not recognized for above average performance, communication, cooperation, and creativity during the course of a construction project.
- Individual Team members of the Organizations not recognized for above average performance, communication, cooperation, and creativity during the course of a construction project.
- Minimal personal attachment to the Project.
- Minimal incentive to improve performance, communication, cooperation, and creativity
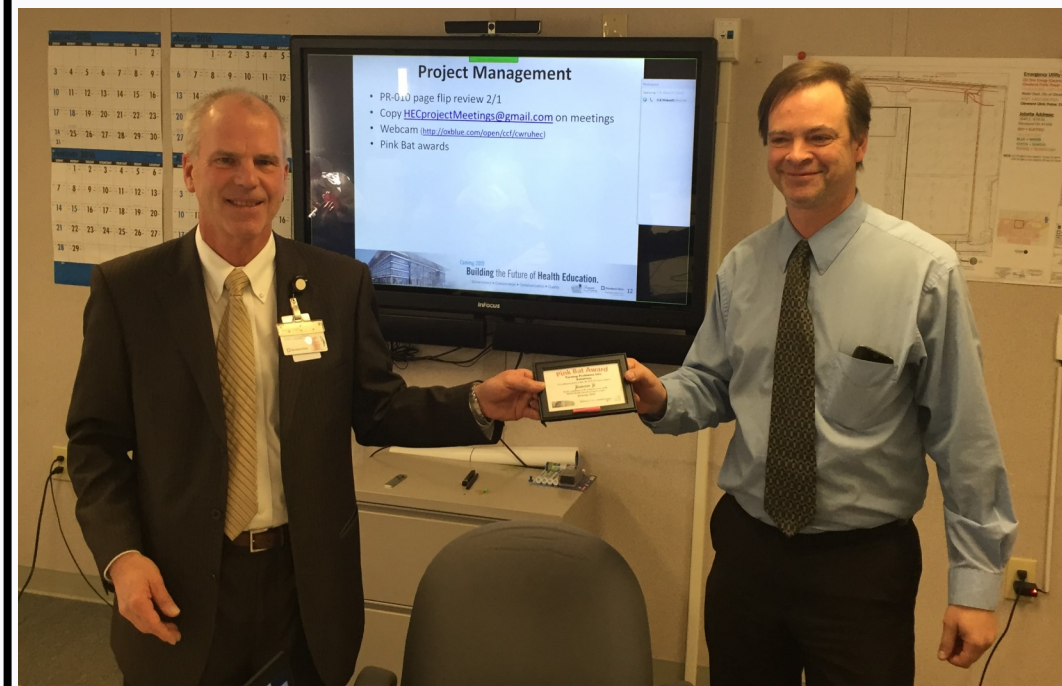
SECTION - FUTURE STATE GOALS

- Recognition of and / or rewarding above average performance, communication, cooperation, and creativity of the Organizations and / or their individual staff members.
- Create friendly competition amongst the Team and "Team of Teams".
- Assist in creating a personal attachment to the Project.
- Enhance Team concept and Team of Team relations.
- Encourage continuous improvement in the construction process.

SECTION - WHAT THE PROJECT TEAM DID

- The Office of Construction's Owner's Representative in cooperation with the CM / GC, and as necessary the Executive Team and the contracted Trade Organization Leaders, monitor the work and identify high performance organizations, teams, and / or individuals and document their performance.
- Owner's Construction Representative and CM determine the form and timing of the recognition and / or reward.
- Verbal recognition and / or rewards are typically presented at field meetings, team meetings or project summit meetings depending on the presenter(s) and the intended receipient(s).
- Past rewards have included: gift cards, trophies, theater tickets, and certificates.
- Frequency of recognizing and / or rewarding has been dependent on each project with monthly being the most frequent and quarterly the typical.

Russ Saghy delivers a Pink Bat award

SECTION - LESSONS LEARNED

- Recognition by one's peers greatly assists in developing personal attachment to and pride in the project.
- Recognition of one team or one individual encourages / challenges the other teams and team members to improve their performance and processes for the betterment of the project.
- Recognition of individual tradesmen assists in creating a positive work attitude on the project and informs them that they are respected, valued, and important to the project.
- It should be noted that recognition and / or reward can take place anytime it is deemed important.
- The on-boarding and off-boarding of organizations and tradesmen should be considered knowing that it is often difficult, if not impossible, to have them return to the project after their scope of work is completed to be recognized.

4.B4
TEAM SURVEY

TEAM SURVEY

In 2006, during the formative years of OLED[SM], Ron Lawson identified the need for the team to be able to measure itself. Ideas such as do we trust each other, do we make timely decisions, how is our teamwork with each other all came to mind. At the time, with no formal training or academic assistance, Cleveland Clinic developed a 7-question team survey form. In or about 2012, an 8th question related to respect was added.

Team surveys were taken at the OLED[SM] team level, but over the years, the format has been used for Project Core Team, Project Executive Team and every Summit Team measurement.

Over the last 14 years, hundreds and hundreds of these surveys have been completed, usually on a bi-monthly or monthly basis, on the 25-30 projects OLED[SM] has completed. Some of the take-aways from these team surveys include:

- Comments are the most valuable feedback form, and the hardest to get

- The average score is a 3.7 +/-

- The high score is 5.0

- The lowest score is 2.3

- There is usually a "honeymoon" period at the beginning of the project and scores are high

- Conflict (i.e. shear wall at Avon; the GMP phase of any project) does impact the scores and you can see the dip

- Question #3 "concerns and problems are dealt with in a timely manner" is always (literally always) the lowest score on each team survey. (Note CWRU Summit team efforts defined in Process Enhancement Team Section #3.)

The bottom line is this survey form is an effective tool for OLED[SM] and it must be used for OLED[SM] success!

CASE WESTERN RESERVE UNIVERSITY SCHOOL OF DENTAL MEDICINE CLINICAL BLDG. PROJECT TEAM SCORECARD

PROJECT: _____ **DATE:** _____

Based on your current project experience, rate your "perceptions" of this project. Check the BOX ☐ under the number that most closely reflects your opinion from a scale of 0 – 5 as described in the questions below.

<u>DOUBLE CLICK</u> ON THE BOX TO CHECK THE BOX THAT APPLIES TO YOU:
☐ Owner ☐ Architect ☐ Construction Manager ☐ Owner's Representative ☐ Other Consultant

1. Communication between all team members is:							
Difficult, With Frequent Disagreements	0 ☐	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	Open, Honest & Free Flowing

2. Concerns and problems are acknowledged:							
Only When They Could Not Be Ignored	0 ☐	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	At First Sign

3. Concerns and problems are dealt with in a timely manner:							
Never	0 ☐	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	Always

4. Cooperation between all team members is:							
Nonexistent-Adversarial	0 ☐	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	Highly Productive – Cooperative

5. When issues were raised people:							
Said One Thing and Did Another	0 ☐	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	Did What They Said They Would Do

6. The sense of teamwork between everyone is:							
Nonexistent	0 ☐	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	Very Strong

7. The level of trust between Team Members is:							
Nonexistent	0 ☐	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	Very Strong

8. The Team Member's respect of each other is:							
Nonexistent	0 ☐	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	Very Strong

COMMENTS*:	

* Please provide comments on any item you score below a three.

School of Dental Medicine
Clinical Building
OLED[SM] Team Survey Results #5

June 27, 2018

SODM Survey Scorecard

	Statement	Score Ranking		
		Low	**Avg**	**High**
1.	Communication between all team members	3	4.6	5
2.	Concerns and problems are acknowledged	3	4.3	5
3.	Concerns and problems are dealt with in a timely manner	3	3.9	5
4.	Cooperation between all team members	4	4.5	5
5.	When issues were raised people (did what they said)	3	4.2	5
6.	The sense of teamwork between everyone	4	4.7	5
7	The level of trust between team members	2	4.3	5
8	The Team Member's respect of each other is	4	4.7	5
	TOTAL		**4.4**	

* **13** Survey Responses Received (10 surveys had comments)

CASE WESTERN RESERVE UNIVERSITY EST. 1826

Cleveland Clinic

SODM Survey Scorecard

Question	0	1	2	3	4	5
1. Communication between all team members is	0	0	0	1	6	11
2. Concerns and problems are acknowledged	0	0	0	2	9	7
3. Concern and problems are dealt with in a timely manner	0	0	0	5	10	3
4. Cooperation between all team members is	0	0	0	0	9	9
5. When issues were raised people (did what they said)	0	0	0	2	11	5
6. The sense of teamwork between everyone is	0	0	0	0	6	12
7. The level of trust between team members is	0	0	1	2	6	9
8. The team member's respect of each other is	0	0	0	0	5	13

CASE WESTERN RESERVE UNIVERSITY EST. 1826

Cleveland Clinic

SODM Survey Comments

- After sitting in the meeting I realized we are all here for a common goal. Everyone really cares about project success and getting continuously involved.

- Continued interaction with CM

- Great trade participation

- More engineering involvement on-site assist with QA / QC

SODM Survey Comments

- More telephone call; personal interaction

- Great Team approach!

- All good!

Comparison of Surveys
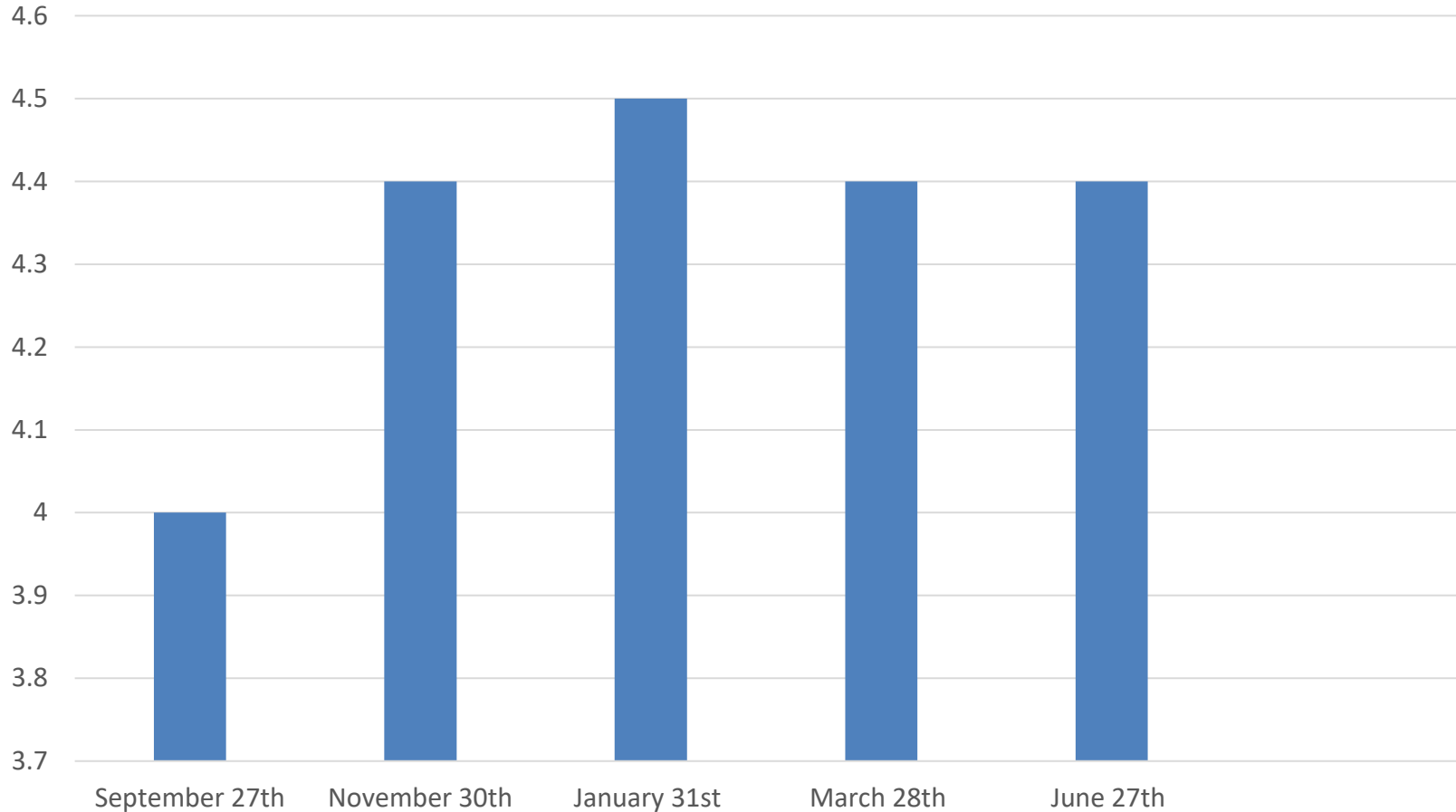
4.B5
TEAM MEMBER ON-BOARDING "PLAY"

Play: PROJECT / FIELD ONBOARDING

PROJECT: ANY PROJECT

SECTION - CURRENT STATE

- All organizations required to complete a construction project including the architect, engineer, consultants, construction manager / general contractor, and the trades, start work on the project without an understanding of the project's purpose, the owner's vision, the hierarchy / organization of the management of the project, and specific safety requirements.

SECTION - FUTURE STATE GOALS

- Provide a kick-off orientation process that requires all project team members (architect, engineer, consultants, construction manager / general contractor, and the trades to attend prior to working on the project.

- Individuals, develop and inherent care and accountability for their work.

- Individuals, develop an inherent care for work they are not responsible for, providing an additional set of eyes to enhance quality and team work to meet the project's missing / purpose statement and the owner vision of the project.

- Assist in the elimination of silo's, misunderstanding, and conflict thereby enhancing the team concept and ultimately the success of the project.

SECTION - WHAT THE PROJECT TEAM DID

- Immediately after the award of work to a new team organization / member they were requested to attend an Onboarding meeting provided by the Cleveland Clinic's Owner Representative.

- An example of the structure of the Onboarding meetings is as follows:

   a. Detailed project description

   b. Owner vision

   c. OLED^{SM} summary

   d. Project specific OLED^{SM} Core Team Purpose Statement

   e. Communication plan

   f. Lean culture including weekly work plans, A3s, percent plan complete, pull planning sessions

   g. Project specific safety requirements

   h. Cleveland Clinic's empathy video

SECTION - LESSONS LEARNED

- Provided an early on fundamental understanding of the "Owner Controlled Team Project Delivery" process and shortened the learning curve.

- Assisted in the development of an emotional connection to the project.

- Provides all team organizations and team members the opportunity to align their goals with the owner's and project's goals thereby enhancing the team concept.

4.B6
ROUNDING "PLAY"

Play: Rounding

PROJECT: CANCER BUILDING (PROJECT ANC09500)

CURRENT STATE

Everyone is most aware of their scope of work or what is in their "silo."   How other's work specially effects your work is typically conveyed later than it should be or not conveyed at all.

FUTURE STATE GOALS

The basic principle of *Rounding* is improved communication. Rounding establishes a clear path for communication that doesn't typically exist on the typical construction site. It provides the opportunity for parties that don't consistently intermingle to collaborate and share ideas. Cross discipline learning occurs naturally and will be carried on to future projects.

WHAT THE PROJECT TEAM DID

The following *Rounding* teams were established at the Cancer Building:

Principal Rounding

- Principals of all Design Assist firms walked the site with each other. Firms included: Relmec/Southland, Zenith, OCP, Georgi, Glenson, & Turner.

CC Facilities & Engineer Rounding

- A bi-weekly time slot was established for CC facilities/engineers to attend. A site walk-thru was conducted with the any CC staff that could attend.

- Notes were taken throughout walk-thru and any issues were conveyed back to project team through established protocols.

CC Institution

- A regular walk-thru was scheduled between the CC Owner's Representative and different departments.

- Departments included: Chairmen, Caregivers, & Institution

    - Having **one** contact person to act on behalf the institution was key in getting fast/accurate decisions and feedback.

- Notes/comments were taken throughout walk-thru and any issues were conveyed back to project team through established protocols.

CC Architect & Design Team

- A regular walk-thru was scheduled between the CC Architect and the design teams. This was typically to review a specific detail that may have been modified due recent project changes.

LESSONS LEARNED

Establishing an easy and effective way to communicate between different groups that typically don't have that opportunity resulted in a better project. The single mission/goal for the project become a strong focus throughout rounding.

Principal Rounding

- Principals can plan projects better and developed better business relationships that will help future projects .

- Project productivity increased as a result (i.e. lifts were shared between trades).

CC Facilities & Engineer Rounding

- Facilities had a chance to see the quality of construction "behind the walls" and had the opportunity to identify future serviceability issues that they might otherwise have to work around for the life of the building.

- Facilities became familiar with the building before they were actually given the keys.

- The design members had a opportunity to hear about the reality of maintaining a building and how their decisions (good & bad) effect the overall life of the building.

CC Institution

- The different departments become familiar with their future space before they moved in.

- Reviewing a space in person is always more enlightening than reviewing design documents. Any issues with the space were identified and collectively solved.

- Clinic staff got a better understanding of construction as a whole and how much impact changes can cause to the construction team.

CC Architect & Design Team

- This provided a venue to validate the design and made sure the building was exactly what the Cleveland Clinic desired.

4.B7
TEAM SUMMITS "PLAY'

Play: Team Summits—1-8-2020

PROJECT: ALL PROJECTS

SECTION - CURRENT STATE

- Construction project participants including Owner's Owner Representatives, Design Team members, Trade Principals, Foreman, Project Managers, Field Staff, Consultants, etc., do not regularly all meet together on a project.

- All project participants do not have the same understanding regarding the project's status, concerns, and issues.

- Short term goals and priorities between the project participants are not the same and often conflict with each other.

SECTION - FUTURE STATE GOALS

- Provide a kick-off orientation process that requires all project team members to attend prior to working on the project (Project & Field On Boarding).

- Hold regularly scheduled meetings, "Summits", with all project participants.

- All project participants develop an understanding of the work they are not responsible for and how it coordinates with their work.

- As a Team of Teams, provide additional sets of eyes to enhance quality and team work to meet the project's purpose statement and the owner vision of the project.

- As a Team of Teams be aware of and assist in identifying and addressing project issues / concerns timely.

SECTION - WHAT THE PROJECT TEAM DID

- Scheduled quarterly Summit meetings

- Project participants including Owners, Owner's Representatives, Design Team Members, Foreman, Project Managers, Field Staff, Consultants, etc.

- Created a common communication forum to provide clear communications, project excitement, and continuous engagement of the entire project team from field individuals to principles.

- Created an environment to provide OLED^{SM}

- Opportunity to reaffirm the project's Purpose Statement and review the goals to achieve same.

- Provided opportunity to recognize / reward organizations and / or individuals for performance.

- Enhanced and strengthened project team members relationships.

- Provided a forum to reach the owner directly.

- Allowed the entire team to acknowledge, review, and timely resolve issues and concerns to the benefit of all and the project.

- Special attention during the Summit to ensure engagement of all.

- Use of break-out sessions to assist in the discussion process.

SECTION - LESSONS LEARNED

- Provides opportunity to refocus efforts of everyone on the project.

- Best location for the meeting is in the Big Room.

- Number of participants can grow to 40 6to 60 people

- Special attention needed to keeping all individuals in the room engaged.

- Scheduling a Team Social after the Summit for networking and relationship building proved beneficial in terms of attendance and providing topics to open up communications.

4.B8
TEAM MEMBER SPOTLIGHT "PLAY"

Play: <u>**Team Member Spotlight**</u>

Cleveland Clinic Project: <u>**Neurological Institute**</u>

Date: September 2023

SECTION – CURRENT STATE

- A fundamental component of OCTPD^{SM} is to develop a culture of teamwork and collaboration with team members. OCTPD^{SM} also stresses project team member recognition and social events (outside of working events) to get to know each other better. This assists in the development of relationships and trust between team members.

- The CCNI team is a very large project team, regularly on-boarding new members. The CCNI project did not have many mechanisms to have the team meet and get to know each other (to learn each other's story) during the design phase and prior to the opening of the on-site trailer compound. This was further complicated because the CCNI Team is globally dispersed and many team members may never have the opportunity to meet in person.

- A virtual Big Room meeting was established by the Core Group and weekly / bi-weekly Big Room meetings were held on Microsoft Teams.

- At the start of each Big Room meeting a Team Member Spotlight is delivered to accomplish the objectives noted above.

SECTION – FUTURE STATE GOALS

- Roll-out the Team Member Spotlight approach on all OCTPD^{SM} projects both large and small to assist in establishing Team relationships, even if the project team benefits from mostly in person meetings. Learning a person's history may not always happen even if meeting in-person regularly. Having a formal avenue to allow someone to share will assist in the facilitation of sharing their backstory.
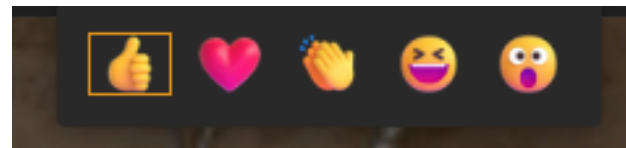
SECTION – WHAT THE PROJECT TEAM DID

- Consistent with the OCTPD^{SM} approach, the CCNI Project Team decided to use the Big Room forum to create a meeting opening ice breaker called Team Member Spotlight.

- The scope of each Team Member Spotlight typically included such topics as:
  - ✓ Family
  - ✓ Job history
  - ✓ Hobbies
  - ✓ What is really important to each team member

- Each Team Member Spotlight lasted between 5-15 minutes, depending on the presenter.

- At each Big Room meeting, the next 2 or 3 Team Member Spotlights were identified, so each could prepare their Team Member Spotlight slides.

- The Team responded to each team member in very positive ways after each spotlight presentation. See attached examples of applause and other signs of appreciation.

- The Team archived all presentations for future review! Currently, as of the date they play was drafted in September 2023, 15 Team Member Spotlights are saved on Microsoft Teams project site.

SECTION – LESSONS LEARNED

- The Team Member Spotlight is a very effective way to welcome, get to know and engage team members.

- Each Team Member Spotlight was as individual as the individual that prepared them! Fantastic effort was put into each spotlight.

Attachments: Video Clips

My Greatest Achievements

4.B9

REFERENCE BOOKS AND ARTICLES

OLED^{SM} REFERENCE BOOKS AND ARTICLES

To assist in the creation and continuous development of the OLED^{SM} process and understanding the concept of "Team" and "Team of Teams" the following books and articles are recommended:

Books:

- Broken Buildings, Busted Budget – How to Fix America's Trillion-Dollar Construction Industry Author: Barry B. Lepatener

- Switch – How to Change Things When Change is Hard Author: Chip Heath & Dan Heath

- aMAZEing Organizational Teams Author: Ellen Burts-Cooper, Ph.D.

- The FIVE Dysfunctions of a TEAM Author: Patrick Lencioni

- 2 Second LEAN – How to Grow People and Build a Lean Culture Author: Paul A. Akers

- THIS IS LEAN – Resolving The Efficiency Paradox Authors: Niklas Modig & Par Ahlstrom

- THE OWNER'S DILEMMA– Driving Success and Innovation in the Design and Construction Industry Authors: Barbara White Bryson with Canan Yetman

- LEAN CONSTRUCTION – One Company's Journey to Success Author: Ted J. Angelo

- THE LEAN TURNAROUND – How Business Leaders Use Lean Principles to Create Value and Transform Their Company Author: Art Byrne Foreward by James P. Womack

- PINK BAT – Turning Problems Into Solutions Author: Michael McMillan

Articles:

- Want To Keep A Project On Track? Get Real Author: Ava J. Abramowitz Presented at the 2016 American Bar Association's Annual Meeting, April 28-30

- The DISCIPLINE OF TEAMS Authors: Jon R. Katzenbach and Douglas K. Smith Published In: Organizational Culture March-April 1993 Issue

- WHY DREAM TEAMS FAIL – It may be tempting to recruit all-stars and let'em rip. Don't do it. Dream team's often become nightmares of dysfunction. Author: Geoffrey Colvin Published In: FORTUNE Magazine – June 8, 2006

(Articles included in the Reference Documents section)

4.B10

GUEST SPEAKERS

OLED^{SM} GUEST SPEAKERS

Numerous guest speakers were asked to address OLED^{SM} project teams, including the list below. This list of speakers has many years of experience with OLED^{SM} and can be a valuable resource to the Cleveland Clinic Owners Rep assigned to the project.

Dr. John Paul Stephens
Case Western Reserve University Dept. of Organizational Behavior 11119 Bellflower Rd., #428
Cleveland, Ohio 44106
(216) 368-1710

Mr. Tom Richert, LPC
Lean Project, Inc.
4136 Colfax Ave. S.
Minneapolis, MN 55409
(612) 440-5326

Mr. Alan W. McKinney, President
Concord Healthcare Development
535 Marriott Drive, Suite 625
Nashville, TN. 37214
(615) 872-1180

Ms. Pam Neckar, CFO
Bostwick Design Partnership 2729 Prospect Ave.
Cleveland, OH 44115
(216) 621-7900

Mr. Robert Bostwick, F.A.I.A. President and Principal of Design Bostwick Design
Partnership 2729 Prospect Ave.
Cleveland, OH 44115
(216) 621-7900

CHAPTER 5

COMMUNICATION AND GOVERNANCE

5A.   INTRODUCTION

5B.   COMMUNICATION & REPORTING PROCESS "PLAY"

5.A
INTRODUCTION

COMMUNICATION AND GOVERNANCE

COMMUNICATION

Communication is an essential part of Owner Led Project Delivery and its ultimate success. The challenge of assuring this success relies on all individuals of the project's teams stepping out of their "silos" and maintaining continuous, reliable, open, truthful, and timely communication with each other regarding all aspects, both positive and negative, of the project and their contractual scopes of work. The words "all aspects" includes, but is not limited to; Budget, Schedule, Quality, Manpower, Sequencing, Material Availability, Weather, or any other item/issue that potentially could, benefit or prevent, the project team from achieving the project's Purpose Statement and Measurable Goals. A team player or organization who is more concerned with his or their own statistics weakens the team and makes it vulnerable to a loss of team spirit and to the risks encountered on any given project. Those few who do not communicate openly and remain in their "silo" should be removed. Removal may be from the team or the project depending on the circumstances.

GOVERNANCE

On every project the OLED^{SM} project team should establish the organizations that will clearly define the decision makers through all phases/aspects of the Project. Creating and establishing a clear communication process and organization allows team members to understand who the point people are and how information is passed from project team members up-stream and back down. The bottom line is that all constraints have a path to timely resolution and approval, thereby not allowing challenges to fester unresolved. "Chapter 3 – OLED^{SM} Team Organizational Structures" defines the minimum management team structure for a project namely: OLED^{SM} Team, Project Executive Team, and a Project Core Team. Depending on the project, additional teams may be formed to address specific project issues and concerns. It is imperative that all teams and all team members tear down the communication "silos". A correct continuous, reliable, open, truthful, and timely communication process provides for the timely flow of information between the executive level and the field level of the team.

Each team formed under Owner Led Project Delivery should have a team leader who is selected by mutual agreement of all the respective team members. When project issues and/or concerns are identified, the team leader should monitor and discuss the team's

progress in identifying the key issue and the development of an appropriate resolution. If a team is not able to reach a unanimous or negotiated resolution between the members, the team leader should present the issue and its status to the next team level for review and resolution. If a unanimous or negotiated resolution is not reached by the project's teams it should be presented by the Cleveland Clinic's Owner's Representative to the Project Executive Team for resolution.

The following "Play" from the Taussig Cancer Center project will share insight on how teams of past projects established successful communication/governance processes.

5.B

COMMUNICATION & REPORTING PROCESS "PLAY"

Play: Communication and Leadership Governance

PROJECT: CANCER BUILDING (PROJECT ANC09500) - WRITTEN BY: DAVE DOREN & LEON ROZIC

SECTION - CURRENT STATE

- In the past, Users have not been integrated in the team or there has not been a clear line of communication so they have transparency to the proposed end product and a process to provide input into the end product.

- Current conditions are as follows:

1. User ideas and requirements to improve the finished product/details are not incorporated in a timely fashion or complety omitted.

2. Users in the end state are unhappy with final product.

3. Project team members restricted access to Users and other team members, creating confusion and ultimately rework.

4. A project tends to languish in pending items that continue to stack up. This creates an environment of indecision that costs the Owner money in rework in both design and construction efforts.

SECTION - FUTURE STATE GOALS

- The goal of the team was to establish a process that integrated the Users and other project team members into the design and construction decision making process in a way that empowered them and others to achieve the team project goals. This effort can be accomplished as noted:

1. Create a transparent communication and governance program that allows transparency across multiple team member layers to included a path to upper management decision makers.

2. Create an avenue for real time collaboration between designers, contractors and Users.

3. Timely decision regarding integration of changes into the design and construction.

4. Maintain visibility and control to total project budget.

SECTION - WHAT THE PROJECT TEAM DID

- At project inception, the project team created a clear communication and leadership governance plan, incorporating layers and access to Users.

- Plan was distributed and reviewed regularly with all team members and was included as part of the project onboarding process.

- Processes and protocols were integrated into the plan that empowered team members to pursue solutions/options to challenges and report them upstream for approval and or as advisements to project executive leadership team.

- Governance plan was supported by other A3s process as follows: 1.) One on Ones Design & Construction; 2.) Small Group; 3.) Executive Team; 4.) Summits; 5.) Component Teams and 6.) Budget Review Meeting.

SECTION - LESSONS LEARNED

- Development of a documented communication and leadership governance plan provided a very clear path for team members to address challenges and receive timely direction on those items.

- The governance plan created highly productive and "move forward" environment.

- The plan provided predictability and transparency for the team.

- It was key to have a liaison from the User side that helped facilitate decisions for the project team .
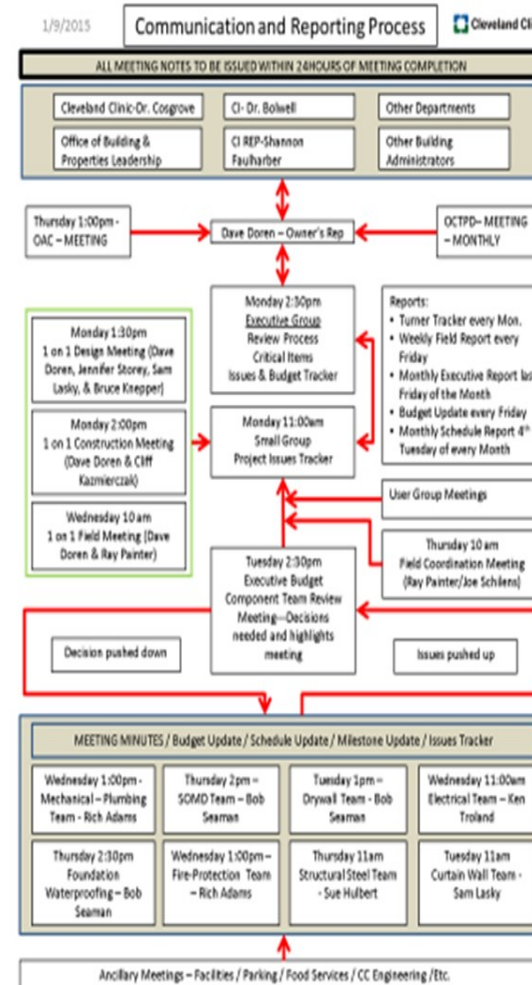
Communication and Reporting Process

Cleveland Clinic

ALL MEETING NOTES TO BE ISSUED WITHIN 24HOURS OF MEETING COMPLETION

Cleveland Clinic-Dr. Cosgrove	CI- Dr. Bolwell	Other Departments
Office of Building & Properties Leadership	CI REP-Shannon Faulhaber	Other Building Administrators

OAC - SUSPENDED → **Dave Doren – Owners Rep** ← **OLED - MEETING – MONTHLY**

Wednesday 10:00am
Executive Group
Review Process
Critical Items
Issues & Budget Tracker

Reports:
- Turner Tracker every Mon.
- Weekly Field Report every Friday
- Monthly Executive Report last Friday of the Month
- Budget Update every Friday
- Monthly Schedule Report 4th Tuesday of every Month

Tuesday 1:30pm
1 on 1 Design Meeting (Dave Doren, Jennifer Storey, Sam Lasky, & Bruce Knepper)

Tuesday 10:00am
1 on 1 Construction Meeting (Dave Doren & Cliff Kazmierczak)

Wednesday 9 am
1 on 1 Field Meeting (Dave Doren & Ray Painter)

Monday 11:00am
Small Group
Project Issues Tracker
Constraint Log

User Group Meetings

Thursday 10 am
Field Coordination Meeting (Ray Painter/Joe Schilens)

Tuesday 2:30pm
Executive Budget
Component Team Review
Meeting---Decisions
needed and highlights
meeting

Decision pushed down

Issues pushed up

MEETING MINUTES / Budget Update / Schedule Update / Milestone Update / Issues Tracker

Wednesday 1pm - Mechanical-Plumbing Team-Rich Adams	Thursday 2pm – SOMD Team - Bob Seaman	Tuesday 1pm – Drywall Team - Bob Seaman	Wednesday 11am Electrical Team - Ken Troland
Thursday 2:30pm Foundation Waterproofing-Bob Seaman	Wednesday 1pm – Fire-Protection Team – Rich Adams	Thursday 11am Structural Steel Team - Sue Hulbert	Tuesday 10am Curtain Wall Team - Sam Lasky

Ancillary Meetings – Facilities / Parking / Food Services / CC Engineering /Etc.

v.06.17.20

CHAPTER 6

MEETING PROTOCOL

6A. TRADE PRINCIPAL MEETINGS "PLAY"

6B. TRADE COORDINATION "PLAY"

6C. ONE-ON-ONE MEETINGS "PLAY"

6D. TRI-PARTITE MEETINGS "PLAY"

6E. PRE-MEETING HUDDLE "PLAY'

MEETING PROTOCOLS

OLED^{SM} has several unique meeting formats designed to deliver accurate and honest communication from Cleveland Clinic to and from the CM, trades, unions and communities. The following "Plays" in A3 format on meeting protocols include:

- Trade Principals Meetings
- Trade Coordination Meetings
- One-on-One Meetings (Taussig)
- Tri-Partite Meetings

The most important and industry differentiating meeting protocol in OLED^{SM} is the participation from the owner, including direct, face-to-face meetings with all roles and "levels" of the project.

6.A
TRADE PRINCIPAL MEETINGS "PLAY"

PROJECT: ALL PROJECTS

SECTION - CURRENT STATE

- Construction trade contractor organizations are contracted to construct a project in accordance with the design team's drawings and specifications.

- Constructing a building requires the involvement of 30 or more different trade contractor organizations.

- The excavation, foundations, structural, exterior wall, glass & glazing, roofing, drywall & ceilings, mechanical electrical, fireproofing, and information technology trades are considered the key trades since their work defines the critical path of the schedule.

- Key trades are not provided the opportunity to jointly meet and share project concerns regarding schedule, cost, quality, coordination, sequence of work with each other and the project team members.

- As a result of one or all of the following issues occur; work delays, out of sequence work, increased manpower, work site congestion, and quality reduction.

SECTION - FUTURE STATE GOALS

- Principals from the construction manager, design team, and trade contractors attend a Trade Principles meeting directed by the owner's representative and / or the CM.

- Project team organization's principals will know first hand the status of their work, other trades work, and the project.

- Team principles have knowledge of all positive and negative project issues.

- Team principles assist in the rewarding of the positives.

- Team principles assign in the resolution of the project issues not just their issues.

- Negative trade and / or project issues are brought to the table early on and resolved timely by the team with oversight and direction as needed from the principles.

SECTION - WHAT THE PROJECT TEAM DID

- Owner's representative provides a regularly schedule opportunity during the course of their project for the key trade contractors organization's principals to meet

- Principals of the construction manager's and design team's office are included in the Trade Principals meetings.

- All principals attending are from their respective home office and not stationed at the jobsite

- Prior to each meeting the attending principals meet with their key field staff, walk the project, and gain insight into the status of their work and any pending, current, or potential issues that may positively or negatively impact the project.

- All positive and negative issues identified are presented and discussed in the meeting.

- New positive issues are reviewed and type of reward to participating party or parties determined if appropriate

- New negative issues are reviewed, causes discussed, and participants necessary to resolve established and assigned

- Status of pending negative issues reviewed

- Proposed resolution(s) reviewed and if appropriate accepted

SECTION - LESSONS LEARNED

- Project issues identified, work coordinated, and scheduled to achieve timely resolution

- Owner's representative, construction manager, design team and the trades gain an understanding of each others concerns and requirements

- Greatly assists in elimination of "silos"

- Develops respect, trust, and confidence within the team

- Keeps team members focused on the Purpose Statement and goals—"all rowing the boat in the same direction"

- Provides team with a first hand understanding of the owners concerns and desires

6.B

TRADE COORDINATION MEETING "PLAY"

Play: Trade Coordination Meetings 2-12-2020

Cleveland Clinic

PROJECT: ALL PROJECTS

SECTION - CURRENT STATE

- During the course of a construction project there typically is not a formal opportunity for the Trade Project Managers and Superintendents to meet and plan coordinate their work with each other.

- Trade work coordination is typically left up to the Construction Manager or General Contractor

- Lack of planning / coordinating work results in:
  ⇒ Multiple conflicts including manpower, scheduling, material delivery and storage
  ⇒ Out of sequence work
  ⇒ Project schedule delayed
  ⇒ Project cost overruns

- When issues arise Trades return to their silo's and become defensive versus open and cooperative

SECTION - FUTURE STATE GOALS

- Formal Trade coordination meetings held in the preconstruction and construction phase of the project

- CM or GC in cooperation with Project Manager / Superintendent of the Trades being coordinated via mutually schedule meeting(s)

- Participating Trades and Tradesmen working as a Team and develop open and honest working relationships

- Manpower and schedule commitments are maintained

- If changes required or circumstances change for a participating Trade they are immediately discussed with all affected and the coordination plan changes accordingly to minimize or eliminate negative effects to Project

SECTION - WHAT THE PROJECT TEAM DID

- Coordination meetings at a minimum include the CM or GC, the Trade being coordinated, the Trade whose work precedes, and the Trade whose work follows

- Key topics to be coordinated include area of work, access to / and egress form work areas, material delivery / storage, manpower requirements, start date and end date, previous Trade work completion requirements and schedule, following Trade work requirements

- Personal commitments from participating Project Managers or Superintendents to achieve mutually agreed schedules

- Immediate notification to the Coordination Team of potential issues and for changes to agreed upon timeliness and sequences of work

- Work as a Team to achieve potential issues and / or changes to eliminate and / or minimize all negative effects to the project and to all Team members

- Recognize and, if appropriate, reward those team members who are instrumental in developing positive solutions and exemplify the Team behavior (placing the projects and participating Trade Member's interest first)

SECTION - LESSONS LEARNED

- Trade Coordination Meetings assist in the development of the Trades in understanding and learning the OCPTD^{SM} process

- Trade Coordination Meetings provide opportunity for Trades to learn, understand, and appreciate each others properties and concerns

- Minimize field conflicts

- Provides for early identification and resolution of potential conflicts

- Assists in developing respect and trust between all individuals involved

6.C

ONE-ON-ONE MEETINGS "PLAY"

Play: One on One Meetings—2-13-2020—by D. Doren and R. Lawson

Cleveland Clinic

PROJECT: ALL PROJECTS

SECTION - CURRENT STATE

- The architect's project manager, construction manager's project manager, and the Cleveland Clinic project's owner do not have a schedule opportunity to meet "One on One" with the Cleveland Clinic's Owner Representative on their project.

- Existing or potential issues / concerns are not freely discussed due to fear of repercussions if presented in the normal project meeting sessions

- Project issues / concerns remain in the identifiers silo unresolved and ultimately have a negative affect on the project

- Lack of open communication presents the development of respect, trust, and collaboration between individuals and organizations

SECTION - FUTURE STATE GOALS

- Regularly schedule "One on One" meetings between Cleveland Clinic Owner's Representative and, at a minimum, the Cleveland Clinic project's owner, the architect's project manager, and the construction manager's project manager

- Both positive and negative project issues are openly discussed

- Determination of the team members that are or should be involved in the resolution

- Timely resolution of project issues

- Identification of positive issues and opportunity to recognize those involved

- Development of mutual respect and trust between the Cleveland Clinic Owner's Representative and the Cleveland Clinic's owner and the architect's and construction manager's project managers

SECTION - WHAT THE PROJECT TEAM DID

- Cleveland Clinic Owner's Representative held separate weekly "One on One' meetings with Cleveland Clinic's project owner, architect's project manager, and construction manager's project manager (3 separate weekly meetings held on 3 different days)

- General meeting purpose was to discuss status of overall project, areas that need attention, and team member performance

- Cleveland Clinic Owner's Representative held a combined weekly meeting with the architect's project manager and the construction manager's project manager to present in a mutually predetermined manner the issues identified in the individual "One on One" meetings (1 combined weekly meeting held on different day than "One on One" meetings)

- Issues discussed at the "One on One" meetings included the following:
  - ⇒ Field construction issues
  - ⇒ Project management issues
  - ⇒ Individual team member issues
  - ⇒ Relational issues between team organizations
  - ⇒ Relational issues between individual team members
  - ⇒ Individual team member organizational issues

- Meeting duration: 0.5 half hour to 1.0 hour

- Both meetings were scheduled for the duration of the project

- Meeting participants gained mutual respect and trust with each other allowing each of them to present new issues at the combined meeting thereby reducing the need for the "One on One" meetings unless deemed necessary

SECTION - LESSONS LEARNED

- "One on One" meetings substantially reduced the anxiety and stress of bringing forward the issues that arise on a project

- Issues were presented timely and mutually resolved

- Cleveland Clinic's project owner gained respect and trust in the Cleveland Clinic Owner's Representative and the project team

- Project team members gained respect and trust with each other allowing for open and honest dialogue

- Project team members aligned their goals with the project goals

- Project issues were resolved timely eliminating / minimizing the negative effect on the project

6.D
TRI-PARTITE MEETINGS "PLAY"

Cleveland Clinic

PROJECT: ALL PROJECTS

SECTION - CURRENT STATE

- The applicable Construction Labor Union's local business agent visits project sites, where their tradesmen are schedule to or currently work, to determine project status, manpower requirements, adherence to Union's rules, respond to members questions and, identify / resolve jurisdictional disputes. The business agent normally only coordinates with their foreman on the project and the construction manager's / general contractor's lead superintendent.

SECTION - FUTURE STATE GOALS

- Provide the local Union Business Agents and tradesmen the opportunity to understand the project's "Team" management approach and become a participating "Team Member".

- Prior to start of construction the CM / GC and construction owner's representative schedule an orientation meeting with all applicable Union Business Agents and project team members including but not limited to architect, engineer, and trade principles.

- The Cleveland Building and Construction Trades Council have titled this meeting the "Tri-Partite Meeting".

- CM / GC / A/E should provide a detailed review of the Project's scope, budget, schedule, including defined goals and concerns.

- The Clinic's Construction Owner's Representative and the User's Representative should present their desired project results and goals.

- A schedule for the Tri-Partite meetings (monthly or every other month) should be established through the end of construction.

SECTION - WHAT THE PROJECT TEAM DID

- Cleveland Clinic's Owner's Representative and / or the Construction Manger's Project Executive contacted Mr. David Wondolowski, Executive Secretary of the Cleveland Building & Construction Trades Council, to schedule the first Tri-Partite meeting.

- First meeting scheduled prior to start of construction. All trade unions anticipated to have manpower on the project were requested to attend.

- Trade contractor principles under contract were invited to attend. As new trade contractors are awarded their principles joined the meetings.

- Future meeting schedules were established.

- Clinic's Owner Presentative and the Clinic's User Representative discussed Clinic's user's desired goals / results / and benefits to patients and community.

- CM / A/E team discussed project scope, schedule, key milestone dates, anticipated manpower requirements, and unique coordination and construction issues.

- Clinic's Owner's Representative introduced concept of "Team Work" and the "Owner Controlled Team Project Delivery" process that would be used to manage the project.

- The project's "Team" Purpose Statement and related goals were presented.

- Owner's Representative emphasized the importance of timely communication. Requested business agents encourage individual trade workers to communicate with their contractor and with the CM, architect, and owner, and openly suggest, based on their experience, improvements to the design and construction process.

- Trade Union Business Agents provided status of current labor force, and future availability. Project issues concerning trade workers, sense of team on project and suggestions on how to improve.

- All the above items were reviewed at the subsequent Tri-Partite meetings.

SECTION - LESSONS LEARNED

- Developing a concept that creates a personal attachment to the project for all team members including trade workers greatly assisted in developing a stronger team.

- Recognizing and / or rewarding trade workers for successfully achieving specific goals, quality work, working as and encouraging others to be true team members.

- Recognition and / or reward can be given to an individual, group, or trade organization.

- Rewards used in the past have been verbal recognition at meetings or special gatherings, certificates, special tokens (i.e. Health Education Campus project's silver bullet), and gift cards.

6.E

PRE-MEETING HUDDLE "PLAY"

SECTION – CURRENT STATE

Typically, project Core Team representatives from companies attend routinely scheduled traditional OAC or IPD Core Group Meetings on behalf their respective stakeholders firms / disciplines to deliver project updates and decision points for review. This type of engagement setup can result in the following limitations:

- Limited interactions of the team due to the rigidity of time constraints and meeting agendas.
- Inefficiency of team member time as agenda items involving complex issues can result in extended meetings and/or requirements to skip agenda items to make up time.
- Issues are difficult to bring to resolution within meetings in a timely fashion and often require re-introduction time each session as resolution lags.

SECTION – FUTURE STATE GOALS

- Build further the authentic and open trust amongst the team for the development of relationships.
- Improve the social and working experience of those invested in the project.
- Maintain focus on forthcoming activities to be proactive.
- Further develop the hybrid big room approach with the ability to bring in more remote participants.
- Plan to sustain 'pre-meeting huddle' format through majority of construction duration.
- Don't allow access to a specific physical location of a Big Room Setup to delay the start of the pre-meeting format.

SECTION – WHAT THE PROJECT TEAM DID

Developed/Launched a Core Team 'Pre-Meeting Huddle' Setup: Two hours leading up to the Core Group Meeting, the team leads from the owner, owner's representative, architect, engineer, construction manager and design assist trade partners respect a 'pre-meeting' calendar block out to come together and prepare for the Core Group Meeting. This small gathering is prioritized as an in-person event but allows for attendance virtually by out-of-town representatives. In this meeting, the team has an increased ability to further build relationships as they eat breakfast together and get to know each other better simply by investing the time in a less formal setting.

Primarily, this pre-meeting forum is used to talk through design and construction challenges in more detail than the formal Core Group Meeting agenda allows. Therefore, this pre-meeting huddle in-depth conversation provides the opportunity for the Core Team (along with any as-needed stakeholder participation) to gain consensus on current project-level issues ahead of the formal team meeting report-outs. Typically, the agenda is open allowing ad hoc dialog needed for the project to occur. Example agenda items covered by the team during the 'pre-meeting huddle' timeframe include:

- Reflective discussion regarding the health of the team and KPI scoring.
- Discussions on improving the submittal process.
- 'Monkey on the Table' level candid and transparent discussions that allows time for input from all voices as the team resolves these challenges together.
- Dealing with confusion of design deliverable expectations and content of deliverables.
- Allowing Core Group time to properly distill messaging together ahead of the larger group meetings, especially with complex topics such as budget alignment and Institute alignment updates.

SECTION – LESSONS LEARNED

- Utilizing this less formal work session makes the team more efficient in managing the project resulting in better project outcomes and stronger teams.
- Connecting through this time allows team to work through challenges, face the monkeys on the table and avoid false harmony.
- Working together in person once a week is a good investment of time.
- Keeping meetings casual and small encourages everyone to speak freely.
- Eating together and rotating breakfast assignments can be a fun and connective experience.
- This time allows us to bring in those not in the core team if we need to ask deeper questions about a topic. It gives the team freedom not able to be achieved during the formal core team meeting.
- Allow agenda to be flexible and evolve as the project phases transition.
- Focus on sustaining the R&O log routine communication throughout project
- High quality documentation of the pre-mtg required to allow those in the room to keep pulse
- Commit to starting the 'pre-meeting huddle' format ahead of the Validation Phase

CHAPTER 7

TOOLS

7A. SCHEDULES
    1.   Critical Path Resource Loaded Schedule Matrix
    2.   Pull Plan Schedule
    3.   Transition / Activation Schedule

7B. BUDGET GUIDELINES

7C. CONTRACTS
    1.   Modified Integrated Project Delivery "Play"

7D. LEAN PRINCIPLES IN OLED^{SM}
    1. Small Wins "Play"

7E. CO-LOCATION/BIG ROOM "PLAYS"

7F. BIM/VIRTUAL MODEL "PLAY"

7G. OLED^{SM} BUDGET MANAGEMENT WEB BASED APP
    (Under Development and not included)

7.A

SCHEDULES

OLED^{SM} SCHEDULES

The Owner Led Project Delivery approach demands that the Owner has a complete and detailed knowledge of the project's statistics. Therefore it is necessary for the project team, under the lead and direction of the Construction Manager / General Contractor, to develop and maintain detailed schedules for the planning, design, and construction of the project.

The schedules necessary to properly manage the progress of the work and to timely identify scheduling/production issues are:

- Master Critical Path Resource Loaded Schedule
- Pull Plan Schedule
- Transition/Activation Schedule

7.A.1 The first Schedule that needs to be prepared is a Critical Path Schedule that is resource loaded and prepared by the CM/GC with assistance from the Architect and Engineer. Assuming the CM/GC is awarded the work early on in the Preconstruction Phase, the project schedule should include the design and construction phases of the project. As each individual trade is awarded their work, they shall immediately prepare their Critical Path Resource Loaded schedule and present same to the CM / GC for review, discussion, revision, and mutual approval. Their approved schedule(s) shall be incorporated into the CM's / GC's Critical Path Resource Loaded schedule which shall then be considered the **Master Critical Path Resource Loaded Schedule**.

The Master Critical Path Resource Loaded Schedule provides the Project Team, including the Owner, with the following statistics, allowing for accurate and timely management of the Project.

- Design Schedule indicating mutually acceptable phases
- Target Completion Date
- Target Milestone Dates
- General Sequencing of the Work
- Duration times to complete each segment/phase of work by Trade and overall
- Anticipated labor hours to complete the work by trade and overall

- Anticipated cash flow by trade and overall
- Quantity of materials installed by trade and overall

7.A.2 The second schedule to be prepared is a Pull Plan Schedule. This scheduling effort, led by CM/GC, is prepared by the trade project managers and superintendents working together in the "Big Room". A Pull Plan Schedule requires the Trades to start at the project completion date and work backwards, identifying each individual trade's task, the time frame / manpower to complete that task, and what trade's work is required to be completed before they can start their work, and what trade follows their work. Each trade project manager / superintendent makes a personal commitment (promise) to complete their tasks in the time allotted and to immediately notify the team if they are not going to achieve the date(s). Immediately after notification is received, the CM/GC shall schedule a meeting with the notifying trade and the following trade or trades to develop a solution to resolve the potential schedule delay to the project.

In OLED^{SM} it is mandatory that all Cleveland Clinic's Buildings + Design projects be scheduled and constructed using a Master Critical Path Resource Loaded Schedule and a Pull Plan Schedule, unless waived by the Cleveland Clinic's Owner Representative for the Project. The level of detail to be included in these schedules shall be determined by the Project Team. Members of this Team typically includes personnel from the Architect/Engineer's, CM's/GC's, participating trade contractor's organizations and the Clinic's owner's representative.

On projects that are complicated, multi-phased, or considered large, it is recommended that scheduling consultants for the Resource Loaded Critical Path Schedule and the Pull Plan Schedule be retained to provide training and assistance in the development of the schedules. Their oversight and monitoring of the development of the original schedules and the regularly scheduled updates has proven to be cost effective. Currently the recommended consultants are:

- NV5 - Resource Loaded Critical Path and Lean-Pull Plan scheduling

- Lean Project Consultants – Last Planner System / Lean-Pull Plan scheduling

The scheduling consultant(s) are to be retained by the Cleveland Clinic to provide review of the accuracy and procedures used to develop/update the schedules. In addition, they prepare a written report to the Project's Executive and Project Core Team documenting the current status of the project schedule.

The scheduling consultant(s) may also be retained by an individual schedule team organization to provide internal training on developing and updating the schedules for Cleveland Clinic projects. If this occurs it must be mutually agreed between the Cleveland Clinic Buildings + Design and the schedule team member(s) that the scheduling consultant's alliance will always be with the Cleveland Clinic first.

7.A.3 The last schedule necessary to properly monitor the progress of the work and to timely identify scheduling/production issues is the Transition / Activation Schedule. The selected Transition / Activation Vendor is responsible for preparing this schedule and coordinating same with CM/GC into the Master Resource Loaded Critical Path Schedule and the Pull Plan Schedule.

The development of the Transition / Activation Schedule requires the Transition / Activation Vendor (T/A Vendor) to work with his T/A team member representatives from both the Construction side and Clinical / Operational sides of the Project.
Items of work that should be included on the T/A schedule and incorporated into the Master Resource Loaded Critical Path Schedule are:

- Design coordination meetings with the Architect & Engineer
- Furniture, Fixtures, and Equipment (FF&E) Selection
- FF&E Purchase / Delivery Dates
- Rough-in Start and Finish dates for FF&E Items
- FF&E installation start and completion dates including relocations
- Owner/User training
- Move start and completion dates
- Final Occupancy Date

The following three pages prepared by the previous Project Core Team members provide insight and guidance on their approach to providing the necessary schedules on their project.

Cleveland Clinic

NV5

Schedule Development and Schedule Update Execution Protocol Matrix

Protocols by Segment	Small Project Size (< $8mm)	Medium Project Size ($8 mm > $25 mm) (w/ Low Risk)	Medium Project Size ($ 8mm > $25 mm) (w/ High Risk)	Large Project Size (> $25 mm)
Baseline Schedule Development				
Cleveland Clinic C/M Contract Level 1 (Milestone) Schedule Acceptance	At Award	At Award	At Award	At Award
Cleveland Clinic Standard Key Milestone Array	Required	Required	Required	Required
Activity Maximum Duration (Work Days, excluding fab activities)	20	20	10	10
Resource Loading		Key Trades	Key Trades	All But Minor Trades
Scheduling Software Requirements	Oracle Primavera / P6	Oracle Primavera / P6	Oracle Primavera / P6	Oracle Primavera / P6
Procurement Detail (Submit / Fab / Delivery)		Long Lead	Long Lead / Detail by Area	Long Lead / Detail by Area
Schedule Submission to Owner for Review at NTP + 30 WD	Full Project	First 3 Months of Construction	First 4 Months of Construction	First 6 Months of Construction
Full Schedule Submission to Owner for Review	NTP + 30 CD	NTP + 90 CD	NTP + 120 CD	NTP + 180 CD
Schedule Update Execution				
Prescribed Update Cadence by C/M (integrates WWP reporting)	Monthly	Monthly	Bi-Weekly	Weekly
Lag from Data Date to C/M Publication to Trade Contractors	Data Date + 1 Week	Data Date + 1 Week	Data Date + 2 Days	Data Date + 1 Day
Process for Progress Presentation	Submit / Review	Submit / Review	Bi-Weekly Progress Mtg	Weekly Progress Mtg.
C/M Provide Actual Labor Hours for Owner Earned Value Analysis		Monthly (Key Trades)	Bi-Weekly (Key Trades)	Weekly (All Trades)
Change Representation by Fragnet	All Impacting	All Impacting	All > $50k or Impacting	All > $20k or Impacting
C/M Penalty for Non-Compliance	Actual Cost Outside Consultant	Actual Cost Outside Consultant	Actual Cost Outside Consultant	Actual Cost Outside Consultant
Lean / CPM Hybrid - Process Expectations				
Pull Sessions for Development / Updating		Optional	Required - 8 total	Required - 12 total
Pull Session Content Integration Into CPM Schedule		5 Days	3 Days	3 Days
Trade Weekly Work (WWP) Plan Meeting and PPC Accountability by C/M	Optional	Optional	Required	Required
Lean Tool Implementation by C/M - Constraint Log and Rounding	Optional	Optional	Required	Required

Notes:
- All of the above parameters are based on the expectation that schedules will comply with Cleveland Clinic's standard scheduling specification.
- "Days" = Work Days (unless noted as CD)

Health Education Campus
Planning / Scheduling Work Flow
(Construction Phase)

LEGEND
- Trade Contractor
- CM - Donley's / Turner
- Owner Consultant - NV5

WEEKLY CYCLE

MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY

- CM Enter all Progress as reported for each Trade Contractor from previous week
- Trade Contractor / Supt. to submit Schedule Progress to CM by Noon
- Schedule Review Meeting (CM / NV5)
- CM Supt. Meeting (AM)
- Incorporate revisions to plan based on Trade Contractor's Weekly Work Plan or PCO Log
- CM Finalize and issue current Schedule Update
- Trade Contractor prepare and issue Weekly Work Plan to CM
- Facilitate Weekly Work Plan Meeting (PM)
- Collaborative CM / Trade Contractor Pull Planning Sessions
- Incorporate details / revisions based on Pull Planning Sessions
- CM issue previous week's Weekly Planning Meeting minutes
- **Lean LPS (Last Planner System) Weekly Work Planning**
- CM issue Trade Contractor's Field Reports "Actual" Manhours to NV5
- NV5 prepare and issue Scorecard to CM (Bi-Weekly)

DRAFT
2/9/17

Cleveland Clinic

Cancer Building - Schedule Metric Data Collection Process Map
(Construction Phase)

WEEKLY CYCLE

RESPONSIBILITY

- CM - Turner
- Owner Consultant - NV5 (Buric)

MONDAY

CM Issues
Updated Resource Loaded
CPM Project Schedule

InField Schedule Update
Validation Visit Reporting &
Results Coordination

Perform Review of
Current Schedule Update

TUESDAY

Collaborative
Schedule Meetings

Prepare / Issue
Schedule Metrics Scorecard
- Overall Schedule Milestones
- Earned Manhour
- Schedule Variance; Start / Finish %
- Manpower Forecast

Dashboard

WEDNESDAY

4D BIM Schedule L-A Analysis &
Graphic Presentation for WWP Aid
and
InField Schedule Progress
Evaluation Site Visit

Manage Utilization of Lean Tools
w/ Trade Work Plan Meetings

THURSDAY

Facilitate Weekly
Work Plan Meeting

Manage Update & Resolution of
Work Plan Constraint Log Items

Participate in WWP Process
& Schedule Metrics Analytics

Lean LPS
(Last Planner System)
Weekly Work Planning

FRIDAY

Maintain CPM Project Schedule
w/ Trades & Issue Weekly
CM Report

Collaborative
Trade Pull Planning
Sessions

MONTHLY CYCLE

WEEK 1	WEEK 2	WEEK 3	WEEK 4
- Weekly Cycle Activities - Schedule Metric Dashboard Update	- Weekly Cycle Activities - Initiate Monthly Schedule Update Evaluation Process	- Weekly Cycle Activities - Schedule Metric Dashboard Update - Monthly 4D BIM Schedule Analysis	- Weekly Cycle Activities - Monthly Schedule Report Presentation - Schedule Executive Summary Graphic Presentation

7.B

BUDGET GUIDELINES

OLED^{SM} BUDGET GUIDLINES

BUDGET TEAM MEMBER ASSEMBLY

When discussing OLED^{SM} budgeting process, you must discuss the assembly of the OLED^{SM} team. This is essential in empowering the project team to own and further refine the program budget over the course of the life of the project.

These team members should include End User, Owner's Rep, Designers (including space planners), Clinical Engineering (or Medical Equipment Planner), IT & Security liaison, Furniture Designer, Engineers, Construction Manager, DA Subs.

DEVELOPMENT OF "HEARTBEAT" PROGRAM BUDGET

Once the team has assembled, it is important to have the Owner develop the Business Plan, including growth projections. This information is key to properly design and budget the project. The business plan helps the team develop the conceptual size of the building based on general space-planning guidelines. Utilizing historical square foot analysis, a "Heartbeat" budget can be developed, including all aspects of the program (e.g. Construction, Artwork, ITD, Medical Equipment, Security, Furniture, Food Services, Consultants, Chargebacks, Expense Budget). Benchmarking similar projects is also used to validate this initial value. NOTE: An Owner's Contingency, of no less than 30%, should be included at this point in time. Additionally, the starting Construction budget should also include a working contingency. This percentage should be discussed and agreed to at the time of the initial Heartbeat budget.

Now that the "Heartbeat" program budget has been established, budgetary refinements can unfold as the design and program details become more defined.

PROGRAM BUDGET MANAGEMENT

These refinements unfold during project meetings which should include, but not be limited to, the following team members: End-Users, Owner's Rep, Designers/Engineers, CM, DA Subs, etc. These meetings discuss the layouts, workability, adjacent and required service modalities to be rendered and ultimately support the Business Plan. Important information is uncovered during these meetings that may tie to licensures, equipment, and/or operations that can affect building component modules that are not noted in

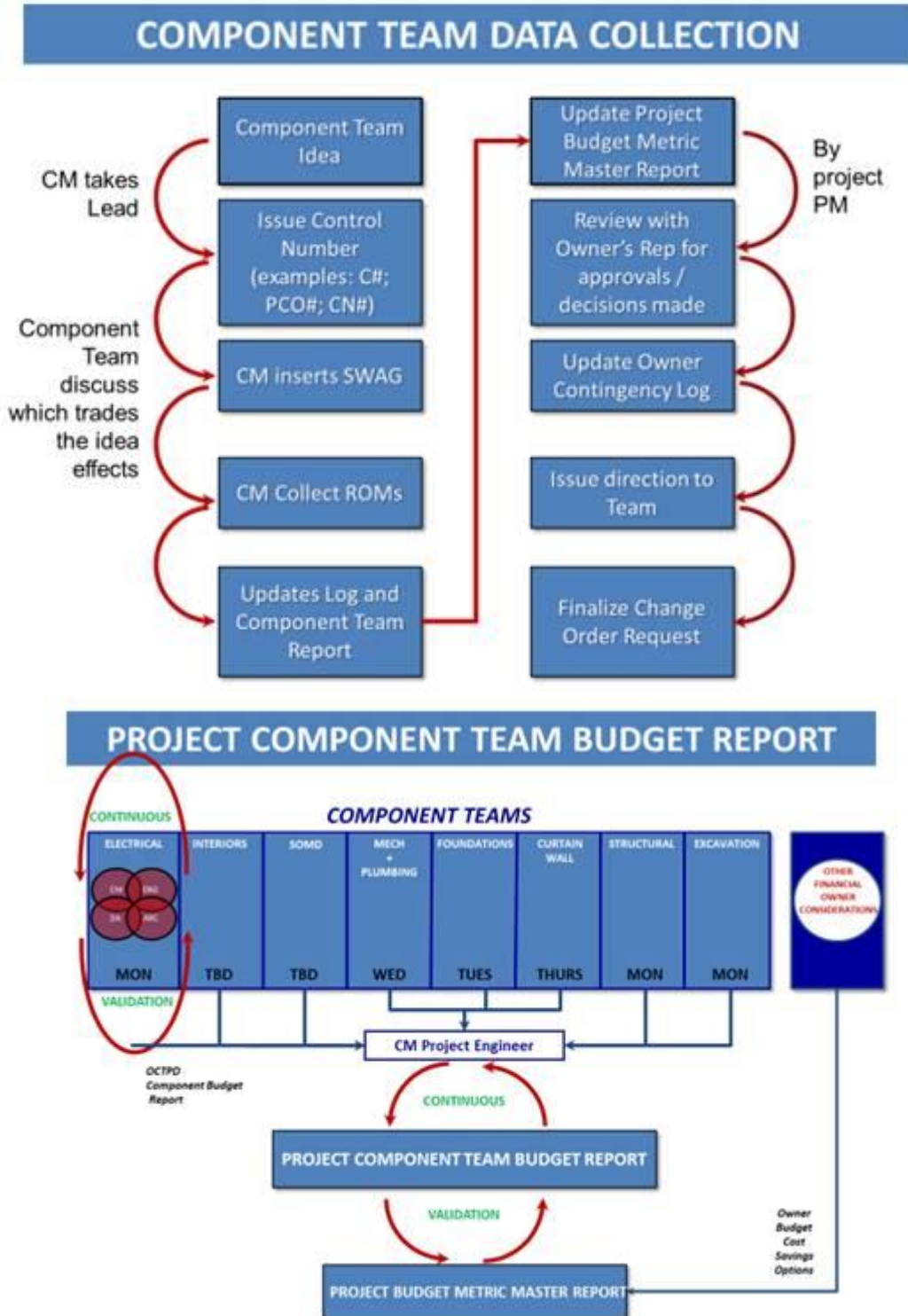general building codes or can be assumed within a square foot estimate.

At this point, the team begins a weekly cycle of budget maintenance and stewardship, called component task teams. As design / program refinements come into play, control numbers are assigned to the cost events. These events are noted as deviations and are assessed a funding source: either "Owner Contingency" or "Design/Construction Contingency". These deviations are applied to the appropriate building component (trade) accordingly. The deviations are then assigned estimates which are budgetary (Rough Order of Magnitude's – "what is fair and reasonable"). This is an acknowledgement that the team accepts the scope and responsibility of the deviation. It is important that quick decisions are rendered for these deviations (go / no go) by the Project Core Team. This allows the component task team members to move forward with their next steps. As the process continues the component team meetings further develop existing deviations along with reporting new ones.

Typically, two individual team members manage the cost information for the project, which is broken into two layers. The first, is the overall comprehensive program budget. This responsibility falls on the Owner/Owner's Representative, who collects and collates a "total" program budget. This information is shared upstream to Cleveland Clinic's executive leadership and at the project level for full transparency. The second is the Construction budget, which supports information to the "total" program budget. In most circumstances, the management of this component of the program budget will be assigned to a Construction Manager team member proper. As previously discussed, weekly component task team meetings help reinforce and communicate the current financial position of each building component. As dialog, design, and further understanding of the necessities of the facility play out, new deviations are added, reported, and decided upon. A weekly meeting with the Project Core Team is held to review new deviations uncovered during the past reporting period. This meeting, by team consensus, confirms the funding source of the particular change. It also informs the Project Core Team of the status of Construction / Design Contingency and/or any other Allowances that have been allocated within the Construction budget. This is a standing weekly meeting and is held over the course of the project, from project start to close-out.

BUDGET MANAGEMENT TOOLS

OLED^{SM} is flexible in the nature of the tracking and reporting of the program budget. It is understood that many CMs have a variety of different project management software. The intent of the budget management process, in the realm of OLED^{SM}, is to have consistent

and transparent information that is tracked real time. We have multiple examples of budget management tools that assist in this process. Regardless of the tools mandated by each team member's company, OLED^{SM} can utilize those systems to allow for a consolidated program budget report. The following represents the backbone of the OLED^{SM} budget reporting process and data collection:

COMPONENT TEAM DATA COLLECTION

CM takes Lead

Component Team Idea

Issue Control Number (examples: C#; PCO#; CN#)

Component Team discuss which trades the idea effects

CM inserts SWAG

CM Collect ROMs

Updates Log and Component Team Report

Update Project Budget Metric Master Report

Review with Owner's Rep for approvals / decisions made

Update Owner Contingency Log

Issue direction to Team

Finalize Change Order Request

By project PM

PROJECT COMPONENT TEAM BUDGET REPORT

CONTINUOUS

COMPONENT TEAMS

ELECTRICAL	INTERIORS	SOMD	MECH + PLUMBING	FOUNDATIONS	CURTAIN WALL	STRUCTURAL	EXCAVATION
MON	TBD	TBD	WED	TUES	THURS	MON	MON

OTHER FINANCIAL OWNER CONSIDERATIONS

VALIDATION

OCTPD Component Budget Report

CM Project Engineer

CONTINUOUS

PROJECT COMPONENT TEAM BUDGET REPORT

VALIDATION

PROJECT BUDGET METRIC MASTER REPORT

Owner Budget Cost Savings Options

The information through the above process is then populated into the below deviation log. As previously described, this information is reviewed on a weekly basis, initially with the component team, and then with the Project Core Team and Project Executive Team for formal approval.

Deviation No	Status (R,U,A,D)	BP #	Deviation Detail	Funding Source	Value	2 - Extg Conditions	3 - Concre	5 - Metals	7A - IMP	7B - Roofin	9 - Finishe	23 - HVAC	26 - Electrica	50 - Owner Paid Cost	Contingency	CM Service	Design	CCIP	Total
			CURRENT EXPECTED BUDGET			66,191	0	401,762	735,337	501,490	984,700	7,108,181	16,227,831	1,329,020	1,230,000	2,928,319	1,498,760	0	33,011,592
165	A		Concrete/Steel Curb Increase from 100% Drawings	Contingency	($3,500)	$0	$0	$25,200	$0	$0	$0	$0	$0	$0	($3,500)	($25,200)	$3,500	$0	
165	A	23 - HVAC	Relmec - Cost			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
165	A	26 - Electrical	LEE - Cost			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
165	A	Design	Design costs			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$3,500	$0	
165	A	5 - Metals	Industrial First Beam Design			$0	$0	$25,200	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
165	A	CM Services	ADD CREDIT FOR AMOUNT INCLUDED IN GRs			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	($25,200)	$0	$0	
165	A					$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
165	A					$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
165	A					$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
165	A	Escal	Escalation												$0	$0		$0	
165	A	Contingency	Contingency			$0	$0	$0	$0	$0	$0	$0	$0	$0	($3,500)	$0	$0	$0	
165	A	CM Services	CM Services			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
165	A	Subguard	Subguard			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
165	A	CCIP	CCIP			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	

As the above information is finalized it is also populated into the Owner's Program Budget Metric Master report.

This report collates the deviations into analytical categories, which may be used for future project considerations and other measurements that may be followed. It also shows the remaining balance associated with the Owner Contingency. The below example is a snapshot of the worksheet. This update is completed by the Owner and/or Owner's Representative on a weekly basis.

CLEVELAND CLINIC / CANCER BUILDING—ANC09500
BUDGET METRIC REPORT
June 6, 2017

Additionally, the comprehensive program budget is also updated to show the total project program costs.

		CI Cantilever Design		CI Sitework		Ancillary Projects		Total		Previous Report	
Square Footage			SF		SF		SF		SF		SF
	Base Building							385,000		377,000	
								0		0	
								0		0	
								0		0	
								inc		inc	
	Total Project Square Footage							385,000		377,000	

Cost Code	Description	Estimated Cost		Estimated Cost		Estimated Cost		Estimated Cost		Estimated Cost	
	Construction Cost										
00004	Demolition	0		0		0		0		0	
00301	Total Building Construction	177,595,904	461.29	4,611,934	11.979	9,863,309	2.1841	192,071,147	498.89	185,961,274	483
00326	Other Item Totals	742,636		0		0		742,636		1,742,636	
00310	Total Other Construction Cos	1,000,051	2.5975	0	0	1,074,000		2,074,051	5.3871	2,074,051	5.39
	Total Construction Cost	179,338,591	465.81	4,611,934	11.979	10,937,309	2.1841	194,887,834	506.2	189,777,961	493
	FF&E										
	Equipment										
00610	Total Equipment	16,226,561	42.147	0	0	0	0	16,226,561	42.147	16,226,561	42.1
00615	Furniture	6,477,927	16.8258	0	0	0	0	6,477,927	16.8258	6,477,927	16.83
00608	Artwork	820,800	2	0	0	0	0	820,800	2	820,800	
00605	Data/Communications	7,011,750	22	0	0	0	0	7,011,750	22	7,011,750	0
00465	Security	1,000,000	2.5974	0	0	0	0	1,000,000	2.5974	1,000,000	2.597
00653	AV & Digital Displays	895,000	2.32468	0	0	0	0	895,000	2.32468	895,000	2.325
00325	Total Signage	574,183	1.49138	0	0	0	0	574,183	1.49138	574,183	1.491
00675	Owner Move-in	374,183	1	0	0	0	0	374,183	1	374,183	0
00325	Final Building Cleaning	187,092	0.5	0	0	0	0	187,092	0.5	187,092	0
	Total FF&E	33,567,496	87.188	0	0	0	0	33,567,496	87.188	33,567,496	87.2
	Soft Cost										
00302	Total Design	21,689,214	57.964	0	0	0	0	21,689,214	56.336	22,173,459	57.6
00329	Total Testing and Inspections	693,996	1.8547	0	0	0	0	693,996	1.8026	736,071	1.91
00601	Owner Management/Capitalized Labor	750,000	3	0	0	0	0	750,000	3	750,000	0
00322	CCF Charge backs - Police	40,000	0.1069	0	0	0	0	40,000	0.1039	40,000	0.1
00323	CCF Charge backs - FEDS	65,000	0.1737	0	0	0	0	65,000	0.1688	65,000	0.17
00317	Total Owner Consultants and Expenses	6,999,083	18.705	0	0	0	0	6,999,083	18.179	7,760,547	20.2
00320	Haz Material Abatement	0		0		0		0		0	
00321	Total Regulatory Cost (Building Permit)	1,267,854	3.3883	44,767	0.1196	89,045	0.0283	1,401,666	3.6407	1,365,897	3.55
00318	Blueprinting & Misc. Costs	40,000	0.1069	0	0	0	0	40,000	0.1039	40,000	0.1
00328	Commissioning - KE - PO #11352	405,523	2	0	2	0	2	405,523	2	405,523	2
00331	Project Builders Risk Insurance	358,677	0.9586	9,224	0.0247	21,875	0.0044	389,776	1.0124	379,556	0.99
00346	Legal Cost	0	0	0	0	0	0	0	0	0	0
	Finance Cost	0	0	0	0	0	0	0	0	0	0
	Master Plan Back Charge Cost	0	0	0	0	0	0	0	0	0	0
	Soft Cost Total	32,309,346	86.346	53,991	0.1443	110,919	0.0333	32,474,257	84.349	33,716,053	89.4
	FF&E & Soft Cost Total	65,876,842		53,991		110,919		66,041,753		67,283,548	
	CANCER BUILDING PROJECT SUBTOTALS	245,215,433	655.34	4,665,925	12.47	11,048,228	29.526	260,929,587	677.74	257,061,509	682
00304	**Owner Contingency / Escalation**	14,285,429	0.058	232,573	0.05	552,411	0.05	15,070,413	5.78%	18,938,491	0.1
	FULL CANCER BUILDING PROJECT BUDGET	259,500,862	693.51	4,898,498	13.091	11,600,640	2.377	276,000,000	716.88	276,000,000	732
		0		0		0		0		0	
	CLEVELAND CLINIC CANCER BUILDING BUDGET PROGRAM COST MODEL	259,500,862	693.51	4,898,498	13.091	11,600,640	2.377	276,000,000	716.88	276,000,000	732

OLED[SM] WEB APP-IN DEVELOPMENT

In order to consolidate information and limit worksheet calculation errors, OLED[SM] in partnership with Cleveland Clinic Business Intelligence Group are in the middle of developing a web app to assist the project team in managing budget information. It is the intent to mimic the budgeting process as described above. Additionally, the information collected will provide additional data related to project team members performances, turn-around on ROM requests, and other metrics that may be useful in managing the project more effectively. Below is the current development status of the web app.
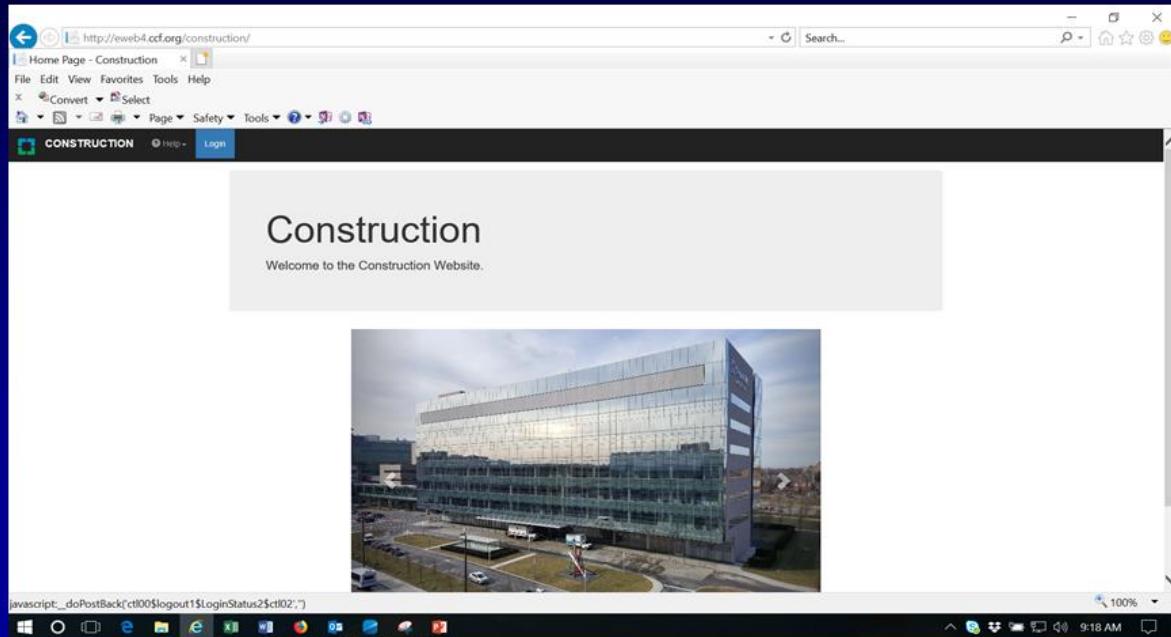
Illustrative example of budget management web-based app under development

NOTE: The key to the success of the project is to be disciplined in holding the weekly budget and component team meetings. It is also important that the team members are active participants in this endeavor.

DIFFERENTIATOR:

We firmly believe that this budgeting / management process is where OLED^{SM} separates itself from others. The project team is empowered to make the decisions. Traditional project management methods lament about "old" issues. In too many instances decisions lag and in some cases ongoing analysis wastes team effort and focus away from upcoming challenges. In OLED^{SM}, the team focuses on making the best decision, by consensus, while looking forward. The end result of this process is to reduce the "Heartbeat" budget over the life of the project. Reductions to "program budget" based on buyouts or other circumstances are expected and can be achieved utilizing this approach.

7.C

CONTRACTS

OLED^{SM} CONTRACT TYPES

OLED^{SM} has proven to be a successful construction management practice model under the traditional contract formats typically used by the industry including Lump Sum Bid (School of Dental Medicine), Design Build (Weston Radiology), Construction Management (Taussig Cancer Center), and Construction Management at Risk (Miller), and Integrated Project Delivery (IPD). Due to the fact that Buildings + Design is currently in the process of recreating its base construction contracts, and also creating a new Operations Manual which will include a contracts section, this OLED^{SM} Guide & Playbook will only discuss the newest contract format, the shared risk / reward contract approach of OLED^{SM}. There have been two previous shared risk / reward contracts since the inception of the OLED^{SM}, one at the Marymount Surgical Expansion project, and one at Lakewood Family Health Center. Now the H-Building Renovation project adds to this list, as it has conceptually finalized a risk / reward approach which is similar to Lakewood.

Lakewood FHC Risk / Reward Structure
The Lakewood project team considered the OLED^{SM} shared risk / reward IPD contract approach as exceptionally successful. The below narrative summarizes the OLED^{SM} IPD shared risk / reward contract at Lakewood.

The cost of the Lakewood project was broken down into payable costs, allowances, profit and OLED^{SM} team contingency as show on the following graphic:

LAKEWOOD FHC - PROJECT COST STRUCTURE & BREAKDOWN

ESTIMATED COST	
PROFIT $1,927,000	**Fixed Profit (Defined in Risk Pool)**
OCTPD TEAM CONTINGENCY $1,512,000	**All Contingency is pooled**
ALLOWANCES $0	**Escalation Allowance** **Other Allowances ?**
PAYABLE COSTS (includes overhead) $31,461,000	**Design & Construction Risk Pool Members** Actual Cost of: >Staff, Material, Labor, Expenses Overhead: >Fixed or % of actual for Contruction >In Staff rates For Design Firms **Non-Risk Pool Subcontracts & Consultants** > LS Cost or Fee **Owner Costs - Managed by OCTPD Team** >Permits, Utilities, Inspections, Test & Balance, Commissioning, Consultants (Schedule, Lean)

TOTAL - $34,900,000

A risk / reward pool was structured in the following manner:

- Risk Pool established to manage risk of cost overruns
- Risk Pool is funded with 100% of fixed profits from Risk Pool members
- Risk Pool members include: Design Professionals, Construction Manager & Trade Partners
- Risk Pool Plan details who participates and how the Risk Pool is managed
- Overruns are paid from Risk Pool
- Savings add to at-risk partner profits

In the event the project got into a cost overrun position, the funding progression would follow the below sources:

1st	2nd	3rd	4th	5th
Recover costs from available insurance proceeds or responsible 3rd parties	IPD Team Contingency	Undistributed amounts of Risk Pool	Clawback from distributed Risk Pool amounts	From Owner (assuming EMP is not team guarantee)

If the project team's costs go down below the estimated maximum price, the savings are shared. If the estimated maximum price is exceeded, the risk pool pays for exceeding the budget up to the profit at risk value. If the costs exceed the EMP and the profit at risk total, then the owner would pay the cost of cost difference.
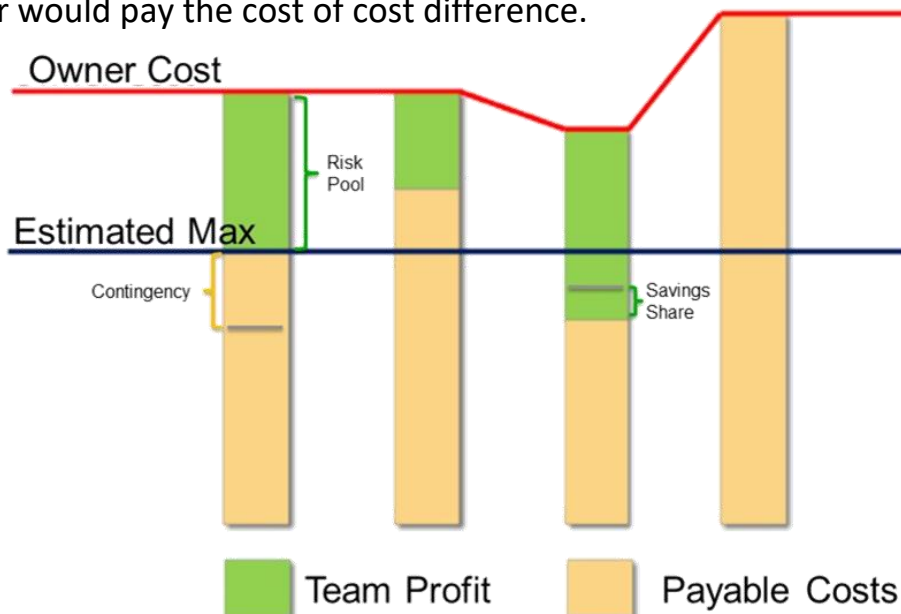
An example of Lakewood's Risk Pool Members & Amounts:

Risk Pool Members & Amounts:

Risk Pool Member	Core Group	Profit	Risk / Reward%
Designer	X		8.56%
Engineer	X		4.51%
Designer#2			1.19%
CM	X		24.03%
DA Trade 1	X		12.97%
DA Trade 1			0.00%
DA Trade 1	X		11.37%
DA Trade 1			2.85%
DA Trade 1			5.19%
DA Trade 1			12.97%
DA Trade 1			7.26%
DA Trade 1			4.67%
DA Trade 1			1.04%
DA Trade 1			0.00%
DA Trade 1			3.37%
Total Risk Pool		$1,927,110.00	100.00%

7% of Estimated Payables →

If the Risk Pool Members are entitled to shared savings, then the base amount of shared savings will be adjusted based on the OLED^{SM} Team's final overall KPI score. The adjustment was calculated using the applicable formula below and then the adjusted amount of shared savings shall be added to the Risk Pool. Any savings on the EMP that are not added to the Risk Pool accrue to Owner.

KPI Score	Adjustment
1	-100% (i.e., no Shared Savings added to Risk Pool)
2	-50% (i.e., only 50% of base Shared Savings added to Risk Pool)
3	-20% (i.e., only 80% of base Shared Savings added to Risk Pool)
4	+0% (i.e., base amount of Shared Savings added to Risk Pool)
5	+5% (i.e., 105% of base Shared Savings added to Risk Pool)

7.C

MODIFIED INTEGRATED
PROJECT DELIVERY "PLAY"

Play: IPD Contract/Project Organization and Management Behaviors

Cleveland Clinic

PROJECT: LAKEWOOD FAMILY HEALTH CENTER & EMERGENCY DEPARTMENT (PROJECT 0015173)

SECTION - CURRENT STATE

Traditional Process

- CC uses several forms of contract for construction projects
- The GMP format has included many elements of an IPD contract in the past including shared savings and Co-Location

SECTION - FUTURE STATE GOALS

- The Lakewood FHC project is the first to sign a true IPD contract
- The team used Consensus Docs 300 as the template for the contract.
- The owner, Architect and Construction Manager signed a Tri-Party Agreement (as opposed to a mulit party agreement)
- Additional Risk Pool Members signed a Joining Agreement
- Other types of IPD contracts (Howard Ashcroft, AIA) Why did we choose Consensus Docs. Consensus Docs is most similar to CC contract format and core values

SECTION - WHAT THE PROJECT TEAM DID

- Executive Team provided good mentoring to the core team (Executive Team — An executive from the Owner, Architect, CM, Engineer, Trade partner 1 and Trade partner 2)
- Created a culture of Trust
- Core Team is responsible to develop all processes for the project (Core team — The project managers from the Owner, Architect, CM, Engineer, Trade partner 1 and Trade partner 2. Trade partners chosen based on impact to project.)
- Defined Key points or "General Guidelines" for the IPD contract and displayed them in the Big Room to facilitate core team understanding and decision making. (SEE ATTACHMENT)
- In both Design and Construction, we established a Co-location day (4 hrs., once a week) with a clear agenda. Including the core team site walk.
- Kept the same team members from design through construction (Project Managers from Core Team and Risk Pool Members)
- Meeting leadership was rotated among the core team members for better engagement and understanding.
- DA Trade partners and Engineers had a voice in contract terms and project decision making
- Core Team utilized a unanimous and collaborative decision making process
- Core Team leveraged their strengths when solving issues by engaging with the right team members
- Utilized Risk Matrix to identify critical items for the core team and risk pool members to mitigate risk on the project. (SEE ATTACHMENT)
- Profit at risk for all core team and risk pool members (SEE ATTACHMENT)

SECTION - LESSONS LEARNED

- Contract supports/reinforces collaborative behaviors but doesn't drive the behavior
- Core Team had proper authority to make decisions in a timely manner
- Sometimes the benefits of consensus decision-making takes time to appreciate
- Core Team Members will have significant investment of hours to facilitate required meetings
- Direction in the field was more efficient and timely with this form of contract
    - Everyone gets paid their cost of performing work (payable costs)
    - The owner rep. was able to trust in the core team ability to make decisions even if they weren't there
    - No arguing with contractors
- Plan-Do-Check-Act
    - Pull planning, Batching, Meetings, Component Team Meetings, Weekly Work Planning,
- Understanding Profit at risk implications
    - Each contractors performance affected other contractors profit.
- Capturing the right number of trades in the risk pool. As many as you can. Understand the firms ability to provide the necessary documentation.
    - Understanding the definition of actual costs per contract definitions (create a format/guidelines at the beginning with all trade partners); Pay applications (including assembly/organization); General Ledgers; Pay rates; OH&P; Asset logs for tools; Equipment rates
- Clarify Conditions Of Satisfaction prior to Design. (Each project is unique)
- Transitions were difficult from Design to Construction and also with new trade partners in the field. (Using a process that is running smoothly and implementing the same process with new people (ie superintendents and field foreman can be difficult.) They need to learn it before they become proficient at using the tool (ie weekly work planning))
- Owner is a teammate and must participate in meetings and decision making

Lakewood FHC Consensus Contract – General Guidelines

1. This Team is a single organization trying to complete this project

2. The only contractual changes that exist are Owner Changes

3. Everyone gets paid (even if they miss something) their <u>payable cost</u> [cost of performing work & overhead]

4. Uncommitted dollars within the EMP that become committed are due O & P

5. All Team related EMP deviations, whether reductions or additions will be tracked in the OCTPD^{SM} contingency

Lakewood Family Health Center
IPD Contract / Project
Organization and Management
Behaviors "Play" Attachment
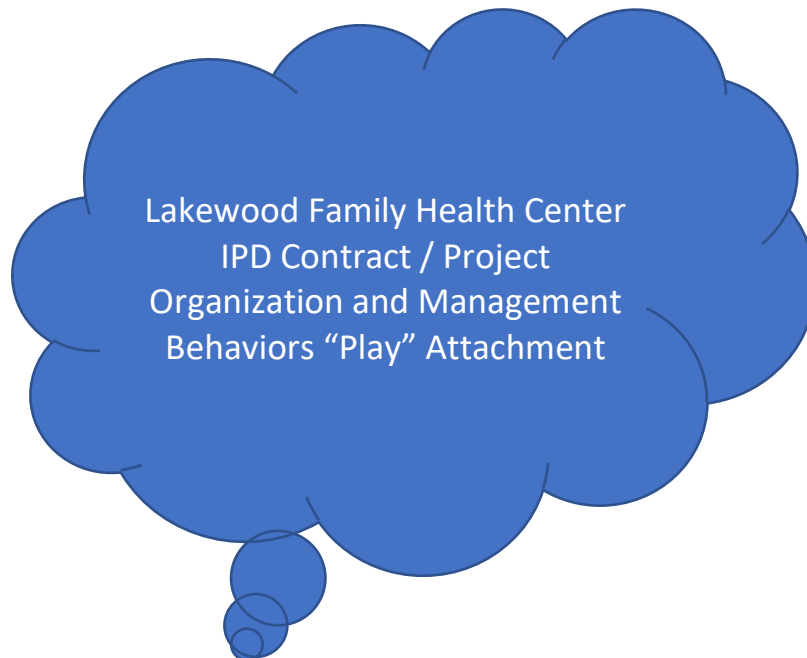
Risk Pool Members & Amounts:

Risk Pool Member	Core Team Member	Base Profit	Risk/ Reward %	Cost Savings: Profit Breakdown	Adjusted Profit including savings	Cost Overrun: Profit Breakdown	Adjusted Profit including profit decrease
Member 1		$300,000.00	11.88%	$23,762.38	$323,762.38	-$23,762.38	$276,237.62
Member 2		$100,000.00	3.96%	$7,920.79	$107,920.79	-$7,920.79	$92,079.21
Member 3		$50,000.00	1.98%	$3,960.40	$53,960.40	-$3,960.40	$46,039.60
Member 4		$400,000.00	15.84%	$31,683.17	$431,683.17	-$31,683.17	$368,316.83
Member 5		$300,000.00	11.88%	$23,762.38	$323,762.38	-$23,762.38	$276,237.62
Member 6		$275,000.00	10.89%	$21,782.18	$296,782.18	-$21,782.18	$253,217.82
Member 7		$100,000.00	3.96%	$7,920.79	$107,920.79	-$7,920.79	$92,079.21
Member 8		$175,000.00	6.93%	$13,861.39	$188,861.39	-$13,861.39	$161,138.61
Member 9		$200,000.00	7.92%	$15,841.58	$215,841.58	-$15,841.58	$184,158.42
Member 10		$300,000.00	11.88%	$23,762.38	$323,762.38	-$23,762.38	$276,237.62
Member 11		$150,000.00	5.94%	$11,881.19	$161,881.19	-$11,881.19	$138,118.81
Member 12		$100,000.00	3.96%	$7,920.79	$107,920.79	-$7,920.79	$92,079.21
Member 13		$75,000.00	2.97%	$5,940.59	$80,940.59	-$5,940.59	$69,059.41
Total Risk Pool		**$2,525,000.00**	**$1.00**	**$200,000.00**		**-$200,000.00**	

Lakewood Family Health Center
IPD Contract / Project
Organization and Management
Behaviors "Play" Attachment
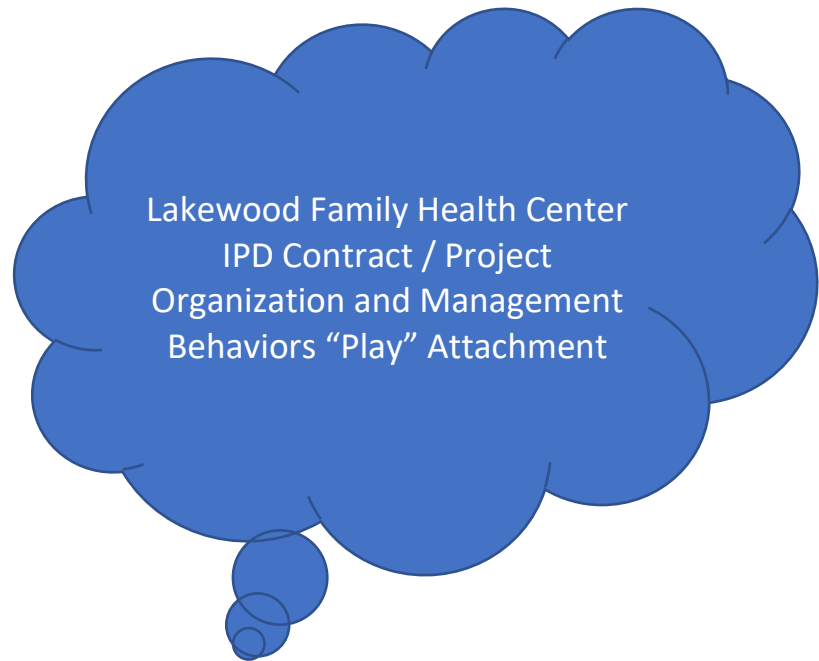
7.D
LEAN PRINCIPLES IN OLED^{SM}

LEAN PRINCIPLES IN OLED^{SM}

As stated in Chapter 1B, OLED^{SM} is not Lean, but draws on Lean ideas, related processes and tools that are important to OLED^{SM} success. Specific lean initiatives used in OLED^{SM} include:

- Last Planner Scheduling
- Pull Planning
- Weekly Work Plan / PPC
- Work Batching (flow) / Takt Planning
- Daily Huddles
- Choose by Advantage

The Lean Leadership Team created the image on the following page which thoughtfully demonstrates the interrelationships of OLED^{SM} with Lean initiatives, including tremendous overlap on focus points which include continuous improvement (and evolution), accountability and collaboration.

All of the topics are addressed in the following Avon Bed Tower Play on Lean and the Lakewood Family Health Center Play on Lean.

Note additional Lean Construction Initiative Last Planner® copyright information is available at the following Lean Construction Institute web site:

https://www.leanconstruction.org/media/docs/chapterpdf/israel/Last_Planner_System_Business_Process_Standard_and_Guidelines.pdf

LLT MISSION: LEAN ON ALL PROJECTS

B+D PROJECTS – SMALL & LARGE

PRELIMINARY
10/4/16 LLT Notes

OLEDSM

Guiding Philosophy

Owner Controlled

Project Mission Statements

Culture of Cleveland Clinic

Principals / Framework

- Patients First

- Research & Innovation

- Education

Trust

Transparency

Budget & Schedule Metrics

Open Communication

- Monkey on Table

No Silos

Customer Experience

Lean

Reduce Waste

Empowerment of Last Planner

"What Bugs You?"

Efficient Workflow

Lean Tools:

Pull Planning

Weekly Work plan/PCC

Constraint Logs

PDCA

Gemba Walk

Value Stream Mapping

Continuous Improvement

Accountability

Collaboration

OLED
Owner-Led Project Delivery

Cleveland Clinic

Cleveland Clinic

PROJECT: AVON BED TOWER (PROJECT 0013350)

SECTION - CURRENT STATE

The Cleveland Clinic in their efforts towards continuous improvement requested of their Construction Management Teams to implement Lean Practices on their projects. Their existing projects had marginal successes on the individual projects regarding instituting Lean processes. Projects were disorganized, often behind schedule, did not have a well-defined construction sequence, did not have trade buy-in and project issues tended to linger thereby impacting the overall project.

SECTION - FUTURE STATE GOALS

The Avon Project was tasked with implementing Lean Principals and achieve the following goals:

- Increase knowledge of Contractors and Team members in the use of Lean principals

- Improve communication amongst all Team members down to the Tradesmen in the field

- Improve construction work flow

- Improve material handling and jobsite organization

- Engage tradesmen and contractors to create a true "Team" dynamic and change the mind-set of how work could and should be done

SECTION - WHAT THE PROJECT TEAM DID

The Avon Bed Tower Project Team implemented the following Lean practices into the Project:

- **5S Practices**—Team implemented 5S by designating space for materials and tools to be stored, color-coding materials for easy identification of trade owner, posting of 5S signage and weekly 5S walks to identify areas needing improvement. In addition to organization and labeling, the Project Team worked with their suppliers to unpackage and pre-sort materials in an off-site warehouse to align deliveries for just the areas needed. Thereby, reducing waste on the jobsite and creating true just-in-time deliveries.

- **Work Batching**—We engaged the Lean Consultant to demonstrate the work batching to the Trade contractors and then divided up a typical patient floor into "blocks" roughly 6 rooms per block for a total of 13 blocks on the floors. This allowed us to create a "Task Time" for a block of approximately 5 days. The block schedules were posted on the floors to ensure the field level tradesmen could see and understand the schedule. In addition, we pointed identification markers on the floors to clearly identify block locations on the floors.

- **Daily Focus Meetings**—The Project Team implemented daily focus meetings for areas that were having difficulty completing or having a significant number of issues. This involved fewer trades than our daily huddles and focused on an item such as top of wall drywall completion / firestopping so the sheet metal contractor could complete their duct installation for given area.

- **Pre-Fabrication / Pre-Assembly**—The Project Team embraced prefabrication from the out-set but expanded the concept past the typical MEP corridor racks and bathroom pods to include custom headwall assemblies and pre-assembly of doors / hardware prior to shipment to the jobsite. This involved using a separate warehouse for pre-assembly and staging of materials.

- **Pull-Planning**—We again engage the Lean Consultant to facilitate some Last Planner pull planning sessions for the work batching process creating a "block" schedule for the typical patient floors. This allowed us to reduce schedule durations, improve communications and increase trade contractor "buy-in" of the schedule.

- **Weekly Contractor Meeting Constraint Process**—Part of our weekly contractor meetings we implanted a constraint log process. The trades indicate which issues are holding them or will potentially hold them up in the 5-10 days. We established a timeframe for resolution and a responsible party. This list was distributed to all the Team Members and was used to populate an Owner's Meeting Constraint Log for items that needed elevated to that level to ensure visibility and timely resolution of issues.

- **Weekly Work Planning**—We implemented a Weekly Work Planning process whereby the trades would populate a standard form of their weekly tasks from the Block Schedule and any other schedule tasks that needed to be tracked. These activities were assigned manpower, overall durations and were updated weekly if the items was completed or not. If the items were not completed, the reason for not completing was recorded. This information was reviewed at the weekly trade meetings and items were added to the constraint log for resolution if appropriate.

SECTION - LESSONS LEARNED

- Start Lean DAY ONE in the project

- Clearly define Lean processes for all groups

- Establish requirements for weekly work plan forms

- Establish block schedule at the beginning

- Have subcontractors present their work plans at the weekly meetings

- Constant, clear, concise communication is key

Play: Lean

PROJECT: LAKEWOOD FAMILY HEALTH CENTER & EMERGENCY DEPARTMENT (PROJECT 0015173)

SECTION - CURRENT STATE

The Cleveland Clinic had been pioneering in collaborative delivery methods and wanted to keep improving.

The Cleveland Clinic continues to face many challenges that the construction industry as a whole faces:

- Indecision state
- Redesign and rework
- Scope gaps due to lack of transparency (in both design and construction between sub-consultants and subcontractors)
- Coordination issues resulting in field changes
- Value engineering exercise
- Schedule set-back

The clear takeaway is that there are opportunities to eliminate waste and add value.

SECTION - FUTURE STATE GOALS

The Cleveland Clinic is continuing to examine its approach to design and construction, constantly looking for ways to improve quality and reduce waste.

Implementing Lean practices starting early in the design process and continuing in construction was the next step in the Cleveland Clinic's collaborative journey.

- Co-Location during design and Construction
- Last Planner in Design and Construction
- Choosing By Advantages
- A3 decision making
- Target Value Design
- Component Team Meetings
- Change Industry—spreading lean practices through individual companies
- Learn together— lean training as a team

SECTION - WHAT THE PROJECT TEAM DID

The following lean tools and methods were utilized:

- Key performance indicators - evaluated on a monthly basis (you need to create and build them as a team.) Listed below are from Lakewood FHC
- Engagement
- Lean
- Safety
- Schedule
- Sustainable Quality
- Last Planner—Pull planning - helped efficiently organize the design process. Pull planning revealed gaps in the team's understanding of one another's workflow; including how one team's work directly affected the other teams work.
- A3 - helped effectively communicate and document the decisions that needed to be made. Including the history of the decision.
- Co-location - had many advantages including model sharing, constructability review and live estimating. Model sharing allowed design assist partners to create coordinated and construction ready documents. Co-locating also helped create fun team environments that fostered creativity.
- Batching - helped organize trades workflow at the worksite.
-     The batching influenced the design of the systems
- Utilized constraint log in design and construction

SECTION - LESSONS LEARNED

- Importance of identifying true conditions of satisfaction: Building occupancy was not clearly defined at the beginning of the project causing a delay in the design process.
- Importance of target value design: The design started without target value design, instead it was based on CC standards which put the project over the budget. The design team pulled the cord, putting the design on hold. The appropriate systems were selected using A3s, which helped bring the project within the budget.
- Last Planner—Pull planning: The team realized that pull planning was an effective tool that helped keep the team on schedule. Pull planning helped prevent wasted effort, clarify workflow and create opportunities for greater efficiency. Weekly Working Planning in design needs to be performed together primarily driven by the designers.
- Having owner, CM and design assist/risk pool members part of the design process helps eliminate waste
- Model sharing: Having coordination drawings completed at the same time as the design construction documents saved significant time in comparison to the traditional schedule.
- The whole team has to be invested in the Lean process.
- Pull Planning during construction needs to be flexible. Work was resequenced from the original plan.
- How many times should you perform a pull plan—depends on complexity of the project and phases of work. Our team pulled the underground, structure/skin, overhead rough-In, interior framing/in-wall rough-in, and finishes.
- Develop a weekly work plan process that fits your project
- Constraints need to be displayed for all parties to see
- Daily Check-In meetings—find the right time and the right people in both design and construction
- Batching—allowed work to happen early if available and didn't affect other trades. Allows the team to be flexible

Play: Last Planner System

CHAMPION: Joe Schilens—Turner Construction

PROJECT: Cleveland Clinic Taussig Cancer Center

PURPOSE STATEMENT: Create and Inspiring Environment

Cleveland Clinic

SECTION - CURRENT STATE

Construction Managers utilize a Superintendent or maybe a scheduling consultant to assemble a project schedule. The schedule is based on past experience or historical data, but is mostly compiled in a bubble or Silo. Little or no collaboration exists between CM and Subcontractors and even less collaboration exists from Subcontractor to Subcontractor. Schedules are distributed monthly with little input from anyone other than the scheduler. Project meetings are conducted by Superintendents. Mostly, just project managers attend meetings and they are told what to do and when. Often times, information is not communicated properly which could lead to missed dates, schedule delays, or even claims. This can be very frustrating for all parties including the Subcontractors, CM, and even the owner.

SECTION - FUTURE STATE GOALS

Work is scheduled and coordinated in a collaborative environment. CM, A/E Team, Subcontractors, and Owner work collectively to develop the project schedule. Work flow is established on the project allowing Subcontractors the ability to perform their work activities in a steady & systematic way. Trade manpower remains steady, or at least fluctuates without sharp increases and decreases. Constant manpower leads to consistency of the workforce. Consistency allows for similar work production and the more likelihood for high quality. Consistency can also produce a safer work environment. A collaborative team that can develop a steady workflow will produce a predictable schedule. A predictable schedule sets the timeline and establishes parameters for team members to make crucial decisions, deliver materials, and perform work. Predictable teams will have the ability to complete the project on time.

SECTION - WHAT THE PROJECT TEAM DID

The team implemented the Lean scheduling technique the Last Planner System. The Last Planner System consists of 6 main components: Pull Planning, 6-Week Look Ahead, Constraint Log, Weekly Work Plan, Daily Huddle, and Percent Plan Complete.

Pull Planning is a collaborative approach to scheduling where the team utilizes a backward pass mentality to properly sequence work activities. Pull Planning is performed to determine the detail of the schedule for all major milestones. Work activities are defined with durations, manpower, and predecessor activities. This detail is input into the P6 Master Schedule. The Team Pull Planned Excavation and Foundation Concrete, Structural Steel and Slab on Metal Deck, Permanent Power, UPS Power, and GMP Development milestones to name a few.

SECTION - WHAT THE PROJECT TEAM DID

The 6-Week Look Ahead is reviewed weekly at the Coordination Meeting. It is a snapshot of the next 6 week's worth of work. In reviewing this, the Team is identifying any issues (constraints) that may prevent any work activity from being performed. Each item is essentially reviewed 6 times before it is started, allowing ample time for pre-planning.

The Constraint Log is a tool to track Constraints or Roadblocks; items that could prevent work from taking place. Constraints are documented during the review of the 6-Week Look Ahead and must include a responsible person from the present team as well as a required due date. Commitment from the Team is required to resolve all issues timely.

The Weekly Work Plan is the current week's work. Each trade submits their WWP to the CM Superintendent prior to the weekly coordination meeting. The Superintendent reviews each trade plan for general conformance to the project schedule. The trade foremen (Last Planners) present their plans to the remaining team at the weekly coordination meeting and any issues are discussed. A clear plan, compiled of all trade activities, is set for the following work week.

The Daily Huddle is a routine meeting where all foreman and superintendents meet daily at the same time and location to review the plan. Safety and coordination is discussed as well as each trade's work plan for the day. The WWP is monitored. The ability for all Last Planners to communicate together as a group, each day, is a critical piece to the process. Everyone's time is valued and respected and the huddle should only last approximately 15 minutes.

Percent Plan Complete is a measurement of the team's ability to plan. Each week the items in the WWP are graded. Credit is only given to items completed exactly per the plan. A high performing team is able to reduce variability by planning properly and executing work per the plan. A percentage grade is given to the team each week (60%, 75%, etc.) and variations are monitored. Variations can be examined by the team to determine areas for improvement.

In addition to fully utilizing the Last Planner System, the Team developed a Short Interval Production (SIP) Schedule. To do this, each level was broken down into batches of approximately 4500 SF. A construction sequence was then determined and a list of activities were grouped together that could complete within each batch each week. When one activity completed in batch 1, that crew would simply move on to batch 2 and the next activity could begin in batch 1. Every week, the construction activities moved one batch forward like a train traveling down the track. This very systematic approach made it very easy to know when material and manpower where required in a particular area (batch) of the building.

SECTION - LESSONS LEARNED

There can be reluctance at first when trying something new. This was the case with some foreman when utilizing the Last Planner System. Educational sessions were key to helping with this transition. Having the foreman present "their" plan to their peers on a weekly basis was essential to the effectiveness of the coordination meetings. Their involvement in the meetings, and communication with the other last planners, proved to make the meetings valuable.

Weekly Work Plans can become repetitive from week to week on a large project. It is important to focus on weekly measurables concerning long lasting activities such as Drywall Hanging or Duct Installation. The foreman need work to define these activities that can be accomplished in a week as the Percent Plan Complete grades a measurable goal. As trends emerge, as reasons for not completing weekly activities per plan, the Team can study the trend to determine the root cause. This process can help the Team to become more predictable with their work plan in the future.

Short Interval Production Schedules are great for work flow and predictable scheduling. In doing so, it is important to consider the batch sizes. In hind sight, the team may have considered a larger batch size; perhaps 7000 - 9000 SF vs. the 4500. In addition, 2 week intervals may have been more effective vs. a 1 week interval. If there is an interruption to work in a single batch it can cause a chain reaction with other batches. Building a "pause week" every 8th week into the schedule may make sense to allow for catch up work. Identifying constraints weeks in advance, and resolving the constraints, is critical for a SIP schedule. Communication amongst the Team, in particular the foreman, is crucial to understand how each other's work may effect the following trade. It is highly recommended that foreman physically walk the next 2 batches each week to look for work that is non-compliant. They should do this to verify that their conditions of satisfaction are met so that they can complete their work in the upcoming weeks. By identifying constraints, foreman will be good stewards for their peers and therefore good stewards to the project as a whole.

7.D
SMALL WINS "PLAY"

Play: Small Wins as an Sustaining Strategy

Cleveland Clinic Project: Big 3

SECTION – CURRENT STATE

Project teams gather weekly for the Big Room meeting. A standard segment in the Big Room has been the team reporting on small wins. These are gathered weekly by the slide deck organizer and are listed in the slides or are gathered during the Big Room meeting and are listed during the meeting by the facilitator. Small Wins become part of the slide archive.

SECTION – FUTURE STATE GOALS

" Something is wrong if workers do not look around each day, find things that are tedious or boring, and then rewrite the procedures. Even last month's manual should be out of date "

- ***Taichi Ohno*** *– Chief Engineer at Toyota*

The future state goals for a Small Wins program include:
- Make Ready
    - o Review program with Core Team
    - o Identify Small Wins champion
    - o Set up Small Wins database template
- Roll Out
    - o Request time on Big Room agenda
    - o Describe Small Wins program in the Big Room
    - o Set initial target for number of Small Wins
- Implement
    - o Deploy forms for teammates to report small wins
    - o Aggregate and map small wins
    - o Report weekly in the Big Room Meeting
- Celebrate
    - o Upon reaching target, hold celebration for project team
    - o Set new target for Small Wins

SECTION – WHAT THE PROJECT TEAM DID

Project teams for other owners have used the Small Wins approach to:
- Keep a culture of continuous improvement
- Promote a culture of innovation
- Drive TVD savings
- Sustain lean behaviors beyond initial training
- Boost morale along the way of a long TVD journey

SECTION – LESSONS LEARNED

A Small Wins program provides added value by:
- Encouraging a sense of friendly competition among teammates
- Leverages gamification as a strategy for engagement of teammates
- Makes improvement and innovation highly visible to the team
- Promotes the notion of "eating the elephant, one bite at a time"
- Translates high level concepts of innovation and improvement to daily activities

Small Wins-O-Meter

4 Small Wins Completed This Week

133 Small Wins Previously Completed

7.E

CO-LOCATION BIG ROOM "PLAYS"

- DESIGN PHASE
- CONSTRUCTION PHASE
- Big Room Efficiency

Play : Big Room/Co-Location in Design

Cleveland Clinic

PROJECT: LAKEWOOD FAMILY HEALTH CENTER & EMERGENCY DEPARTMENT (PROJECT 0015173)

SECTION - CURRENT STATE

- No Co-Location during design
- Typically the construction manager is not involved in the design.
- The owner and construction manager is typically unaware of the design process
- Engineers do not get the benefit of design assist
- Designers do not have the benefit of construction manager's input
- It takes time for the construction manager to understand the intent of the design
- Coordination drawings are required before construction can begin.
- Changes during construction affect the design.
- Designers over detail things because they think its what the contractor needs.
- Designers don't set the floor plan.

SECTION - FUTURE STATE GOALS

- Co-Location of Owner, Architect, Engineer, CM and trade partners during design
- Construction manager should understand design during design so there is no down time from design to construction.
- Engage design assist to help create the design
- Designers need to have the benefit of construction managers input because it saves time with the architect not drawing things that are not needed.
- Coordination drawings are eliminated between design and construction due to the design assist partners being on board.

SECTION - WHAT THE PROJECT TEAM DID

- CM was co-located in architects office and the design assist partners were located in engineers office. The team had weekly meetings where everyone was co-located together including the owner.
- The construction manager informed the design process by guiding
- The designers to only draw details to a level necessary for proper estimation. Construction detailing occurred later with specific trade partners.
- Design assist trade partners were co-located in the engineers office allowing the design assist partners to draw directly in the model.
- With design assist drawing in the model, there was no need to produce coordination drawings.
- Team discussed what it means to set the floor plan. With having the team co-located, we were able understand why moving walls were detrimental to the team.
- The team planned the work from the beginning. Co-location allowed the CM and owner to better understand what the designers were doing.
- The entire team worked in the model.

SECTION - LESSONS LEARNED

- The entire project team should collectively discuss what "setting the floor plan" means, as this may mean different things to different team members. FYI our team of 6-8 different disciplines didn't agree.
- To maintain the schedule, the owner had to make timely decisions by honoring the last responsible moments set by the project team.
- Understand what it means to set the floor plan and develop a process as a team to minimize waste.
- In the end, the team had about four to six pull planning sessions during the design process. A lesson learned would be to have more frequent pull plan sessions, and for various pieces of the project. The team started off with pull planning sessions for the entire design phase, which often resulted in long and sometimes disorganized meetings since team members were still learning the pulling process. Once the team had more practice, pull plan sessions could happen more quickly. The team realized it was equally as useful for smaller portions of the design process, and does not need to tackle an entire phase all at once, but could address individual milestones.
- The design team should consistently review and discuss details with the CM regarding constructability, especially if details change along the way.
- Predict the appropriate time for the Design Assist Partners to draw specific details in effort to avoid rework.

Play: Big Room / Co-location

CHAMPION: Jeff Abke - Turner

Cleveland Clinic

PROJECT: Cleveland Clinic Taussig Cancer Center

PURPOSE STATEMENT: Create and Inspiring Environment

SECTION - CURRENT STATE

Projects have many participants and they are brought together on a temporary basis to construct the building. Historically, each participant creates a temporary space at the site to meet their needs for housing their employees. The resultant complex of trailers, Conex boxes, or other form of temporary structures litter the site. Each of these temporary spaces needs power, internet, phone or water to support the management staff housed within. These space also tends to become an extension of the firm's corporate office, complete with signage and corporate identity. The built-in individual nature of these spaces focuses on the participant and not on the team. The physical barriers to communication and collaboration limit the team's abilities to perform as a single entity.

SECTION - FUTURE STATE GOALS

Ideally, the entire management team would be housed together; Owner, Architect, Engineer, Construction Manager, and Subcontractors. Each team member would work in an office space that supports their work and also encourages collaboration with other team members. This combined work space would leverage common needs across all team members. Things like; copiers/printers/plotter, phone systems, meeting rooms, kitchen/eating area, toilet facilities, office supplies, and administrative assistants/ receptionist, would be shared assets. Single utility connections to this space would limit the need for robust and costly temporary electrical or plumbing networks. Seating in the common work area would be flexible and offer a common environment across all team members, to minimize hierarchical layers that can represent barriers to communication and collaboration (no permanently assigned private offices). Seating assignments are flexible, decided by the team, and should work to the advantage of the project. There would be adequate areas for collaboration, privacy/quiet, and presentations. Technology would fully support the team with high-speed Internet access, wireless connectivity, computer projection in meeting rooms, and phone and virtual conferencing options available. Printing and plotting would be supported to common equipment within the space. Participants would feel a sense of common purpose as a member of a team, rather than an individual or company working solely for their own interests. The space would also support a larger meeting space, or "Big Room" that would serve as the informational nerve center of the project. In the Big Room current project information is displayed for the consumption of the entire team. Planning activities are supported in this space with lots of flexible seating and display boards to support the team.

SECTION - WHAT THE PROJECT TEAM DID

At CC Taussig, the CM established a +/- 9,000 SF trailer facility made up of a four-wide trailer, a six-wide trailer and a double wide trailer. A single trailer of this size was not available at the time. The three trailers were arranged as close together as they could be and shared electrical, plumbing, and Internet utilities. Weather-tight connecting links were constructed between the trailers to facilitate a "single space" feel. The four wide trailer came equipped with 8 offices and two toilets. The offices were preserved based on the costs of removal/replacement. The six-wide had two toilets and a kitchenette. The double wide had no amenities. Meeting rooms and perimeter large workstations were added to the six-wide. Low partition cubicle workstations were added to the open floor space of the four-wide and six-wide trailers. These two office spaces could support, The double-wide trailer served as the "Big Room" with fold-up tables, stacking chairs, marker/tack boards and presentation screens and projectors added. Two digital plan tables were constructed; one in each office trailer. The office could support 45 staff with room for hoteling visitors in conference rooms. Most of the trade contractors made use of the office during their duration on site. The Architect and the Engineer both had full-time representation, as did the Owner and the Owner's representative. The combined office space kept each person engaged in the project, available for collaboration and as the team members got to know each other, a camaraderie was established. The team was more easily able to stay focused on the group objective.

SECTION - LESSONS LEARNED

The team found that it is important to establish a commitment up front to a set schedule of attendance at the site office. Predictability is important for planning of meetings, integration sessions and presentations. Each team member should publish a schedule so that the rest of the team can plan accordingly.

The team should recognize the necessity of hours spent at the company office.

The team should support the concept of "Office Hours". During office hours a team member makes themselves accessible to collaboration, impromptu meetings, etc. Outside of Office Hours, the person can focus on the tasks at hand and staying current with their responsibilities to the project/company. It was too easy at Cancer to interrupt someone for a conversation that was really not urgent and would completely derail the persons work efforts. There should be a built-in mechanism for "do not disturb" status.

The team should try to envision the quantity of break-out rooms required and they should be as sound isolated as possible. Noise bleed into shared office space can be very distracting.

A shared office environment should be considered as early in the process as possible, so that team buy-in and contract terms can be established as team members are brought on to the project. The environment should remain flexible as the needs of the project may change over time, but early planning can avoid issues later.

If a project team is considering the construction of a shared office environment, including a Big Room, they should reach out to as many teams that have done it previously as possible to gather information, lessons learned, and advice. This is something that has been done many times and one should not reinvent the wheel.

Specifically in the Big Room, try to avoid any structural elements that fall in the middle of the space. The CC Taussig project had two small columns along the centerline of the room, and while their footprint was quite small, their impact to the space was huge. Seating arrangements and vision lines were disrupted by these columns and there was likely a solution that the trailer vendor could have incorporated to eliminate them.

Establish a norm of quiet in the open office environment. Headphones should not be a necessity at one's desk. The team should have adequate break-out rooms and be willing to take conversations away from others trying to concentrate at their desks. No one should have speaker phone calls at their desk for the same reason. Take the call to a break-out room.

Encourage the use of Visual Management tools on the walls of the office, so that the whole team can be knowledgeable as to the status of the project.

Eliminate private offices. Break-down the hierarchy of the project team. No one person should be presented as any more important to the success of the project than any other person. Physical barriers stop communication, collaboration and team chemistry.

Try to get the office space all in one trailer. Although connected, the two office spaces did lead to some disjointed teamwork. The engineering and supervision functions were housed in separate rooms and it would have been better if they were all together to share conversations, and be more open to collaboration.

If the office is going to be used for pre-construction design efforts like Design Assist Subcontractor collaboration, be sure that the internet connection is adequate to support the use of the 3D drawing tools.

Play: Big Room in Construction

PROJECT: LAKEWOOD FAMILY HEALTH CENTER & EMERGENCY DEPARTMENT (PROJECT 0015173)

SECTION - CURRENT STATE

Traditional—Process

- Set up for CM team only
- Minimal space and accommodations for Designers and trade partners
- 1 conference room
- Project meetings held by CM team and contractors—Designer and owner might attend

SECTION - FUTURE STATE GOALS

- Representatives from all parties (Owner, Architect, Engineer, CM and Trade Partners) work at the project site.
- Big Room may be in multiple locations (be flexible due to project size)
- Component Team meetings held at the project site— held weekly or as needed depending on the project size and duration.
- Provide hoteling space for Designers and trade partners– Hardwire or wireless. What do people need.
- Referencing Models by linking the different Revit models (not all in one model)
- Increase internet capacity as needed for other partners—provide additional hardware as needed. Separate servers for files and or the model
- Increase technology in big room—monitors to display meeting information.
- BIM 360—As this technology gets better having one model that all parties can remote into would be helpful.
- Conference calling—make sure it's sufficient

SECTION - WHAT THE PROJECT TEAM DID

- Met on a weekly basis with entire core team on Wednesday's—8:30—12:00 pm from start of design through construction competition.
- Provided internet capacity and power for CM team, with the ability for others to use while onsite.
- Held component team meetings on an as needed basis
- Provided a large wall space for Pull planning
- Displayed team Key Performance Indicators
- Displayed project Percent Plan Complete
- Displayed project rules/guidelines—as it relates to costs
- Displayed behaviors that we want the team to follow and opportunities, threats, concerns developed at the onset of the project
- Displayed the project floor plans and site plan—used for discussions throughout project.
- Had 2 60" TV's in big room for meetings to display content
- Working with 2 models but both being updated to current changes
- Had 2 8'x4' white boards
- Displayed Batching plans
- Displayed Quality recognition
- Displayed Constraints

SECTION - LESSONS LEARNED

- Core Team Meeting—weekly (only time the entire team was together)
  - Started with only 1 meeting but we consistently ran long
  - Added a discussion meeting prior to core team
  - Added a core team site walk "Gemba walk"
- Should have displayed Conditions of Satisfaction starting in design through construction (when making decisions you have something to refer back to)
- Size of the TV or TV's needs to changed based on the size of the room
- Allow the TV's to have the ability to be split to allow for more content to be displayed
- Add wireless connections to the TV's
- Add more White boards
- Better phone/speakers for conference calling
- Pull planning and Weekly work planning should be held in the same space

SECTION – CURRENT STATE

Current state of OCTPD projects includes project meetings, but regular Big Room meetings that gather the entire project team in person are not always feasible. Many project teams include both local and out-of-state project members, with many team members working remotely from home offices. Hosting in-person meetings for the larger project team on a weekly basis is not cost-effective or logistically feasible, yet the team still needs to communicate on a regular and short cadence, as information and decisions are rapidly developed.

SECTION – FUTURE STATE GOALS

The team will continue to gain efficiency of communication and decision making.

The future state goals for Big Room meetings include:
- Efficient weekly virtual Big Room meetings that communication issues/decisions and identify action items to resolve open issues, that stay within the allotted time frame
- Efficient monthly in-person Big Room meetings that maximize team's time together
- Decreased time and costs for team to make decisions
- Decreased time and costs for Clinic to make decisions
- Solutions offered to Cleveland Clinic for decision are complete and timely
- Thorough communication throughout team on open issues and decisions made

SECTION – WHAT THE PROJECT TEAM DID

The CID Team has implemented various combinations of weekly virtual and monthly in person Big Room meetings over the last year, and has fine-tuned the meeting schedule to the following structure:
- 1.5-hour weekly virtual Big Room meeting on Thursday mornings.
- 2.5-hour block of time is reserved on team members' calendars, every Thursday afternoon.
- This calendar hold is a reserved time for team members to be available to attend ad-hoc meetings (referred to as "swarms") to resolve specific topics with specific members. Swarm meetings are added to an online Swarm Schedule log.
  - Swarms can be identified throughout the week and added to the Swarm Schedule log.
  - Swarms are also identified during the weekly virtual Big Rooms. After Component Teams have had a chance to communicate open issues and requests for help to resolve issues during the Big Room, the team reviews the log for swarm meetings that have been scheduled, and propose new swarms based on any new issues identified. The team reviews (and adjusts as needed) the times, goals, leader, and participants for each swarm.
  - The swarm leaders create a unique Teams invite for each swarm they are leading.
- 1 to 1.5-hour weekly Component Team meetings occur throughout the week leading up to the Big Room. These Component Teams include team members from both the design team, construction team, and the Clinic and are centered around topic areas such as Site & Civil Engineering, Structural, Mechanical/Electrical/Plumbing, and Cost, to name a few examples.
- A 2-day in-person Big Room occurs once per month, on the second Wed and Thu of the month. The project team and the Core Team identify topics ahead of time, including recurring items such as a schedule review and an OCTPD-focused team health session, as well as timely topics relevant to the entire team, and multiple swarms with small groups of team members.

SECTION – LESSONS LEARNED

Using this framework, information is communicated quickly throughout the project team. Issues are resolved faster, and solutions are identified and brought to project leadership during the week and discussed in the Big Room the following week.

New or recurring issues that arise are identified quickly, and team members hold swarm meetings on the issue within one week maximum. Separate swarm meetings mean that team members give these specific issues the time needed to arrive at resolution or next steps, and do not monopolize time in the regular Component team meetings, so that other issues can be addressed. These swarms have also yielded efficiency of communication and problem solving ability of the team because 1) the participants are tailored to the specific topic at hand, and often include cross-functional members from different Component Teams, and 2) the issues are discussed face to face (even if virtual) in real time versus being described via email.

7.F
BIM / VIRTUAL MODEL "PLAY"

Play: BIM Transition between Design & Construction

PROJECT: CANCER BUILDING (PROJECT ANC09500) WRITTEN BY: KATHERINE COPELAND

SECTION - CURRENT STATE

- Cleveland Clinic projects, have in past, implemented Building Information Modeling via multiple entities on its project.

- Coordination of models was time consuming and inefficient

- Aside from cost incurred at multiple levels (design and trades) the net result from this process did not yield the desired outcome/results for the Clinic.

- The BIM process is not transparent nor managed effectively in the current state.

SECTION - FUTURE STATE GOALS

- The team wanted to create a fluid process that allows design development and enhancement and trade coordination to occurs simultaneously in support of and parallel to a Fast Track construction.

- Specific to the Cancer project we want to improve the BIM process to solve the following problems:

  1. Ensure that the design intent and aesthetic that was methodically agonizingly incorporated into the design translated to the construction

  2. Eliminate waste and rework between the design model and the fabrication/installation model.

  3. Ensure that the Cleveland Clinic facilities maintenance can adequate space for maintenance of all components.

  4. Ensure adequate time in the schedule to allow fabrication models to be developed and coordinated without delaying construction or short changing the design process

SECTION - WHAT THE PROJECT TEAM DID

The solution was broken into 3 categories

1. Behaviors & Information Flow
2. Process & Technology
3. Schedule

Behaviors & Information Flow

- Assemble the team before design begins—consider RFP that looks for self selected teams

- Include team building activities for the design and modeling team including on-boarding so each team member understanding the overarching goals for the project and feels part of the team.

- Co-location Find a colocation plan that works for the project and change it as the project involves. Embed BIM modelers from the contractor in the designers office early during design, create am actual big room for modelling or utilize virtual big rooms with periodic in person meeting. The plan should support the project and the people that are part of the project.

Process & Technology

- Focus first on building a high performing team for design and build modelling

- Have team develop a process for hand-off of model, including smaller portions of the model. Once the builder start modelling in an area the design should not longer model but should use the builders model.

- Include designers in the detailed coordination meeting to ensure the design intent transfer to the build model.

Schedule

- Align design schedule with the construction schedule.

- Utilize pull plans for entire team understand when information needs to be transferred between teams

- Move away from the standard "Phases of Design", and define upfront the milestones based on the "Customer's" Conditions of Satisfaction and be sure to get BIM Team input.

- Consider "set-based design" to build flexibility in design to respond to changing owner needs.

SECTION - LESSONS LEARNED

1. The single biggest lesson learned was to make sure all designers and contractors are part of the BIM process and modelling what they are going to build. In every incidence where insufficient access existing for facilities or the build did not reflect the design plan it was because something was left out of the BIM model.

2. Avoid concurrent modeling—There should never be a time when design and trades are modelling an area concurrently. Once the trade fabrication modeling start in an area, the design modeling stops.

3. Design team members need to be open to sharing design revit models

4. Prefabrication concepts need to be incorporated into overall design at inception. This may drive floor plan layouts

5. Project batching sequence needs to be incorporated into BIM design

6. BIM participation should be extended to all trades that can affect above ceiling interfaces (eg. drywall partitions and barriers)

7. Need to clearly define up front level of detail expected from team members.

Play: BIM as a Primer for Pre-Fab

CHAMPION: Chris Snyder - Turner Construction Company

PROJECT: Cleveland Clinic Taussig Cancer Center

PURPOSE STATEMENT: Create and Inspiring Environment

SECTION - CURRENT STATE

During the early stage of the project, prior to construction beginning, the design team creates a design intent model. The Design Assist contractors along with the Construction Manager will utilize this model to create a detailed constructible model. In order for prefabrication to work, the ideas must be incorporated into the model. As the Design Assist/Construction Manager team work through the model it inherently becomes clear which pre-fabrication ideas make sense for the individual project. For example, restroom pods may not work for a project whereas pre-fabricated corridor racks may.

Pre-fabrication opportunities are reliant upon the experience and knowledge of the teammates.

The BIM execution plan is based off a level of detail to begin able to utilize pre-fabrication.

SECTION - FUTURE STATE GOALS

The design model should be based on future agreed upon concepts for pre-fabrication. For example, in order to utilize restroom pods the design has to rally around a minimal number of restroom layouts.

Utilize the model/pre-fabrication for quality, especially in repetitive rooms, like a headwall in a patient room.

Utilize the model to provide productivity. Constructing as much as we can in a controlled setting and not on the project site will make us more productive in the field.

Use the model to eliminate fire stopping related issues during construction in rated walls.

Ensure that all parties that can bring value to the model have their chance to do so.

SECTION - WHAT THE PROJECT TEAM DID

The team utilized cast-in-place MEP anchor points. We were able to lay out 95% of the hangers on the floor above prior to pouring the concrete, that way when we come to hang the MEP hangers we can do so while standing on the floor and not in a lift or ladder. This makes install safer and faster. This also makes the field install a more accurate representation of the BIM model.

The team utilized MEP Corridor Racks. This allowed us to build our above ceiling MEP in the corridors in 20 foot increments in a controlled environment in a factory-like setting. We then brought out the racks and hung them in the corridor. At this point all we have to do was connect the joints and test. This makes the MEP corridor rough-in extremely more productive.

We were also able to use multi-floor risers. The lengths of pipe and ductwork were put together in a factory-like setting and brought out in 40 foot increments and flown into the vertical shafts by a crane. This creates less open shaft welding and thus makes the task safer.

We used a "BIM Box" Mobile Computer Station. This was especially useful for the MEP trades that are used to having to look at 2D drawings and create the 3D vision in their head. We were able to provide (2) BIM boxes and found that the employees felt as though they were much more productive by seeing their rough-in's in 3D and not just the 2D drawings. In a typical build, the MEP trade will have 2D drawings that only show their individual trades rough-in. With the BIM Box we were able to have contractors see the other trades rough-in's and look for pinch points and help coordinate proper sequencing.

The electricians used what we termed "room in a box". The boxes were assembled in their shop and each box contained exactly what was needed by the electricians to finish rough-in in each room.

We set up a pre-fabrication shop on an upper floor and assembled water closets and sink carriers and were then able to bring them pre-assembled to their install location.

SECTION - LESSONS LEARNED

We wound up finding out that bringing the Design Assist Contractors on much earlier would help identify pre-fabrication earlier and thus incorporating them into the BIM design.

BIM coordination needs to follow the pour sequence or vise versa. If the BIM team is coordinating in one sequence and the building is being built in another sequence this could cause delays in construction.

The drywall contractor can offer signification insight into fire walls and can provide an extra set of eyes so that we are not creating details at firewalls that will not be constructible. This eliminates potential engineering judgments. In order to take advantage of this BIM needs to be bought from the drywall contractor.

MEP corridor racks were strategically placed and only done in the corridors where it was determined would vastly help our productivity. Every team has to evaluate pre-fabrication ideas for what works for their individual project.

Team members should come into the project with a list of potential pre-fabrication ideas so the project might be able to be designed to incorporate them.

If the option to do bathroom PODS is chosen then the finishes have to be chosen extremely early in the process.

We also learned the value of combining CD's with DA MEP coordination. We encountered a change at Central Sterile and were able to utilize the team approach. By having the DA MEP contractors draw their respective Construction Documents under the supervision of the design team we were able to save a step in the process and come to CD's sooner. This was able to be accomplished due to the level of trust built between the design team and the DA contractors throughout the project. If that level of trust can be built early on in the project these type of opportunities can present themselves earlier.

7.G

OLED^{SM} BUDGET MANAGEMENT WEB BASED APP

(Under Development and Not Included)

CHAPTER 8

OLED^{SM} GROWTH & EVOLUTION

8A. NEXT STEPS OF OLED^{SM}
     1. Community Outreach "Play"

OLED^{SM} GROWTH AND EVOLUTION

NEXT STEPS OF OLED^{SM}

Cleveland Clinic Buildings + Design is committed to the continued use of OLED^{SM}, building on its 15 years of success. The key to the future of OLED^{SM} is creating a strategic direction for its growth, improvement and evolution, as outlined below.

- Continuation of our current approach to the use of OLED^{SM}, whereby each project in its own way "individually" uses the tools described herein as desired by the Owner's Rep responsible for the project.

- Roll-out of this OLED^{SM} Guide and Playbook to internal CCF Buildings + Design for feedback and improvement.

- Upon finalization of the Guide and Playbook, implement OLED^{SM} in a more "standardized" fashion using the Guide and Plays, while <u>still allowing for individuality and creativity of each Owner's Rep responsible for each project</u>.

- Evolve and grow OLED^{SM} in the following ways:
  - Continuation of the OCPTD^{SM} Research Study with CWRU to academically justify and define the desired OLED^{SM} culture behaviors and environments that maximize team and project success. This will include the expanded use of Relational Coordination to continuously measure the relationships between all project roles defined in Chapter 2.
  - Build off Buildings + Design's successful mentor protégé program, to enhance the diversity, equity, and inclusion of historically underutilized businesses (see attached play entitled DEI Community Outreach).
  - Completion of the development of a web-based application by Cleveland Clinic Business Intelligence Group to enhance management of critical budget information
  - The marketing and sale of OLED^{SM} to obtain a trademark of OLED^{SM}.
  - Continue the documentation of how-to and implementation of OLED^{SM} on small projects (not just large projects) to reduce risks, enhance budgets and schedule.

- Training of partners (designers, contractors, consultants) in OLED^{SM} via the use of the Guide and Playbook.
- Continuation of Post Occupancy Teams to continuously improve OLED^{SM}.
- Continuous updating of the OLED^{SM} Guide and Playbook documenting new plays via adding A3s, team improvement techniques and processes.

Finally, please see the following chart which graphically captures the initiative currently underway.

Sampling of OCTPD℠ Initiatives

OCTPD℠ - Team / Appreciative Inquiry Session

"Concerns and problems are dealt with in a timely manner" from each team's perspective

OCTPD℠
Cleveland Clinic Group Practice Model for Planning, Design & Construction
Defined
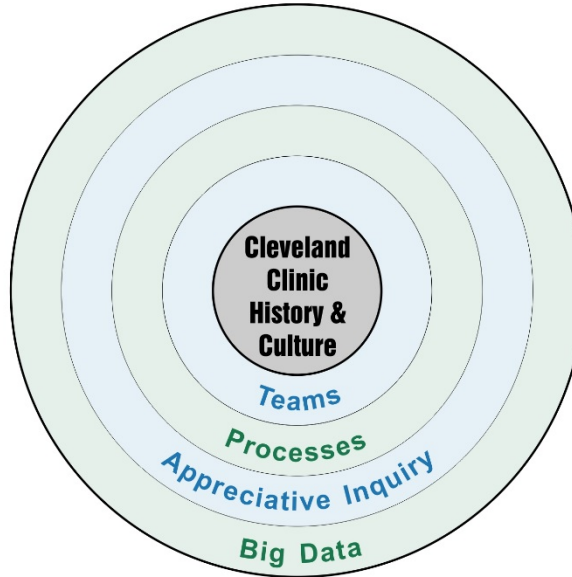
Guide & Project Playbook
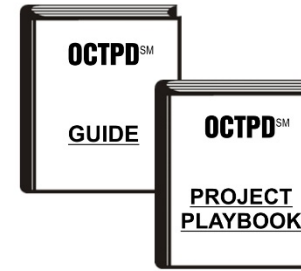
Relational Coordination Analytics

Project Metrics Summary
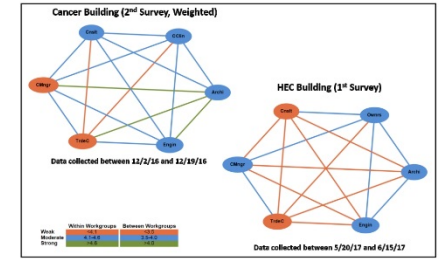
Project Budget (Cost) Metric Overview

Intellectual Property
Monetize Products & Services

Project Budget (Cost) / Schedule Metric Dashboard

Project Schedule Metric Analytics & Database
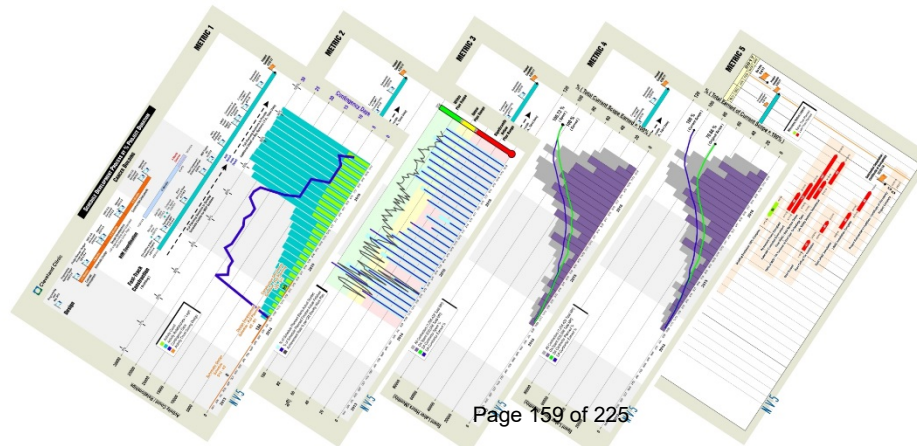
Project Budget (Cost) Metric Web App & Database

8.A

NEXT STEPS OF OLED^{SM} COMMUNITY OUTREACH "PLAY"

Current State

- **Big 3 Projects – Neurological Institute, Cole Expansion and Renovation, and Cleveland Innovation District**
- **$1.3B over next 3 years**
- **Community Commitment with Stakeholders**
- **Workforce Goals: 16% MBE; 5% WBE; 20% City of Cle; 4% Low Income**
- **DEI Spend Goals: 20% or better**

What the Project Team Did

- **Developed master contact list comprised of suppliers (Cleveland Clinic, Eco-system Partners, & Thought Partner**
- **Engaged CC Communications: Branded tools used throughout Outreach emphasis Mission | One Message**
- **Established core team and created Action Register**
- **Standard Approach; configured for each project**
- **Action Plan (location, agenda, messaging, registration, pre / day-of / and post event tasks)**
- **Photograph and survey participants**
- **Engaged DEI Accelerator on Project Site Fencing**
- **Engagement with the CMs and DAs early in the process**

Play: DEI Community Outreach BIG 3

Future State Goals

- **Developing scorecard for transparent and timely communication of progress**
- **Scaleable playbook for large and focused outreach events**
- **Incorporate Mentor Protégé and DEI Accelerator participants in Outreach activities**
- **As part of "redefining" Mentor Protégé create an Alumni Network – "Pay it Forward"**

Lessons Learned

- **Time to plan and execute**
- **Registration technology capabilities**
- **Adjust gameplan as needed**
- **Communicate and then communicate more and often**
- **Confirm speaker time allotment and content**
- **Create Q & A dialogue**
- **Test technology**
- **Two-paths for engagement of suppliers and workforce**
- **Prospective diverse supplier follow-up; summary of interaction between CM/DA Partner and diverse supplier in CC boundary system**

ACTION REGISTER

Core Group by Project

Buildings + Design Leadership (Accountable)	DEI Thought Partner (Consult)

1. NAME
    • Leadership Engagement (Ops Admin/DEI, Community Relations, Corp Communications)
    • Initial Coordination with Protective Services & Parking
2. NAME
    • Program & Project Communications
	1. Thought Partner

Marketing, Communications, & 3ʳᵈ Party Coordination	**Event Coordination (Pre, Day-of &Post)**
1. Design (NAME) 2. Communications (NAME) 3. Thought Partner (NAME) 4. Ambassadors / Contributors (NAMES) 5. Owner Representative (NAME) 6. Construction Manager (NAME) 7. Signage (NAME)	1. Logistics (NAME) 2. Thought Partner (NAME) 3. Ambassadors / Contributors (NAMES) 4. Design (NAME) 5. Communications (NAME) 6. Owner Representative (NAME) 7. Construction Manager (NAME) 8. Signage (NAME) 9. Media Operations (NAME) 10. Protective Services (NAME) 11. Parking (NAME)

Day-of-Event | Action Register

Action	Owner	Complete?	Due Date	Notes
Confirm any changes for day of event (Contacts, Room or Technology Issues, etc)				
Distribute directional signs				
Distribute table signs (resources/DA/Wi-Fi/Registration)				
Distribute sign-in sheet signs				

Opening remarks
    • Recognize special guests, community partners, etc
    • Touch on agenda for the day
    • Run video (if applicable)				

Arrange name tags (extra for walk-ins & markers)				
Bring bottle waters, coffee, snacks				
Use team text group for all day-of communications				
Parking confirmation of distribution of garage signage				
Technology test and confirmation with speakers				
Remove and recycle signage				

BIG 3

COMMUNITY OUTREACH EVENT

Cleveland Innovation District

Agenda

Outreach Opportunity Session ••

8:45-8:50a	Welcome and brief overview of Outreach Program
8:50-8:55a	Overview of NI project and bid package opportunities.
8:55-9:00a	Overview of Cole Eye project and bid package opportunities.
9:00-9:20a	Overview of CID project and DA Partners discuss bid package opportunities.
9:20-9:30a	Breakout to tables
9:30-11:30a	Breakout sessions with DA Partners follow up conversations. (Tables will be set up outside of large Conference Room) for DA partners to meet with vendors and contractors.

BIG 3

COMMUNITY OUTREACH EVENT

Cleveland Innovation District

Event Ambassadors

Dave Berlekamp	**Mark Finken**	**Jack Kong**	**Doug Lippus**	**John McCreary**
Architect	Mechanical Engineer	Sr Design Associate	Owners Rep	Owners Rep
Emily Slovan	**Victora Wolter**	**Alex Xu**	**Megan Zupan**	**Ken Roy Jr.**
Engineer	Owners Rep	Architect	Engineer	Owners Rep

COMMUNITY OUTREACH EVENT

Cleveland Innovation District

The Cleveland Clinic, in collaboration with Gilbane Building Company, invites you to participate in our business-to-business and career fair event. The Cleveland Innovation District Building, one of the BIG 3 projects, will showcase contract opportunities for large and small organizations & employment options.

WHO

Register Here

For Questions:
cweitzel@gilbaneco.com

WHAT

Contract Opportunities:

- Learn about upcoming bidding opportunities
- Meet the project team members and decision makers
- How to become certified as a small /minority/women -owned busines

WHEN

Wednesday, July 26, 2023

8:30-11:30 am

WHERE

P2 Parking Garage

2111 E. 100th St.

Free parking

Lerner Building

9620 Carnegie Ave, 5th Floor

PROJECT FACTS

- Two buildings totaling approximately 300,000 sf at the corner of E.100th and Cedar, creating a new front door to discovery at Lerner Research Institute
- Create direct and indirect career opportunities with local trades and suppliers to support families and communities
- Cedar Building A:
  - Foundations - August 2023
  - Structure - February 2023
  - Enclosure - December 2024
  - Interiors - February 2025
- Cedar Building B:
  - Foundations - July 2023
  - Structure - October 2023
  - Enclosure - August 2024
  - Interiors - June 2025

Cleveland Clinic

Community Outreach
SUCCESS STORY

Feedback from the Community Outreach event held on Monday, May 15, for Cleveland Clinic's Cole Eye building addition and renovation.

"Good information for potential contract opportunity"
-Brian

"Very informative and got to meet and greet other companies!!"
-JD

"I was able to have 1:1 time with several major trade partners"
-Emily

"This was a wonderful event. It was great to hear how dedicated Cleveland Clinic is to encouraging equity and diversity in my neighborhood"
-Adam

"Extremely informative! We enjoyed hearing about all the various opportunities and timelines for the scope of the projects"
-Nick

"Great chance to connect to new companies and faces"
-Joe

Click here to register for upcoming Community Outreach event for Cleveland's Innovation District on Wednesday, July 26.

REFERENCE MATERIALS

A. OLED^{SM} RESEARCH INITIATIVE - CWRU RESEARCH
SUMMARY: CONTRIBUTION & IMPACT

B. THREE (3) ARTICLES FOR OLED^{SM} TEAM MEETING KICK-OFF

- Want to Keep a Project on Track – Get Real

- The Discipline of Teams

- Why Dream Teams Fail

C. LEAN CONSTRUCTION INSTITUTE MATERIALS

REFERENCE MATERIAL

A.OLED^{SM}RESEARCH INITIATIVE CWRU RESEARCH SUMMARY: CONTRIBUTION & IMPACT

CWRU Research Summary: Contribution & Impact

Abstract: Construction projects are complex "teams of teams", or multi-team systems. Current understandings about the mechanisms[1] of consistent multi-team system (MTS) success in the construction industry – in terms of budget, schedule, quality, and safety adherence – are largely anecdotal. Thus, the outcomes of these mechanisms are not reliable, and continuous improvement is thereby impeded. CWRU brings the social science and rigorous academic research necessary to investigate what explains MTS effectiveness. Findings to-date from a multiple-year study of two significant Cleveland Clinic construction projects emphasize the importance of roles, relationships, and communication—three core values of the Cleveland Clinic's Owner Controlled Team Project Delivery (OCTPD[SM]) practice model of planning, design, and construction— in shaping positive outcomes on Cleveland Clinic projects.

Part 1. CWRU research team strengths and broad framework for study

- **Social Science**. The OCTPD[SM] practice model for planning, design, and construction is built on the notion that strong teamwork is essential to successful project management. Yet, much of the knowledge of the specific mechanisms for building effective teams in construction is based on anecdotal evidence. Organizational Behavior is the social science discipline most knowledgeable of how and why teams are successful. Our expert research team has brought rigor and precision to defining what makes an effective team and identifying the core mechanisms that enable this effectiveness.

- **Relational Coordination**. One central contribution from bringing this disciplinary focus to the study of OCTPD[SM] was identifying the importance of Relational Coordination, which refers to a concept and scientifically-validated measure of how people coordinate through the communication in their role-based relationships. Relational Coordination has been shown to be especially important in contexts with high task interdependence, great uncertainty, and time and cost pressures. Each of these features strongly characterize the large, complex construction projects that Cleveland Clinic undertakes. Rather than relying on anecdote or memory, we have applied a concept and measure that has been validated in numerous studies of task coordination across the world.

- **Multi-Team Systems**. A second contribution has been to frame these construction projects as "teams of teams" or Multi-Team Systems. This newer concept in the organizational behavior discipline is on the cutting edge of team research. The Multi-Team System

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[1] In terms of MTS success, a "mechanism" refers to practices that explain how certain factors lead to task improvement.

perspective helps to situate complex construction projects within a larger spectrum of team-based systems and thus allows for more rigorous comparison and contrast. It also aligns the OCTPD[SM] practice model for planning, design, and construction with Cleveland Clinic's approach to delivering high-quality health care via teams of teams. At Cleveland Clinic, the team of teams effectively delivers healthcare and construction projects by "Acting as a Unit"[2].

- **Appreciative Inquiry**. A third contribution of this research team has been to highlight the role of Appreciative Inquiry in the OCTPD[SM] practice model. Appreciative Inquiry is an organization development process developed by Professor David Cooperrider (originally based on a study of Cleveland Clinic) that focuses on the strengths of the entire organizational system as a whole (see Figure 1). This process has been applied to numerous organizations, cities and even the United Nations; a strengths-based approach that focuses on the positive is already apparent in OCTPD[SM] project teams. Drawing on Appreciative Inquiry in studying these projects focuses both researchers and project participants on identifying and accentuating what is already working well, in addition to identifying areas for improvement.
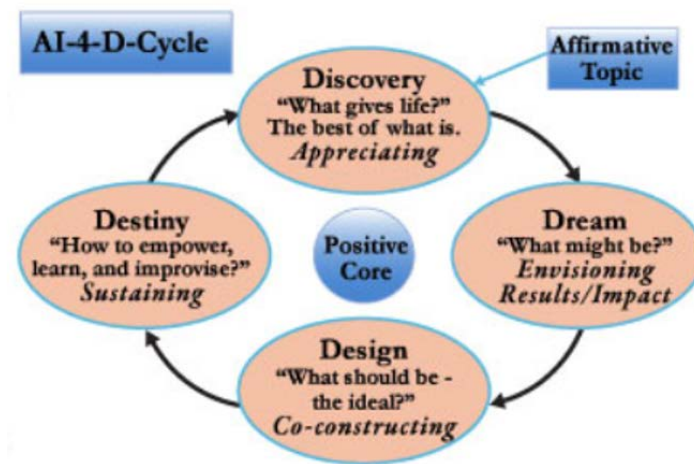
Figure 1. Appreciative Inquiry 4-D Cycle. Retrieved from www.davidcooperrider.com/ai-process/.

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[2] George Crile wrote this on August 27, 1918, in the General Field Hospital #9, Rouen, France, as quoted in *George Crile, An Autobiography*, edited with sidelights by Grace Crile, 1947, p. 344.

PART 2. CWRU RESEARCH QUESTION PRESENTED

- This research study was designed to address the specific question of "What are the relational mechanisms that explain how OCTPD^{SM} works, and do they predict time and money savings?"

PART 3. CWRU RESEARCH DESIGN & RESULTING DEVELOPMENTS

Cleveland Clinic's *initial inquiry focused on identifying the relational mechanisms that explain how the OCTPD^{SM} practice model works, and whether the OCTPD^{SM} practice model helps predict savings in both time and money in environments clouded with high task interdependence, uncertainty, and time and cost constraints.* Given this line of inquiry, *Relational Coordination emerged as an appropriate theoretical framing to focus the research and help guide the CWRU research team's attention toward two key areas of thought: relationships and communication.*

Relational Coordination (RC) is defined as the "management of task interdependencies carried out in the context of relationships with other group members" (Gittell, 2001, p. 471), and includes four communication dimensions (timely, accurate, frequent, and problem-solving) and three relational dimensions (shared goals, shared knowledge, mutual respect) (see Figure 2).

Figure 2. Relational Coordination Model. Reprinted from Hoffer Gittell. (2018). *RC Roundtable Booklet*. Relational Coordination Research Collaborative.

The *research team used mixed methods to examine these core mechanisms* of RC, and the associations between RC and key project outcomes at the Cancer Building and Health Education Campus (HEC) projects:

Quantitative Methodologies

- **RC Survey**. We conducted multiple waves of surveys that included participants representing each of the six core roles involved at the Cancer Building and HEC projects (i.e., Owners, Architects, Engineers, Construction Management, Trades, Consultants),

including questions that capture additional constructs such as the desire for future relationships, trust, and collective efficacy.

- **Owner Weekly Relational Survey**. At the HEC project, we surveyed members of the Executive Small Group each week for 24 weeks to gather perspectives about the quality of the relationships between Owners. If the CWRU research team is approved to continue the study, we will statistically tie the data to weekly schedule and budget adherence.

Qualitative Methodologies

- **One-on-one interviews.** At each site, we conducted two rounds of formal interviews (with people representing each role of Owner, Architect, Engineer, Construction Management, Trades, and Consultant) to assess commonality of perspectives, and sharedness of experiences and goals across roles and levels. We conducted additional interviews focused specifically on timely communication.

- **Informal conversation.** Throughout our time on both sites, we relied on many in-the-moment dialogues to glean a better understanding of coordination and collaboration within and across teams.

- **Observation.** We conducted hundreds of hours of observation of team meetings (from Core Team to Weekly Planner to Task Team Meetings) and shadowing personnel in different roles (e.g., Construction Management, Architect) to see links between OCTPD^{SM}, RC, and project outcomes (e.g., *what mechanisms tie the way that roles are arranged and how they interact to problem-solving and savings generation?*).

Interventions

Historically, through the OCTPD^{SM} practice model, Cleveland Clinic has actively intervened into its projects with appreciative practices, such as whole-system (or "team-of-teams") summits. These interventional practices are being formulated into an OCTPD^{SM} practice model 'playbook' that can be applied to future projects. In a similar vein, the *CWRU team has created a research agenda that includes both formal and informal interventions*, in large part developed from analyzing other sources of data (e.g., interviews, surveys) to build legitimacy for the OCTPD^{SM} practice model.

- **Formal interventions** typically occur at the OCTPD^{SM} summits. CWRU conducted one such intervention at both the Cancer Building and HEC by facilitating *working sessions to define and make sense of 'timely communication' within and across roles*. One of these working sessions included collaborative, cross-role conversations facilitated by the CWRU research team at HEC Summit 6. CWRU thematically analyzed the data and then relayed the findings to, and received validation by, the project team during the following Summit. Figure 3 on the next page provides a sample PowerPoint slide of what we presented to the project team as evidence for what ultimately became the Timely Communication Action Model (discussed below). One of the results came in the form of team members asking more clarifying questions and explicitly negotiating timelines, which has the potential of increasing the accuracy and timeliness of communication as well as cultivating trust and respect between roles. For example, after the CWRU research team presented the timely communication information to the project team, a member of the Design team began

regularly asking more explicit, clarifying questions in meetings to ensure shared knowledge and shared expectations of deliverables and timelines. We saw this have a positive effect on the process, on decreasing time needed to problem solve, and on reducing unnecessary meetings.
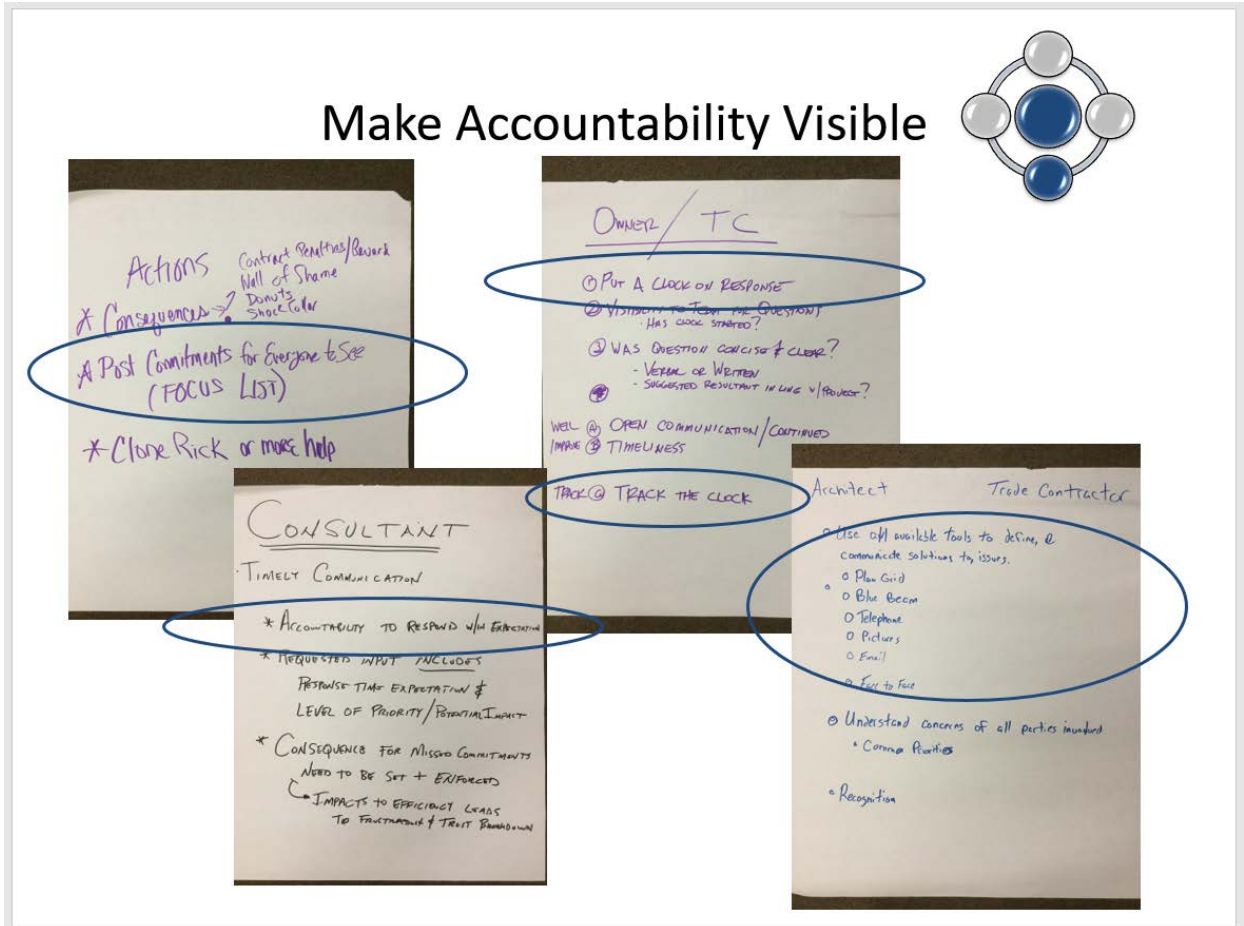
Figure 3. Slide from HEC Summit 7.

- **Ongoing informal interventions** primarily exist through CWRU research team members *intentionally posing provocative questions* during team meetings (e.g., "Did you get an answer to your question just now?"). Research has shown that the simple act of asking a thoughtful question can change the course of a project or even the strategic goals of an organization. Additionally, the data collection processes of conducting interviews, surveys, observations, and relational mapping can be considered interventions as they invoke participant reflection on their project involvement. Figure 4 on the next page provides an example of an RC-based relational map, and how a relational map can change over time based on ongoing internal and external intervening into the system. The relational map on the top of Figure 4 represents the first survey conducted at the HEC, and the map on the

bottom represents the second HEC survey. As noted in the legend, most of the average RC-based relationships between roles in Survey 1 were considered 'weak' with only a few considered 'moderate'. We can see that several relationships strengthened within the five-month period between surveys (see circled lines in the 2nd map). For example, the relationship between Owners and Consultants went from 'moderate' to 'strong', and the average RC-based relationship between Construction Management and Engineers increased from 'weak' to 'moderate'.
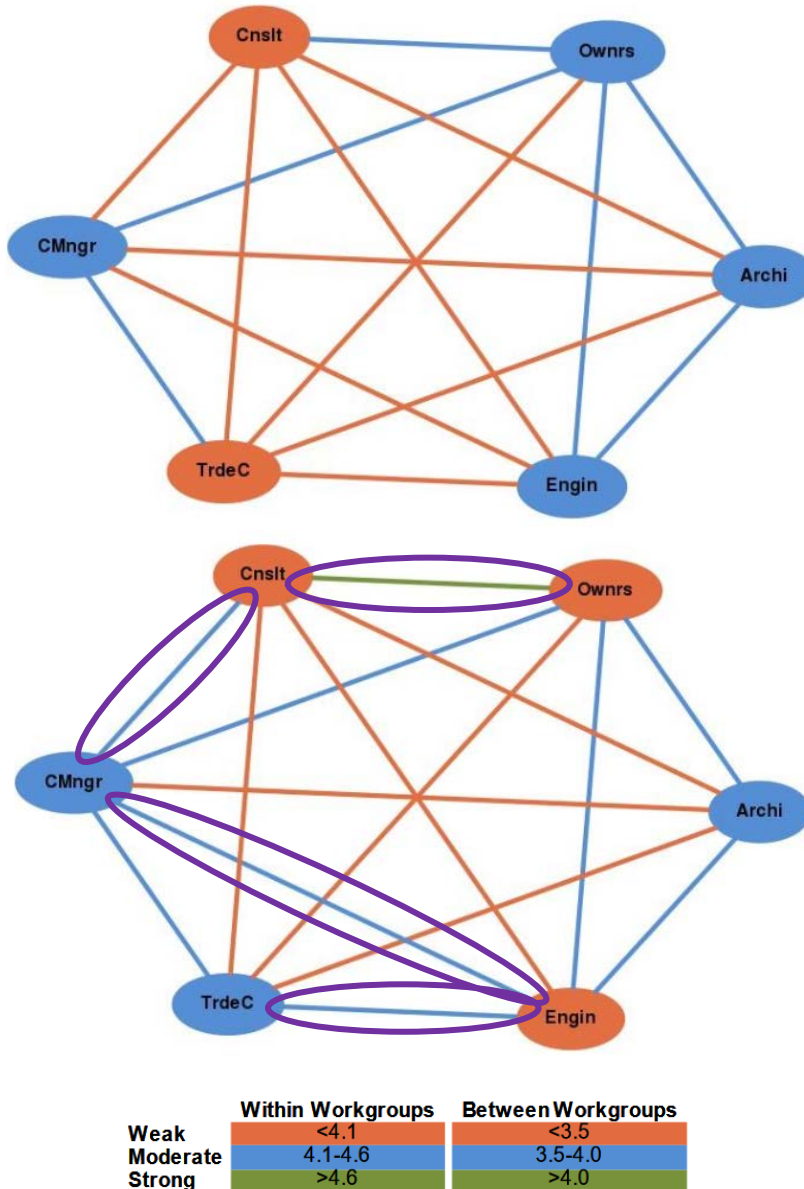
Figure 4. Example of CWRU's OCTPD^{SM} Research Team's Relational Mapping for HEC Surveys 1 & 2.
Ownrs: Owners. Archi: Architects. Engin: Engineers. TrdeC: Trade Contractors. CMngr: Construction Manager.
Cnslt: Consultant.

PART 4. PRELIMINARY FINDINGS: CANCER BUILDING AND HEC SITES

Comparing and contrasting the data from the Cancer Building and HEC revealed some similarities as well as new findings and potential boundary conditions of the OCTPD^{SM} practice model. Our research findings from the site introduced an advancement in thinking from the original OCTPD^{SM} framework in which "teamwork" was stressed. Our study findings highlighted the need for, and the importance of, navigating the intricacies of a *multi-team system approach*; that is, a "team of teams".

- **Owner presence on the project.** *Construction project leaders (e.g., owners) are important for setting the stage for project success*, through activities such as establishing and reinforcing "big picture" goals, selecting organizations and individuals who are already oriented towards cooperation, and developing a clear communication plan among teams and all levels of responsibility. *This "stage-setting" is essential for ensuring task and goal alignment among teams from different and independently owned organizations* who must balance self-interests with project-focused interests. Practices such as hiring for culture fit—not only at the beginning, but also throughout the project—may be just as important as hiring for technical prowess. Getting people with the skills needed to build and sustain strong personal relationships is needed to reinforce the collaborative culture.

- **Visibility of the full "role set"**. *While owners set the stage for increased cooperation through intentional selection, goal setting, and directing flows of communication, these features need to be brought to life by project participants in their daily work*. For effective coordination, all project participants – whether owner, architect, construction manager, consultant, engineer, or trade contractor – have to continuously make themselves available and visible to each other. *Making the "role set" or the full ensemble of project roles visible is first accomplished by the collocation of the participants in the shared trailers*. This allows participants to easily interact, query, and problem-solve with each other. Importantly, the physical presence of owner's representatives gives all role participants continuous, centralized access to the intentions and decisions from the owner.

- **Frequent meetings with representation of full "role set"**. Next, participants leverage the increased potential for access to each other in frequent team meetings where the entire role set is present. *In most meetings, members from each project role are present*, creating a smaller-scale representation of the project as a whole every time an issue has to be resolved. *This ensures that the expertise and interests of each role are brought to bear on issues by involving a mini-version of the entire project in the room*. The increased visibility of the

project role set provides greater opportunity for timely communication and resolution of the emergent changes that constantly threaten to derail coordination.

- **Timely communication is an action-based process**. We found that when project participants experience untimely communication, trust in others decreases, as does a sense of mutual respect. We learned from Summit interventions across the two sites that maintaining timely communication requires involving decision makers, reaching shared understanding, making accountability visible, and enacting consequences. Figure 5 provides an image of the Timely Communication Action Model, developed through content and thematic analysis of role-based responses to structured questions on timely communication provided at the HEC Summit 6. *At the HEC, the first two actions (i.e., involve decision makers, reach shared understanding) appear to be works-in-progress, but the latter two (i.e., make accountability visible, enact consequences) seem to be absent in practice, limiting the timeliness of communication.*
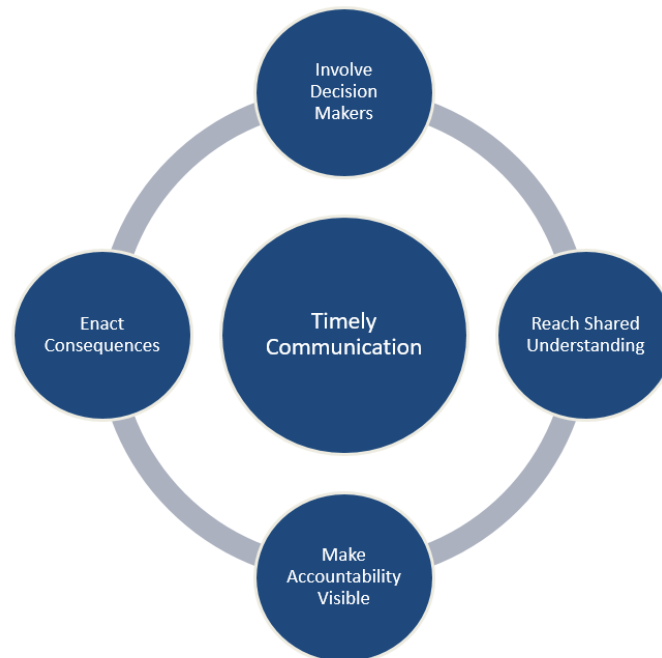
Figure 5. Timely Communication Action Model.

- **Personalized engagement increases project commitment**. An important aspect of motivating project participants to cooperate for the good of the project is personalizing coordination through appreciative practices. Project leaders regularly meet to design ways to reward good teamwork and to boost morale. When project participants are able to engage with each other on and off site, they learn more about the people behind the roles. These appreciative practices and getting to know the people behind the role support project commitment, i.e. having a sense of pride in one's contribution to the project and a sense of responsibility to the project as a whole. Such commitment has been shown to promote

collaboration within teams and coordination between teams in prior research. Figure 6 represents the resulting model from the second HEC Relational Coordination survey, highlighting *statistically significant relationships between concepts such as timely and problem solving communication, shared goals, mutual respect, and trust that lead to a desire for future relationships, which then predicts project commitment*.
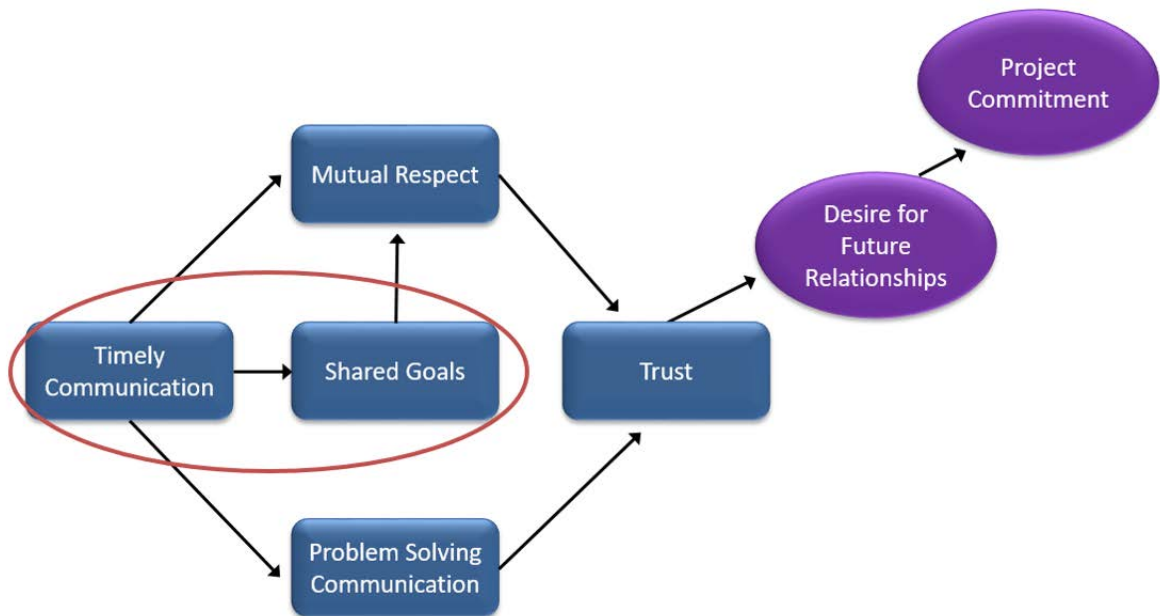
Figure 6. Structural Equation Model from HEC Relational Coordination Survey #2.
Sample size = 131. All relationships were statistically significant.

- **Boundary conditions of OCTPD[SM] practice model.** A potential boundary condition of the OCTPD[SM] practice model is the type of organization with which Cleveland Clinic partners as co-owners. In the case of the HEC, there were two owners with very distinct organizational structures and cultures. Elements of time (e.g., sense of urgency), decision-making, and project delivery practices are only a few of the key mechanisms that can help or hinder a project's success. For the OCTPD[SM] practice model to benefit the project as a whole, major stakeholders should anticipate and mindfully negotiate key differences in their organizational structures and cultures to better navigate the project landscape.

PART 5. INITIAL RESPONSE TO THE OCTPD[SM] RESEARCH STUDY CENTRAL QUESTION

The "central question" of the OCTPD[SM] research initiative is "How can Cleveland Clinic reduce costs on design and construction projects, while at the same time meet the organization's quality objectives and reduce the risks inherent in the design and construction process?"

We have not yet finalized our assessment of the links between RC and the control of project budget, schedule, and quality; there is additional data yet to be analyzed and reported. However, *through rigorous quantitative and qualitative methodologies, we have been able to assess the relationships among concepts (refer to the concepts in Figure 6 on p. 9) that have been shown to promote the collaboration and problem-solving that enables budget, schedule, and quality optimization.* Specifically, we found:

- Initial project design of the management process by the owners sets the stage for the high-quality relationships needed to collaboratively develop cost-saving solutions by supporting increased access to communication among roles. These solutions help to reduce project budget.

- The desire for future relationships appears to help explain and reinforce the OCTPD^SM culture, which includes taking on shared risk as well as developing savings of time and money.

- Strong interpersonal and team-based communication—supported by collocation and frequent meetings—ensures that project members can optimize the project schedule by identifying and resolving issues and changes as they emerged.

- Increasing the visibility of the role set through smaller-scale, whole-project representation at team meetings ensures that a diversity of perspectives is brought to bear on issues, optimizing quality in project decision-making.

- Cleveland Clinic has the opportunity to not only establish what 'timely' means within and across roles, but to make that accountability more clearly visible and enact specific consequences when timely communication is not met.

- Contrasting between the two sites revealed the importance of the owner empowering decision makers with the necessary authority to move forward.
  - For example, on more than one occasion, someone in an owner role at an executive team meeting would pronounce a decision to be able to maintain workflow only to be reminded that there were others at higher levels through whom the decision still needed to be vetted.
  - Delays and/or disempowerment in decision making can lead to re-work, lost morale, and losing face, which slows the work and decreases trust in the overall process. Uncertain environments are to be expected; however, *uncertainty with regard to decision making can be avoided, ultimately saving both time and money*.

PART 6. PRACTICAL APPLICATION OF CWRU RESEARCH FINDINGS TO-DATE

Following is a preliminary list of "to do's" or "do more of's" recommended by the CWRU research team based on their study findings thus far that can be applied to the improvement of the OCTPD[SM] practice model for planning, design, and construction:

Investing in the team

- **Recruiting and selecting for a relational orientation in individuals and organizations** appears to be an important practice to reinforce the OCTPD[SM] culture and practice model. That may mean choosing a slightly more expensive bid, yet recognizing that the relationship already built on mutual respect and trust may save both time and money – and result in higher quality work – down the line. After recruiting and selecting individuals and organizations based on their commitment and relationship-orientation, *designing an on-boarding process to allow new project members to learn more about the people behind the role prior to project start could speed up the relationship-building process necessary* for collaborative problem-solving during the project.

- **Collocation of all key parties** *is another important practice to build relationships, not only from the standpoint of working on interdependent tasks, but also working toward a more personalized team of engaged members*. The earlier this can happen in a project, the better for both fluid communications and collaboration. Providing collocated space on-site for participants requires financial resources from the owner; more intensive and frequent interactions require more time and energy from project participants. Motivating sustained efforts may take more resources, yet will derive more success through improvements such as timely communication and consistent collaboration.

- **Maintaining visibility of the project role set** requires continuous reinforcement through resources such as collocation. *Frequent, problem solving-based meetings appear to be successful practices to keep people engaged in not only their own team but the team-of-teams*. By allowing for both scheduled and spontaneous meetings, project personnel can have access to the full set of project roles in order to share knowledge in timely ways. New projects should continue the practices observed at the Cancer Building site, including frequent meetings, time for spontaneous conversations, introducing new personnel to the full role set, and communicating the values of transparency and collaboration at quarterly Summit meetings.

- **Building strong relationships.** Taken together, the above practices build and reinforce strong relationships. Several project participants noted in their interviews that their relationships were so strong with certain individuals because they had worked through something challenging together, often on previous Clinic projects. Working through challenging conversations together, including a core value of the OCTPD^{SM} practice model to "put the monkey on the table" (i.e., bring up issues that would otherwise fester), may help build deeper, longer-lasting relationships.

Accountability for timely communication

- **Accountability and consequences relative to timely communication.** Bolstering timely communication depends on several factors, but perhaps particularly on *making accountability for timely communication more clearly visible* to those who most need to see it, and enacting specific consequences for those who don't meet it. Executing this finding will likely include having challenging conversations and building conflict management and negotiation skills.

Mindful decision-making

- **Decision-making authority.** Given the premium placed on decision-making in both projects, it behooves Cleveland Clinic to smooth the path for decisions to be made. An example of this is to *ensure that decision-making authority matches decision-making responsibility*.

- **Decision-making framework.** Regardless of the organization structure, it will be important for Cleveland Clinic to *develop a decision-making framework at the beginning of each project* that clearly identifies decision-making authority, decision making responsibility by role, and expected timeframe to make decisions.

- **Partnerships.** The HEC was a very unique project in its ownership and decision-making structures, most notably with two very different institutions as well as key personnel changes from architect to owner roles. That the OCTPD^{SM} practice model centers on "owner control" may be more effective when partnering, internally or externally, with organizations and organizational members that maintain similar organizational structures, cultures, and values.

REFERENCE MATERIAL

B. THREE (3) ARTICLES FOR OLED^{SM} TEAM MEETING KICK-OFF

– **WANT TO KEEP A PROJECT ON TRACK? GET REAL**

American Bar Association
Forum on Construction Law

Want To Keep A Project On Track? Get Real

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Want To Keep A Project On Track? Get Real

INTRODUCTION

In 1985, after five years as an assistant US attorney prosecuting criminals, I entered the world of civil justice as Deputy General Counsel of The American Institute of Architects. My very first day, I was introduced to civil law. The General Counsel sat me down, leaned forward, and, with his gravelly, yet warm voice that I grew to love and respect, said, "The key to success on this job is, 'Think liability'." I suspect that this or something like it was most likely your introduction to civil law, too. After all, the casebook method used in nearly all law school curricula is built on a steady diet of appellate decisions focusing on where something went wrong, somebody lost, and somebody else got blamed. As a result, if you are a well-trained lawyer, you think liability first, second, and foremost—how to avoid it or transfer it so your client is not caught in its web.

But there are big downsides to a lawyer's defining "success" as drafting a contract intent on anticipating potential failures and allocating as much responsibility for those failures to other parties, with exacting procedural requirements for any those parties to jump through before they can hold a client accountable. Success by this definition hurts the project: The better you have anticipated and allocated project risk away from your client, the more you have created disincentives for all the parties to collaborate, prevent problems and, when they occur, as they will, find solutions. It hurts the client: Self-serving narcissism has never built either the trust or the chemistry necessary for group effort to succeed or for firms to get hired. It hurts the legal profession: Too many in the business world think the best way to mess up a deal is to have a

lawyer commit it to contract. And it is so totally unnecessary: Projects succeed —that is, projects

are finished on time, on budget, claims-free, profitably for all parties—only when the parties'

business dealings, communications, and dispute recognition and resolution mechanisms are

aligned and geared to that result. Before you join me in taking this giant step into what I propose

is a better design and construction world, let's examine the problem in more detail. It will make

the jump safer.

Getting real requires us to recognize that lots of today's clients still think "liability" first.

I once had the pleasure of meeting Stephen Joel Trachtenberg, President of George Washington

University, a not so small school in our nation's capital. I asked him what he wanted most out of

his in-house counsel. "To keep me out of trouble," he said, without missing a beat. So, if

seemingly the mother's milk of today's lawyers *and* their clients is avoiding liability, we

shouldn't be surprised that there are so many clients out there holding "risk cups" from which we

lawyers can sip.

But in American society, it is the risk-takers who enjoy the spoils, not the risk-avoiders.

That's the lure of entrepreneurship. As a result, increasingly, many of our clients are taking up

this new banner. "Risk and reward? We want both." How did our clients make the move from

risk aversion to risk affinity and what does that mean for us, the construction bar?

Let's address the client change first. Our clients, well-taught by all too many of their

insurance carriers and risk managers to see, spot, and run from risk, have been trained to think as

follows:

"Uh oh, there is an exposure here. I'm not sure I have the skills to manage it, and, even if

I do, I bet I won't get enough control over the situation to be able to manage it, and, even

if I do, I bet I won't get enough money to manage it. Hmm, without sufficient capabilities, authorities and fee, the chances of me failing if I take on the responsibility are too great to risk it. Something bad is bound to happen and when it does, I'll be blamed. Let's see: Who can I find to cover for me? What are the chances I can get someone to indemnify me. Defend me? Hey, lawyer......."

And so on and so on, and thus our clients began to manage their risks by having us manage their words.

But clients aren't dumb. They began to rethink their risk aversive choices, if only because the market for their services was shrinking due either to their refusal to take responsibility for their own actions or because *their* clients were demanding ever more egregious risk transfers. They began inching their way toward realizing that it would be more rewarding for them to actively manage the reasonable risks facing them than to run from them. In embracing and managing risk rested the big bucks and *their* profit. The bottom line was simple, though getting there might be difficult. More money would come their way if they analyzed exposures with logic and without fear, determined who is the most capable of managing the exposure, and then made sure that that entity received all the resources it reasonably needed to manage the risk successfully.

Would projects cost more in the short run? Possibly, even probably, but these clients focused also on the major savings of failures prevented, litigation avoided, transaction costs escaped, and opportunities gained through projects completed on time and on budget. To the question, "Wouldn't all parties to the design and construction process be better off in the long run if funds spent on avoiding liability or disputing it actually went into the project to help it succeed," they answered resoundingly "Yes."

Representing those enlightened clients, ever growing in number, presents this challenge to the construction bar today: How can we, brought up on risk-avoidance, work with our clients to manage their risks assertively so they can reap the rewards of their endeavors? It is not difficult, once we cross the bridge from risk aversion to assertive practice, getting our clients to understand that enlarging their exposure to risk will simultaneously reduce the chances of their being found liable, *if* they manage the risks they assume reasonably and well. They may even increase their profits in the process. After all, if increased responsibilities are handled effectively, the probabilities of something going wrong will decrease. And increased responsibilities mean—and should mean—increased rewards.

Novartis, its architects, engineers, contractors, and subcontractors took just that approach when converting the 550,000 square foot very old NECCO candy factory into an award-winning, state-of-the art, research laboratory. They brought that multi-million dollar project in on time and below budget, without one injured worker using Integrated Project Delivery (IPD) and Building Information Modeling (BIM). It can be done with focus on success and its rewards, party incentives to speak up early and often, strong project governance that recognizes the need for party flexibility, and even stronger part communication skills. Let's take them one by one.

The first step is negotiating contracts with both eyes solidly focused on building success into our clients' endeavors, not just on helping them avoid responsibility and the consequences of failure. That means when a client spots a risk – or even when we do – we ask, "Are you competent to manage the risk alone or with others? If yes, what do you need from the owner, from others to manage the risk?" In other words, we ask, not what must be done to avoid the risk, but what must be done to manage the risk effectively. And then we help the client develop and

implement the negotiation strategy that will lead to the delivery of all the support they need to succeed.

This commitment to solid front-end alignment is the most important step you can take pre-contract to increasing the chance of keeping a project on track. It should not be that difficult. No one who enters into a design and construction project wants that project to fail. The long-term costs are simply too high for anyone to believe that a wing and a prayer plus good word-smithing is all that is needed for short-term success. With this acknowledged and the resulting common ground embraced by all, tough conversations can be had. Indeed, they have to be had if nothing untoward is to happen. Which brings us to the second step: The second step is understanding the need for and demanding that all parties subscribe to *No-Surprise Design.*

THE VALUE OF NO-SURPRISE DESIGN

No matter how carefully a project is front-end aligned, a corollary of Murphy's Law is controlling on the construction site. Something is going to go wrong sometime. No one knows precisely what that something is, but as night follows day, all of us can guarantee each of the parties that something will happen to throw the project off-track.

No-surprise design and construction take that as a given, and require the parties to make this promise: Outside forces might deck us, but at no time will we blind-side each other. As soon as we have an inkling that something untoward is in the offing, we will raise a flag for all to see, so that we *collectively* can put our minds and varying expertise together and strategize an effective way to handle it. Why is this important? Because studies show that all too often in

project failures, someone knew something wasn't right, but they kept silent. No-surprise design rewards those who speak up by solving the problem they uncover and facilitating project success.

Is this a pipe dream? On a lot of projects, it most certainly is. Contracts drafted too tightly deny the parties the flexibility they need to handle change, and contracts drafted too defensively put them all on notice that on this project, when push comes to shove, everybody will be thinking "Shove." Want to succeed on this project? Keep your head down and buy an umbrella.

This doesn't have to be the case and increasingly, owners know it. Owners who want half a chance of having their projects come in on time and on budget know the wisdom of building success-driven processes into their contracts. They know too the importance of attracting professionals to their project who think gain, not blame. These two things – flexibility in process and a track record of proven commitments to professionalism -- save time in the short run, and money in the long run. These owners often spend a considerable amount of time and money involving the parties in pre-planning for they have learned over time that the savings rebound from the pre-planning effort. In fact, owners who have followed this procedure report that pre-planning alone saves $4 to $8 for every $1 spent on it.[1]

What does it mean for construction lawyers? For some of us, it will require a major change in our thinking. Brought up to "not admit responsibility," we will have to work extra hard to see the wisdom of working with our clients to surface problems quickly so they can be solved. Others will find the change as refreshing as it is rewarding. After all, if everybody's fingerprints are on the solution and the solution works, everybody is better off. And if it fails, with everybody's prints on the failure, the only option available is fix it. Moreover, this is where

we can earn the big bucks, helping our clients negotiate the un-anticipatable, but certain to happen sometime, problem, developing with them the strategies they need to bring the project back on track.

WILL NO-SURPRISE DESIGN BE ENOUGH?

Where does the predicate for project success lie? In no-surprise design alone? No. We need two more bits of information to pull the project together. Not only do we need to revisit our drafting goals and subscribe to no-surprise design, we need to focus first on Project Governance and then on Project Communication.

Let's start with Project Governance. Let us look for creative success predicates outside of the construction world to other fields where two or more parties are involved in a complex business arrangement. It is there where we can find some guidance. In the world of strategic business alliances, for example, corporate executives are moving away from running their alliances through contracts alone and moving toward creating governance structures for their alliances with the goal of making sure they succeed.

The seeds for that change began in the 1990's with the publication of Michael Hammer's *Reengineering the Corporation* (Harper Business, New York, 1993). Hammer argued that each organization should reengineer all of its internal processes to maximize efficiencies and ultimately effectiveness. Therein lay new savings and greater profits. Corporation after corporation did just that, upending their internal personnel and procedures, designing new efficiencies into how they did business. Profits spurted up, but amazingly, only for a short while. Why? Because it was processes *between* corporations where most problems brewed, most

money was lost, and most opportunities existed for creating new value. It was in the intersection of businesses where waste and inefficiencies were rife and the biggest opportunities for new value created.

Armed with this insight, corporate America ventured into partnering.[2] In the process, corporate America discovered new ways by which a corporation working with another entity, whether a customer, a supplier, or an alliance partner, could produce value greater than either corporation or entity could produce alone. From this evolved the new movement of "co-creating value," a process during which all parties work collaboratively before and during the project to develop and implement systems, procedures, mechanisms, metrics, incentives—whatever the alliance needs to help the parties collectively succeed, producing value for all alliance members as a result. Co-creating value alliances push the envelope of front-end alignment and multi-party partnering as the preferred way of doing business.

We in the construction world played with some of these ideas when we created partnering in the nineties. I say "played" because we never quite followed through on our idea, though our instincts that partnering would work were good. We held partnering sessions *after* the contracts were signed. We signed a partnering agreement *outside* of those contracts, an agreement with feel-good provisions, but with no metrics or teeth. We held partnering sessions at the beginning of the project's construction phase, but then sat back and watched events play out, expecting the parties to change their behavior without more than a partnering agreement to support them.

Had we gone whole-hog, we would have done it differently. We would have brought the contractor in as construction documents were being designed, and held partnering sessions then. We would have focused those sessions on building the structural underpinnings that would allow our clients to succeed individually and as a group. We would have helped them design

procedures to uncover and resolve problems before their implications could take hold. We would have worked with them to develop definitions of parties' needs and metrics of progress, as well as the definition and metrics of ultimate alliance success, so that at all times all parties could assure themselves that everyone was working on the same page with the necessary resources and support to succeed. We then would have incorporated the results of these partnering sessions into each party's contract and measured the parties by their success in implementation. And, we would have convened partnering sessions continually over the course of the project so that the governance structures created at the outset could be used in support of the project. Finally, we would have made sure the key beneficiary of partnering, the owner, paid the parties for the time and effort that this new partnering required of them so they came to partnering sessions willingly, prepared, and ready to work for project success.

Traditional contracts impede this "co-creation" of value. We draft contracts using "silo-thinking"—there is the owner silo, the design professional silo, and the contractor silo, and no one in any silo is the third-party beneficiary of any agreements not made by his silo. We then lodge roles, responsibilities, authorities, and fees in the party silo most competent to manage each aspect of the design and construction process.[3] But an architect cannot design alone. He needs an owner, and they need a contractor, or efficiencies cannot be induced at the moment in the project's life when the costs of changes are at the lowest.

This silo thinking causes every party problems. Take, for examples, requests for information. A non-game playing contractor has *bona fide* questions about four aspects of the construction documents. One is urgent. One is important, but may never be urgent if it is answered sooner than later. One is excessively complicated to answer and will be both urgent and important, but in a month. One is easy. All the questions land on the A/E's desk at the same

time, typically without any indication of importance or urgency. The contractor is satisfied at least for the moment. He has moved his problems from his silo to the A/E's. Well done, Mr. Contractor, but query: What's the A/E to do with the RFIs? If she looks to her contract with the owner for guidance, she is out of luck, so she picks through the RFIs guessing at urgency and importance, answering the easiest ones first, saving the hardest ones for when she has time to be thoughtful. Two go back to the contractor that night. She goes home thinking she's done well—moved two RFIs from her silo back to the contractor's. But what does an outside observer see? Soon, the owner, the A/E, and the contractor may very well have big problems on their hands.

Need another example? Think about how our contracts handle delay issues. The contracts we draft today deal primarily with the *causes* of delay by addressing those outside of the someone's control, such as weather, unforeseen conditions, acts of God, fire, labor unrest[4] and the like, and those within the someone's control, and apportion the risk of those causes among the parties depending on foreseeability, assumption of the risk, and legal control. They deal primarily with the *results* of delay by slapping liquidated damages on the contractor who fails to meet the schedule and allowing the owner and the contractor various acceleration, compensation, and termination rights—a sloppy solution at best. None of these clauses builds success into the project. None of them even supports the project. None of them incent the parties. Indeed, all of the provisions are reactive and are triggered only after the delay has occurred.

Worse yet, they are based on a myth. Our present contracts assume that delay-causing issues within the parties' control are the fault of one party and that that party should be hunted down and made to pay the consequences of his delay-provoking conduct. When two parties cause a delay, our contracts assume that who did what when to cause the delay can be identified

and damages apportioned appropriately. But that's not how design and construction work, and we know it.

Picture this project. You've had one like it. The owner has to make a decision on Monday. Time is of the essence. The contractor presents the problem from his perspective. The A/E presents the problem from her perspective. The owner asks questions for which neither the A/E nor the contractor has the answers. They promise to look into the situation and get back to the owner by the next Monday. Result: One week of delay built in. The parties meet the next Monday. With the answers the owner now has, the owner finally understands the nature of the problem and has a growing sense that if he decides one way there are certain implications for the project's overall budget, but, if he decides another way, there are certain implications for the project's timing. Uncertain about which consequences are the most affordable, the owner asks more questions, questions for which neither the contractor nor the A/E has an answer. They agree to meet the next week on it. Result: Two weeks of delay built in. And this process continues until the owner finally feels he can safely decide the issue.

Under present contracts, who's responsible for this delay? The owner who rightfully is unwilling to make a fast decision? The contractor and A/E who rightfully choose not to respond to questions until they are sure of their answers? Better yet, would anyone among us lawyers even identify what just happened as a cause of delay? And yet, the project is now avoidably weeks off schedule.

Avoidably? Most certainly, for had the new partnering, intent on co-creating value, been in effect, all the parties would have developed collectively a shared vision of the project and how it was to be carried out. They would have had in pocket a shared understanding of each party's strategic goals, objectives and decision-making processes. And, they would have designed for

themselves a shared governance structure with metrics that allowed them collectively to breathe life into those understandings. As a result, the trade-offs to be made by the owner would have been identified, understood, and addressed by both the A/E and the contractor earlier than is characteristic of problem-solving within the conventional contracting process. A timely decision could have been had by and for all.

WHERE DO WE GO FROM HERE?

Could this new partnering approach be translated into contract clauses? With work and imagination, to some valuable extent, yes. Partnering would be a basic and compensated service required of all. Provisions would be crafted by the parties (with the help of lawyers) that enable communication, problem solving, and problem prevention.[5] But systems to handle inter-party dependencies on such issues as requests for information and the like would have to be designed and spelled out on a project-by-project basis. Similarly known issues, such as schedule, would have to be collectively addressed and pinned down, as would success metrics and problem-identification metrics pre-determined, and so on. Depending on the project, some of these would result in new contract language; some not. Regardless of format, with this approach perfected, in time, design and construction would have a greater chance of achieving a profitable end for all.

What is the necessary first step to implementing a co-creation value approach to design and construction? I would start with the owner, for it is within the power of owners to produce environments that eventually will yield on time, on budget, claims-free projects. It is the owner who selects the team, sets the team's values, rewards the parties for collaboration, chastises them for unnecessary game-playing, and fosters an atmosphere where problems and creative ideas

bubble readily to the surface to be explored and addressed by everyone. So for those of us who are owner-attorneys, the challenge is yours.

Does that mean all other lawyers are off the hook? Not a chance. No surprise design and construction means that every player at the table has to play. No one can sit back and nit-pick after the fact and worse, blame. Good project governance requires that everyone has to come to the table, prepared to listen and prepared to talk. And therein lies the major problem: How do you talk when any and everything you say can be held against you in a court of law?

THE IMPORTANCE OF COMMUNICATING EFFECTIVELY

Now on to Project Communication. A Forum colleague once called and asked me to partner a $40 million project that was drowning in problems. I asked first to sit in on a job meeting so I could figure out what was going on. I was struck by the patois of the parties and its impact. Well-schooled by their insurers, attorneys, trade associations, and past failures, no one volunteered information. Indeed very little information was shared, and, when it was shared, it was usually heard with surprise -- when it was not heard with affront. The net effect was conversations were stopped before they had begun. And, if that were not bad enough, though the same words were used, they were heard differently and understood differently depending on the listener's expertise – or in the case of this owner, lack of expertise. Something was missing in how they were communicating with each other and the project was suffering miserably as a result.

What was missing? For this insight we have to turn to one of the first studies where trained observers actually sat in on group meetings and negotiations and measured what the participants were doing before and during the negotiation to reach settlements that would stand the tests of time.[6] These researchers, led by Neil Rackham, found that expert negotiators plan and communicate differently than average negotiators — and the difference is measurable and can be learned. As each party at a job meeting is effectively negotiating his way to a result, and, as a the one thing true about all design and construction projects is they demand constant negotiation even of the tiniest things, communication behaviors of expert negotiators are behaviors construction lawyers need to learn, use and teach their clients.

First, let's understand how Rackham defined "Expert Negotiator" so we can decide for ourselves whether their behaviors should be ours. Rackham defined experts as negotiators who 1) routinely came to agreement, 2) shaped agreements that were routinely implemented successfully, and 3) who left the negotiation table with the Other willing to negotiate with them again. Average negotiators lacked one or more of the three measures. For example, some could come to agreement, but their agreements were not always successfully implemented. Others could come to agreement, but their Other[7] did not want to negotiate again.

Think about it. Isn't it without question that Rackham's success measures should be the goal of every construction attorney today? After all, each of our negotiated agreements may take years for their successful implementation. We want our Others to be willing to negotiate with us again, because they are going to have to, unless one of us opts for court over the negotiation table. Moreover, our professional market is so small and so talkative that our personal reputations are one of the most significant assets we personally bring to the table. The more we are perceived as empathetic, creative, personable and prepared advocates,[8] as well as competent,

candid, and concerned,[9] the easier it will be for the Others we meet to say "yes". The issue for us then is, What do we need to know to communicate effectively?

The first is this. Experts communicate specially, transmitting information in a way that will allow it to be received. When Rackham sat in on negotiations, he measured discrete communication behaviors that fell into three primary categories: [10]

- Initiating
  - Making a Proposal
  - Building on the Proposals of Another

- Reacting
  - Supporting
  - Disagreeing
  - Defending/Attacking

- Clarifying
  - Testing Understanding
  - Summarizing
  - Seeking Information
  - Giving Information

Also noted were two additional behaviors observed mostly in group interactions: Bringing In, that is soliciting input, and Shutting Out, that is interrupting, cutting off and the like.

Some negotiators relied primarily on Proposing, Giving Information, and Shutting Out to get across their ideas. Others used those three behaviors some, but relied mostly on Building on the Proposal of Another, Testing Understanding, and Seeking Information to persuade. The difference was so measurable that Rackham could classify the two respectively as "Pushers" and

"Pullers." Both types of persuaders enjoyed successes, but the expert negotiators most often fell into the Puller category. These negotiators used communication behaviors to help the Other persuade themselves. In other words, if there were any persuading to be done of the Other, the Other was the one who was helped to do it.

Lawyers particularly need to know this because our upbringing, our schooling, trains us to be "Pushers." We are grounded in advocacy and evaluated by our eloquence. We learn to give information,[11] and, when we seek information, we learn to ask questions in order to get information we can use against the Other, not particularly to empathize with or even understand the Other. We get "A's" when we win, especially if the Other loses – at least a little.

Unconvinced about the value of Pulling? Not quite ready to give up the power of pushing? Let's return to the data. Research shows that twenty percent of the expert negotiators' behavior revolves around using questions; they Seek Information from the Other nearly *three times more often* than the average negotiator. Ten percent of their behavior has them Testing for Understanding — more *than twice as often* as the average negotiator. That means at least fully a third of their behaviors involve Pulling. When they do make statements, some eight percent of their behavior involves Summarizing what they heard the Other say. And they use this Summarizing, a Clarifying technique, nearly twice as often as the average negotiator. Putting those percentages all together, some forty percent of expert negotiators' behavior involves Clarifying the other's thinking — twice as much as average negotiators' behavior.[1]

Why do expert negotiators rely so heavily on questions and other Clarifying behaviors? For many reasons. Perhaps the most compelling is that *questions help you persuade the Other.*[12] Test it out in the quiet of your home. Try to alter your significant other's behavior by telling him (or her) what to do. When nothing changes, try this. Ask questions and really listen. Listen for understanding – both yours and the Other's. Explore the Other's issues. Then yours. Summarize. Test Understanding. Look for common ground and ways to cure differences. Then see where this newly found, shared understanding takes you. Don't be surprised to discover that questions genuinely asked, not to confuse, not to pin down or otherwise tamper, serve stunningly well to *reveal the Other's needs, values, and priorities* which, by the way, is precisely what you need to know to negotiate a solution.

And questions serve other purposes, too. *Questions expose problems in your own thinking.* As useful as questions are in persuading the Other of the weaknesses in their thinking, questions are great for discovering the weaknesses in your own thinking. And because all you're doing is asking a question—and not telling your idea—nobody needs to know how shoddy your thinking is. Further, q*uestions help with elegant option development.* Even the best of negotiators gets stuck from time to time, and a game of "What if. . .?" can prove just the strategy for bridging an impasse.

Questions are a solid alternative to saying no. There is one reality in all negotiations: Anyone can ask for anything at any time, and they often do. Sometimes askers may be unwise to press for something because, had they been practicing no-surprise design, they should have known the Other wouldn't agree. And, with a wrongly made request, goodwill may be lost. This is unfortunate and usually unnecessary, especially when a well-thought-out question often can readily take the place of "no".

Which brings me to this final point: *Questions help you build trust.* We know that, the more competence, candor, and concern the client perceives, the more the client trusts the Other. As you can't buy or beg trust, what better way is there to build it than by asking targeted questions that cause the Other to think, "Wow. She gets it." And, if the Other has any doubt as to your trustworthiness, a thoughtful use of the information the Other just gave you proves without you saying that you listened and understood the Other.

So it is Clarifying behaviors – that is, Seeking Information, Summarizing and Testing Understanding – that will help you bridge information gaps, emotional disruptions, and projects jack-knifing before you. And it is Building on the Ideas of Another and Bringing In that will help the players find common ground sufficiently attractive that all will want to live there together.

Oh, no you say: This is all too touchy-feely. Besides Building Information Modeling (BIM) has surpassed the needs for these communication behaviors. Still not a believer? At your next project meeting, whether "BIMmed" or not, count the number of times each player Initiates, Clarifies, and Reacts. If the meeting ends up not accomplishing anything, odds are that one of the three communication behaviors was missing. Initiating and Reacting without Clarifying? Ten to one people aren't on the same page or worse, everyone walks out angry certain that no one was listening to them. Initiating and Clarifying without Reacting? Everyone will leave having no idea what to do, or worse, each will walk out having a different idea of what comes next. Clarifying and Reacting with no Initiating? Why on earth are you meeting? An utter waste of time. In short, you need all three to make progress.

What does this mean to us construction lawyers? A new set of tools to add value. Here is where we can serve best to keep the project on track simply by providing the missing communication behavior. Negotiating a contract? Stop looking at the process as one with a goal

of pinning everything down. Use it as the key opportunity to build success into the project. Invite the hard talk. Enable your client and all the other parties to explain interests and needs. Discussion gets heated? Help the parties by Summarizing what each has said so that all know they are being heard. Test Understanding if confusion is trumping information. Bring In the silent party brooding in the corner. Seek Information so that the issue becomes clearer to all. Put a proposal on the table if none is there. Find the nugget in another's idea and Build on the Proposal of Another. Ask for reactions if that is the behavior that's missing. In short, be the expert communicator that helps the parties bridge differences and solve problems. After all, isn't that why you wanted to be a construction lawyer in the first place?

Appendix

If your reading time is limited, here are ten of the best books on negotiation. Enjoy.

1. *Getting to Yes: Negotiating Agreement Without Giving In.* Roger Fisher and William Ury (Boston: Houghton Mifflin, 1981)

2. *Beyond Winning: Negotiating To Create Value In Deals and Disputes.* Robert H. Mnookin, Scott R. Peppet, and Andrew S. Tulumello (Cambridge: Harvard University Press, 2000)

3. *Effective Legal Negotiation and Settlement.* Charles B. Craver (New York: Matthew Bender & Company, Inc. 2005)

4. *The Fast Forward MBA in Negotiating and Deal Making.* Roy J. Lewicki and Alexander Hiam (New York: John Wiley & Sons, Inc. 1999)

5. *Spin® Selling.* Neil Rackham. (New York: McGraw Hill, Inc., 1988)

6. *Difficult Conversations.* Douglas Stone, Bruce Patton and Sheila Heen (New York: Penguin Books, 1999)

7. *Women Don't Ask: Negotiation and the Gender Divide.* Linda Babcock and Sara Laschever (New York: Princeton University Press, 2003)

8. *Bargaining for Advantage,* G. Richard Shell (New York: Viking, 1999)

9. *Thinking Strategically: The Competitive Edge in Business, Politics, and Everyday Life.* Avinash K. Dixit and Barry J. Nalebuff. (New York: W.W. Norton & Company, 1991)

10. *The Trusted Advisor.* David H. Maister, Charles H. Green and Robert M. Galford (New York: The Free Press, 2000)

and, of course, mine

11. *The Architect's Essentials of Negotiation.* Ava J. Abramowitz, Esq., Hon. AIA, (New York: John Wiley & Sons, 2009)

[1] Philip L. Bruner & Patrick J. O'Connor, Jr., *Bruner and O'Connor on Construction Law* §§7:24 (West Group 2002), citing "Productivity Improvement in Construction" (1989).

[2] There are many books on strategic alliances and partnering in the business sector. One of the best is *Getting Partnering Right: How Market Leaders Are Creating Long-Term Competitive Advantage* by Neil Rackham, Lawrence Friedman, and Richard Ruff (The McGraw-Hill Companies, New York, 1996).

[3] We do this because the standard of care for each party differs and liability concerns dictate that each party be judged differently accordingly. Joinder issues, we fear, would mess up the clarity of the differences making all parties liable for the failures of the project. In projects with silo-thinking this approach makes sense.

[4] One could argue that this is within the control of the employer of the un-restful laborers, and often courts find that it is.

[5] Lawyers focus on dispute avoidance and resolution. Clauses supporting them would remain, especially those in support of mediation, but the focus of this new contract would be on inter-party problem solving and value-creation, a far more assertive approach to the reality of design and construction.

[6] See Neil Rackham, *The Behaviour of Successful Negotiators* (England: Huthwaite Research Group, 1975) *N.B.* Rackham is my husband. His findings are terrific notwithstanding.

[7] I use the word "Other" to signify simply that the person is a person with his or her own perspective of the problem and interests and needs, not an adversary out to get you, not a friend to cherish, just not you.

[8] These are four of the over-arching attributes of effective problem-solvers found by Andrea K. Schneider in her seminal treatise *Shattering Negotiation Myths: Empirical Evidence on the Effectiveness of Negotiation Style* (7 Harvard Negotiation Law Review 143, 2002)

[9] The three key attributes of trust uncovered in the Rackham study.

[10] For a detailed description of these behaviors and how each plays a role in advancing a negotiation read Chapter Six, *The Communication Behaviors of Expert Negotiators* of my book, *The Architect's Essentials of Negotiation* (Second Edition).

[11] Interestingly though, when you add in the data on Giving Information, which, as you remember, is a form of Clarifying behavior and something we lawyers are trained to do, Pushers end up "clarifying" more than Pullers. They spend that *much more time than expert negotiators Giving Information* about the rightness of their negotiating stance.

[12] While Douglas Stone, Bruce Patton, and Sheila Heen in their wonderful book *Difficult Conversations: How to Discuss What Matters Most* (New York: Viking Penguin 1999) down play the power of questions to persuade, *Spin®Selling*, again by Rackham, has persuaded me that if every lawyer used questions to uncover explicit needs and then helped their clients meet them, a lot more projects would stay on track and a higher degree of customer satisfaction would result. It is mandatory reading in my George Washington University Law School class on negotiation.

REFERENCE MATERIAL

B. THREE (3) ARTICLES FOR OLED^{SM} TEAM MEETING KICK-OFF

– THE DISCIPLINE OF TEAMS

The Discipline of Teams

by Jon R. Katzenbach and Douglas K. Smith

Early in the 1980s, Bill Greenwood and a small band of rebel railroaders took on most of the top management of Burlington Northern and created a multibillion-dollar business in "piggybacking" rail services despite widespread resistance, even resentment, within the company. The Medical Products Group at Hewlett-Packard owes most of its leading performance to the remarkable efforts of Dean Morton, Lew Platt, Ben Holmes, Dick Alberting, and a handful of their colleagues who revitalized a health care business that most others had written off. At Knight-Ridder, Jim Batten's "customer obsession" vision took root at the *Tallahassee Democrat* when 14 frontline enthusiasts turned a charter to eliminate errors into a mission of major change and took the entire paper along with them.

Such are the stories and the work of teams—real teams that perform, not amorphous groups that we call teams because we think that the label is motivating and energizing. The difference between teams that perform and other groups that don't is a subject to which most of us pay far too little attention. Part of the problem is that *team* is a word and concept so familiar to everyone.

Or at least that's what we thought when we set out to do research for our book *The Wisdom of Teams*. We wanted to discover what differentiates various levels of team performance, where and how teams work best, and what top management can do to enhance their effectiveness. We talked with hundreds of people on more than 50 different teams in 30 companies and beyond, from Motorola and Hewlett-Packard to Operation Desert Storm and the Girl Scouts.

We found that there is a basic discipline that makes teams work. We also found that teams and good performance are inseparable; you cannot have one without the other. But people use the word *team* so loosely that it gets in the way of learning and applying the discipline that leads to good performance. For managers to make better decisions about whether, when, or how to encourage and use teams, it is important to be more precise about what a team is and what it isn't.

Most executives advocate teamwork. And they should. Teamwork represents a set of values that encourage listening and responding constructively to views expressed by others, giving others the benefit of the doubt, providing support, and recognizing the interests and achievements of others. Such values help teams perform, and they also promote individual performance as well as the performance of an entire organization. But teamwork values by themselves are not exclusive to teams, nor are they enough to ensure team performance.

Nor is a team just any group working together. Committees, councils, and task forces are not necessarily teams. Groups do not become teams simply because that is what someone calls them. The entire work force of any large and complex organization is *never* a team, but think about how often that platitude is offered up.

To understand how teams deliver extra performance, we must distinguish between teams and other forms of working groups. That distinction turns on performance results. A working group's performance is a function of what its members do as individuals. A team's performance includes both individual results and what we call "collective work-products." A collective work-product is what two or more members must work on together, such as interviews, surveys, or experiments. Whatever it is, a collective work-product reflects the joint, real contribution of team members.

Working groups are both prevalent and effective in large organizations where individual accountability is most important. The best working groups come together to share information, perspectives, and insights; to make decisions that help each person do his or her job better; and to reinforce individual performance standards. But the focus is always on individual goals and accountabilities. Working-group members don't take responsibility for results other than their own. Nor do they try to develop incremental performance contributions requiring the combined work of two or more members.

Teams differ fundamentally from working groups because they require both individual and mutual accountability. Teams rely on more than group discussion, debate, and decision; on more than sharing information and best practice performance standards. Teams produce discrete work-products through the joint contributions of their members. This is what makes possible performance levels greater than the sum of all the individual bests of team members. Simply stated, a team is more than the sum of its parts.

The first step in developing a disciplined approach to team management is to think about teams as discrete units of performance and not just as positive sets of values. Having observed and worked with scores of teams in action, both successes and failures, we offer the following. Think of it as a working definition or, better still, an essential discipline that real teams share.

A team is a small number of people with complementary skills who are committed to a common purpose, set of performance goals, and approach for which they hold themselves mutually accountable.

The essence of a team is common commitment. Without it, groups perform as individuals; with it, they become a powerful unit of collective performance. This kind of commitment requires a purpose in which team members can believe. Whether the purpose is to "transform the contributions of suppliers into the satisfaction of customers," to "make our company one we can be proud of again," or to "prove that all children can learn," credible team purposes have an element related to winning, being first, revolutionizing, or being on the cutting edge.

Teams develop direction, momentum, and commitment by working to shape a meaningful purpose. Building ownership and commitment to team purpose, however, is not incompatible with taking initial direction from outside the team. The often-asserted assumption that a team cannot "own" its purpose unless management leaves it alone actually confuses more potential teams than it helps. In fact, it is the exceptional case—for example, entrepreneurial situations—when a team creates a purpose entirely on its own.

Most successful teams shape their purposes in response to a demand or opportunity put in their path, usually by higher management. This helps teams get started by broadly framing the company's performance expectation. Management is responsible for clarifying the charter,

rationale, and performance challenge for the team, but management must also leave enough flexibility for the team to develop commitment around its own spin on that purpose, set of specific goals, timing, and approach.

The best teams invest a tremendous amount of time and effort exploring, shaping, and agreeing on a purpose that belongs to them both collectively and individually. This "purposing" activity continues throughout the life of the team. In contrast, failed teams rarely develop a common purpose. For whatever reason—an insufficient focus on performance, lack of effort, poor leadership—they do not coalesce around a challenging aspiration.

The best teams also translate their common purpose into specific performance goals, such as reducing the reject rate from suppliers by 50% or increasing the math scores of graduates from 40% to 95%. Indeed, if a team fails to establish specific performance goals or if those goals do not relate directly to the team's overall purpose, team members become confused, pull apart, and revert to mediocre performance. By contrast, when purposes and goals build on one another and are combined with team commitment, they become a powerful engine of performance.

Transforming broad directives into specific and measurable performance goals is the surest first step for a team trying to shape a purpose meaningful to its members. Specific goals, such as getting a new product to market in less than half the normal time, responding to all customers within 24 hours, or achieving a zero-defect rate while simultaneously cutting costs by 40%, all provide firm footholds for teams. There are several reasons:

- Specific team performance goals help to define a set of work-products that are different both from an organizationwide mission and from individual job objectives. As a result, such work-products require the collective effort of team members to make something specific happen that, in and of itself, adds real value to results. By contrast, simply gathering from time to time to make decisions will not sustain team performance.

- The specificity of performance objectives facilitates clear communication and constructive conflict within the team. When a plant-level team, for example, sets a goal of reducing average machine changeover time to two hours, the clarity of the goal forces the team to concentrate on what it would take either to achieve or to reconsider the goal. When such goals are clear,

discussions can focus on how to pursue them or whether to change them; when goals are ambiguous or nonexistent, such discussions are much less productive.

- The attainability of specific goals helps teams maintain their focus on getting results. A product-development team at Eli Lilly's Peripheral Systems Division set definite yardsticks for the market introduction of an ultrasonic probe to help doctors locate deep veins and arteries. The probe had to have an audible signal through a specified depth of tissue, be capable of being manufactured at a rate of 100 per day, and have a unit cost less than a pre-established amount. Because the team could measure its progress against each of these specific objectives, the team knew throughout the development process where it stood. Either it had achieved its goals or not.

- As Outward Bound and other team-building programs illustrate, specific objectives have a leveling effect conducive to team behavior. When a small group of people challenge themselves to get over a wall or to reduce cycle time by 50%, their respective titles, perks, and other stripes fade into the background. The teams that succeed evaluate what and how each individual can best contribute to the team's goal and, more important, do so in terms of the performance objective itself rather than a person's status or personality.

- Specific goals allow a team to achieve small wins as it pursues its broader purpose. These small wins are invaluable to building commitment and overcoming the inevitable obstacles that get in the way of a long-term purpose. For example, the Knight-Ridder team mentioned at the outset turned a narrow goal to eliminate errors into a compelling customer-service purpose.

- Performance goals are compelling. They are symbols of accomplishment that motivate and energize. They challenge the people on a team to commit themselves, as a team, to make a difference. Drama, urgency, and a healthy fear of failure combine to drive teams who have their collective eye on an attainable, but challenging, goal. Nobody but the team can make it happen. It is their challenge.

Not All Groups Are Teams: How to Tell the Difference

Working Group	Team
☐ Strong, clearly focused leader	☐ Shared leadership roles
☐ Individual accountability	☐ Individual and mutual accountability
☐ The group's purpose is the same as the broader organizational mission	☐ Specific team purpose that the team itself delivers
☐ Individual work-products	☐ Collective work-products
☐ Runs efficient meetings	☐ Encourages open-ended discussion and active problem-solving meetings
☐ Measures its effectiveness indirectly by its influence on others (e.g., financial performance of the business)	☐ Measures performance directly by assessing collective work-products
☐ Discusses, decides, and delegates	☐ Discusses, decides, and does real work together

Not All Groups Are Teams: How to Tell the Difference

The combination of purpose and specific goals is essential to performance. Each depends on the other to remain relevant and vital. Clear performance goals help a team keep track of progress and hold itself accountable; the broader, even nobler, aspirations in a team's purpose supply both meaning and emotional energy.

> Goals help a team keep track of progress, while a broader purpose supplies meaning and emotional energy.

Virtually all effective teams we have met, read or heard about, or been members of have ranged between 2 and 25 people. For example, the Burlington Northern "piggybacking" team had 7 members, the Knight-Ridder newspaper team, 14. The majority of them have numbered less than 10. Small size is admittedly more of a pragmatic guide than an absolute necessity for success. A large number of people, say 50 or more, can theoretically become a team. But groups of such size are more likely to break into subteams rather than function as a single unit.

Why? Large numbers of people have trouble interacting constructively as a group, much less doing real work together. Ten people are far more likely than fifty are to work through their individual, functional, and hierarchical differences toward a common plan and to hold themselves jointly accountable for the results.

Large groups also face logistical issues, such as finding enough physical space and time to meet. And they confront more complex constraints, like crowd or herd behaviors, which prevent the intense sharing of viewpoints needed to build a team. As a result, when they try to develop a common purpose, they usually produce only superficial "missions" and well-meaning intentions that cannot be translated into concrete objectives. They tend fairly quickly to reach a point when meetings become a chore, a clear sign that most of the people in the group are uncertain why they have gathered, beyond some notion of getting along better. Anyone who has been through one of these exercises knows how frustrating it can be. This kind of failure tends to foster cynicism, which gets in the way of future team efforts.

In addition to finding the right size, teams must develop the right mix of skills, that is, each of the complementary skills necessary to do the team's job. As obvious as it sounds, it is a common failing in potential teams. Skill requirements fall into three fairly self-evident categories:

Technical or functional expertise. It would make little sense for a group of doctors to litigate an employment discrimination case in a court of law. Yet teams of doctors and lawyers often try medical malpractice or personal injury cases. Similarly, product-development groups that include only marketers or engineers are less likely to succeed than those with the complementary skills of both.

Problem-solving and decision-making skills. Teams must be able to identify the problems and opportunities they face, evaluate the options they have for moving forward, and then make necessary trade-offs and decisions about how to proceed. Most teams need some members with these skills to begin with, although many will develop them best on the job.

Interpersonal skills. Common understanding and purpose cannot arise without effective communication and constructive conflict, which in turn depend on interpersonal skills. These include risk taking, helpful criticism, objectivity, active listening, giving the benefit of the doubt, and recognizing the interests and achievements of others.

Obviously, a team cannot get started without some minimum complement of skills, especially technical and functional ones. Still, think about how often you've been part of a team whose members were chosen primarily on the basis of personal compatibility or formal position in the

organization, and in which the skill mix of its members wasn't given much thought.

It is equally common to overemphasize skills in team selection. Yet in all the successful teams we've encountered, not one had all the needed skills at the outset. The Burlington Northern team, for example, initially had no members who were skilled marketers despite the fact that their performance challenge was a marketing one. In fact, we discovered that teams are powerful vehicles for developing the skills needed to meet the team's performance challenge. Accordingly, team member selection ought to ride as much on skill potential as on skills already proven.

Effective teams develop strong commitment to a common approach, that is, to how they will work together to accomplish their purpose. Team members must agree on who will do particular jobs, how schedules will be set and adhered to, what skills need to be developed, how continuing membership in the team is to be earned, and how the group will make and modify decisions. This element of commitment is as important to team performance as is the team's commitment to its purpose and goals.

Agreeing on the specifics of work and how they fit together to integrate individual skills and advance team performance lies at the heart of shaping a common approach. It is perhaps self-evident that an approach that delegates all the real work to a few members (or staff outsiders), and thus relies on reviews and meetings for its only "work together" aspects, cannot sustain a real team. Every member of a successful team does equivalent amounts of real work; all members, including the team leader, contribute in concrete ways to the team's work-product. This is a very important element of the emotional logic that drives team performance.

When individuals approach a team situation, especially in a business setting, each has preexisting job assignments as well as strengths and weaknesses reflecting a variety of backgrounds, talents, personalities, and prejudices. Only through the mutual discovery and understanding of how to apply all its human resources to a common purpose can a team develop and agree on the best approach to achieve its goals. At the heart of such long and, at times, difficult interactions lies a commitment-building process in which the team candidly explores who is best suited to each task as well as how individual roles will come together. In effect, the team establishes a social contract among members that relates to their purpose and guides and obligates how they must work together.

No group ever becomes a team until it can hold itself accountable as a team. Like common purpose and approach, mutual accountability is a stiff test. Think, for example, about the subtle but critical difference between "the boss holds me accountable" and "we hold ourselves accountable." The first case can lead to the second; but without the second, there can be no team.

Think about the difference between "the boss holds me accountable" and "we hold ourselves accountable."

Companies like Hewlett-Packard and Motorola have an ingrained performance ethic that enables teams to form "organically" whenever there is a clear performance challenge requiring collective rather than individual effort. In these companies, the factor of mutual accountability is commonplace. "Being in the boat together" is how their performance game is played.

At its core, team accountability is about the sincere promises we make to ourselves and others, promises that underpin two critical aspects of effective teams: commitment and trust. Most of us enter a potential team situation cautiously because ingrained individualism and experience discourage us from putting our fates in the hands of others or accepting responsibility for others. Teams do not succeed by ignoring or wishing away such behavior.

Mutual accountability cannot be coerced any more than people can be made to trust one another. But when a team shares a common purpose, goals, and approach, mutual accountability grows as a natural counterpart. Accountability arises from and reinforces the time, energy, and action invested in figuring out what the team is trying to accomplish and how best to get it done.

When people work together toward a common objective, trust and commitment follow. Consequently, teams enjoying a strong common purpose and approach inevitably hold themselves responsible, both as individuals and as a team, for the team's performance. This sense of mutual accountability also produces the rich rewards of mutual achievement in which all members share. What we heard over and over from members of effective teams is that they found the experience energizing and motivating in ways that their "normal" jobs never could match.

On the other hand, groups established primarily for the sake of becoming a team or for job enhancement, communication, organizational effectiveness, or excellence rarely become effective teams, as demonstrated by the bad feelings left in many companies after experimenting with quality circles that never translated "quality" into specific goals. Only when appropriate performance goals are set does the process of discussing the goals and the approaches to them give team members a clearer and clearer choice: they can disagree with a goal and the path that the team selects and, in effect, opt out, or they can pitch in and become accountable with and to their teammates.

The discipline of teams we've outlined is critical to the success of all teams. Yet it is also useful to go one step further. Most teams can be classified in one of three ways: teams that recommend things, teams that make or do things, and teams that run things. In our experience, each type faces a characteristic set of challenges.

Teams that recommend things. These teams include task forces, project groups, and audit, quality, or safety groups asked to study and solve particular problems. Teams that recommend things almost always have predetermined completion dates. Two critical issues are unique to such teams: getting off to a fast and constructive start and dealing with the ultimate handoff required to get recommendations implemented.

The key to the first issue lies in the clarity of the team's charter and the composition of its membership. In addition to wanting to know why and how their efforts are important, task forces need a clear definition of whom management expects to participate and the time commitment required. Management can help by ensuring that the team includes people with the skills and influence necessary for crafting practical recommendations that will carry weight throughout the organization. Moreover, management can help the team get the necessary cooperation by opening doors and dealing with political obstacles.

Missing the handoff is almost always the problem that stymies teams that recommend things. To avoid this, the transfer of responsibility for recommendations to those who must implement them demands top management's time and attention. The more top managers assume that

recommendations will "just happen," the less likely it is that they will. The more involvement task force members have in implementing their recommendations, the more likely they are to get implemented.

To the extent that people outside the task force will have to carry the ball, it is critical to involve them in the process early and often, certainly well before recommendations are finalized. Such involvement may take many forms, including participating in interviews, helping with analyses, contributing and critiquing ideas, and conducting experiments and trials. At a minimum, anyone responsible for implementation should receive a briefing on the task force's purpose, approach, and objectives at the beginning of the effort as well as regular reviews of progress.

Teams that make or do things. These teams include people at or near the front lines who are responsible for doing the basic manufacturing, development, operations, marketing, sales, service, and other value-adding activities of a business. With some exceptions, like new-product development or process design teams, teams that make or do things tend to have no set completion dates because their activities are ongoing.

In deciding where team performance might have the greatest impact, top management should concentrate on what we call the company's "critical delivery points," that is, places in the organization where the cost and value of the company's products and services are most directly determined. Such critical delivery points might include where accounts get managed, customer service performed, products designed, and productivity determined. If performance at critical delivery points depends on combining multiple skills, perspectives, and judgments in real time, then the team option is the smartest one.

> Where does the team option make sense? Where the cost and value of the company's products and services are most directly determined.

When an organization does require a significant number of teams at these points, the sheer challenge of maximizing the performance of so many groups will demand a carefully constructed and performance-focused set of management processes. The issue here for top management is how

to build the necessary systems and process supports without falling into the trap of appearing to promote teams for their own sake.

The imperative here, returning to our earlier discussion of the basic discipline of teams, is a relentless focus on performance. If management fails to pay persistent attention to the link between teams and performance, the organization becomes convinced that "this year we are doing 'teams.'" Top management can help by instituting processes like pay schemes and training for teams responsive to their real time needs, but more than anything else, top management must make clear and compelling demands on the teams themselves and then pay constant attention to their progress with respect to both team basics and performance results. This means focusing on specific teams and specific performance challenges. Otherwise "performance," like "team," will become a cliché.

> Top management's focus on teams and performance challenges will keep both "performance" and "team" from becoming clichés.

Teams that run things. Despite the fact that many leaders refer to the group reporting to them as a team, few groups really are. And groups that become real teams seldom think of themselves as a team because they are so focused on performance results. Yet the opportunity for such teams includes groups from the top of the enterprise down through the divisional or functional level. Whether it is in charge of thousands of people or a handful, as long as the group oversees some business, ongoing program, or significant functional activity, it is a team that runs things.

The main issue these teams face is determining whether a real team approach is the right one. Many groups that run things can be more effective as working groups than as teams. The key judgment is whether the sum of individual bests will suffice for the performance challenge at hand or whether the group must deliver substantial incremental performance requiring real, joint work-products. Although the team option promises greater performance, it also brings more risk, and managers must be brutally honest in assessing the trade-offs.

Members may have to overcome a natural reluctance to trust their fate to others. The price of faking the team approach is high: at best, members get diverted from their individual goals, costs outweigh benefits, and people resent the imposition on their time and priorities; at worst, serious animosities develop that undercut even the potential personal bests of the working-group approach.

Working groups present fewer risks. Effective working groups need little time to shape their purpose since the leader usually establishes it. Meetings are run against well-prioritized agendas. And decisions are implemented through specific individual assignments and accountabilities. Most of the time, therefore, if performance aspirations can be met through individuals doing their respective jobs well, the working-group approach is more comfortable, less risky, and less disruptive than trying for more elusive team performance levels. Indeed, if there is no performance need for the team approach, efforts spent to improve the effectiveness of the working group make much more sense than floundering around trying to become a team.

Building Team Performance

Although there is no guaranteed how-to recipe for building team performance, we observed a number of approaches shared by many successful teams.

Establish urgency, demanding performance standards, and direction. All team members need to believe the team has urgent and worthwhile purposes, and they want to know what the expectations are. Indeed, the more urgent and meaningful the rationale, the more likely it is that the team will live up to its performance potential, as was the case for a customer-service team that was told that further growth for the entire company would be impossible without major improvements in that area. Teams work best in a compelling context. That is why companies with strong performance ethics usually form teams readily.

Having said that, we believe the extra level of performance teams can achieve is becoming critical for a growing number of companies, especially as they move through major changes during which company performance depends on broad-based behavioral change. When top management uses teams to run things, it should make sure the team succeeds in identifying specific purposes and goals.

This is a second major issue for teams that run things. Too often, such teams confuse the broad mission of the total organization with the specific purpose of their small group at the top. The discipline of teams tells us that for a real team to form there must be a *team* purpose that is distinctive and specific to the small group and that requires its members to roll up their sleeves and accomplish something beyond individual

Select members for skill and skill potential, not personality. No team succeeds without all the skills needed to meet its purpose and performance goals. Yet most teams figure out the skills they will need after they are formed. The wise manager will choose people both for their existing skills and their potential to improve existing skills and learn new ones.

Pay particular attention to first meetings and actions. Initial impressions always mean a great deal. When potential teams first gather, everyone monitors the signals given by others to confirm, suspend, or dispel assumptions and concerns. They pay particular attention to those in authority: the team leader and any executives who set up, oversee, or otherwise influence the team. And, as always, what such leaders do is more important than what they say. If a senior executive leaves the team kickoff to take a phone call ten minutes after the session has begun and he never returns, people get the message.

Set some clear rules of behavior. All effective teams develop rules of conduct at the outset to help them achieve their purpose and performance goals. The most critical initial rules pertain to attendance (for example, "no interruptions to take phone calls"), discussion ("no sacred cows"), confidentiality ("the only things to leave this room are what we agree on"), analytic approach ("facts are friendly"), end-product orientation ("everyone gets assignments and does them"), constructive confrontation ("no finger pointing"), and, often the most important, contributions ("everyone does real work").

end-products. If a group of managers looks only at the economic performance of the part of the organization it runs to assess overall effectiveness, the group will not have any team performance goals of its own.

While the basic discipline of teams does not differ for them, teams at the top are certainly the most difficult. The complexities of long-term challenges, heavy demands on executive time, and the deep-seated individualism of senior people conspire against teams at the top. At the same time, teams at the top are the most powerful. At first we thought such teams were nearly impossible. That is because we were looking at the teams as defined by the formal organizational structure, that is, the leader and all his or her direct reports equals the team. Then we discovered that real teams at the top were often smaller and less formalized—Whitehead and Weinberg at Goldman, Sachs; Hewlett and Packard at HP; Krasnoff, Pall, and Hardy at Pall Corp; Kendall, Pearson, and Calloway at Pepsi; Haas and Haas at Levi Strauss; Batten and Ridder at Knight-Ridder. They were mostly twos and threes, with an occasional fourth.

Teams at the top are the most difficult but also the most powerful.

Set and seize upon a few immediate performance-oriented tasks and goals. Most effective teams trace their advancement to key performance-oriented events. Such events can be set in motion by immediately establishing a few challenging goals that can be reached early on. There is no such thing as a real team without performance results, so the sooner such results occur, the sooner the team congeals.

Challenge the group regularly with fresh facts and information. New information causes a team to redefine and enrich its understanding of the performance challenge, thereby helping the team shape a common purpose, set clearer goals, and improve its common approach. A plant quality improvement team knew the cost of poor quality was high, but it wasn't until they researched the different types of defects and put a price tag on each one that they knew where to go next. Conversely, teams err when they assume that all the information needed exists in the collective experience and knowledge of their members.

Spend lots of time together. Common sense tells us that team members must spend a lot of time together, scheduled and unscheduled, especially in the beginning. Indeed, creative insights as well as personal bonding require impromptu and casual interactions just as much as analyzing spreadsheets and interviewing customers. Busy executives and managers too often intentionally minimize the time they spend together. The successful teams we've observed all gave themselves the time to learn to be a team. This time need not always be spent

Nonetheless, real teams at the top of large, complex organizations are still few and far between. Far too many groups at the top of large corporations needlessly constrain themselves from achieving real team levels of performance because they assume that all direct reports must be on the team; that team goals must be identical to corporate goals; that the team members' positions rather than skills determine their respective roles; that a team must be a team all the time; and that the team leader is above doing real work.

As understandable as these assumptions may be, most of them are unwarranted. They do not apply to the teams at the top we have observed, and when replaced with more realistic and flexible assumptions that permit the team discipline to be applied, real team performance at the top can and does occur. Moreover, as more and more companies are confronted with the need to manage major change across their organizations, we will see more real teams at the top.

We believe that teams will become the primary unit of performance in high-performance organizations. But that does not mean that teams will crowd out individual opportunity or formal hierarchy and process. Rather, teams will enhance existing structures without replacing them. A team opportunity exists anywhere hierarchy or organizational boundaries inhibit the skills and perspectives needed for optimal results.

together physically; electronic, fax, and phone time can also count as time spent together.

Exploit the power of positive feedback, recognition, and reward. Positive reinforcement works as well in a team context as elsewhere. "Giving out gold stars" helps to shape new behaviors critical to team performance. If people in the group, for example, are alert to a shy person's initial efforts to speak up and contribute, they can give the honest positive reinforcement that encourages continued contributions. There are many ways to recognize and reward team performance beyond direct compensation, from having a senior executive speak directly to the team about the urgency of its mission to using awards to recognize contributions. Ultimately, however, the satisfaction shared by a team in its own performance becomes the most cherished reward.

Thus, new-product innovation requires preserving functional excellence through structure while eradicating functional bias through teams. And frontline productivity requires preserving direction and guidance through hierarchy while drawing on energy and flexibility through self-managing teams.

We are convinced that every company faces specific performance challenges for which teams are the most practical and powerful vehicle at top management's disposal. The critical role for senior managers, therefore, is to worry about company performance and the kinds of teams that can deliver it. This means that top management must recognize a team's unique potential to deliver results, deploy teams strategically when they are the best tool for the job, and foster the basic discipline of teams that will make them effective. By doing so, top management creates the kind of environment that enables team as well as individual and organizational performance.

A version of this article appeared in the March–April 1993 issue of *Harvard Business Review*.

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REFERENCE MATERIAL

B. THREE (3) ARTICLES FOR OLED^{SM} TEAM MEETING KICK-OFF

– **WHY DREAM TEAMS FAIL**

Why Dream Teams Fail

It may be tempting to recruit all-stars and let 'em rip. Don't do it. Dream teams often become nightmares of dysfunction.

by Geoffrey Colvin, FORTUNE Magazine
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FORTUNE

(FORTUNE Magazine) - In what universe is it even conceivable that the United States could fail to reach the semifinals of something called the World Baseball Classic? Not only fail to win, but could field a team that included Roger Clemens, Derek Jeter, Alex Rodriguez, and Johnny Damon and then lose games to Mexico, South Korea, and - wait for it -Canada? Yet it happened this year.

How could a movie starring Brad Pitt, George Clooney, Catherine Zeta-Jones, and Julia Roberts, directed by Steven Soderbergh, get tepid reviews and gross less worldwide than the star-free My Big Fat Greek Wedding? That movie was Ocean's Twelve.

And how could a FORTUNE 500 company run by a brilliant former McKinsey consultant, paying fat salaries to graduates of America's elite business schools, dissolve into fraud and bankruptcy? It happened at Enron. If someone tells you you're being recruited onto a dream team, maybe you should run. In our team-obsessed age, the concept of the dream team has become irresistible. But it's brutally clear that they often blow up. Why? Because they're not teams. They're just bunches of people.

A look at why so many dream teams fail, and why so many of the most successful teams consist of individuals you've never heard of, yields insight into the essential nature of winning organizations. As always when the subject is the real-world behavior of human beings, the takeaway includes things we always knew - even though we rarely behave as if we do.

The most important lesson about team performance is that the basic theory of the dream team is wrong. You cannot assemble a group of stars and then sit back to watch them conquer the world. You can't even count on them to avoid embarrassment. The 2004 U.S. Olympic basketball team consisted entirely of NBA stars; it finished third and lost to Lithuania.

By contrast, the 1980 hockey team that beat the Soviets at the Lake Placid Olympics was built explicitly on anti-dream-team principles. Coach Herb Brooks, who died in 2003, based his picks on personal chemistry. In the story's movie version, Miracle, Brooks' assistant looks at the roster and objects that many of the country's greatest college players were left out (professionals were not eligible to play then). To which Brooks responds with this essential anti-dream-team philosophy: "I'm not lookin' for the best players, Craig. I'm lookin' for the right players."

To see why dream teams so often disappoint, let's consider the most common paths to failure.

Signing too many all-stars.

"Some of the worst teams I've ever seen have been those where everybody was a potential CEO," says David Nadler, chief of the Mercer Delta consulting firm, who has worked with executive teams at top global companies for more than 30 years. "If there's a zero-sum game called succession going on, it's very difficult to have an effective team."

Chemistry and culture are key. Henry Ford II successfully brought in the Whiz Kids, a pre-assembled team of U.S. Army managerial stars that included Tex Thornton, Robert McNamara, and others, when he sensed that Ford needed a revolution after World War II. Young and iconoclastic, they had a record of working together effectively, and they did well at Ford, helping it to cash in on the postwar boom. But 50 years later when CEO Jacques Nasser correctly decided that [Ford](#) ([Research](#)) needed another revolution, he stuck with the old-guard team already in place. Like most old guards, they weren't ready for a real revolution, and when push came to shove, Nasser got ejected. More seriously for Ford, the revolution didn't happen.

For a notably successful method of choosing team members, look at [Worthington Industries](#) ([Research](#)), the Ohio-based steel processor. When an employee is hired to join a plant-floor team, he works for a 90-day probationary period, after which the team votes to determine whether he can stay. The system works because much of the team's pay is based on performance, so members are clear-eyed and unsparing in evaluating a new candidate's contribution. Worthington's CEO, John McConnell, could be talking about teams at any level when he says, "Give us people who are dedicated to making the team work, as opposed to a bunch of talented people with big egos, and we'll win every time."

That's the philosophy that powers teams such as basketball's Detroit Pistons and especially football's New England Patriots. The Pats have won three Super Bowls in the past five years with few stars and a quarterback, Tom Brady, who was the 199th pick. The Washington Redskins, by contrast, have bought star after star - and floundered.

Failing to build a culture of trust.

Read the extensive literature on team effectiveness, or talk to people on teams in sports, business, or elsewhere, and it always comes down to this: Trust is the most fundamental element of a winning team. If people think their teammates are lying, withholding information, plotting to knife them, or just incompetent, nothing valuable will get done. The team doesn't create synergy. It creates "dysergy" - two plus two equals three, with luck.

So dream teams are in trouble right from the start because team members may have particular reasons to be distrustful. In sports settings they are often brought together only briefly from teams that spend the rest of the year trying to beat each other. Even if team members can set aside that antagonistic mindset, they rarely have time to develop confidence in one another's behavior. It's similar in business: Even if team members aren't battling for the next promotion, someone is always getting moved or stolen away. "A major problem is that people are transient," says consultant Ram Charan. Especially on an all-star team, "there's all the headhunting, and there's a constant tug to have people pulled out of the team. Instability is a major issue." That's a big problem because trust, by its nature, builds slowly.

Many companies try to speed the trust-building process. In the '80s there was a virtual epidemic, often in woodsy corporate off-sites, of people falling backward off tables into the arms of co-workers as a way of learning trust. Maybe it even helped. Today consultants have developed many additional exercises that involve people sharing personal stories or revealing their personality type, based on the valid insight that reciprocal vulnerability is the beginning of trust. But the process can be rushed only so much.

In fact, trust is so fragile and so laboriously created that it may never extend very far in a top-level team. "Building a really high-performing executive team at the highest level is a mirage," says a management consultant who doesn't want to be quoted because this particular message is a downer. "When such teams do exist, they'll consist mostly of two people, maybe three." It's just too hard to build trust more extensively at the top level, where everyone is supposedly a star.

And sure enough, the legendary top executive teams are almost always pairs. Think of Roberto Goizueta and Donald Keough at Coca-Cola (Research) in the '80s and '90s, or Tom Murphy and Dan Burke at Capital Cities/ABC from the '60s to the '90s, or Reuben Mark and Bill Shanahan at Colgate-Palmolive (Research) for two decades until last year, or Warren Buffett and Charlie Munger at Berkshire Hathaway (Research) from the '60s to today. No one would have called those pairs dream teams back when they got together; at the time, most people had never heard of them.

Maybe you noticed something else about those teams: Each consisted of a boss who became famous and a much less famous No. 2 who devoted his career to the success of the enterprise. In every case, though, they developed deep trust over many years and produced outstanding results.

Tolerating competing agendas.

You don't often find examples of the best and worst executive teams involving the same person, but consider the case of Michael Eisner. For the first ten years of his reign at Disney (Research), he and COO Frank Wells formed one of corporate America's great teams. On their watch, Disney revived its glorious animation tradition, and the movie business flourished. Eisner and Wells could take credit for saving a storied company - and making shareholders rich. This productive partnership ended suddenly and terribly when Wells died in a 1994 helicopter crash.

Eisner then formed one of the most famously disastrous teams in recent history, bringing in uber-agent Michael Ovitz as president. He lasted only 14 months. In the extensive postmortems, the overriding theme is of conflicting business and personal agendas. Ovitz wanted to buy a major stake in Yahoo (Research), expand Disney's book and record businesses, and buy an NFL franchise, among other big ideas that Eisner dismissed as off-strategy. Ovitz also seemed to have notions of his own future - he spent $2 million remodeling his office - that did not sit well with Eisner. Bottom line: team failure, at tremendous cost to Disney in both money and prestige.

It is many a father's dream to team up with his sons, but family businesses can find it particularly difficult to unpick the personal from the corporate. That is one part of the dynamic that operated at Adelphia, the cable company founded by John Rigas. Even after it went public, Rigas and his sons operated it as if were still a family concern - for example, paying for private expenses from corporate funds. They got nailed, and Adelphia went bankrupt in 2002.

The challenge is to keep the inevitable personal agendas from becoming destructive. That's part of the leader's job. For example, Ameritech in the '90s had an all-star team of top executives that included Richard Notebaert, future CEO of Ameritech, Tellabs, and Qwest, and Richard Brown, future CEO of Cable & Wireless and EDS. Michigan business school professor Noel Tichy, who was advising the company on leadership development at the time, recalls that CEO Bill Weiss told the team bluntly every week that if he caught anybody trying to undermine the others, the guilty party would be fired. It worked.

Letting conflicts fester.

Col. Stas Preczewski, coach of the Army crew at West Point a few years ago, faced a baffling problem. Through extensive testing, he had developed objective criteria to rank his rowers. He then put the eight best - his dream team - in the varsity boat and the eight others in the junior varsity boat. The problem: The JV beat the varsity two-thirds of the time. The situation, as explained in a Harvard Business School case, was that the varsity was full of resentment over who was contributing most, while the JV, feeling they had nothing to lose, supported one another happily.

One day Preczewski lined up the varsity crew in four pairs. He told them they were to wrestle - no punching - for 90 seconds. There were no clear winners: Each man was discovering that his opponent was just as strong and determined as he was. Preczewski then had them change opponents and wrestle again. By the third round they were choosing their own opponents - "One guy would point at another and say, 'You!'" Preczewski says. Finally, one of the rowers started laughing, and they all piled into a general brawl. Eventually someone said, "Coach, can we go row now?" From then on, the varsity boat flew.

You probably can't order members of an executive team to wrestle, tempting though it may be. But bringing tensions out into the open and then resolving them is one of the team leader's most important jobs.

Hiding from the real issues.

"Put the fish on the table," says George Kohlrieser, a professor at the International Institute for Management Development in Switzerland. You've got to go through the "smelly, bloody process of cleaning it," but the reward is "a great fish dinner at the end of the day." Most people don't want to be the one who puts the proverbial fish on the table. "There's a veneer of politeness," says consultant David Nadler, "or unspoken reciprocity - we won't raise our differences in front of the boss." Consultant Ram Charan describes a $12 billion division of ABB that was headed for bankruptcy, in part because of "its culture of polite restraint. People didn't express their honest feelings" about the most important issues. The unit's leader turned it around by insisting that team members say what was on their minds.

Jack Welch was one of the great champions of putting the fish on the table - facing reality, as he says. GE's dream team was and is the Corporate Executive Council, which used to meet at headquarters in a formal atmosphere with rehearsed presentations and little real discussion. Welch moved the meetings off-site, forbade prepared presentations and jackets and ties, and lengthened the coffee breaks to encourage informal discussion, among other changes. At GE they call this "social architecture" and believe it was a critical element of Welch's success.

In business, dream teams are usually part of some rescue fantasy, not the real world. "Be prepared to have an imperfect set," says Charan. "Then you've got to devote your energy to getting them to synchronize. It's very time consuming. It taxes your patience." It's life.

To avoid seducing yourself into thinking all your problems might be vaporized by assembling a dream team, resolve now to accept this fact: There was only one Dream Team, and that was the 1992 U.S. Olympic basketball team. Michael Jordan, Magic Johnson, Larry Bird, Charles Barkley, Patrick Ewing - it was a one-time event. (And remember, Bird and Magic, the veteran co-captains, both had reputations as team players.) For the rest of us, putting together a few talented people who will work honestly and rigorously for something greater than themselves - that's more than enough of a dream. ■

REFERENCE MATERIAL

C. LEAN CONSTRUCTION INSTITUTE "LAST PLANNER® SYSTEM – Business Standards and Guidelines" WEBSITE

https://www.leanconstruction.org/media/docs/chapterpdf/israel/Last_Planner_System_Business_Process_Standard_and_Guidelines.pdf