

Course Registration - Follow the Link...

The course fee is \$1,195 per person (US funds. The course fee includes lunches, coffees, soft drinks, dinner, etc. (The course fee does not include travel, accommodation or dinners not at the summer camp clubhouse).

In order to register please follow the registration instructions in the link...carefully. Register early – and recall that this event is by invitation only so please do not pass on the link. We will close the registration once the event is at capacity.

Hotel Information - Follow the Registration Link...

The course is being held at the Westford Regency Inn & Conference Center, 219 Littleton Road, Westford, MA, 01886. The hotel is located at Exit 32 off I-495, approximately 10 miles south of Lowell, MA. Links to the room blocks at the Westford Regency Inn & Conference Center will be sent to you with your registration receipt. Please reserve your rooms in the room blocks under the name of the registrant. You will also receive additional information about travel, other hotels, and the after party with your registration receipt.

The hotels have run out of rooms regularly during this event. So register early. If you get stuck and do not have a room reserved, and the hotels are full, contact us and we will try to help you - but be prepared to be abused a little because you did not follow instructions and register early.



Summer Camp XXV

Twenty-Fifth Westford Symposium on Building Science

July 31, 2023 to August 2, 2023

I would like to invite you to the twenty-fifth Westford Symposium on Building Science. In continuing with past tradition, “building science summer camp” features intensive discussions on building science in both a formal and informal setting.

Westford XXV – features numerous presenters/facilitators. Also in keeping with tradition the lead presenter/facilitator for each of the subject areas is one of the foremost practitioners in the subject area.

Course Dates

Monday, July 31 through Wednesday, August 2, 2023.

Course Outline

Presentations begin each day at 8:30 am
Lunch will be provided each day between 12 noon and 1:00 pm
Presentations will end Monday and Tuesday at around 4:00 pm
Symposium will close Wednesday at 2:30 pm

Monday AM Session

8:30 am to 10:00 am

Marc Rosenbaum

“Monitoring - Using Data to Solve Problems”

Marc Rosenbaum, P.E., received a BS and MS from the Massachusetts Institute of Technology. He is an engineer who has pushed the frontiers of high performance buildings. He is the Founder and Principal of Energysmiths and built his first superinsulated house in 1978. To say he is a legend is an understatement. His presentation points out that much of what we know about how buildings perform comes from measuring and monitoring....and the results are not always obvious.

----- **MORNING BREAK 10:00 AM TO 10:30 AM** -----

10:30 am to 12:00 noon

Andy Padian

“Technical Fixes - Another Government Program”

Andy Padian is a recognized expert in buildings and building science despite receiving a BA from Syracuse University in Energy and Environmental Policy. He joins a list of notable Syracuse alumni including President Joe Biden and Jim Brown who was the greatest lacrosse player of all time. Andy is an independent consultant, founder and President of PadianNYC Consulting. His presentation deals with how “the next piece of technology” that is intended to solve building problems often results in a cascade of problems not fully known at the time of the technology introduction. The history lesson provided will note how many of “these great ideas” were received, later fixed and the cautionary lessons learned.

----- **LUNCH 12:00 NOON TO 1:00 PM** -----

Monday PM Session

1:00 pm to 1:30 pm

Chris Van Rite

“Airflow Research Flex Duct vs Sheet Metal”

Chris Van Rite is the Executive Director of M&M Manufacturing Company. Research shows that flex ducts are just fine when properly installed...the problem is they are hardly ever installed properly...the biggest mistake is using too much material...can't resist the coming pun...."yes, there can be too much of a good thing."

1:30 pm to 2:30 pm

Peter Baker

“Deep Foundations - It's not how deep you go, it's how you go deep.”

Peter Baker, P.Eng., is the President of Building Science Corporation. The Romans taught us about how to deal with foundations above the water table over 2,000 years ago. We are still figuring things out for foundations below the water table. Peter has been dealing with these things since before Wayne Gretzky was sent to the United States...which seems like it was about 2,000 years ago.

----- **AFTERNOON BREAK 2:30 PM TO 3:00 PM** -----

3:00 pm to 4:00 pm

William Bahnfleth

“ASHRAE's New Standard 241 *Control of Infectious Aerosols*”

Bill is back by popular demand. William Bahnfleth is a Professor of Architectural Engineering, The Pennsylvania State University, is a Past President of ASHRAE and chaired the ASHRAE Epidemic Task Force. He now chairs both the ASHRAE Environmental Health Committee and the committee developing ASHRAE's first standard for the control of infectious aerosols. Bill will give an overview of the standard and will also make a few remarks on the social/political context in which it was developed. To use a pun that I can't resist..."it is a breath of fresh air from a distinguished group...."

Tuesday AM Session

8:30 am to 10:00 am

Jim Larsen

“Windows - Seeing things clearly - Multi Variant Energy Analysis”

16 years ago Jim Larsen taught us the basics of window and glass performance. After 40 years in the glass business – you might have heard about his company... Cardinal Glass Industries... he will present “the rest of the story”....”how windows actually affect building performance”. Jim will present the results of a huge research project with Oak Ridge National Laboratory. It only took 500,000 computer runs and judgement from a few legends to refine our understanding. I view this body of work as “unprecedented” and I mean that in a good way. Jim will introduce us to “unobtainium” and windows 2100.

----- **MORNING BREAK 10:00 AM TO 10:30 AM** -----

10:30 am to 12:00 noon

Matt Dupuis

“Roofs and Pressures”

Matt Dupuis received his B.S., M.S. and Ph.D. from the University of Wisconsin and is a licensed PE in multiple states. He has worked all over the world and is the “go to” person when things are not going “well”. Low slope roofing is a cornerstone of building science. However, when things go hygrothermally wrong on a roof, things fail in spectacular fashion. Matt will cover some of the most expensive failures currently plaguing the roofing side and ways to avoid them.

----- **LUNCH 12:00 NOON TO 1:00 PM** -----

Tuesday PM Session

1:00 pm to 2:30 pm

Kohta Ueno

“Multifamily Buildings and Summertime Humidity”

Kohta Ueno is a Principal of Building Science Corporation and has an undergraduate degree in Material Science from the Massachusetts Institute of Technology and a Masters of Applied Science from the University of Waterloo. Over the past few years issues, including persistent summertime humidity, comfort complaints, sweating ductwork, and mold are increasing in recently constructed multifamily units. Problems are often due to a “perfect storm” of factors: from air conditioning sizing vs. cooling load, to poorly configured systems, to outside ventilation system issues to catastrophic air leaks.

----- **AFTERNOON BREAK 2:30 PM TO 3:00 PM** -----

3:00 pm to 4:00 pm

Joe Smallwood

“Florida Hurricane Damage - What Have We Learned”

Joe Smallwood founded BCB Homes of Naples, FL in 1993. He has an engineering degree from the University of Florida and runs one of the premier custom home builders in Florida. Naples has been in the crosshairs of Florida hurricanes for several decades. The most recent hurricane was Ian – the damage was so intense that the west coast of Florida was nicknamed “Beirut”. BCB has learned a thing or two.

Wednesday AM Session

8:30 am to 9:00 am

Andre Desjarlais

Michael Lubliner

“Building Science Advisor (BSA)”

Andre Desjarlais is the Program Manager for the Building Envelope and Materials Research Program at the Oak Ridge National Laboratory (ORNL) and has been involved in building envelope and materials research for 50 years....yes...a half century...Michael Lubliner is a Senior Energy Advisor at ORNL and has been involved in building envelope research for a much shorter period of time...40 years. BSA is not a British motorcycle...it is a hands on simple...publicly available hygrothermal design tool. Andre and Michael will talk about how BSA can help us avoid “Wasted Away in Moisture Damage Ville”.

9:00 am to 10:00 am

Michael Patrick

Sydney Katz

“Historic Retrofit of a 200 Year Old Mass Building”

Michael Patrick is an architect with BarnesVanze Architects in Washington, DC. Michael attended the College of William and Mary (B.A. Linguistics) and later studied architecture at the University of Texas, Arlington (M. Arch). Sydney Katz is an architect with BarnesVanze Architects. She received her Bachelor of Architecture from the University of Southern California. Yes, the building they will be talking about was constructed in 1806 the same year Lewis and Clark made it to the Pacific and Andrew Jackson killed an attorney (in a duel). No comment about the attorney but the Pacific thing was a big deal....and so is this historic retrofit.

----- **MORNING BREAK 10:00 AM TO 10:30 AM** -----

10:30 am to 11:00 am

Stephanie Taylor

"Building4Health"

11:00 am to 12:00 noon

Betsy Pettit

“Net Zero - New Construction and Retrofit”

Betsy Pettit, is a Fellow of the American Institute of Architects and received her undergraduate degree in Architecture from Miami University, Oxford, Ohio and her master’s degree in Architecture from North Carolina State University, Raleigh, NC. She is a pioneer in net zero construction and will share her experiences and insights in net zero new construction projects and retrofit projects. Things are both easy and obvious and then they are not.

----- **LUNCH 12:00 NOON TO 1:00 PM** -----

Closing Presentation:

1:00 pm to 2:30 pm

Katrin Klingenberg

“Passive House: The Past, the Present and the Future”

Katrin Klingenberg is an architect with “heavy building science leanings” who has driven adoption of the Phius Standard over the past 20 years. She built the first passive house in the United States in 2003 in Champaign-Urbana and has helped develop and adopt passive building methodology since. This presentation will explore the history and impact of passive building design theory, technology and standards and their impact on building design and speculate what will drive the design and construction of the built environment over the next few decades.