



Open to all, from working professionals to the general public, this seminar benefits architects, interior designers, indoor air quality consultants, home inspectors, home dwellers, and other building professionals.

The daily schedule includes lectures and group activities, with practical experience in building science principles, research assignments, demonstrations, and interactive discussions.



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Please direct all inquiries to:  
outreach@buildingbiology.net • (866) 960-0333  
Click [here](#) for more information on Building Biology

## **Cancellation Policy**

Seminar students who paid their tuition in full, and then cancel at least thirty (30) days before the first day of classes, will receive a tuition/tuition deposit refund in full (100%). Those who cancel less than thirty days out, but more than ten days out, and had paid their tuition in full, will receive a fifty percent refund; the amount they forfeited will be considered on deposit for one year, and may be applied toward any subsequent IBE event or online course. Those who cancel ten or fewer days out will not receive a refund, but their entire forfeited payment will be considered on deposit for one year.

If a student cancels out of a seminar after having received a digital and/or hard-copy of that seminar's manual, and elects to apply their tuition credit to a seminar *other* than the one for which they cancelled out, their tuition credit will be reduced by the value (\$375.00 USD) of the course manual for the seminar out of which they cancelled.

Regarding seminar room & board, our refund policy is dependent on the chosen venue's cancellation policy; if the venue should issue a refund, IBE will pass 100% of the venue's refund to the student. In like manner, should the venue refuse IBE a refund, in whole or in part, then said venue's policy becomes fully representative of IBE's policy.

## **Extended Policy Stipulation**

IBE does not endorse products, methods, practices, services and/or business opportunities (hereafter referred to as “offerings”) that are extraneous to IBE’s policies, practices, and/or curriculum, regardless of whether they are vended/sponsored by our alumni, students, or by outside third parties or organizations.

This policy extends to our seminars, our biennial conference, and all other live or interactive events. And while participants in our events are not restricted by IBE from apprising their fellow participants of any offerings, regardless of whether they are or may be or may not be in conflict and/or in competition with IBE, they may in no way solicit or otherwise “pitch” their fellow attendees during said event(s). Subsequent to said events, neither offerings nor follow-up appraisals of offerings may be made or attempted by any means - telephone, e-mail, or snail-mail - without the expressed *prior* consent of their intended recipient(s).

IBE reserves the right to deny/rescind enrollment, whether first-time or continuing, to students it deems to present the risk of being or becoming disruptive of our program presentations, and/or a distraction for our students from what they have come to us to learn and experience.

## **Discrimination: Zero Tolerance**

The International Institute for Building Biology & Ecology (IBE) does not and shall not discriminate on the basis of race, color, religion (creed), gender, age, gender expression, national origin (ancestry), disability, marital status, sexual orientation, or military status, in any of its activities or operations. These activities refer to any and all interactions involving our potential or current students and our alumni; these operations include, but are not limited to, hiring and firing of staff, recruiting/selecting of vendors, volunteers, and providers of services. We have been and remain committed to providing an inclusive and welcoming environment for all.

## Seminar Synopsis

**B**au-Biologie, or Building Biology®, is a specialized branch of **Building Science** with human health as the central focus. This 5-day seminar explores the interrelationships between human health, the built environment and planetary ecology. Attendees will learn about the interaction between air, moisture, toxins and humans within a built environment, and the uniquely holistic Building Biology approach to the built world. Students will learn to apply Building Biology criteria to evaluate these exposures within the built environment and how to reduce exposure and improve indoor environmental health through a better understanding of the science of Building Biology. Additionally, students will learn about how to inspect and consult for these indoor contaminants and their health impact upon occupants following Building Biology approaches. Finally, the students will explore healthier solutions that can be implemented in residential buildings to improve indoor environmental quality. The instructors are experienced Building Biology Environmental Consultants whose combined experience spans almost 3 decades.

Topics include:

- Introduction
- Building Biology® principals and philosophy
- The Human Body – pathways of concern
- Brief overview of Building Science
- Indoor Climate
- Biological, Chemical and Particulate exposures by air
- Biological, Chemical and Particulate exposures from the ground
- Biological, Chemical and Particulate exposure from water

Resources: On-line module *Indoor Climate*

Time requirement: 5 days (successful completion of a written exam is required for BBEC status)

Prerequisite online courses: IBE 204.2 *Indoor Climate*, IBE 206.6 *Ventilation*

## Seminar Objectives

Upon completion of this seminar, the students will be able to improve indoor environmental health by:

1. Understanding the factors of the environment that effect health
  - a. Indoor climate parameters (temperature, humidity, ventilation...)
  - b. Driving forces of air movement (pressure differentials, etc.)
  - c. Combustion gases and combustion by-products (propane, natural gas, carbon monoxide, PAH)
  - d. Outdoor factors (air, water, industry, neighborhood, traffic)
  - e. Conventional heating, air conditioning, ventilation, filtration
  - f. Dust and particulates (lead, asbestos, metals)
  - g. Soil gases (radon, methane...)
  - h. Fundamental interactions of moisture and the built environment (water intrusion and humidity issues)
  - i. Biological contaminants (mold, bacteria, viruses, dust mites, allergens...)
  - j. Volatile and semi-volatile organic compounds, formaldehyde, cleaners and pesticides
  - k. Evaluate materials, products, cleaners, pesticides to determine the least toxic alternatives
2. Understand how to quantify the health of indoor environments
  - a. IBE Principles, and Guidelines for sleeping areas
  - b. Be familiar with pertinent Acts, regulations, standards, and industry best practices
  - c. Understand the limitations of testing and quantifying conditions

## Seminar Syllabus: IBE 211

3. Gain practical experience at:
  - a. Improving observational skills
  - b. Instrument usage
  - c. Interpretation of various laboratory and other agency reports
  - d. Thinking about alternatives and common sense solutions to creating healthier spaces
  - e. **Compositing** an indoor environmental assessment report
4. Understand general issues pertinent to Building Biology Environmental Consultant (BBEC)
  - a. Safety and Personal Protective Equipment
  - b. Information resources for further education and further certification

## Seminar Syllabus: IBE 211

### **Day One, Monday, 7 May 2018**

- Student Introductions
- IBE Introduction
- Building Biology Principles and Guidelines for sleeping areas
- The Human Body
- Building Science Overview
- Indoor Climate

### **Day Two, Tuesday, 8 May 2018**

- Air
- Biological Contaminants
- Chemical Contaminants
- Particulate Contaminants

### **Day Three, Wednesday, 09 May 2018**

- Air con't
- Biological Contaminants
- Chemical Contaminants
- Particulate Contaminants

### **Day Four, Thursday, 10 May 2018**

- Soil
- Heavy Metals
- Asbestos
- Radon
- Soil Gases
- Field Trip: Carry out a Healthy House Inspection

### **Day Five, Friday, 11 May 2018**

- Water
- Treatment types
- Biological Contaminants
- Particulate Contaminants
- Filtration
- Inspections – Protocols, Standards, & Guidelines
- How to proceed with final project for BBEC certification
- Seminar exam for Professional Certification candidates (BBEC, EMRS, BBNC)

## Seminar Syllabus: IBE 211

### Meet the Instructors

#### IBE 211: Indoor Air & Water Quality Seminar



**Stephen Collette** is a Certified Building Biology Environmental Consultant, and Principal of Your Healthy House, based out of Lakefield, ON, Canada. Stephen is a retired straw bale builder, having worked on two dozen straw bale structures across Ontario and Quebec, from small cottages to 13,000 ft<sup>2</sup> structures and everything in between. Stephen has an engineering background and became passionate about healthy housing when his family became ill due to exposure to mold. Stephen carries out indoor environmental inspections on houses and other buildings to determine health impactors based on building science and environmental health concerns. Stephen is a LEED AP (Leadership in Energy and Environmental Design Accredited Professional) from Canada Green Building Council. Stephen has a Building Science Certificate from the University of Toronto and is a certified Building Science Specialist of Ontario. As a consultant Stephen helps people make healthier, more environmentally friendlier building choices. Stephen is a published author who writes and lectures across North America on healthy, natural and green buildings.

Please visit Stephen's website at [www.yourhealthyhouse.ca](http://www.yourhealthyhouse.ca) for more information.



**Alex Stadtner**, IBE Board Member (since 2016) is founder, president, and senior consultant of Healthy Building Science. His path toward environmental work began in college, where he earned a degree in Environmental Science & Environmental Policy. After college he worked for two years as a Sustainability Manager at Antioch College, before moving to New Hampshire to earn an MS in Resource Management & Administration at Antioch, New England. After graduate school, he worked with green building consulting pioneers at the Center for Maximum Potential Building Systems in Austin, and then a Portland-based company specializing in third-party building rating systems, especially LEED. Since then Alex has earned his BBEC, and six additional national certifications in environmental inspection, testing, and mitigation in his ongoing devotion to bridging the gap between environmental science and building science.

# Seminar Syllabus: IBE 211

## Venue

Immaculate Heart of Mary Retreat/Conference Center  
50 Mount Carmel Road, Santa Fe, NM 87505

**IBE arranges your lodging and your food via contracts with two separate vendors, and your contract is with IBE, not with its vendors. We must ask that any issues, concerns, or needs you may have regarding your room or your food be addressed to Erik Rosen, our Administrative Director, who will be on-site and available to serve you 24/7, rather than to the venue management or the caterer.**

We make every effort to ensure that the classroom, dining room, commons areas, and overnight guest rooms at this venue meet Building Biology Standards for a health-supporting environment, and this venue's management joins us in our efforts. The main building, Santa Maria Hall, has no WiFi service. The nearest cellphone tower is nearly a mile away. The few magnetic fields in Santa Maria Hall are very localized, fall off quickly, and do not exceed a level for concern. The secondary residential building, San Miguel Hall, *does* have a WiFi signal that emanates from the Archbishop's residence therein. We house only those students who are not sensitive to WiFi in San Miguel Hall. This WiFi signal of course is password protected, and not available for our guest's use.

Nonetheless, please note that no venue situated "on the grid" is entirely ideal. While we have served nearly one hundred IBE students at this venue over the past eighteen months, two of those students did find their guestroom experience incompatible with their environmental sensitivities, and were moved to off-campus accommodations for the remainder of the seminar.

**Overview:** Tuition and room & board must be paid in advance, please, to the International Institute for Building-Biology® & Ecology. Payment may be arranged online at IBE's website ([click here](#)), or by check, or by calling IBE's executive director (505-428-0901). To pay by check, please mail your payment to: IBE, P.O. Box 8520, Santa Fe, New Mexico 87504.

You are required to arrive the day before classes begin (Sunday, 05 February) and remain on site through your completion of the final exam, at or around 3:00 PM, Friday, 10 February. You may opt to arrive earlier and/or depart later, at an additional cost (\$116.00/night, USD). This is a lodging fee only, as meal service is not available for there extraneous days (the nearest restaurants are one or more miles away). Check-in begins at 3:00 PM on Sunday; check-out is 10:00 AM Friday, 10 February. To arrange early arrival, or an extended departure date, please contact our administrative director, Erik Rosen, not the venue: <[erosen@buildingbiology.net](mailto:erosen@buildingbiology.net)>. (the nearest restaurants are one or more miles away).

There will be a Meet & Greet Sunday evening, 05 February at 6:30 PM in the venue lobby. At this time, attendees arrange among themselves for an off-site meal or snack, all together or breaking into groups according to their individual dietary and culinary preferences. The nearest restaurant is one mile from the seminar venue. Downtown Santa Fe, with its broad selection of restaurants and cuisines, is situated two miles from the seminar venue.

**Arrival/departure:** Santa Fe is served by two airports: Albuquerque International Sunport and Santa Fe Regional Airport. Sandia Shuttle serves those arriving at Albuquerque International

## Seminar Syllabus: IBE 211

Sunport with hourly service (8:00 AM to midnight; [click here](#) for schedule) with drop off at the IHM Retreat Center's front door. From Santa Fe Regional Airport there is taxi service only to the IHM Retreat Center. Both airports are served by major national rental car companies, on-site.

**Rooms:** Each student will be afforded a private room with private bath. Those who might want to share a two-bed room will save \$24 each per room per night. Students wishing to share must alert IBE's executive director at least two weeks in advance, at [mconn@buildingbiology.net](mailto:mconn@buildingbiology.net). WiFi will be turned off in all guest rooms, as well as the classroom; the nearest cellphone tower stands nearly a mile away.

**NOTE:** The venue does not permit alcoholic beverages anywhere on their property, and all indoor areas are smoke-free. We ask that all students, in consideration of attendees who may suffer from allergies, to please refrain from using/wearing scented personal products.

**NOTE:** The building directly adjacent Santa Maria Hall, to the west, is the private residence of cloistered nuns, and the building directly east of Santa Maria Hall is the private residence of the Archbishop of the Santa Fe. We ask that you please consider all outdoor areas to be a quiet zone.

**Meals:** Vegan, vegetarian, and gluten-free available if request is submitted at least two weeks prior to the first day of classes. Seminar tuition includes daily lunch; breakfast and dinner are included in the Room & Board charge (\$785.00 USD) and will be served on site, except for one group dinner to be held at a Santa Fe restaurant (yet to be selected), where each attendee will be responsible for their own meal cost. All meals on-site to be catered by Piñon Catering of Santa Fe.

**Attire:** While Santa Fe is located at a somewhat southerly geographic latitude, it is situated 7,500 feet above sea level. Expect balmy but occasionally cool weather, with nighttime temperatures often dropping below 40°, Fahrenheit. Average daytime temperature: 65°. Please dress accordingly (layering recommended), and at your own comfort level (as casual as you please).

**Rental cars:** Students who drive to Santa Fe or opt to rent a car for the duration of their stay are asked to consider volunteering their driving services for transporting their fellow attendees to and from the field trip site (Wednesday afternoon, 08 February) and to/from the group's dinner in Santa Fe on Wednesday evening. if you expect to be volunteering this service, please contact IBE's executive director, Michael Conn, at: [mconn@buildingbiology.net](mailto:mconn@buildingbiology.net).