Master of Architecture/Master of Construction Management

Joint Degree Program

#### M.Arch/MCM – JDP

**Prospective Student Information Deck** 

James McKelvey School of Engineering
The Henry Edwin Sever Institute
Graduate Studies in Construction Management Program



## Why might an M.Arch Student be interested in adding the MCM degree?



#### Who are Construction Managers today?

Construction managers plan, coordinate, budget, and supervise construction projects from start to finish.

## CMs are not exclusively employed by construction firms, Today, they are employed by:

- CM/GC's
- Architects
- Engineers
- Owners
- Prime Contractors
- Sub-Contractors

Most MCM/M.Arch Alumni work in Architecture, Construction, or for Owners



#### The Masterbuilder

- The word "Architect" in fact comes from Greek Arkhi Master and Tekton – Builder.
- Architect = Master Builder
  - Throughout history has been so up until the mid-19th century.



#### Reestablishing the Masterbuilder

Today, the success of the built environment depends on integrating diverse perspectives into a comprehensive solution.

M.Arch + MCM Students are in *formation* to become the next **Masterbuilders** – by *integrating*:

- art/design,
- social factors, and
- construction management

Professionals with the MCM and M.Arch degrees are best qualified to become the next Masterbuilders.



#### **Masterbuilders**



"For me the results of the joint degree were very meaningful. For my first jobs after graduation I was accelerated with both salary and responsibility. In addition, it opened the door to my career at SOM when I was brought in as an Assistant Project Manager. I am now a Managing Partner with many firm wide responsibilities including Project Management."

#### Jonathan Stein, M.Arch/MCM '93

Managing Partner of Skidmore Owings & Merrill (SOM), Retired – Chicago



#### Why Pursue Graduate Studies in CM

"Indeed, graduates of traditional programs generally do not enter the workplace with the right skill sets to succeed as CMs in the impending new environment."

"Construction Managers will need heightened communications and leadership skills more acutely than they will need engineering expertise and other technical know-how."





#### Why Pursue Graduate Studies in CM

"Industry must partner with Academia and employ a different approach . . . " – FutureFocus 2012+

The Graduate Studies in Construction Management (GSCM) program at Washington University *is the different approach*.

an Innovative Program – BY DESIGN

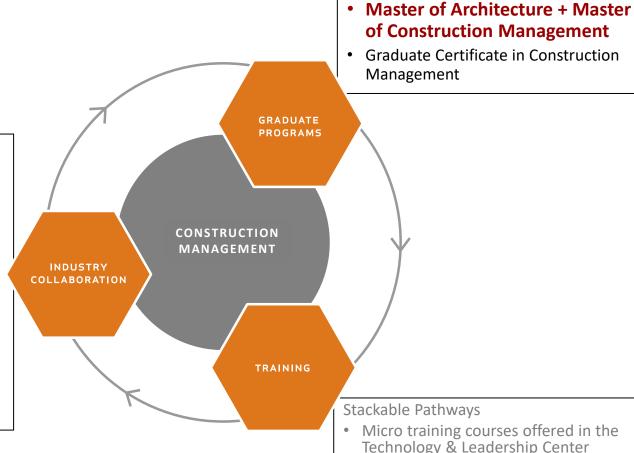


Master of Construction Management

#### an Innovative Program – BY DESIGN

**Integrated Learning Paradigm** 

- Working Professional Students
- Construction Industry Advisory Council
- Curriculum Committee
- Networking
- Internships
- Integrations
  - Coursework and Applied Research Studies & Capstones
- Alumni





#### GSCM an Innovative Program – BY DESIGN

- Uses Cross-disciplinary Courses
  - ◆ Cross-disciplinary: viewing one discipline from the perspective of another – A/E/C/O – it is necessary for collaboration.
  - Cross-disciplinary is a foundation for Interdisciplinary Teaming
    - Interdisciplinary: integrating knowledge and methods from different disciplines, using a real synthesis of approaches.
      - Collaboration is insufficient to achieve successful Integrated Teams – it's not good enough.
        - Collaboration does not require integration . . .
           Integration requires collaboration as a precondition.

#### Graduate Studies in Construction Management







Avik Guha Thanks Steve!!! My time in the MCM program has been so valuable in this and other large projects I'm on right now



#### GSCM an Innovative Program – BY DESIGN

#### Skills required of an Integrator

- ◆ Interdisciplinary fluency™
  - Language and . . .
  - Thought process making the mental shift
    - a real synthesis of approaches
- Critical thinking analysis and decision making
- Adaptability managing uncertainty and change
- Lean concepts, methodologies, and processes
- Communications interpersonal, nonverbal, written, and oral
- Leadership principles and applications



#### MCM/M.Arch Joint Degree Program (JDP) Structure

#### **JDP Students:**

- Work toward two separate degrees simultaneously.
  - M.Arch from Sam Fox School
  - MCM from McKelvey Engineering School

CM courses are integrated into the student's M.Arch degree

program.

♦ M.Arch 2

→ M.Arch 3

Students complete the requirements for the MCM degree in less time — and cost, than it would take to earn the degree separately from the M.Arch.





- 4 18 units count toward both the M.Arch and MCM degree requirements:
  - School of Architecture accepts 9 credit units earned in McKelvey toward the M.Arch degree.
  - McKelvey accepts 9 credit units earned in Architecture toward the MCM degree.



For M.Arch + MCM joint degree students, the 30 total units in the Construction Management program are made up of:

#### **Shared Courses**

A. 9 units of Construction Management (T64) courses count toward both degrees:

T64-573 Fundamentals in Construction Management - 3 units
T64-574C Construction Project Planning & Scheduling - 3 units

**T64-523A** Construction Cost Estimating - 3 units





#### **Shared Courses**

B. 9 units of Architecture (A46) courses count toward both degrees. Approved courses include:

A46 ARCH 435F	Precast Concrete Enclosures
A46 ARCH 436B	BIM in Practice
A46 ARCH 436D	Advanced BIM in Practice
A46 ARCH 438	Environmental Systems I
A46 ARCH 439	Environmental Systems II
A46 ARCH 445	Building Systems
A46 ARCH 447A	Structures I
A46 ARCH 448A	Structures II
A46 ARCH 457G	Creating a Resilient City: Gateway South, St. Louis
A46 ARCH 462N	Constructing Ideas
A46 ARCH 462P	The Competition of Solar Decathlon Building Challenge
A46 ARCH 462S	Solar Decathlon Design Challenge
A46 ARCH 472	Sustainable Development
A46 ARCH 530H	Special Topics in Professional Practice
A46 ARCH 538A	Technology Transfer
A46 ARCH 538C	Advanced Building Systems
A46 ARCH 573B	Alternative Modes of Professional Practice
A46 ARCH 574B	Principles of the Virtual Design and Construction (VDC) Process
A46 ARCH 646	Professional Practice I
A46 ARCH 648F	Project Design Realization: From Concept to Construction

Other courses may be used with the GSCM Program Director's approval.



#### And finally . . . The 'Plus Twelve'

C. 12 units of CM/PM courses <u>in addition to</u> the requirements for your M.Arch degree:

#### Courses

T64-572 Legal Aspects of Construction – 3 units

T55-587 Communication Excellence for Influential

**Leadership – 3 units** 

TXX-XXX CM elective coursework – 3 units

#### **Capstone Project**

Option 1

T64-581A MCM/M.Arch Capstone Project – Phase 1 (1 unit) and

T64-581B MCM/M.Arch Capstone Project – Phase 2 (2 units)

Option 2

T64-599 Applied Research Study – Summer only.



#### The Capstone Project – Option 1

T64-581A MCM/M.Arch Capstone Project – Phase 1 (1 unit) *and* T64-581B MCM/M.Arch Capstone Project – Phase 2 (2 units)

The Capstone Project Courses allow students to integrate both disciplines of study – Architecture and Construction Management by applying constructability principles to their M.Arch degree project (A46 616) or another comprehensive studio.

Constructability principles may include analysis of the construction methods and procedures, project cost, time, value, quality, and safety.

The capstone project is the opportunity to critique your architectural work, as a constructor/construction manager, by addressing the constraints of an authentic project. Your objective is to improve the constructability of your design.



### The Capstone Project – Option 2 T64-599 Applied Research Study – Summer only.

The Applied Research Study Course enables the integration of an internship with the Architectural Experience Program® (AXP) for Construction & Evaluation.

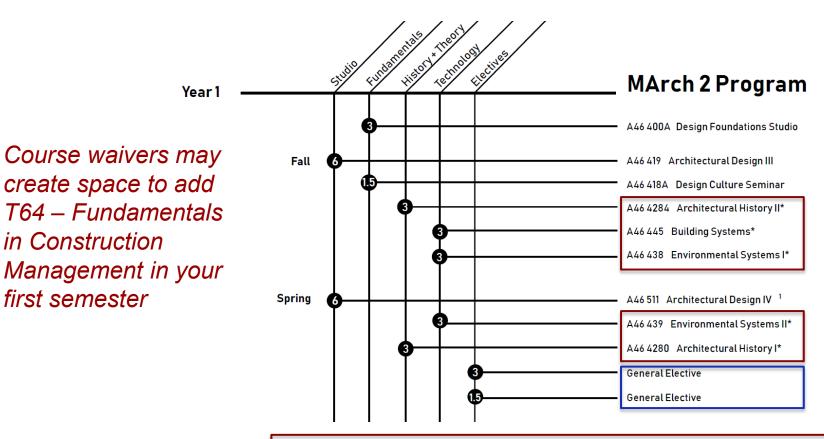
To earn a license and become an architect, you'll need to document real-world experience through the Architectural Experience Program® (AXP®). Developed by NCARB and required by most U.S. licensing boards, the AXP provides a framework to guide you through earning and reporting your professional experience.

Construction & Evaluation focuses on the construction administration and post-construction phases of a project. This includes being out on the job site; meeting with contractors, clients, and building officials; and punch lists.



#### The M.Arch 2 program (GA0008)

- 4-semester, 2-year course of study totaling 75 credits
  - MCM adds 12 for a total of <u>87</u> credits



<sup>\*</sup> may be waived: waived courses (more than 2) must be fulfilled by general elective



#### **Architecture Course Waivers**

Students admitted to the M.Arch 2 and M.Arch 3 programs have the opportunity to waive the following courses:

- Building Systems (A46 445)
- Structures I (A46 447A)
- Structures II (A46 448A)
- Architectural History I (A46 4280)
- Architectural History II (A46 4284)
- Environmental Systems I (A46 438)
- Environmental Systems II (A46 439)

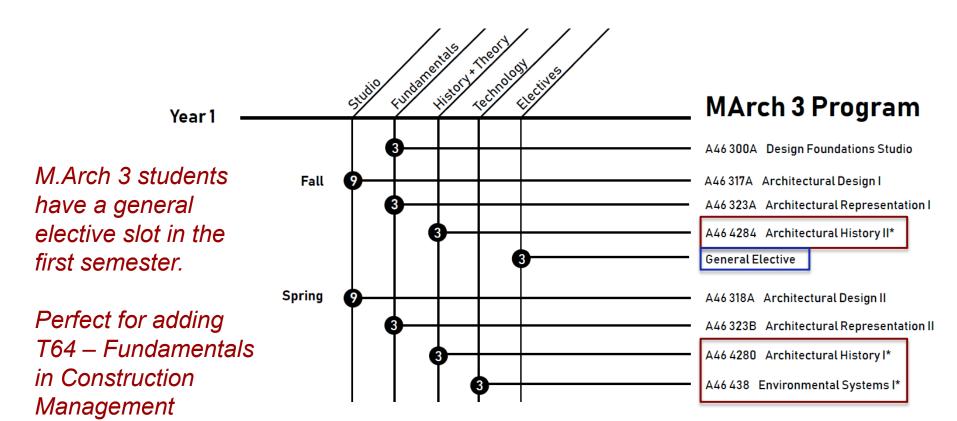
Six waived credits count toward the degree, and all others must be replaced with general elective credits.

Please note that admitted **MArch2** students must waive at least one of these courses or they must take both Structures I and Structures II during the first summer of their program.



#### The M.Arch 3 program (GA0001)

- 6-semester, 3-year course of study totaling 105 credits
  - MCM adds 12 for a total of <u>117</u> credits



<sup>\*</sup> may be waived: waived courses (more than 2) must be fulfilled by general elective

## \* \* \*

#### MCM/M.Arch DDP



"Your curriculum brings a new and compelling perspective to architecture students who think architecture is just fancy design. Bravo!"

Janet Baum, AIA Commenting on the MCM/M. Arch Curriculum

Instructor, Executive and Continuing Professional Education – Harvard - T. H. Chan School of Public Health

Former Washington University Graduate School of Architecture, Senior Lecturer

https://www.hsph.harvard.edu/ecpe/faculty/janet-s-baum/



#### **Frequently Asked Questions**



### FAQ – "How long will it take to complete my graduate studies at WashU???"

#### Based on your program and plans, we plan a course of study for you.

Henry Edwin Sever Institute  Ol of Engineering & appuled science at Washington University	Graduate Studies in Construction Management MCM/M.Arch Joint Degree Program
Initial Assessme	nt of Student's Program
Student's Name:	Date:
1. Which Master of Architecture p	rogram are you admitted to?
MArch 3: 6 semesters/3 years MArch 2: 4 semesters/2 years Other:	
Are you pursuing graduate stud degrees? Check all that apply.	dies in addition to the M.Arch and MCM
MUD MLA MBA Graduate Certificate in: Other	
Students may have had specific M.Arch program. Please identification.	c course requirements waived from their fy all your waived courses.
4. Do you plan on Studying Abroa No Yes Is yes, when (semester and year)	d?

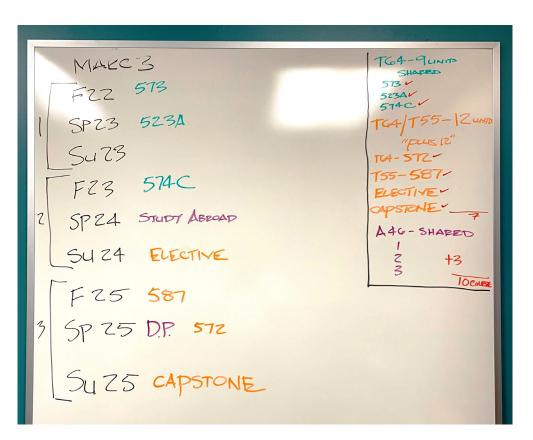
Are you a	vailable to take courses during the summer?
No	Yes
Is yes, wh	en (year):
When do	you expect to complete all of your graduate studies?
	No Is yes, wh

Answering these questions allows us to understand your plans and expectations.



### FAQ – "How long will it take to complete my graduate studies at WUStL???"

Based on your program and plans, we plan a course of study for you.



Based on your Initial
Assessment, we work
together to develop an initial
plan for you to earn both
degrees.



#### FAQ – "How much will it cost???"

#### 2024-2025 Tuition Structure for Master of Architecture/Master of Construction Management Joint Degree Program

Three Master of Construction Management (MCM) courses are accepted as electives in the Master of Architecture program. These three courses, listed below, are charged as normal Architecture courses and scholarship funds will cover them.

<ul> <li>T64-573</li> </ul>	Fundamentals in Construction Management	3 units
<ul> <li>T64-574C</li> </ul>	Construction Project Planning and Scheduling	3 units
<ul> <li>T64-523A</li> </ul>	Construction Cost Estimating	3 units

All other MCM courses are charged at the Engineering rate, in addition to the Architecture tuition. Scholarship funds from Architecture are adjusted to reflect the total enrolled units in Architecture courses. Architecture scholarships are awarded based on the assumption that the student will be enrolled in 12 Architecture units per semester. If you take fewer than 12 Architecture units, your scholarship will be reduced according to the number of Architecture units enrolled.

#### **Examples:**

A. If you enroll in 9 Architecture units and 3 Engineering units, you are charged at the Architecture per unit rate for 9 units and the Engineering rate for 3 units. Your scholarship will be reduced for that semester.

Registration	Units	Tuition rate per unit *	Tuition charge	Scholarship based on enrollment in 12 Architecture units	t in Scholarship after Tuition de	
Architecture	9	\$2,459.00	\$22,131.00	-\$10,000.00	-\$7,500.00	\$14,631.00
Engineering	3	\$2,284.00	\$6,852.00	\$0.00	\$0.00	\$6,852.00
					Total Tuition Due:	\$21,483.00

B. If you enroll in 12 to 15 Architecture units and 3 Engineering units, you are charged the Architecture flat tuition rate and an additional amount for the Engineering course. You are eligible to receive your full scholarship for that semester.

Registration	Units	Tuition rate per unit *	Tuition charge	Scholarship based on enrollment in 12 Architecture units	Scholarship after adjustment	Tuition due
Architecture	12	flat rate	\$29,513.00	-\$10,000.00	-\$10,000.00	\$19,513.00
Engineering	3	\$2,284.00	\$6,852.00	\$0.00	\$0.00	\$6,852.00
					Total Tuition Due:	\$26,365.00

C. If you enroll in 12 to 15 Architecture units, you are charged the Architecture flat tuition rate and will be eligible for your full scholarship.

Registration	Units	Tuition rate per unit *	Tuition charge			Tuition due
Architecture	12	flat rate	\$29,513.00	-\$10,000.00	-\$10,000.00	\$19,513.00
Engineering	0	\$2,284.00	\$0.00	\$0.00	\$0.00	\$0.00
					<b>Total Tuition Due:</b>	\$19,513.00

D. If you enroll in 9 or more Engineering units, you are charged the Engineering flat tuition rate and are not eligible to receive any Architecture scholarship.

Registration	Units	Tuition rate per unit *	Tuition charge	Scholarship based on enrollment in 12 Architecture units	Scholarship after adjustment	Tuition due
Architecture	0	\$2,459.00	\$0.00	-\$10,000.00	\$0.00	\$0.00
Engineering	9	flat rate	\$32,250.00	\$0.00	\$0.00	\$32,250.00
					Total Tuition Due:	\$32,250.00



#### FAQ – "How much will it cost???"

When integrating the M.Arch and MCM programs we strive to develop a plan to minimize the financial burden.

The 18 shared units are covered under the student's Architecture Scholarship.

**Graduate Studies in Construction Management** 



#### MCM/M.Arch JDP Structure

- 4 18 units count toward both the M.Arch and MCM degree requirements:
  - School of Architecture accepts 9 credit units earned in McKelvey toward the M.Arch degree.
  - McKelvey accepts 9 credit units earned in Architecture toward the MCM degree.



#### FAQ – "How much will it cost???"

When integrating the M.Arch and MCM programs we strive to develop a plan to minimize the financial burden.

Students are responsible for the "Plus 12" units. They are charged when taken at the part-time McKelvey rate.

Graduate Studies in Construction Management



#### MCM/M.Arch JDP Structure

And finally . . . The 'Plus Twelve'

C. 12 units of CM/PM courses <u>in addition to</u> the requirements for your M.Arch degree

T64-572	Legal Aspects of Construction - 3 units
T55-587	Communication Excellence for Influential Leadership - 3 units
T64-581A T64-581B	MCM/M.Arch Capstone Project – Phase 1 (1 unit) MCM/M.Arch Capstone Project – Phase 2 (2 units

ND 3 units of CM elective course work



#### FAQ - "When are the CM courses offered?"

### CM courses meet once a week in the evening – 6 to 9 PM and are offered per the following schedule.

#### **CM Course Offerings**

#### MCM/M.Arch JDP

Term		Course	Shared	Plus 12	Capstone
Fall	T64 CNST 573	Fundamentals in Construction Management	X		
	T64 CNST 574C	Construction Project Planning and Scheduling	X		
	T55 ETEM 587	Communication Excellence for Influential Leadership		X	
Spring	T64 CNST 523A	Construction Cost Estimating	X		
	T64 CNST 572	Legal Aspects of Construction		X	
	T64 CNST 573	Fundamentals in Construction Management	X		
	T55 ETEM 587	Communication Excellence for Influential Leadership		X	
	T64 CNST 580B	Digital Construction Technology (elective)		X	
Summer	T55 ETEM 587	Communication Excellence for Influential Leadership		X	
	T64 CNST 550D	Heavy Civil Construction Management (elective)		X	
F/SP/SU	T64 CNST 579	Advanced Construction Management (elective)		X	
Capstones	T64 CNST 581A	MCM - M.ARCH Capstone Project Phase 1			X
	T64 CNST 581B	MCM - M.ARCH Capstone Project Phase 2			X
	T64 CNST 599	Applied Research Study			X

T64 581A and 581B will be offered in the Fall, Spring, and Summer to accommodate student needs. T64-599 - is offered in the summer in conjunction with an internship.

Beginning SP 2025



## FAQ – "I'm Interested in the Joint Degree Program – But I'm not sure if it's for me. Is there anything I can do to see if it's *right* for me???"

#### Come and See . . .

T64-573 Fundamentals in Construction Management is a "Free" Course

#### Meaning:

- It can be taken prior to admission in the MCM program You're
   "Free" to take the course. Students are encouraged to take this
   course to come and see if the JDP is right for you.
- Counted as a "Free" M.Arch Elective should you decide not to pursue the MCM degree.



FAQ – "I'm Interested in the Joint Degree Program – But I'm not sure if it's for me. Is there anything I can do to see if it's *right* for me???"

#### Come and See . . .

T64-573 Fundamentals in Construction Management will be on Tuesday evenings, 6:00 to 9:00 PM, this fall semester.



"In my gap year, I worked for a year at a design-build firm and saw the value of construction management as a critical component in architecture.

The first couple of weeks of CNST 573, gave me an overview of the various construction management components and their effects on the on the design-build process.

573 helped me decide to fulfill a joint degree, by laying out the foundations for an understanding of the joining of design and construction."



#### Kinga Pabjan

MCM/M.Arch - Class of '19

Architectural Designer, Wannemacher Jensen Architects, Inc.
Wannemacher Jensen Architects is a regional leader in municipal, corporate, and recreation architecture.





"My choice for graduate school was between Columbia University in New York and Washington University . . .

I chose Washington University because of the MCM/M.Arch Joint Degree Program and it's unique opportunities to pursue both careers . . .

I now have experiences in both Construction Management and Architecture which differentiates me in the workplace."

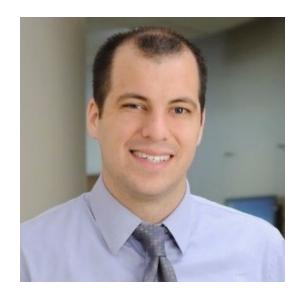
#### Haley (O'Brien) Phillips

MCM/M.Arch - Class of '13

Vice President, Heitman

Heitman LLC is a global real estate investment management firm with approximately \$51 billion in assets under management.





"The ability to pursue a dual masters is what brought me to St. Louis is the first place and it has been the keystone to the job offers I have received in pursuit of a career."

"Integrating architectural exploration into the construction field is a great selling point. I would encourage dual master's students to try their hand at construction for internship opportunities. They will be amazed how well-received they are for being different."

#### **Ryan Spataro**

MCM/M .Arch – Class of '11
Director, Operations / Co-Owner
Northcenter Construction, LLC - Chicago
Ryan is a registered and licensed architect and real estate broker in the State of Illinois.





#### **Prof. Steve W. Bannes**

Program Director, GSCM

I've directed this program for 20 years, advising over 500 graduate students and many more prospective students. I know that selecting the right school and program is a significant decision. I know I further complicate things by suggesting that you may want to consider adding the MCM to your M.Arch program.

I often say that it's a unique process for every student, and it takes time. As you consider the opportunity, you'll have questions that, when answered, usually raise more questions. The process is dialogical. It happens in conversation.

As the Program Director, I am here to support you throughout your discernment process. I do this by providing you with information, answering your questions, and offering honest feedback to help you make informed, value-based decisions.

Please don't hesitate to contact me with questions or concerns or if you'd like to discuss the MCM program further. I can be reached via email at <a href="mailto:sbannes@wustl.edu">sbannes@wustl.edu</a>. Alternatively, if you would like to schedule a conversation on Zoom, please use the Calendly link. It is found on the <a href="M.Arch + MCM Website">M.Arch + MCM Website</a>.

Thanks again for your interest. I look forward to an ongoing conversation.

Cheers,

~Steve

## Learn more about earning your Master's in Construction Management.

# Register for the upcoming MCM information session: Wed, April 9 at noon, CST

