

# GLOSSARY

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## **A3**

A one-page report on a single 11 x 17 sheet of paper, which uses PDCA thinking as it applies to collaborative problem solving, strategy development, or reporting. An A3 includes a problem statement, data and background information, analysis, proposed options, recommendations and agreements, actions, expected results, and follow-through. (See Appendix 12 for an example of an A3.)

## **A3 Thinking**

A3 Thinking refers to the structured process of documenting a problem, solution, and action plan. The A3 Thinking process is undertaken collaboratively, with input from all stakeholders on the topic. It begins with consensus on the problem statement and arrives at consensus on a solution and path forward.

## **Actual Cost**

The sum of the total cost of the work actually incurred by the project participants in connection with the performance of all phases of the project. Does not include owner expenses, such as fees for permit, inspection, or equipment. Depending on the contract form used, actual cost may be direct costs plus overhead or may be direct cost plus overhead plus profit.

## **Allowable Cost**

The owner's absolute maximum project cost, based on the project business case, which is the subject of the validation study. The allowable cost includes all elements: direct costs, overhead, and profit (also called ICL).

## **Big Room**

A space where all stakeholders in the team can come together and work, typically with visual documentation posted. Shared space can support communication and dialogue, resulting in greater efficiency and work product that is updated in real time, as well as less reworking and revising. Big Room setup, duration, and usage varies.

## **Building Information Model(ing) (BIM)**

The product (model) and process (modeling) of generating and managing building data during the life cycle of a building. BIM uses three-dimensional building modeling software. BIM includes building geometry, spatial relationships, geographic information, and quantities and properties of building components.

## **Blended Rate**

An average hourly rate that can be used for financial tracking when precise amounts are not needed. Typically used for trade partners when a range of hourly rates based on person-hours can be averaged to project costs. (See Appendix 23 for an example of how a blended rate was used to calculate costs based on hours.) Can also be used in situations when design partners may not wish to highlight differences in salaries for personnel who share the same job title. Averaging multiple people at the same title creates one rate that can be openly shared without revealing sensitive information.

### **Burn Rate**

The rate at which project funds are expended. Typically tracked in a spreadsheet with budgeted versus actual cost for labor and materials, focusing on rate of expenditure over time. (See Appendix 24 for an example of how the burn rate can be tracked.)

### **Choosing by Advantages (CBA)**

A structured decision-making system that compares the advantages of alternatives based on objective facts and transparently evaluated subjective preferences.

### **Co-location**

Physically locating personnel in a single area, often referred to as the Big Room, to enable constant communication and integrated thinking, build relationships, and increase productivity. Co-location may be face-to-face 100% of the time or part-time. Virtual co-location, the commitment of the team to collaborate at specific dates and times through use of web-based collaboration technology, is another method of co-location.

### **Conditions of Satisfaction (CoS)**

An explicit description by an owner and/or other members of the IPD team, stating all requirements that must be satisfied to deem the outcomes as successful. Distinct from a project charter, which typically focuses on team-behavioral goals. (See Appendix 2 and Appendix 4 for examples of CoS.)

### **Dashboard**

Visual management system to track data and metrics important to the team, which highlights whether the project is on track and also prompts actions. (See Appendix 14 for examples of dashboards and their use in the Big Room.)

### **Design Assist**

Builders providing design assist services offer suggestions, insight, costing, and constructability review, but do not take responsibility for design, which remains with a design professional unaffiliated with the builder. All builders that are within the IPD group typically provide design assist or design/build services. In some instances, trade contractors who are not in the IPD group may provide design assist services under their subcontracts.

### **Design/Build**

Design/build can refer to a project delivery method or a method for delivering an element of a project, such as a mechanical system. As a project delivery method, the design/builder is responsible for the design and construction of the project. As a method for delivering an element of a project, the design/builder has the design and the construction responsibility for that element. Fire protection systems, for example, are often delivered as a design/build element within an IPD project.

### **Design Management**

Design management brings order and structure to the development of the design through defining outcomes and decision-making processes and by identifying and optimizing information flow and pull planning.

### **Guaranteed Maximum Price (GMP)**

A cost-type contract that compensates the contractor for actual costs incurred plus a fee subject to a ceiling price.

### **Huddle**

Huddle (or “daily huddle”) is a very short daily stand-up meeting that addresses the day’s work. Huddles are a part of scrum but are also frequently used in lean construction. (See also Scrum.)

### **Incentive Compensation Layer (ICL)**

The team’s collective, at-risk profit. The ICL can increase or decrease based on the project outcome. An adjusted ICL is the ICL after adjustment based on project outcome.

### **IPD Agreement or Integrated Form of Agreement (IFoA)**

In this guide, we use IPD agreement to reference the multi-party or poly-party agreement that includes, at minimum, the owner, design professional, and constructor as signatories to the same construction contract. Examples include custom agreements (such as those by the law firm Hanson Bridgett) and templates (such as CCDC-30, ConsensusDocs 300, and AIA-C191 or C195). An IPD agreement is synonymous with IFoA. An IFoA or IPD agreement may be a multiparty (three-party agreement) or a poly-party agreement that can have more than three parties. (See also *Multiparty Agreement and Poly-party Agreement*.)

### **Integrated Project Delivery (IPD)**

IPD is a contractually based approach, which creates an environment that enhances collaboration, innovation, and value. IPD is characterized by early involvement of IPD team members, shared risk and reward based on project outcome, joint project management, liability reduction among IPD team members, and joint validation of project goals.

### **IPD Team**

The IPD team is made up of the participants who have placed their profit at risk and have the opportunity for increased profitability, based on project outcome. Under a multiparty agreement, IPD team members who are not signatory to the multiparty agreement are engaged through appropriate subcontracts or subconsulting agreements that reflect the terms of the multiparty IPD agreement. Sometimes called the risk/reward team, parties, or the ICP participants.

### **Last Planner System (LPS)**

The collaborative, commitment-based planning system that integrates pull planning, make-ready look-ahead planning with constraint analysis, weekly work planning based on reliable promises, and learning based upon analysis of PPC and reasons for variance. (*See Appendix 15 for an example of LPS statistics.*)

### **Lean**

A culture based on a set of principles focused on creating more value for the customer through elimination of waste, streamlined processes, and continuous improvement (*See More Resources for more information on lean.*)

### **Level of Development (LOD)**

The LOD specification is a product of the BIMForum. Based on the basic LOD definitions developed by AIA, it is used to clearly define and communicate to what level of completion work will be done in a BIM and by whom: who will be responsible for modeling which building elements to a specific level of detail at a particular point in time. (*See Appendix 13 for an example of a LOD matrix.*)

### **Likert Scale**

A common means of psychological measurement used to gauge a person's opinions, values, and/or attitude along a range of responses. The range of responses usually consists of five to seven possible answers—for example, ranging from strongly disagree to strongly agree—with a number value corresponding to each response.

### **Logs/Registers**

This family of tools includes constraint logs and risk and opportunity registers. These have multiple functions. They are used to track and mitigate risks and issues. The development and consistent usage of them builds team consensus and can drive accountability. (*For examples of logs and registers, please see Appendix 10 and Appendix 11.*)

### **MEP**

Mechanical, electrical, and plumbing systems. These are often inclusive of fire protection and data cabling as well.

### **Milestone**

An item on a master schedule that defines the end or beginning of a phase or a contractually required event.

### **Multiparty Agreement**

Referencing a three-party IPD agreement between owner, designer, and builder. Though the prefix multi does not imply a specific number, it is industry standard that multiparty is a three-party agreement due to the history of the development of IPD agreements. (*See also IPD Agreement and Poly-party Agreement.*)

### **Non-Signatory**

A company that is participating in the project that is not part of the IPD team. That is, they are not included in the IPD agreement with the shared risk/reward and other terms.

### **Off-Boarding**

The deliberately planned process for removing team members or firms.

### **On-Boarding**

The deliberately planned process for bringing new players onto the team. In IPD, there is a need to on-board and align the initial team and to have a process for on-boarding new players added later to the team.

**One-Piece-Flow**

A methodology used to address a process from end to end with all parties involved in order to identify which step(s) must be completed for the next step to occur without waiting or waste.

**Overhead (Home Office Overhead)**

The amount, which may be expressed as a percentage applied to costs or a fixed amount, to compensate a firm for items such as rent, executive salaries, and other non-project-specific costs. *(To see an example of how overhead can be calculated, see Appendix 27 for trade partners and Appendix 28 for designers.)*

**Owner Controlled Insurance Program (OCIP)**

An OCIP is an insurance program in which the owner obtains a policy to cover loss and liability during the project, reducing the coverages provided by other parties, such as the construction manager/general contractor and trade partners. An OCIP program has requirements for safety management, reporting, and the like, which must be incorporated into the IPD team's plan.

**Owner's Project Requirements (OPR)**

Developed by the owner, this is a project narrative defining the owner's requirements. The OPR is often used as a basis for the team to develop the CoS. In the context of a high-performance certification, this can include quantitative measures, such as meeting LEED or Petal standards. *(See Appendix 3 for an example of OPR.)*

**Percent Plan Complete (PPC)**

A basic measure of how well the planning system is working, calculated as the number of commitments completed by the time stated divided by the total number of commitments made for the time stated. It measures the percentage of assignments that are 100% completed as planned. *(For examples of how PPC is visually tracked, see Appendix 14 and Appendix 15.)*

**Plan-Do-Check-Act (PDCA; also sometimes Plan-Do-Check-Adjust)**

A four-step process intended to support continuous improvement in a product or process: plan, do, check, act. This is conceived of as a repeating and never-ending cycle, which creates a feedback loop for teams to assess their ability to achieve and improve outcomes.

**Plus/Delta**

Performed at the end of an activity, such as a meeting or a decision process. This review is used to evaluate the activity. Two questions are asked and discussed. Plus: what produced value during the session? Delta: what could we change to improve the process or outcome?

**Poly-party Agreement**

An IFoA that has more than three parties and generally includes, as parties, all members of the IPD team. The distinction between a multiparty (three party) and poly-party agreement is relevant to contract structure, governance, and insurance.

**Project Charter**

*(See also Conditions of Satisfaction.)*

**Project Implementation Team (PIT)**

PITs are nimble, multidisciplinary groups of project participants assigned by the PMT to conduct deep dives into specific project needs (e.g., building envelope, mechanical systems). PITs typically have an initial mission, a time frame in order to perform their work and report back, and the authority to incorporate the right people to perform the work. These are sometimes called clusters or cluster groups. PITs can include all members of the team—PMT, signatories, non-signatories, owners, architects, contractor, trades, and suppliers. Common PITs include structure, mechanical, electrical, envelope, etc. The specific number of PITs needed will be determined by the team. *(See also Project Management Team.)*

**Project Management Team (PMT)**

A team composed of representatives from each IPD contract party, with membership as defined by the specific IPD contract and subsequently others as jointly agreed by the parties. The PMT is charged to act in a collaborative manner to provide project management leadership during the design and construction process in a concerted effort to achieve the project's objectives. The PMT is the project's administrative workhorse, making the tough decisions and monitoring financials. Sometimes called the core group or core team. Interfaces with the SMT and PIT. *(See also Senior Management Team and Project Implementation Team.)*

## **Project Team**

The totality of all firms participating in the project, regardless of their status in the risk/reward structure. For the purposes of this guide, the firms participating in risk/reward make up the IPD team. There may be firms working on the project that are not part of the risk/reward structure. These are referenced as non-signatory or the project team. The totality of all the individuals on the team is referenced as project participants. (See also *IPD Team and Non-Signatory Agreement*).

## **Pull**

A method of advancing work when the next-in-line partner is ready to use it. A request from the partner signals that the work is needed and is pulled from the performer. In the pull method, work is released when the other members of the team are ready to use it.

## **Push**

The opposite of pull. During push, an order is made from a central authority based on a schedule and advancing work based on a central schedule. Releasing materials, information, or directives possibly according to a plan but independent from whether or not the downstream process is ready to process them.

## **Request for Information (RFI)**

A formal question asked by one party of the contract to another party. Typically, a request from the contractor to the designer.

## **Request for Proposals (RFP)**

Owner's call for teams to submit proposals. In IPD this often includes how the team is going to handle collaboration and integration. (See *Appendix 1 for an RFP example*.)

## **Request for Qualifications (RFQ)**

Typically includes relevant previous work, key personnel, and approach to work. In IPD this often includes demonstrations of lean and IPD experience.

## **Risk/Reward**

A collectively agreed upon amount or percentage of final cost that will be distributed among the members of the IPD team (sometimes called risk/reward pool) if project goals are met. Sometimes called ICL or profit pool.

## **Rough Order of Magnitude (ROM)**

Estimate of time or cost before details are known. A way to describe the impact and likelihood of an occurrence that could impact the project budget, positively or negatively. Calculated by taking possible cost or savings multiplied by the probability of occurrence. Typically used with risk logs or opportunity logs, sometimes combined into one format, sometimes weighted with probabilities and costs so that it can be managed in conjunction with contingency funds.

## **Scrum**

Scrum is a term borrowed from agile project management, often used in software development, referring to a process involving small teams engaging in short, repeatable, sustainable "sprints," the outcome of which is a chunk of delivered value.

## **Senior Management Team (SMT)**

A team composed of representatives from each IPD team member, typically the project executive of the firm. The SMT always handles dispute resolution and backs up the PMT as required. In many cases they also conduct contract negotiations and resolve questions of scope change, but this can alternatively be done by the PMT. The SMT is composed of one C-level executive from every party who signs the IPD agreement.

## **Target Cost (TC)**

The cost goal established by the project team as the target for its design and delivery efforts, typically determined after the validation process. In some projects, there is only TC, which can be adjusted by the owner in the rare situations when that is appropriate. Other times, TC is broken into two measures:

- **Base Target Cost:** The TC amount that matches the base program in the project objective.
- **Final Target Cost:** The TC amount that matches the base program, plus any value added Items. Because the value added Items are funded from savings off of the base TC, the final TC must be less than or equal to the base TC (unless there are change orders).

**Target Value Design (TVD)**

A disciplined approach to design that requires project values, cost, schedule, and constructability to be basic components of the design criteria, and uses cost targets to drive innovation in designing a project to provide optimum value to an owner. TVD uses constructability and cost information from the owner and IPD team before design decisions are made to allow the design to progress within the base TC, final TC, and schedule. *(To see an example of PIT tracking during TVD, see Appendix 26.)*

**Trade Partners**

Trade partners are the IPD team members (signatories to the IFoA) who are the specialty contractors engaged to put the construction work in place. Trade partners typically include mechanical contractor, electrical contractor, structural steel contractor, and the like. Not to be confused with trade contractors, subcontractors, and trades, which are ambiguous terms that do not imply membership on the IPD team.

**Validation**

Validation is a process through which the IPD team establishes certainty for the project. It proves or disproves whether the team can meet the full range of the owner's CoS within the owner's constraints (including cost and schedule). Validation is not compressed schematic design. The project is developed only to the degree necessary to achieve certainty. Validation is a go/no-go gate, undertaken at the beginning of the project, and often has its own budget, schedule, prerequisites, and approvals. *(For an example of a validation checklist, see Appendix 8.)*

**Virtual Design and Construction (VDC)**

The use of BIM and other tools to optimize and coordinate design, virtually rehearse and manage construction, and/or operations.

**Visual Management**

Placing tools, parts, plans, schedules, measures, and performance indicators in plain view for transparency, allowing the system to be understood at a glance by everyone involved and actions taken locally in support of system objectives. *(For examples of dashboards and visual management in the Big Room, see Appendix 14.)*

**Weekly Work Plan (WWP)**

The commitment-level step of LPS, identifying the promised task completions agreed on by the project team. The WWP is used to determine the success of the planning effort and to determine what factors limit performance and is the basis of measuring PPC. *(See Appendix 16 for examples of WWPs.)*