# Draft of the Professional Note
on
# "INTEGRATED PROJECT DELIVERY"

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## Integrated Project Delivery

UIA recognizes and promotes Integrated Project Delivery to improve quality and productivity of design by means of the innovation of the way to collaborate and communicate among all stakeholders of a project during lifecycle of built environment through development of information/data processing. In order to accomplish this objective, UIA recognizes and promotes the importance of alliance of developments in all industry sectors, including design professions, engineering professions, construction industries, manufacturing industries, building operation professions, financial industries as well as hardware and software of information technology industries.

### Definition

**Integrated Project Delivery is a project delivery approach that integrates people, systems, business structures and practices into a process that collaboratively harnesses the talents and insights of all participants to reduce waste and optimize efficiency through all phases of design, fabrication and construction.**

### Background

In most jurisdictions Architects have been providing professional service through drawings and specifications as communication tools for clients and contractors. Design is initiated from establishment of project requirements and finalized by Contract documents. Then these documents are translated to construction drawings and shop drawings to implement construction. During the building delivery process, many stakeholders are involved in different stages such as pre-design, basic design, detailed design, production of construction contract document, bid & award, construction and hand-over. Drawings and Specifications are bases for communication. They are used for coordination of architect design

with structural, mechanical, electrical engineering. They are used for construction cost estimate; permit processing, construction and facility management. Traditionally, architect design drawings and specifications are translated in different set of drawings and specifications for different professions. The documents are translated into the presentation package for client approval. The documents are translated and renewed for each stage of design process. These translations of the documents not only cause repetitive work during the process but also cause knowledge loss from stage to stage as well as conflicts among these sets of documents.

High quality of built environment and improvement of efficiency in building delivery are in high demand in public at large. The clients are demanding quality building in shorter period of time by improving efficiency in construction industry. Quality, cost and schedule of the project are all to be optimized without compromising each other. Better design with lower cost and faster implementation. It is becoming crucial to make decisions at earlier stage of the project that affects the quality, cost and schedule.

Sustainable built environment becomes major issue for our profession. Analytical works are requested by projects more and more. Environment impact analysis including heat gains and losses, energy control, internal air quality, and others are getting more detailed and are requesting more accurate assumptions and analysis. The results of these analyses are becoming to have more direct impact on the design itself. Therefore, design work needs to integrate these simulation and analysis at early stage of design.

Computer simulation technology is now being fully utilized in other industries. Simulation and analysis by using advanced computer technology have become standard procedure to maximize the quality of products. In design and construction industry, building information modeling tools have been improved dramatically in past decades. Building Information Model integrates various data bases such as drawing, specification, and schedule, and simulation processes such as creation, communication, optimization, simulation, collusion identification and checking. Data conversions among software have been improved through alliance promoted by the International Alliance for Interoperability. These advanced information technology with international alliance has ability to integrate accumulated data in

one coordinated file, which can contain many levels of data (drawing, specification, cost, engineering simulation, and schedule) about a project, so that unnecessary repetitive work and knowledge loss during the translation of different stages can be avoided. Clients, contractors, engineers and other stakeholders associated with the project can work on the coordinated virtual model of the project to communicate with each other, which improve the efficiency of the design process and building delivery process.

Building Information Model also has a potential to expand horizon of design limitation. Parametric Image can be easily created in virtual model which can flexibly correspond to needs of clients and implemented in real life.

By fully utilizing this information technology, a new project delivery system is emerging. This delivery system is not just usage of computer technology, but it is a new communication system with collaboration of all the stakeholders for a construction project. This new delivery system called integrated project delivery is envisaged to optimize the whole construction industry efficiency.

## Issues

UIA recognizes that there are many issues to be resolved to promote sound development of Integrated Practice.

Project Team Formation

- Project Organization (Project Facilitator)
- Participants (Owner, Architects, Engineer, Contractor)
- Collaboration

Business Model Structure

- Conflict of Interest restructuring (Open Book, Reimbursement, pre-set profit, penalty, bonus)
- Risk management (Release of Liability)
- Compensation
- Insurance
- Copy Right

Contractual Issues

- Alignment of risk and reward to optimize project success over individual entity success
- Alignment of risk and reward with a party's ability to control risk

Creating a culture of partnership among stakeholders

Creating an open information environment

Integrating operating, design and construction knowledge

Procurement Method

Design - Bid - Build

Turn - Key

Design/Build

CM Method

Single Purpose Entity (SPE)

Integration of Building Life-Cycle

(New construction, Remodeling, Adaptive use)

Planning

Design

Construction

Operation

Maintenance

Standard (International Alliance for Interoperability)

BIM Scope

Coverage of Version

Reference Standards

Business Processes

Business Rules

Data Structures and Models

Electronic Document Issues

Security/Traceability

Accuracy/Usability

Liability/Implied Warranties

Loss of back checking/Coordination

Compensation/Ownership

Education

Professional Education

Training

Examination

Registration

The list above is merely an identification of major issues to be developed further. Along with

the development of these issues, modification, addition and/or deletion are expected. UIA recognizes the importance of alliance of developments in all sectors, including design professions, engineering professions, construction industries, manufacturing industries, building operation professions, financial industries as well as hardware and software of information technology industries.

End of Draft

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