**CEPH Virtual Classroom training course 22nd-26th June 2020**

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| **DAY 1 - Basic concepts, Economics, Envelope and Thermal Bridges** | |
| 09:00 A1 Passive House Introduction (\* video) | Welcome, discussion of virtual workings, materials, logistics |
| 9:45 A5 Compact Design (\* video) | Discussion of video & A/V exercise |
| 10:15 Break |  |
| 10:45 A3 Economics background (\*) discussion of ‘the formula’ | Discussion of video |
| 11:15 A4 Economics (30m), exercises (30m) | Virtual |
| 12:15 Lunch |  |
| 13:00 B1 Envelope: construction types and U-values (\*), U-value exercises (20m) | Discussion of video, live U-value calculations |
| 13:35 B2 Envelope: Airtightness (\*) | Discussion of video |
| 14:00 B4 Airtightness testing (video of test prior to workshop) | Discussion of tests video plus a smoke test video and virtual presentation. |
| 14:30 Airtightness exercise and materials demo | Materials demo plus flow calculations |
| 15:00 Break |  |
| 15:15 B3 Thermal bridge free design (\*) | Discussion of video |
| 15:45 Building envelope junction detail exercise | Virtual with sketch submissions |
| 16:15 Guest speaker [TBC] - Airtightness and thermal bridges design/execution and or simulation (30 min lecture +15 questions) | Virtual |
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| **DAY 2- Fenestration and PHPP** | |
| 9:00 B5 Thermographic imaging & demonstration | Virtual + live videos |
| 9:30 B6 Windows principles | Virtual |
| 10:15 Break |  |
| 10:45 B7 Shading (\*) | Discussion of video + exercise |
| 11:30 A2 Passive House Planning Package (PHPP) introduction\* | Discussion of video |
| 12:00 Lunch |  |
| 12:30 PHPP case study (intro & pre-seminar Q&A) | Virtual |
| 14:30 PHPP case study (internal heat gains) | Virtual |
| 15:15 Break |  |
| 15:30 PHPP case study (glazing, shading, ground) | Virtual |
| 16:15 Guest speaker [TBC] - Using PHPP (30 min lecture + 15 questions) | Virtual |
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| **DAY 3 - HVAC Systems** | |
| 9:00 C1 Ventilation requirements (\*) | Discussion of video |
| 9:15 C2 Ventilation principles | Virtual |
| 10:15 Break |  |
| 10:30 C3 Ventilation component planning | Virtual |
| 11:45 C4 Acoustics | Virtual |
| 12:15 Lunch |  |
| 13:00 C5 Ventilation practical implementation | Virtual |
| 13:30 C6 Ventilation examples (\*) | Discussion of video |
| 13:45 C6 Ventilation exercises | Review of exercises + Virtual duct design session |
| 15:00 MVHR laboratory | Virtual tour |
| 15:15 Break |  |
| 15:30 C7 Heating fundamentals (\*) | Discussion of video |
| 16:10 C8 Heat generation (\*) | Discussion of video |
| 16:40 C9/10 Temperature variation and distribution losses (\*) | Discussion of video |
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| **DAY 4 - Site observation, PHPP closing session and revision** | |
| 9:00 B8 Site observations and exercises | Virtual |
| 10:15 Break |  |
| 10:30 PHPP Heating & distribution losses & services & PER | Virtual |
| 11:45 What-if studies via PHPP | Virtual |
| 12:15 Lunch |  |
| 13:00 A6 Revision of PH principles, envelope calculations | Virtual |
| 14:45 A7 Revision building services | Virtual |
| 15:15 Break |  |
| 15:30 A8 Revision economics | Virtual |
| 16:10 A9 Revision of numerical calculations | Virtual |
| 16:40 Guest speaker, former student about taking the exam (30 min) | Virtual |
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| **DAY 5 - Mock exam and PH examples** | |
| 9:00 Guest speaker [TBC] - Residential and commercial buildings | Virtual |
| 9:45 Guest speaker [TBC] - Certification process | Virtual |
| 10:30 Break |  |
| 10:45 Mock exam design question | Virtual |
| 11:45 Feedback/discussion of design exam | Virtual |
| 12:30 Lunch |  |
| 13:00 Mock exam multiple choice & maths questions | Virtual |
| 14:00 Feedback/discussion of mock exam, Q&A session | Virtual |
| 15:15 Break |  |
| 15:30 Discussion, handout of 2nd mock exam and wrap-up | Virtual |
| 16:30 Finish | Virtual |