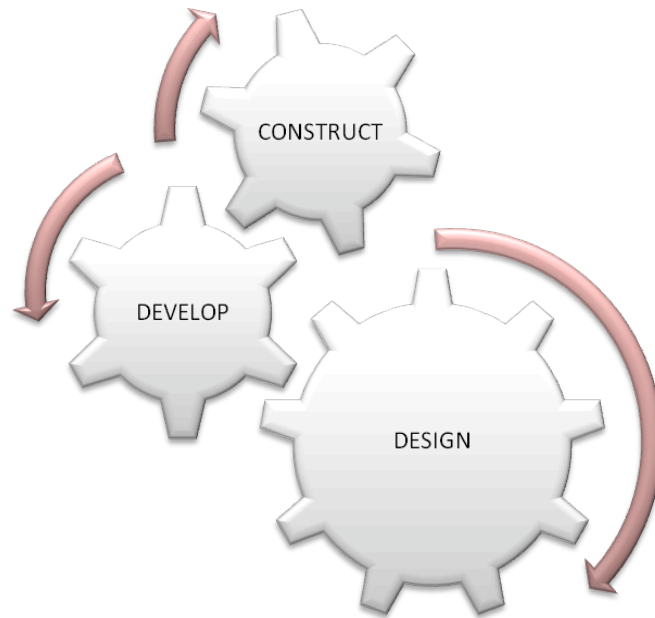


19 February 2009



*a proposal for:*  
**A New Degree Program  
Master of Integrated Building Delivery  
(M-IBD)  
College of Architecture**

*presented to:*  
**The Graduate Studies Committee  
Illinois Institute of Technology**

**Curriculum**  
Master of Integrated Building Delivery  
(M-IBD)  
College of Architecture

## College of Architecture; Illinois Institute of Technology

Degree Proposal:

### **Master of Integrated Building Delivery**

Providing Comprehensive Delivery Strategies to Promote a Quality Built Environment

30 credit hours

#### **Overview:**

Architecture has generally involved the conceptual basis of project initiation as well as the documentation and management of implementing methodology. Some architects, in turn, must have the abilities and the leadership skills to empower the profession toward a position of competency and responsibility in the broader and complex processes of design and construction. The Master of Science in Integrated Delivery Practices aims to provide this knowledge and skill set to those who have already assimilated, or are in the process of acquiring, the more traditional scope of an architectural education.

#### **Curriculum:**

Prerequisite: Students must have attained a professional degree in Architecture, or be concurrently enrolled in the IIT MARCH degree program to participate in this course of study.

First semester

ARCH 560	Integrated Building Delivery	3 Hrs
ARCH 561*	Entrepreneurship and Innovation in Architecture	3 Hrs
ARCH 562	Planning Law and Land Development Policies	3 Hrs
ARCH 563	Real Estate Financial Fundamentals	3 Hrs
XXXX XXX	Elective	3 Hrs
		<hr/>
		15 Hrs

Second semester

ARCH 564	Comprehensive Opportunity Assessment and Entrepreneurship Development Project/Practicum	6 Hrs
ARCH 565	Project Management and Construction Contract Administration	3 Hrs
ARCH 566	Project Sector Studies / Case Studies	3 Hrs
XXXX XXX	ITM Elective	3 Hrs
		<hr/>
		15 Hrs

\* Co-listed as MNGT XXX

**College of Architecture;**  
**Illinois Institute of Technology**

**Master of Integrated Building Delivery**

Providing Comprehensive Delivery Strategies  
to Promote a Quality Built Environment

30 credit hours

**Mission and Objectives:**

Fundamental changes in the process of delivering buildings are about to revolutionize the structure and practice of architectural design. The management practices which have doubled industrial production efficiencies since the mid 1960's, coupled with the power of computer tools and Building Information Modeling (BIM) are recognized as now necessary inclusions to current practice, to initiate a similar trajectory in the construction industry. The role of the architect at the realization of this change is not yet clearly defined, but it is recognized that it will be significantly altered from that of today. IIT introduces the new IBPD curriculum to insure that education prepares graduates for a rewarding and significant role in the emergent state of the profession.

Almost universally architects engage the practice of their art with the hope or expectation that the efforts will culminate in a realized project. Design is acknowledged as a component of a more holistic undertaking; that of creating an actualized built environment. The Master of Integrated Building Delivery Practices degree program will educate architects to more actively participate in, guide, and/or undertake the full range of entrepreneurial and innovative activities comprising design, develop, & build initiatives.

The goals of the program are:

- To empower the design professionals to work more closely with the financial teams, and the construction industry, to more effectively realize a project or enterprise.
- To energize the entrepreneurial initiative in the profession to encourage a more determinate role in project development.
- Develop a more open mind and greater receptiveness to innovation in the broadest sense.
- To develop the skills and knowledge useful in appraising and managing innovation in integrated systems and projects.
- To advance the level and nature of architectural education to a level that embraces and advances the evolving state of the industry.

- To recognize the roles of and better prepare architects for paths already practiced under the umbrella definition of *architecture*.
- To promote competency and responsibility in the full range of activities comprising the creation of the built environment.
- Develop communication and decision making skill with particular emphasis on core competencies needed to compete in a rapidly changing dynamic business environment.

## **Course Overview:**

### First Semester

#### **ARCH 560 Integrated Building Delivery /BIM:**

Architecture has always been a complex interdisciplinary business, where the management of allied professions and industry affiliates is critical to the success of any endeavor of significant scale. The introduction of BIM (Building Information Modeling) is an advance in project delivery tools which should be viewed as a multi-dimensional expansion of the mechanisms of management and accommodation of an ever broadening range of participants in the organization of a project, allowing the development of a new delivery protocol, IBD (Integrated Building Delivery). BIM is currently recognized as consolidating the basis for a range of functions including; drawing, modeling, document management, clash detection, interdisciplinary coordination, estimating, scheduling, constructability review, production modularization, fabrication protocols, and for the analysis of myriad physical and prescriptive demands such as energy consumption, daylighting, code compliance, egress, circulation, and operation scenarios. The breadth of information embedded a BIM model will require the emergence of facilitating professionals to an extent previously unknown in the practice and the industry. This course explores the state of the profession and the anticipated future ramifications

#### **ARCH 561 Entrepreneurship and Innovation in Architecture:**

Teaches future architects the practical aspects of entrepreneurial small business management, to develop a comprehensive opportunity assessment and to develop the skills necessary to improve the odds of success. The course will consider strategies to leverage limited resources for maximum effect. Also covers small organization and group behavior,

performance, leadership and motivation in small business settings and focuses on the owner/manager as the principle success factor in the context of a small organization. Emphasis is placed on the circumstances and opportunities of the professional practice of architecture: practice as profession, process, organization, business, and evolving models of practice are covered.

The course also provides a series of concepts, frameworks and heuristics that enable the entrepreneur to anticipate and deal with the challenges that accompany growth of an existing business. Cases, exercises, lectures and speakers are used to focus on choosing opportunities, allocating resources, motivating employees and maintaining control, while not stifling innovation. A key component of the course is how to sustain entrepreneurial thinking in mid-sized ventures as they continue to grow.

### **ARCH 562**

#### **Planning Law and Land Development Policy:**

Since the introduction of basic zoning laws to the numbers and complexity of ordinances attached to any land parcel have proliferated to include those addressing land use, development density, environmental concerns, both on and off site, aesthetic mandates, energy use, quality of life concerns, and infrastructure development. The growing understanding that comprehensive and integrated systems must be managed across property lines to effect sustainable planning and communities will accelerate the number of prescriptive and policy ordinances enforced at the development of a parcel. Many agencies have further created extra-legal linkages between approvals for land development and the provision of social and ideological benefits to the community.

The impact on the profession of Architecture of the panoply of planning options and governmental goals is the result that the navigation of the system of mandated design determinates is one of the initial and potentially most creative acts in the process of project delivery. Project designers must understand the ramifications and trade-offs inherent in the system, especially in any attempt to achieve the best use of any parcel of land and position the most appropriate built environment.

### **ARCH 563**

#### **Real Estate Finance Fundamentals:**

The Art of the Deal, with the emphasis on Art, is a term best positioning the financial structuring behind any project. The ability of the project team

leader in integrated practice to understand and appreciate the motivations and opportunities inherent in the initiation of the project will be essential in guiding team decisions and maintaining a leadership position. The understanding of the financial underpinnings of a project is of paramount importance to those intending to actually engage the process of initiating and effecting a construction activity. The sources, costs, and sequence of funding, budgeting, cash flow, incentives options, and tax ramifications regarding a project are to be addressed as component knowledge to an understanding of integrated project management.

The distinctions which arise between projects initiated by individual entities, corporations, public agencies, and by those employing public monies will inform the materials presented.

### **Elective Options 1:**

The elective options are intended to facilitate the student's pursuit of particular interests, advancing the focus of the course of study. The elective course work may be from the College of Architecture, or approved co-listed courses from the Stuart School of Business, the Institute of Design, the Chicago-Kent College of Law, Department of Civil and Architectural Engineering, or other schools or departments under the University system.

### Second Semester

#### **ARCH 564**

#### **Comprehensive Opportunity Assessment and Entrepreneurship Development Project or Practicum:**

Two options are available to the student for the acquisition and assimilation of the breadth of knowledge required to bring project ideas to fruition:

The *Comprehensive Development Project* is a capstone effort which will demonstrate project concept, planning resolution, land acquisition strategies, estimating, scheduling, financial pro-forma, and value capture intents.

The *Practicum* would entail employment at a vetted office, engaged in the actual process of project assembly. A position requiring a minimum of 20 hours per week, prior review and approval of the work plan and submittal of documentation of the work undertaken would be required for this scenario.

The ultimate objective is to provide a roadmap of the interaction between the architect-entrepreneur, market opportunities and integrated building delivery practices, which facilitates the development of student skills necessary to compete in a rapidly changing socio-economic environment. This course is designed to help students learn and use tools and frameworks to create, implement and update a strategic plan to shape the future and guide an entrepreneurial organization on its path to success.

### **ARCH 565**

#### **Project Management / Construction Contract Administration:**

Organization of deliverables from the multiple participants in a project plan, estimating, value engineering, scheduling of work, conflict resolution, pay schedules, and project close out and commissioning are essential to managing a project delivery. Many of these requirements will be previously addressed in Integrated Building Delivery, and this course will amplify where needed. The development of managerial skills requisite to the practice of this coordination, and techniques for developing interpersonal relationships will be stressed throughout the incorporation of the technical methodologies.

### **ARCH 566**

#### **Project Sector Studies / Case Studies:**

This course will be advanced as an independent study format. Each student will work independently to research a project option, or building type, and document the particular attributes of that case study which require specialized address. Case studies might be a particular business niche, such as land sub-divisions, condo conversions, change of use conversions, or build to suit options. The studies might pursue particular building types, or social initiatives, historic restoration strategies, or even unique construction typologies.

#### **Elective Options 2:**

Recommended to be from an Information Processing field of study



# **Overview of Curricular Concerns**

## **Master of Integrated Building Delivery (M-IBD)**

### **College of Architecture**

#### **College of Architecture; Illinois Institute of Technology**

Degree Proposal:

#### **Master of Integrated Building Delivery**

Providing Comprehensive Delivery Strategies to Promote a Quality Built Environment

#### **Notes regarding organization and structure of the program:**

MASTER OF INTEGRATED BUILDING DELIVERY – NEW DEGREE PROPOSAL  
2.19.09

**Overview:**

Entrepreneurship entails coordinating financial and human assets toward the creative exercise. The vision adopted and realized becomes part of our collective culture, those not pursued remain fascinations. The practice of architecture can either be the progenitor or the first line of implementation to those entrepreneurs working to augment and advance our built environment. The revolutionary developments in information processing and project management engendered by the virtual, or parallel, digital environment have radically altered the creative initiative. The term most universally adopted to describe the emergent design methodologies is Integrated Building Delivery. As the proposed coursework deals with the creation of the built environment, we term the degree a Master of Integrated Building Delivery.

While the initiating entity must remain as instigator and engine to the creative imperative, the virtual manifestation of the act, accessible to all participants in the act, has re-configured the process, making it much more interactive, participatory, and in certain applications, more democratic. By creating a platform wherein each participant can engage the project early, and provide expertise according to best practice and highest benefit, the net effect is that within each realm of expertise, the respective participant is more empowered, and more closely assumes the role of the directing entity.

Architecture has generally involved the conceptual basis of project initiation as well as the documentation and management of implementing methodology. Some architects, in response to the broad definition of the profession, must have the abilities and the leadership skills to empower the individual toward a position of competency and responsibility in the broader and complex processes of design and construction. The Master of Integrated Building Delivery aims to provide this knowledge and skill set to those who have already assimilated, or are in the process of acquiring, the more traditional scope of an architectural education.

Integrated Building Delivery is an emergent methodology encompassing all participatory agencies in the creation of our built environment. Facilitated by the development of software tools which allow the simultaneous development of a project design, most notably BIM, IBD will typify a disruptive methodology. Existing practitioners and firms will be forced to re-educate as the design and construction profession changes

at a rate greater than staff transition and turnover allow assimilation of that change.

**Value to The University:**

The University vision statement foresees an institution “...driven by professional and technology-oriented education, and based on a culture of innovation that embraces bold and transformational ideas.” The proposed M-IBD will initiate a path towards that type of institution, recognizing and making accessible one of the fundamentally disruptive process paradigms to emerge from the development of computing technologies.

The M-IBD will introduce to the University a cultural shift, recognizing the validity of independence and excellence in educational and research initiatives between colleges, but also recognizing the ability, given a platform, of melding the university wide activities into a singular initiative, the “University as Studio”. The premise of IBD is the unification of disparate interdisciplinary action centers into a singular initiative. In both a practice and cultural manifestations, this is a major tenet of the University mandate.

The curriculum developed with this degree program introduces academic investigations formatted to be unique offerings, which will insure IIT is known for leadership in the field of Integrated Building Delivery and the allied knowledge bases. Offering expertise to those entering the profession, as well as to those with experience in the profession, will engage the broader community and enhance links between the University and the community. The degree program offers students an opportunity to transcend professional roles as established in traditional degree programs, but much more to the benefit of the University, the degree program introduces the subject matter to the university course offerings, giving breadth to the overall curriculum.

**Development Schedule:**

Three of the core courses (Innovation and Entrepreneurship in Architecture, Planning Law and Land Development Policy, and Integrated Building Delivery) have been offered as architectural electives in the Fall of 2008. Two additional of the core courses (Real Estate Financial Fundamentals and Project Management and Construction Administration) are being offered during the Spring of 2009. It is intended to have the entire proposed curriculum in place and properly sequenced beginning in the Fall semester of 2009. With requisite approvals, the students taking course work will qualify for the degree: Masters of Integrated Building Delivery.

**Targeted Students and Course Market:**

The courses and materials introduced under the proposed degree are anticipated to be of very broad appeal, to both enrolled students and post professional candidates. One very profound shift in the professional culture which will accompany the introduction of BIM will be the elimination of the low performance internship position which has characterized the *draftsman* title. Students will realize they need advanced skills prior to leaving the university, and will find this curriculum advantageous to their differentiation from other job seekers as they enter the profession.

More critically, many existing practitioners will be faced with their failure to be competitive should they not enroll in this coursework to gain the knowledge base. An expectation that a large component of the students pursuing the degree will be professionally engaged has prompted the assignment of course times to facilitate this group.

**Faculty, Staffing, and Lecturers:**

The proposed curriculum requires high expertise in a range of disparate fields of study. IIT is fortunate to be an integrated educational institution. Professors from the Stuart School of Business, the Kent School of Law, and the Center for Entrepreneurship will be available to lead courses in their respective field. Professionals from local design and construction firms will introduce the expertise as it is developed and applied in practice.

The curriculum will serve as a platform to introduce and support Category One members of the faculty to provide expertise and oversight. Each of the courses comprising this curriculum is specialized, and requires a distinct level of competency seldom found in aggregate in any single individual. Strategic alliances with practice will ultimately bring the highest knowledge base.

Lecturers introduced with this curriculum will augment the College lecture series, providing the general dissemination of much of the body of knowledge.

**Facilities and Space Requirements:**

All the courses proposed for this curriculum utilize the types and sizes of rooms generally available at the University. The scheduling of courses to maximize those available to post professional students favors the evening and weekend periods when university facilities are generally under utilized. The course work would be optimally taught in an advanced I-

Room, with the ability to engage multiple parties in a collaborative virtual environment. It will be a goal of the IBD leadership to utilize this initiative to secure space and additional equipment to provide a setting which will advance the professional demeanor to the curriculum.

**Scale:**

It is anticipated that the degree program will attract 12-15 students per year. This assessment is based on the interest demonstrated by response to the website, and the enrollments in the currently offered core courses. It is a further expectation that interest in several of the core courses will be very high, and courses are expected to reach a cap of 25 students regularly.

Those enrolled in the M-IBD program would thereby generate revenues equivalent to 450 credit hours per year (15 students x 30 credit hrs), and the non-degree participants would generate an additional revenues equivalent to 240 credit hours per year (10 students x 24 credit hours).

Enrollments for the three courses offered in Fall of 2008, as electives, were:

ARCH 560	Integrated Building Delivery	14
ARCH 561	Entrepreneurship and Innovation in Architecture	16
ARCH 562	Planning Law and Land Development Policies	19

**Financial Assessment:**

The M-IBD program will be supported by tuition. (separate financial statement available on request) More importantly, the program will be of such a unique and progressive stature that it will attract donors and funding otherwise not accessible. The program will elevate the stature of the institution, and contribute to a general climate favoring financial recognition of IIT by foundations and institutional donors.

**Accreditation and Peer Assessment:**

The M-IBD program will be a unique offering, and there are no agencies assessing or accrediting this area of academic interest. The only program of similar intent is the CIFE Program at Stanford University ([cife.stanford.edu](http://cife.stanford.edu)). Stanford lacks the intents and purposes associated with an Architectural curriculum, thus leaving the offering proposed to be inaugurated at The Illinois Institute of Technology, currently, without peers or academic oversight.

# **Faculty and Staffing**

## **Master of Integrated Building Delivery (M-IBD)**

### **College of Architecture**

#### **College of Architecture; Illinois Institute of Technology**

Degree Proposal:

#### **Master of Integrated Building Delivery**

Providing Comprehensive Delivery Strategies to Promote a Quality Built Environment

#### **Faculty Credentials:**

#### **Current IIT Faculty Participating in the Program:**

Dr. David Pistrui, Ph.D

Ph.D in Business Administration (Entrepreneurship and Strategy); Universitat Autònoma de Barcelona

Ph.D in Sociology; University of Bucharest  
Master of Arts and Liberal Studies; DePaul University  
Bachelor of Business Administration; Western Michigan University  
Stuart School of Business  
Director of Entrepreneurship and Innovation  
Coleman Foundation Chair in Entrepreneurship  
Industry Associate Professor of Business  
*Professor, ARCH561 Innovation and Entrepreneurship in Architecture*

David Hovey, FAIA  
Owner; Optima Corporation  
Master of Architecture; Illinois Institute of Technology  
Associate Professor of Architecture  
College of Architecture  
*Director and Lecturer*

Tom Roszak  
Owner; Roszak ADC  
Bachelor of Architecture; Illinois Institute of Technology  
Adjunct Professor of Architecture  
College of Architecture  
*Professor, ARCH564 Comprehensive Opportunity Assessment and  
Entrepreneurship Development Project*

John Durbrow, AIA  
Bachelor of Architecture; Rice University  
Assistant Professor of Architecture  
College of Architecture  
*Professor, ARCH562 Planning Law and Land Development Policies*

Robert Babbin, AIA  
Bachelor of Architecture; Illinois Institute of Technology  
Adjunct Professor of Architecture  
College of Architecture  
*Professor, ARCH562 Planning Law and Land Development Policies*

Marc Teer, AIA  
Architect; Gensler Corporation  
Master of Architecture; Clemson University  
Adjunct Assistant Professor of Architecture  
College of Architecture  
*Professor, ARCH560 Integrated Building Delivery Practice*

Robert Smietana  
CEO and Vice Chairman; HSA Commercial Real Estate  
Bachelor of Science in Architecture; University of Illinois Institute of  
Technology  
Adjunct Professor of Architecture  
College of Architecture  
*Professor, ARCH563 Real Estate Financial Fundamentals*

Arthur Weir  
Senior Project Manager; RISE Group  
Bachelor of Science in Civil Engineering; Purdue University  
Adjunct Professor of Architecture  
College of Architecture  
*Professor, ARCH565 Project Management and Construction Contract  
Administration*

John Lupinos  
Senior Project Manager; RISE Group  
Bachelor of Science in Architecture; University of Virginia  
Bachelor of Arts in Art History; University of Virginia  
Assistant Adjunct Professor of Architecture  
College of Architecture  
*Professor, ARCH565 Project Management and Construction Contract  
Administration*

**Proposed Faculty Participating in the Program:**

Jack Guthman, Esq.  
Partner; Shefsky and Froelich  
LLB; Yale Law School  
Bachelor of Arts; Northwestern University  
Adjunct Professor  
Kellogg School, Northwestern  
*ARCH562 Planning Law and Land Development Policies*

Bridget Lane  
Owner: Business Districts Inc.  
Master of Business Administration; Harvard University  
Bachelor of Urban Planning; University of Illinois U-C



*ARCH562 Planning Law and Land Development Policies*

Aaron Greven

Associate Principal, Director of Process and Delivery, Goettsch Partners

Bachelor of Science in Architecture; University of Illinois U-C

*ARCH560 Integrated Building Delivery Practice*

**Oversight**  
**Master of Integrated Building Delivery**  
**(M-IBD)**  
**College of Architecture**

**College of Architecture; Illinois Institute of Technology**

Degree Proposal:

**Master of Integrated Building Delivery**

Providing Comprehensive Delivery Strategies to Promote a Quality Built Environment

**Program Oversight and Advisors:**

As this program is intended to engage the professions and the practice to a high degree, it will be advisable to insure that the governance and oversight are highly founded in a level of expertise which might not be readily available at the university. The following individuals will review the curriculum, review the coursework relative to their areas of interest, and will advise on methods, directions, content, and linkages which might augment the development of the curriculum at large.

### **Integrated Building Delivery Program**

- Mr. Robert Babbin  
President; Babbin & Associates  
401 N Franklin St, Ste 5  
Chicago, IL 60610-4673  
312-644-7239 Tel  
312-644-7259 Fax
- David C. Hovey, FAIA  
President  
Optima, Inc.  
630 Vernon Avenue  
Glencoe, IL 60022  
847 835.8400 Tel  
847 835.1698 Fax

### **ARCH 560 Integrated Building Delivery**

- Mr. Mark Simonides  
Vice President / Operations Manager  
Turner Construction Company  
55 East Monroe Street  
Suite 3100  
Chicago, IL 60603  
312-327-2891 Tel  
312-578-8061 Fax

### **ARCH 561 Entrepreneurship and Innovation in Architecture**

- Mr. Thomas Roszak  
President  
Roszak/ADC  
1415 Sherman Ave.  
Suite 101  
Evanston, IL 60201  
847-425-7555 Tel  
847-425-7540 Fax

### **ARCH 562 Planning Law and Land Development Policies**

- Mr. Jack Guthman  
Partner; Shesky & Froelich Ltd.  
111 East Wacker Street  
Suite 2800  
Chicago, IL 60601  
312-527-4000 Tel  
312-527-4011 Fax
- Ms. Bridget Lane  
Director  
Business Districts Inc.

9040 Forestview Road  
Evanston, IL 60204  
847-971-8635 Tel  
847-657-0366 Fax

**ARCH 563 Real Estate Financial Fundamentals**

- Mr. Richard Stein  
Senior Managing Director  
Mesirow Stein Real Estate  
350 North Clark Street  
Chicago, IL 60654  
312.595.6000 Tel
- Mr. Robert Smietana  
CEO and Vice Chairman  
HSA Commercial Real Estate  
223 South Wacker Drive Suite 350  
Chicago, IL 60606  
312-683-7225 Tel  
312-458-4325 Fax

**ARCH 564 Comprehensive Opportunity Assessment and Entrepreneurship Development Project/Practicum**

- Ms. Bernita Gabriel Johnson  
New communities Program Director  
Quad Communities Development Corporation  
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Chicago, IL 60653  
773-268-7232 Tel  
773-536-7296 Fax

**ARCH 565 Project Management and Construction Contract Administration**

- Mr. David Crowell  
The Rise Group  
120 South LaSalle Street Suite 1350  
Chicago, IL 60603  
312-917-1000 Tel  
312-917-1572 Fax

**ARCH 566 Project Sector Studies / Case Studies**

- Eugene J. Porto AIA  
Great Lakes Principals  
221 W. Illinois St.  
Wheaton, IL 60187  
630.221.7000 Tel  
630.221.7009 Fax