

ICWCT 2018

The International Course on Wood Conservation Technology Report and Evaluation



Riksantikvaren er direktorat for kulturminneforvaltning og er faglig rådgiver for Miljøverndepartementet i utviklingen av den statlige kulturminnepolitikken. Riksantikvaren har også ansvar for at den statlige kulturminnepolitikken blir gjennomført og har i denne sammenheng et overordnet faglig ansvar for fylkeskommunenes og Sametingets arbeid med kulturminner, kulturmiljøer og landskap.





The 18th International Course on Wood Conservation Technology was held on-line 9th April – 11th May and in Norway 4th -29th June 2018.

The course is a collaboration between Riksantikvaren (the Norwegian Directorate for Cultural Heritage), ICCROM and NTNU (The Norwegian University of Science and Technology) who is also responsible for the academic accreditation. The course was financed by Riksantikvaren. 18 participants from 18 different countries completed the course.

We would like to thank all the contributors for their support, in particular NTNU who also contributed with a member of staff, Jon Ivar Nordsteien, Assistant Professor, Department of Architectural Design, History and Technology, who made a valuable contribution during the course period.

In total, approximately 233 hours of teaching were prepared. During the on-line part of the course, approx. 35 hours of teaching material was shared on *Blackboard*, a digital file-sharing platform administered and owned by NTNU. For the 26 days of the practical part of the course in Norway, a full program of tuition was prepared for 22 days with approximately 198 hours of tuition. The schedule was divided between lectures, practical exercises, workshops, field studies and museum visits. The course spent 3 days at MiA (Museer i Akershus) at Follo Museum in Drøbak working on practical techniques using traditional tools. The group also spent 3 busy days at the Furniture Workshop (Møbelverkstedet) with lectures and practical exercises on furniture and object-related conservation. Four days were spent on an excursion around central and western Norway. *En route* we visited relevant cultural heritage sites including Ringeby, Lom, Urnes and Borgund Stave Churches, the historic Kleppe farm and Maihaugen Museum in Lillehammer. The final exam was, for the first time, organised as a practical group project using the Folk Museum in Oslo as a venue and presented to a panel of experts. The exam is compulsory and gives 15 ECTS. All participants passed.

The course evaluation consisted of an on-line questionnaire at the end of the course and an evaluation meeting on the last day of the course. The participants' evaluation and the organisers' experiences are discussed in the following report.

Anne Nyhamar and Sjur Mehlum
Riksantikvaren, Oslo, January 2019

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Introduction

The 18th International Course on Wood Conservation Technology, ICWCT, was organised in two main parts: On-line distance learning 9th April – 11th May, and in Norway 4th – 29th June 2018.

The course has been held in Norway on a biannual basis since 1984, as one of ICCROM's specialised training courses on heritage conservation. It provides the possibility for mid-career professionals within the area of conservation of wooden cultural heritage to update and specialise their skills. It also provides an international platform where networking and exchange of knowledge with other professionals from all over the world can take place.

The on-line part of the course was conducted using *Blackboard*, NTNU's digital file-sharing platform. Here the participants could download files and submit their weekly assignments. The second part of the course took place in Oslo at the premises of Riksantikvaren - the Norwegian Directorate for Cultural Heritage - as a main base.

1. Course Objectives

The main objectives of the course are:

- To give the course participants the theoretical and practical knowledge essential for diagnosing causes of deterioration and for selecting the most appropriate methods of conservation and restoration of wood.
- To extend the knowledge of the participants beyond their own professions for a broader understanding of different aspects and approaches to wood conservation.
- To bring people of various professions from different countries and cultures together for a mutual learning experience, drawing on different experiences, practices and approaches to wood conservation and use of wooden materials.

2. Organisation

2.1. Organisers

- Riksantikvaren – overall course planning and administration.
- ICCROM - professional and practical contribution and support.
- NTNU – Assisting in the planning and as practical help during the course implementation. Administering payments of the lecturers and book-keeping (NTNU Videre). Administrator and owner of the on-line platform *Blackboard*.

2.2. Funding

- Riksantikvaren finances the course.
- ICCROM contributed with two travel scholarships as well as in kind with the attendance of a member of staff for a visit during the course.
- NTNU contributed with one member of staff full time during the entire course period in Oslo.

2.3. Academic accreditation

NTNU - The Norwegian University of Science and Technology.

2.4. Course Direction

Anne Nyhamar and Sjur Mehlum, both Senior Advisors at Riksantikvaren, were responsible for the overall course administration and planning together with Jon Nordsteien, NTNU who was also present during the course in Oslo.

Hilde Løveid Varvin, Head of Section, International Issues at Riksantikvaren, was kept updated and informed on matters of significance throughout the planning and implementation of the course.

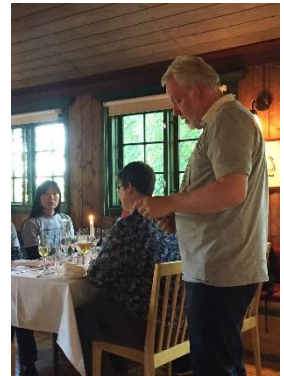
Joe King, Unit Director, and Gamini Wijesuriya, recently retired Project Manager at ICCROM, both assisted with advice and recommendations during the planning of the course. Gamini Wijesuriya retired from his position at ICCROM before the start of the course but attended on behalf of ICCROM and gave a lecture on the opening day of the course in Oslo. He was also responsible for the first week of on-line tutorial. Joe King visited the course for two days during the course in Oslo.

Eir Grytli, Professor of Architecture, Department of Architecture and Technology, NTNU was kept informed during the planning of the course and acted as part of the Evaluation Panel during the examination.

3. Course program

3.1. Inauguration

The course was inaugurated on Monday 4th June in the Riksantikvaren conference hall. The course organisers - Anne Nyhamar, Sjur Mehlum and Jon Nordsteien welcomed the participants to Oslo and Riksantikvaren. Head of the International Section, Hilde Løveid Varvin also welcomed the group. An introductory lecture was held by Gamini Wijesuriya (ICCROM), following up on the theory already studied on-line. Lunch was provided in the Riksantikvaren canteen before the group left by coach for the Norwegian Folk Museum at Bygdøy. Here the group had a general guided tour of the museum before gathering in “Folkestua” where Head of the Conservation Department at the Museum, Stian Myhren, welcomed the group followed by an introductory lecture by Terje Planke on the use and conservation of wood in Norway. There were welcome drinks and introductions before the Riksantikvaren Director General Jørn Holme also arrived, welcomed everyone and joined the group for dinner.



- *At the Norwegian Folk Museum on the first day of the course in Oslo 4th June*
- *Right: Director General of Riksantikvaren Jørn Holme welcoming the participants at the opening dinner*

3.2. Course curriculum

The course was for the first time divided into two main parts:

1. 5 weeks theoretical on-line distance learning, including weekly assignments. The platform used – *Blackboard* - is owned and administered by NTNU. An estimated 6 hours of study per week was considered a realistic amount of study for participants in full-time employment.
2. 4 weeks practical full-time training in Norway. This was conducted through lectures, workshop exercises, field studies and museum visits.

The curriculum included six distinct but interconnected units which were both on-line (on Blackboard) and off-line (in Oslo). The same lecturers were responsible for their subject in both parts, the participants meeting in person in Oslo the lectures they had already “met” on Blackboard.

1. **Introduction: Conservation Theory and Principles**
2. **Wood properties**
3. **Environment, climate and decay**
4. **Wooden structures**
Excursion
5. **Conservation of wooden objects**
6. **Building surface treatment and workshop**
Practical exam

Lecturers from 2016 who had scored well in the evaluation were asked to contribute again. Three lecturers were completely new to the course (See Chapter 6. Lecturers and Resource people). The lecturers were also asked to be responsible for their respective weeks on Blackboard, organising the on-line curriculum and preparing an assignment. For some, it was the first time they worked on-line, others had previous extensive experience. In addition to preparing the tutorials, they had to answer questions posted by the participants. This meant an obligation to log on to Blackboard at least every 24 hours.

Workshops and visits were arranged at the following institutions or sites (not including the excursion):

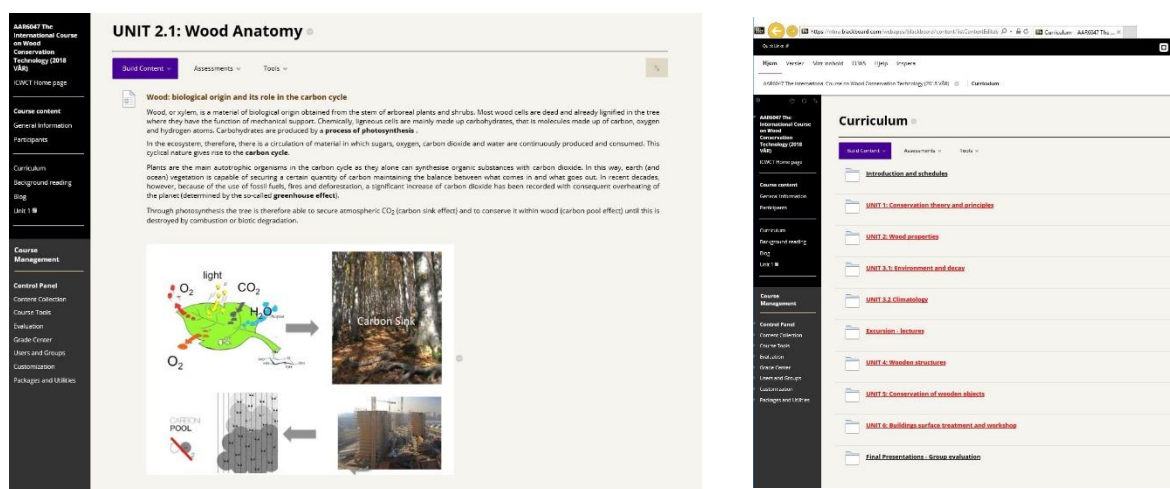
- **Norsk Folkemuseum, Oslo**
Guided tour and dinner on the first day as well as the setting for the final, practical exam – using the museum buildings as case-studies for the assignments. The paint workshop with Jon Brønne was also held in the work-yard of the museum.
- **MiA (Museer i Akershus), Follo Museum, outdoor museum at Seiersten – Drøbak**
Practical wood-working workshop with Per-Willy Fergestad, trying traditional tools and using both the out-door Museum and the town of Drøbak itself to see examples of wooden cultural heritage and construction methods.
- **The Viking Ship Museum, Bygdøy**
Visiting the Viking Ship Museum – guided tour and lectures afterwards regarding the ‘Saving Oseberg’ project.
- **“The Furniture Workshop” (Møbelverkstedet) at Grünerløkka in Oslo**
The workshop success from earlier years on the *Conservation of Objects* was continued, where three days were spent at the Furniture Workshop (*Møbelverkstedet*) with Hanne Bjørk, Anne Cathrine Hagen and Shayne Rivers - combining lectures with practical exercises.

- **Vøienvolden Farm, Oslo:** One day spent at the historical Vøienvolden Farm in Oslo doing a workshop on Climatology with Dr. Nigel Blades from the National Trust.

In total, approximately 233 hours of teaching were prepared. During the on-line part of the course, approx. 35 hours of teaching material was shared on Blackboard. For the 26 days of the practical part of the course in Norway, a full program of tuition was prepared for 22 days with approximately 198 hours of tuition.

3.3. Blackboard

Taking parts of the curriculum on-line, as a separate, distance-learning segment of the course, was a big step for the ICWCT which has been almost unchanged in its structure since 1984. The parts of the course which previously had a large theoretical component, with considerable time spent in the lecture hall at Riksantikvaren, were prioritised when planning the on-line curriculum.



- Example of pages from Blackboard

The different Units consisted mainly of literature (PDFs/ web-links) and concluded with a practical task to demonstrate understanding of the subject matter. Each Unit had one week on-line with about 6 hours of study each, including the practical task which was posted on-line and accessible to the rest of the group. Blackboard contained the following:

- **Welcome video** and introduction to the course by the course Directors. Participant Profiles with descriptions of their work and backgrounds
- **Conservation theory and principles:** *Reflecting on current principles/approaches that underpin the conservation of wooden heritage. All relevant Charters and Conventions were included for reference.*
- **Wood properties:** *An introduction to wood structure and properties in order to understand the complex relationship between material and object and conservation. Wood science and technology as a necessary support for an effective preservation of wooden heritage.*
- **Environment and decay:** *Understanding the individual requirements for the activity of fungi and insects, looking at the possibilities of handling any damages that are caused by biodeterioration with limited effort and with maximum effect.*
- **Climatology:** *Addressing the discipline of environmental preventive conservation in caring for indoor collections and historic materials. Emphasis on the role of temperature, relative humidity and light as agents of deterioration and how they are monitored and controlled*
- **General information including:** Arrival in Oslo, what to do in Oslo, Information regarding

accommodation, Course timetables and schedules, list and backgrounds of the lecturers and their contact information, Participant blog, suggested reading material with links, additional reading material with links.

3.4. Sessions in Oslo

- **Theory and Principles**

The session was led by Dr. Gamini Wijesuriya, recently retired from ICCROM and a seasoned contributor to the ICWCT. The session reflected on current principles and approaches that underpin the conservation of wooden heritage, reviewing the evolving nature of conservation principles and approaches over the last 150 years and touching on the latest paradigms. As their on-line assignment, participants were asked to make a poster based on a case study they have worked on. The project illustrated which international documents were used and how the participants were influenced by them in their work. The posters were displayed on the wall of the conference hall on the first day of the course.

- **Wood Properties**

The Unit of Wood Properties was conducted and taught by Professor Marco Fioravanti from the University of Florence. In addition to being responsible for a week's curriculum on Blackboard, he also taught the group for one and a half days in Oslo. In the on-line session, basic elements of wood science and technology was provided so that the participants could become familiar with the structure and the main physical and mechanical behaviour of the material. When the group met in Oslo, they started from the knowledge acquired with the on-line session, and further in-depth information was given on specific subjects such as wood identification and wood science applied to preservation of wooden cultural heritage. Emphasis was given to the relationship between conservation environments and potential risks of wood damage or degradation.



- *Left: Marco Fioravanti lecturing on wood properties*
- *Centre: Gamini Wijesuriya lecturing on theory and principles*
- *Right: Gord Macdonald testing the density of the beams in the lecture hall at Riksantikvaren*

- **Environment, climate and decay**

Dr. Johan Mattson of Mycoteam, has been a long-standing and much appreciated contributor to the ICWCT. He set up a week's curriculum of on-line literature as well as teaching a class in Oslo on why and how wood-decaying fungi and wood-destroying insects cause damages in wood and how such damages can be examined and handled. Mattsson's

approach is that it is possible to handle most damages in a simple way, with a minimum of negative influence on the cultural heritage and usually without any use of biocides.

Climatology was taught by Dr. Nigel Blades from The National Trust in England, a contributor to the course for the second time. The session was held at Vøienvolden farm, a historic farmhouse in Oslo owned by The National Trust of Norway. In the on-line session, the participants studied preventive conservation and conservation science literature, covering definitions of relative humidity and associated parameters, use of the psychrometric chart, interaction of materials with humidity and temperature; example uses of monitoring data and environmental control in historic houses and museums.

The session in Oslo revisited the topics covered in the online session before going on to consider case study examples of damage to wooden artefacts caused by the environment; environmental monitoring and equipment used; uses and interpretation of monitoring data and methods for environmental control. A practical environmental monitoring exercise was done with the group – setting up and downloading dataloggers and a T and RH graph data interpretation exercise.



- *Nigel Blades teaching at Vøienvolden Farm*
- *Lunch-break in the garden at Vøienvolden Farm*

- ***Structural use of wood and repair of buildings***

For the first time, Gord Macdonald of Heritage Works, Canada, was invited to lecture this unit. He spoke about the properties of wood, the assessment of wooden structures, repairing wood with wood, new technology and how it works and can help in a conservation process. His case-studies from huge bridge constructions in Canada as well as buildings in Antarctica demonstrated a variety of construction methods and solutions.

- ***Workshop at “Møbelverkstedet” (The Furniture Workshop)***

The organisers continually strive towards achieving a good balance between the conservation of movable and immovable wooden cultural heritage within the course framework and to give objects and buildings equal emphasis. The Unit Conservation of Objects has since 2014 been moved to “Møbelverkstedet” – (the Furniture Workshop) situated at Grünerløkka in Oslo. The owners, Anne Cathrine Hagen and Hanne Bjørk, work closely with Shayne Rivers, (West Dean College, England), to plan the programme for the week. Møbelverkstedet provides a friendly, informal space for learning in a commercial workshop, offering the facilities for practical exercises and lectures.

The workshop included how to examine, interrogate and understand movable wooden objects, overview of properties of wood that affect the construction methods of movable objects, including structures and joints, and how and why structural failure occurs. Each day included lectures in the mornings and practical sessions in the afternoons.



- Top left: At the "Furniture Workshop" with Shayne Rivers.
- Top right: Ahmed Abdrabou Ibrahim Ali from Egypt mixing glue
- Bottom left: Ainra Iroz Zalba Spain, Süheyla Yilmaz, Turkey, Octavian Coroiu, Romania and Daniele Fonseca, Brazil examining a damaged chair.
- Bottom right: Alexander Myrseth, Norway, Mauli Mishra, India, Shayne Rivers (in red), Per-Willy Fergestad and Raul Naguit, Philippines.

- **Viking ship Museum**

As part of Unit 5, Conservation of Wooden Objects, one day (divided in two parts) was also spent at the Viking ship Museum. The group was met by Professor Jan Bill who gave us a tour of the ships and objects, explaining their background and meaning. Head Engineer and Wood Carver Barte Aarset demonstrated the work he is doing 3D scanning the sleigh exhibited in the museum.



- *Left: Professor Jan Bill giving a tour of the Viking Ship Museum*
- *Right: Bjarthe Aarseth demonstrating 3D-scanning techniques at the Viking Ship Museum*

Later the group was divided in two, half following Bjarthe Aarseth down to his workshop under the museum, and the other half following Doctoral student David Hauer to the pavilion in the museum grounds where the ‘Saving Oseberg’ Project have their offices. The group were introduced to the conservation challenges of the ships due to the earlier alum treatment and the work in trying to reverse and stabilise the ships.

- ***Workshop on paints and surface treatment***

Jon Brænne held a popular day at the Folk Museum, including lectures and an afternoon workshop on paint-making. The group got recipes and formulas for distemper, emulsion & rye-flour paints and linseed oil and cod-liver oil-based paints. Dressed in protective clothing, different formulas were made in the museum work-yard.



- *Süheyla Yilmaz, Turkey, and Daniele Baltz Fonseca, Brazil mixing paint*
- *Jon Brænne (right) with the group*

- ***Conservation of buildings Workshop in Drøbak***

For the first time, the course held the practical conservation of wooden buildings workshop at Follo Museum in Seiersten, which forms part of the Museums in Akershus (MiA). The out-door museum is located in Drøbak, a small town 30 mins drive south of Oslo. Per-Willy Fergestad, Master Carpenter based at the Museum, was responsible for the planning and implementation of the workshop together with Jack Hollinger, College Professor of carpentry and joinery at Algonquin College in Ontario, Canada. Jack was a participant of the ICWCT 2016 and it was a great pleasure to be able to invite him back as a lecturer for this years’ course.

Felling the tree in Spydeberg on the first day of the excursion was a key part of the workshop (see p. 14). The timber from the tree felled and sawed to planks by the participants had seasoned to 15% MC in the hot dry weather, and this material was used during the following practical exercises.



- *Top left: Mariana from Ukraine working with an axe.*
- *Top right: Jack Hollinger instructing Kit Wong, Hong Kong.*
- *Bottom right: Padma Sundar Maharjan, Nepal and Chiedza Zharare, Zimbabwe. Jack Hollinger lecturing the group.*

During the workshop, the course participants were organised in work stations, trying out traditional tools in the museum work-yard. The introduction to all the tools and working the wood that they had harvested, using axes, drawknives, shavers, planes, moulding planes, saws, etc. brought the program into practical terms. They encountered wood technology and science issues firsthand with difficult knots, grain direction and pitch pockets. They used all the traditional tools that were common in Northern Europe before the industrial revolution and would have been used in the production of the buildings on the museum site where we were based. This point caused much astonishment amongst several participants when it was noted. The simplicity of the tools and exercises undertaken accentuated the versatile properties of wood as a group of materials and allowed insight into its importance in the cultural heritage of all the nationalities present.

With Per-Willy Fergestad as a guide, the group were taken on a tour of the buildings in Drøbak, allowing participants to observe wood in both architecture and object form and gain an understanding of the workmanship that had taken place. The observations of the doors, windows, museum furniture and architecture, as well as discussions in the workshop allowed the same. The group also visited a listed building that had been severely damaged by fire in 2015 and which was in the process of being restored. The panels planed by the participants were to be used in the restoration work, adding extra impetus to successfully working the tools.

Appendix 3: On-line Course Programme

Appendix 4: Full ICWCT 2018 Course Programme



- *Per-Willy Fergestad with the group outside Drøbak Church*
- *Pizza on the beach after a day's work. Vilte Janusauskaite, Lithuania and Per-Willy Fergestad facing the camera.*

4. Excursion

The excursion took place in the period Wednesday 13th – Saturday 16th June. Based on previous experience and course evaluations, the conclusion is that having the excursion in the middle of the course helps break up the period in Oslo. The aim is to see a variety and cross section of the most valuable wooden heritage sites in Norway and get an impression of the rest of the country. We met both private owners of cultural heritage properties as well as museums and publicly managed sites. Professor Nobuko Inaba from the University of Tsukuba in Japan accompanied up on the trip and acted as a resource person.

- ***Spydebeg – felling a tree***

We started the excursion by driving to a forest south of Oslo to Spydeberg where we meet with Per-Willy Fergestad, a Master Carpenter employed by the Regional Follo Outdoor Museum. He guided the group through the process of material selection - choosing the right tree for making exterior panelling for a listed house damaged by fire in Drøbak, the nearby town. A spruce was chosen, felled by axe and transported to a local farm where the group helped operate a saw. It was sawed to boards and boxes and then left to season for a couple of weeks. We used the seasoned material later when we met Per-Willy again for the practical workshop at the Follo Museum.



- *Chopping a tree with Per-Willy Fergestad in the forest at Spydeberg*



- *Sawing the chopped log at the sawmill and stacking the wood for seasoning at Haugen Farm, Spydeberg*

- **Lillehammer**

We were met at Maighaugen Museum by Torgeir Korpberget, Technical Manager at the Museum. Together with Marte Boro (Senior Advisor at Riksantikvaren) the Museum has started a 50-year project to monitor the effects of climate change on a selection of wooden buildings at the Museum. Marte explained the project to the group and we toured the Museum, observing the technical monitoring in the Stave Church.



- *Top: At Maighaugen Museum, Lillehammer*
 - *Bottom: Mille Stein (NIKU) lecturing the group in Ringebu Stave Church*

- **Ringebu Stave Church**

Mille Stein, previously NIKU, met us at Ringebu Stave Church and gave a guided tour of the interior and explained what was done in the restoration of the distemper wall painting and the Madonna and crucifix, the choices made and reasoning concerning restoration methods. The interior climate and the alternative methods for managing the heating was discussed.

- **Kleppe Farm**

We were met at Kleppe Farm by the owner Dag Lindvik. We toured the farm and observed how the owner had made quite radical choices to adapt the farm to new use as a hotel, combining modern additions to the old structures. We heard about the restoration process and the work involved in establishing a new business in heritage buildings, challenges with authorities and local traditions.

- **Lom**

We stayed overnight stay at Fossberg hotel and had a lecture on the Stave Church Restoration

Programme by Sjur Mehlum and Leif Anker (Riksantikvaren) in the morning. The lecture discussed how the Programme was conducted according to international charters and principles and how these affected the choices made in the work. We then visited Lom Stave Church before departure, driving across the Sognefjell mountains on our way to Urnes.

- **Urnes Stave Church**

We were met by Marit Bøen, the church warden at Urnes and an expert on the history of the church after a lifetime of living next door. The question of the Urnes Portal was discussed, its fragility and exposure to the elements and pros and cons of in-situ preservation versus musealisation.



- Left: Marit Bøen in front of the Urnes portal
- Right: Participants Raul Naguit, Ahmed Ali, Roberto Bestetti, Padma Sundar Maharjan, Mariana Kaplinska, Mauli Mishra and Süheyla Yilmaz in front of Urnes Stave Church

- **Borgund Stave Church**

We spent the night in Sogndal and drove to Borgund Stave Church the next day. Here we were met by Merete Winness from the Norwegian National Trust – the organisation owns many of the existing Stave Churches. She talked about the management of the Stave Churches from the owner’s perspective; the wear and tear of tourism and how to best manage the increasing number of visitors. As at Lom and Urnes, the work done during the Stave Church Preservation Programme was discussed, especially the new roof shingles and how the new ones had been adapted using the same techniques and tools.



- Left: At Borgund Stave Church
- Centre: Merete Winness (a ICWCT 2000 participant) from The National Trust of Norway (Fortidsminneforeningen)
- Right: Borgund Stave Church

- **Valdres Museum**

We stopped at Valdres Museum for lunch and had time for a look around the exhibition rooms and the out-door museum before heading back towards Oslo.



- *Left: On the ferry from Hansaølet to Fondnes on the way to Borgund Stave Church.*
- *Centre: Daniela Zacharova from Slovakia flying the Norwegian flag!*
- *Right: Lunch break at Valdres Museum*

5. Exam

The ICWCT is concluded with an exam in Oslo under the auspices of the Norwegian University of Science and Technology (NTNU). The exam is compulsory and gives 15 ECTS (European Commission grading system) if passed. In addition to the transcript of ECTS (grades) from NTNU, all participants are awarded an ICWCT course certificate issued by Riksantikvaren. This certificate is awarded on the final day of the course and is independent of the exam results.

A fundamental change in the ICWCT 2018, was the form of the final exam. Previous years there has been a formal 3-hour written exam which was corrected and marked by NTNU. The written format meant native speakers had an unfair advantage; the correction of the papers often required interpretation, and the continuous assessment of how well the student had performed during class was not considered in the grading. The revised format of the exam followed NTNU's recommendation and was introduced as a group assignment, using the Folk Museum as a venue.



- *One of the groups working on their assignment at the Folk Museum.*
- *Assessing a building and an object in the museum storage.*

The participants were divided into four cross-disciplinary groups of 4-5 persons and each group assessed two case studies; a building and an object. The building was different for each group, the object the same for all groups. The case studies were set up as an assignment where the groups formed a team of experts. The assignment was a fictitious request by the Museum requesting comments and suggestions to existing plans of repair for the object and building. It was a realistic task in the sense that the issues were relevant to the Museum, and that decisions had to be made and measures taken on items from the Museum collection. It was stressed that the assignment was not a competition between the groups and that there was no fixed solution. The purpose of the assignment was to discuss approaches and solutions in a broad perspective, implementing what they had learnt during the course.

The groups were required to prepare a presentation of their conclusions of both the building and the object – present their findings to the rest of the group and an Evaluation Team in the Conference Room at Riksantikvaren on the final day of the course. The examination had to be prepared, presented and evaluated as a group work. The work was required to take the form of a presentation, a report, an exhibition or similar.

The Evaluation Team represented 4 main organisations involved with, and aspects represented during the course (Cultural heritage administration of built heritage, education, dissemination and conservation of objects):

- Leif Anker, Senior Advisor, Riksantikvaren
- Eir Grytli, Professor of Architecture, Faculty of Architecture and Design, Norwegian University of Science and Technology, NTNU, Trondheim
- Terje Planke, Senior Curator, Norwegian Folk Museum
- Tone Marie Olstad, Senior Paintings Conservator, Norwegian Institute for Cultural Heritage Research, NIKU



- *One of the groups (From left to right: Danielle Baltz Fonseca, Ahmed Abdrabou Ibrahim Ali, Mauli Mishra, Raul Naguit and Vilde Janusauskaite) presenting their assignment to the Evaluation Team - from left: Tone Olstad, Eir Grytli and Leif Anker.*

The grading system for assessment: Passed / Not passed
Continuous assessment 50/100
Final exam presentation 50/100

All participants passed the ICWCT 2018 exam and were notified of this the same day. The official certification from NTNU was posted to the participants after the summer.

6. Lecturers and resource people

Lecturers for the course are selected by the organisers. Feed-back and reviews from previous courses are also important in the choice of lecturers. The following lecturers were invited to contribute to the ICWCT this year (in no special order):

- **Gamini Wijesuriya**, recently retired from ICCROM, and **Joseph King**, Director for Sites Unit, represented ICCROM in the programme. Mr. King visited during the course period and spent time talking to the participants and observing some of the lecturers. Both contributions were much appreciated by the organisers and participants.
- **Marco Fioravanti**, Associated Professor of Wood science and technology, University of Florence.
- **Nigel Blades**, Preventive Conservation Adviser, National Trust, UK
- **Johan Mattsson**, Manager R&D in Mycoteam, Oslo
- **Marte Boro**, Senior Advisor, Riksantikvaren
- **Shayne Rivers**, Senior lecturer, West Dean College, UK
- **Hanne Bjørk** and **Anne Cathrine Hagen**
Møbelverkstedet (The Furniture Workshop), Oslo
- **Jon Brænne**, Paintings conservator, Vel Bevert, private consultancy. Oslo
- **Nobuko Inaba**, Professor, World Heritage Studies, University of Tsukuba, Japan
- **Gord Macdonald**, Master Carpenter and Buildings Conservator, Heritageworks, Canada
- **Per-Willy Fergestad**, Master Carpenter at Follo Museum, Museums of Akershus
- **Jack Hollinger**, College Professor of carpentry and joinery at Algonquin College in Ontario, Canada
- **Kaja Kollandsrud**, Senior Conservator, Museum of Cultural History, Oslo
- **Leif Anker**, Senior Advisor, Riksantikvaren
- **Torgeir Korpberget**, Technical Manager, Maihaugen Museum
- **Jan Bill**, Professor, University of Oslo, *The Museum of Cultural History*
- **David Hauer**, Conservator, *The Viking Ship Museum, The Museum of Cultural History*
- **Bjarte Aarseth**, Wood carver/Engineer, *The Viking Ship Museum, The Museum of Cultural History*
- **Stian Myhren**, Head of Section for Building Preservation, *Norsk Folkemuseum*
- **Terje Planke**, Senior Conservator in the Section for Building Preservation, *Norsk Folkemuseum*
- **Dag Lindvik**, Owner Kleppe Farm
- **Marte Bøen**, Church Warden, Urnes Stave Church
- **Merete Winness**, National Trust of Norway
- **Mille Stein**, Emeritus, NIKU
- **Morten Stige**, Head of Department Oslo West, Oslo City Antiquarian
- **Eir Grytli**, Professor of Architecture, Department of Architecture and Technology, NTNU
- **Tone Olstad**, Paintings Conservator and Researcher, NIKU

Appendix 5: Lecturers and Resource People

7. Participants

7.1. Announcement and response

The ICWCT 2018 course announcement was published on the ICCROM and Riksantikvaren web sites in June 2017. ICCROM was the receiving address for the applications. By the closing date for applications 30th September 2017, 105 applications were registered, representing 46 different countries. Another 5 applications came in late – these were put on the waiting list. The total number of applicants was slightly higher than in 2016.

Appendix 1: Course Announcement

Appendix 2: Pre-Course Information Material



- The ICWCT map of the world.

7.2. Selection of participants

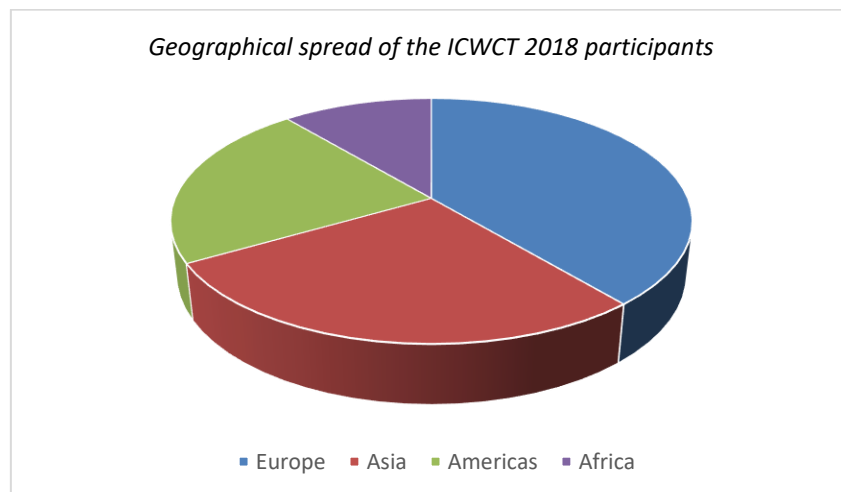
The choice of participants aims at securing a relevant professional level and at creating a good group composition. The following main criteria were used for the selection of the participants:

1. **Minimum 3 years relevant work experience**
2. **Diversity in educational and professional backgrounds considering both academic and practical experience**
3. **Geographical and cultural diversity**
4. **Balanced gender representation**












The course organisers at Riksantikvaren and ICCROM made proposals separately and drew up a shortlist and a waiting list. The two parties conferred by email and phone and compared their selections. For Riksantikvaren it is always very useful to hear ICCROM's rationale behind their selection and beneficial to learn from their experience. Riksantikvaren informed all applicants concerning the results of their applications. The 20 successful candidates received a confirmation letter by post in addition to e-mail. As a final check before the selection was confirmed, Riksantikvaren telephoned candidates where their native tongue was not English to check language skills.






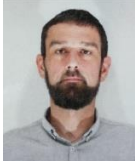

Sadly, one participant from Syria was not able to attend the course in Oslo due to not being granted a visa, she did, however, complete the on-line part of the course. Two additional participants (from Eritrea and Denmark) reported last minute that they would not be attending the course in Oslo although they both completed the on-line part of the course. Unfortunately, there was not time to notify others on the waiting list at this stage. The total number of participants who participated on both the on-line course and also attended the course in Oslo and participated in the final examination was 18.

- The final group of participants consisted of: Europe 7, Asia 5, Americas 4, and Africa 2.
- There were 11 female and 7 male participants
- 10 participants had background as architects or engineers and worked with buildings. 7 were object conservators, 1 was a trained carpenter.
- Most of the participants were employed by governmental entities; museums or other public institutions in their home countries.
- The youngest participant was 30 years old, the oldest 47.



ICWCT 2018

Ukraina	KAPLINSKA, Mariana <i>Lecturer, Dept Architecture and conservation, Lviv Polytechnic National University</i>	F	
India	MISHRA, Mauli <i>Architect, Studio Mandala</i>	F	
Brazil	FONSECA, Daniele Baltz <i>Teacher and coordinator of conservation and restoration programme, Federal University of Pelotas</i>	F	
El Salvador	RAMIREZ MENDOZA Claudia <i>Conservator, Atelier for polychromed wood, Secultura</i>	F	
Philippines	NAGUIT, Raul Jr. <i>Engineer II, National Historical Commission of the Philippines</i>	M	
Turkey	YILMAZ, Süheyla <i>Project chief, General Directorate of Highways, Historical Bridges Division</i>	F	
USA	BIENIOSEK, Genevieve <i>Furniture conservator, private practice</i>	F	
Zimbabwe	ZHARARE, Chiedza Nyengeterai <i>Assistant curator of antiquities, National Museums and Monuments of Zimbabwe, Mutare Museum</i>	F	
Hong Kong	WONG, Kit <i>Assistant Curator (Conservation), Conservation office, Hong Kong Special Administration Region Government</i>	F	
Spain	AINARA, Iroz Zalba <i>Architectural technician, Historical and Artistic Heritage Service/Culture Dept, county council of Gipuzkda</i>	F	
Norway	MYRSETH, Alexander <i>Carpenter, Norsk Folkemuseum</i>	M	

Slovakia	ZACHAROVÁ, Daniela <i>Technician, architectural monuments maintenance inspector, Monuments Board of Slovakia</i>	F	
Italy	BESTETTI, Roberto <i>Professor of conservation of panel paintings, Ado Galli Fine Art Academy Como</i>	M	
Canada	OXLAND, Evan <i>Heritage Conservation Technologist, Government of Alberta, Ministry of Culture and Tourism, Conservation and Construction Services</i>	M	
Nepal	MAHARJAN, Padma Sundar <i>Architect, Kathmandu Valley Preservation Trust KVPT</i>	M	
Egypt	ALI, Ahmed Abdrabou Ibrahim <i>Conservator, Grand Egyptian Museum Conservation Centre, Wood laboratory</i>	M	
Romania	COROIU, Octavian <i>Registered architect, SC Outline One SRL</i>	M	
Lithuania	JANUSAUSKAITE, Vilte <i>Senior architect, VI Lietuvos Paminklai</i>	F	

7.3. Course costs and financial support

The participants do not pay a course fee. Accommodation for the duration of the course is offered free of charge at Anker Apartments in Central Oslo. Travel costs within Norway during the excursion and other course field trips are also covered by the course. Participants cover their own travel expenses within Oslo. Each participant must finance her/his own travel expenses to Norway and their own food for the duration of the course. During the excursion, all meals were covered by the course.

As a rule, the course offers some scholarships to enable participants with limited economical resources to attend the course. It was decided this year that 3 travel grants would be awarded by Riksantikvaren. In addition, ICCROM awarded two travel and sustenance grants. Scholarships were awarded to participants from the following countries which are on the DAC List of ODA Recipients: Ukraine, India, Zimbabwe, Nepal and Egypt. Travel was also covered for the participant from Lithuania due to last-minute admittance from the waiting-list.

7.4. The role of the participants during the course

The success of the course has always depended on the participants playing an active role in the program. The course language is English, and good working knowledge of English is stressed in the course announcement. Some participants do still have problems with basic communication as well as following the lectures. The importance of conducting an interview by phone to applicants whose mother tongue is not English is stressed.

As part of the on-line course, the participants prepared assignments which were shared within the group on Blackboard. Posters they had made about their work were also printed out and hung up on the walls of the conference room for the first day in Oslo. The mutual exchange of experience and ideas between the participants outside the classroom is regarded an important contribution to the quality of the course, and the practical framework for the course aims at strengthening social and professional networking. Workshops and excursions also promote networking and exchange of experience.

8. Course evaluation

The course has both a written and an oral evaluation. The results of the evaluation are an important tool for the improvement of the programme for future courses. This year we received help from ICCROM to prepare an electronic questionnaire which was sent to all participants on the final day. In total, 16 answers were received.

The feedback from the ICWCT 2018 participants, both in the written and oral evaluations, was extremely positive. The course has an excellent reputation and the two organisers are proud to prove that Riksantikvaren is able to continue the good work and uphold the high standards set by previous courses.

8.1. Oral evaluation meeting

The evaluation meeting was organised on the last day of the course and held as a discussion between the course members and the course coordinators. As mentioned above, the feedback from the participants was very positive. The general organisation, most of the lecturers and the course programme, as well as the course organisers themselves all got very good reviews. The comments were constructive and have been noted by the organisers for future improvement.

Below are some of the main issues raised and discussed during the oral evaluation meeting. All points will be examined carefully, and efforts will be made to rectify the issues raised before the next course. Some issues are also raised and discussed in the written evaluation forms.

- **Blackboard:** There were some issues regarding Blackboard as a digital platform. It is not completely intuitive, and some participant experienced occasional difficulties in finding their way around the site. The following points were also raised to improve the on-line part of the course even further:
 - Give access to the reading-list as soon as the participants are admitted to the course to allow for more reading-time.
 - The blog was difficult to find and needs to be lifted to the front page
 - Folder for submitting weekly assignments should be clarified and simplified
 - Unit with objects also given space in the on-line component

- Ensure that there is sufficient time to assess and discuss the projects submitted on-line when the group meets in Oslo.

The points raised are all valid comments which will be rectified. Blackboard was also a completely new experience for the organisers and efforts will be made before the next course to iron out teething problems and set up a more comprehensive technical help-desk.

- **The multidisciplinary profile:** In 2018, as they have done other years, the participants underlined the importance of retaining the multidisciplinary profile of the course. The group feel the benefits derived from meeting different professional groups within the field of wood conservation, is more important than specialising in one's own field. The balance between buildings and objects was generally experienced as being satisfactory, though some of the conservators felt there was slightly too much focus on buildings.
- **The length of the course:** The on-line component could be longer to allow for greater flexibility for study. Most agree that 4 weeks is a good length in Oslo for the amount of study covered. It is a challenge for most to be away from both their families and from their places of work for any longer.

8.2. Conclusion of course evaluation

The organisers were extremely satisfied with both the oral and written evaluations of the ICWCT 2018. The participants seemed very positive and satisfied with the overall course experience. The written evaluation forms, which were anonymous, also confirmed that the radical changes made this year were a success and should be continued and developed.

Appendix 7: Course evaluation and analysis of results

9. General assessment of the course by the organisers

9.1. Announcement

The course announcement was released end of May 2017 with the deadline for applications 31st September. ICCROM's course announcement on their website as well as through their mailing list, reaches the intended target audiences. ICCROM has a far wider international network than Riksantikvaren as well as giving the course a credibility of an international organisation.

Although we were fortunate to have an excellent Norwegian participant on this years' course, it is still a challenge for the organisers to attract Norwegian applicants which are in general very few. This means that the information on a National level is not sufficient. It might also mean that the international name of the course, and information in English, means that Norwegian candidates do not realise that they too can apply.

9.2. Pre-course information

Through Blackboard and the on-line part of the course, the participants received an information pack containing detailed directions regarding their arrival; accommodation, what to bring, clothes and climate. They also received information about Oslo; public transport, where to go and what to see. They received

the full course programme, and introductory list of participants and resource people.

Previous years' evaluations have shown that participants have sought more information about each other prior to meeting in Oslo. This was made possible through Blackboard, allowing participants to see each other's assignments and each other's profile and background before meeting in person. The blog was also used for informal chats and encouraging positive group dynamics.

9.3. Blackboard

Overall, we found that it worked extremely well for both students, lecturers and organisers and the following aims from the ICWCT 2016 report were met:

- The participants were on a more equal level when the group met in Oslo
- The participants were overall better prepared academically
- Through access to each other's assignments and background profiles, the participants were familiar each other and the group was established before arrival in Oslo. There was also a blog with room for informal chats.
- Less time was spent in the conference room and more time on practical assignments while in Oslo.
- 4 weeks in Oslo (as opposed to the previous 6) made it easier for participants to be away from work and family. Shortening the course time in Oslo also made it easier for the course organisers to manage and plan on a practical level.
- A substantial reduction in student accommodation costs was achieved.

It must be stressed that the on-line component to ICWCT 2018 was a pilot and the organisers will continue to improve accessibility and facilitate easy access to Blackboard for the next course. Improving the technical assistance provided by NTNU would help, as would a course on the technical possibilities within the platform for the organisers. The course evaluation is in the appendix of this report, including further comments regarding Blackboard.

Appendix 6: Course evaluation and analysis of results

9.4. The Course Directors



- *Left: Course Director Anne Nyhamar (centre) with Süheyla, Mariana and Daniela.*
- *Centre: Sjur Mehlum (seated) signing his book 'Restoration of the Stave Churches'.*
- *Left: Jon Nordsteien helping Claudia during the workshop.*

ICWCT 2018 was the fourth time the entire planning and organisation of the course was done by Riksantikvaren. The course committee consisted of **Anne Nyhamar**, Senior Advisor in the International

Section, and **Sjur Mehlum**, Senior Advisor in the Section for Conservation. They were jointly responsible for the general planning, administration and academic content of the course. In addition, for the second time, **Jon Nordsteien** from NTNU was part of the course planning committee and present in Oslo for the duration of the course.

9.5. Participants

The composition of the participant group varies from year to year, depending on the applicants. This year as often before, two main groups dominated; architects/ engineers and conservators. Special care was shown in the selection procedure to make a balanced group. One participant was a qualified carpenter which is important for the composition and variety of the group. In terms of group dynamics, ICWCT 2018 worked well. They were independent, open and active from day 1. They looked out for one another and helped each other where necessary and were inclusive when organising events or activities in their spare time. The average age in 2018 was 36,5. It was 40 in 2016 – an all-time high compared to 37,5 in 2014, 36 in 2012 and 34 in 2010.



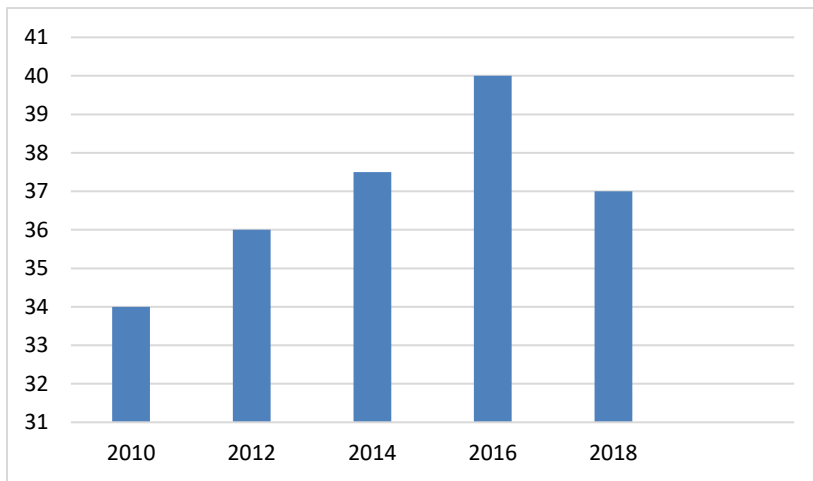
– *ICWCT 2018: A great group, academically and socially*

Although a higher average age contributes to self-sufficiency and independence, we saw that in 2016 the higher average age and higher proportion of PhDs made expectations harder to manage; the generalist nature of the course does not fit as well with specialist qualifications. The course organisers have always tried to include a wide spectrum of backgrounds and qualifications in the final group selection. However, while striving for the best possible participants, have learnt that over-qualification is also a challenge. In selecting the participants for the 2018 course, the organisers made a conscious effort to reduce the average age and reduce the number of specialists, bringing the participant profile back to the intended “mid-career” professional level. In this we were only partially successful as illustrated in the graph below, but although the number of PhDs are the same as in 2016, a marked improvement was the number of active practitioners rather than academics/ theorists which were prevalent amongst the PhDs in 2016.

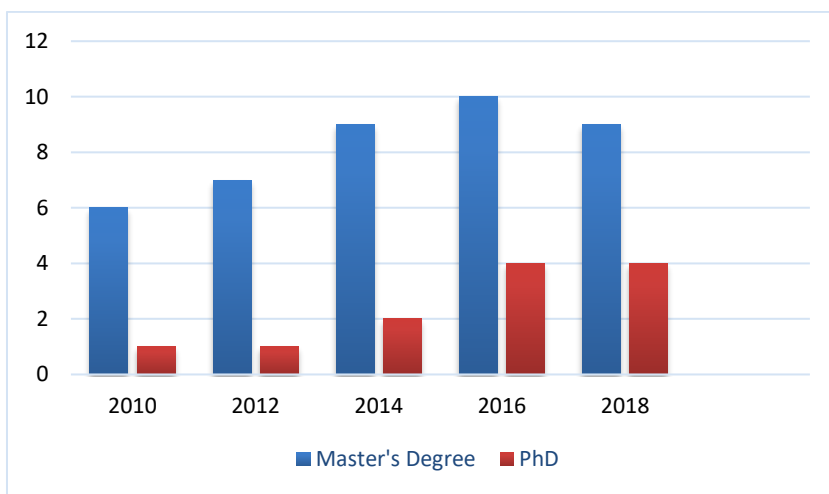
9.6. The ‘Buddy’ system

The ‘Buddy-system’ between course participants and employees at Riksantikvaren was organised for the first time in 2012 and has now become a popular fixture. The ‘Buddy’ acts as a mentor for the duration of the course and provided a contact point for the participants outside the course administration. The level of engagement varies greatly, but in many cases, the ‘Buddy’ invites the participant home for a meal or arranges an excursion or outing one evening or at the week-end. Feed-back from both ‘Buddies’ and participants this year was extremely positive, and many continue to stay in touch.

The ‘Buddy’ system is a success in terms of widening the networking opportunities through the ICWCT to also include the staff at Riksantikvaren. Greater interaction from Riksantikvaren as an organisation also contributes to the Directorate’s sense of ownership and inclusion in the course.



- Average age of the participants since 2010



- Levels of higher Academic qualifications since 2010

9.7. Lecturers

The academic programme aims at covering a variety of topics within the framework conservation of wooden heritage. The program is intended to reflect a multidisciplinary and international approach, and at the same time, update and refresh skills and knowledge on different topics. The question of the composition of the lecture program necessarily relates to the wide range of topics within the field of wood conservation; selecting the issues and lecturers is always a challenge.

It is a special challenge to be a lecturer in a cross-disciplinary course, where the level of knowledge of the students varies enormously. Ideally, the lecturer should introduce a certain topic for those unfamiliar to the subject, and at the same time give new information to participants who sometimes are experts within the same field. This issue was one of the main reasons for introducing the on-line preparatory course on Blackboard. The aim was to bring participants up to a more equal level *prior* to meeting the lecturers in Oslo. In this, the feedback from the students confirmed the impression of the organisers and lecturers alike; that preparatory ready made a big difference in the appreciation and understanding of the practical exercises and lectures during the Oslo workshops.

The program seems to be adequate, given the limit of 4 weeks and the enormous scope of subjects within the field. Participant evaluation on the individual lectures and lecturers were given to the organisers through the evaluation forms and in the final evaluation meeting. Efforts have been made the last few years to reduce the overall number of lectures as a high turnover and swift departure reduced time for discussion and questions. Lecturers were encouraged to come a day early and attend class to promote continuity. Being available during breaks and having lunch with the participants also encourages questioning and a more informal exchange of ideas.



- *Left: Morten Stige from the Oslo City Antiquarian giving a guided walk around Rodeløkka in Oslo*
- *Centre: Jack Hollinger at the workshop in Drøbak*
- *Right: Jon Nordsteien, NTNU in informal discussion with students on the bus during the excursion*

Having a fewer number of lecturers who can conduct longer sessions covering a broad field of knowledge would be an advantage. In a more and more specialized world, it seems to be harder to find these generalists and it is also a question about the learning profile of the course; fewer broad resource persons or many specialists. The current rapid development within the various subject requires the specialist in order to be a post-educational course on a high international level. A broad variety of nationalities is also important when recruiting lecturers, as is considering the international aspect when planning the course content (i.e. more tropical wood). An aim for future courses could be to include an African and/ or South American lecturer.

Some lecturers attended the ICWCT for the first time this year, and we should mention in particular **Gord Macdonald** from Heritageworks who led the Unit on Wooden Structures. His case-studies from massive railway-bridges in Canada and Scott's cabin at the South Pole impressed the students and teaching colleagues alike. **Marco Fioravanti** from the University of Florence has been a lecturer for several courses and continues to get a very high score from the participants. We were very pleased to also welcome back **Shayne Rivers** for the furniture workshop; her classes got top marks in the evaluation and were highly praised by the participants. **Nigel Blades** from The National Trust (UK) was also a very welcome return lecturer. His day in Oslo was held at the historic Vøienvolden Farm where the students were given a lecture on preventative conservation and climatology, followed by hands-on exercises and group-work. **Jon Brønne** has been teaching surface treatment and paint-making since the very beginning of the ICWCT and is our most faithful and popular lecturer. Hopefully his threats that this was his last course will not be followed through! **Per-Willy Fergestad** taught the workshop together with **Jack Hollinger**, a ICWCT 2016 participant who we were delighted to welcome back in a new role. They worked well together as a team in Drøbak and the workshop got extremely good reviews from the participants. Per-Willy also led the session in the forest selecting a

tree and the subsequent sawing of planks – demonstrating through the whole workshop his unique combination of practical and pedagogical skills as well as his good humour and patience. We sincerely hope we will be able to include Per-Willy in future courses.

9.8. Field work and excursions

Workshops and practical exercises are considered essential in the course program. Introducing the on-line part of the course with preparatory study, meant that the four weeks in Oslo could be spent outside the lecture hall to a greater degree. Feedback showed that future courses could improve this aspect even further, with for example the Unit on Environment and Decay including a field-trip and re-introducing the use of microscopes in Wood Properties as has been done previous years.

The 4-day excursion out of Oslo is regarded as a positive element of the course, both for the practical training, viewing examples of wooden heritage and for the teambuilding within the group. Staying and travelling together bring participants, lecturers and coordinators close together both in a professional and social capacity. The excursion programme is planned with care, and efforts are made to include sites which are currently being restored, or have recently undergone work, to stimulate discussion regarding choices and considerations. The balance of distance covered versus time spent at each site is always a dilemma, but the importance of group discussions *en route*, as well as practical assignments must be carefully considered by the organisers. The evaluation also showed that care must be taken to include a greater variety and spectrum of heritage sites when planning stops.



- *Vilte Janauskaite from Lithuania and Daniela Zacharova from Slovakia on the quayside in Solvorn during the excursion*
- *In the forest at Spydeberg*
- *Evan Oxland in Urnes Stave Church*

9.9. Practical framework for the course

The main part of previous courses has taken place in the conference hall of Riksantikvaren, the Directorate for Cultural Heritage in Oslo. As mentioned in the previous section, this year allowed for greater freedom, as much of the theory had already been covered on-line. A re-cap was included by the lecturers, before continuing with an exercise demonstrating practical implementation.

At Riksantikvaren, participants are offered good course premises; Wi-Fi and a lunch/break-room, a printer and free photocopying. The participants are welcome to use the reasonably priced staff canteen and also have access to the Riksantikvaren library. As we were only in the building for the three first and final day of the course this year, these facilities were not utilised as they have been other years.

For the second time, the students were accommodated at Anker Apartments in the popular and trendy Grünerløkka neighbourhood in Oslo. They were given small, individual studios, comprising one room with a small kitchen corner and a separate bathroom with a toilet and shower. The apartments are simple but adequate and very centrally located within walking distance of Riksantikvaren. The neighbourhood is multi-cultural and offers a wide range of shops, selling all kinds of different foods and open at all hours. A food-store is also located in the 1st floor of the complex. A bonus is a huge roof terrace and a big reception area for informal gatherings. Feedback from the participants has been positive, though the issue of inadequate internet connection was raised as a problem. Hopefully this can be resolved for future courses.

9.10. Exam

The reformed exam, moving away from the written and introducing a practical group assignment, was considered a great step forward. It meant participants could implement what they had learnt during the course and put new knowledge into a practical setting. The groups were carefully composed to represent the cross-disciplinary aspect which is often close to real-life. The questions asked were also close to what could have been a typical, real-life scenario.

The evaluation on the final day confirmed the impression that the exam itself had been an enjoyable learning experience. Working as a team and experiencing the stresses and strains of a tight deadline, combined with the challenges of communicating in an international group, was a powerful summery of the entire course. The course organisers agreed that the new model should be continued.

10. Conclusion and recommendations

10.1. Background and benefits

The International Course on Wood Conservation Technology (ICWCT) was started in 1984 as a joint project between UNESCO, ICCROM, Riksantikvaren, ICOMOS, and NTNU. The curriculum and organisation of the course are still based on ICCROM's original recommendations. A total of 347 participants from 92 different countries have attended the 18 courses that have been organised to date.

After ICCROM took over the responsibility to announce the course on its web site, there was a marked increase in applications. In recent years, the numbers have stabilised. There were 98 applications in 2016 and 105 in 2018. An additional 5 applications came in late, bringing the total up to 110 this year, a slight increase from 2016. The still high number of applications indicates that the course is considered relevant among professionals internationally.

Course evaluations stress that ICWCT should be continued as an international course, and that it should not be replaced by regional courses. Even if Japan (ACCU-Nara) runs a south-west Asian course in conservation of timber structures, ICWCT still has many applicants from that region, and some take both the courses. The more recent addition to ICCROM's wood courses is held in Kizhi in Russia. The course organisers hope that the three ICCROM wood courses can cooperate more closely in the future; for example, exchanging lecturers and organisational experience.

It is always important to continuously assess the need and the future of the ICWCT. The course demands a considerable amount of planning-time for the organisers and for the institutions involved. The cost per head, contributions in kind not included, is in 2018 about 65 000 NOK/ca.7000 Euro. The cost-benefit

relationship should always be considered when deciding if the course should be continued. In this aspect, the feed-back from the participants is our most reliable source of information. This year's high score in the evaluation results leave no doubt; the course is greatly appreciated and valued, and a clear majority say they have benefitted from the tuition and will recommend the course to colleagues in their home countries.

Several measures have been suggested over the years to reach more people with the existing programme. Riksantikvaren is addressing this issue seriously and is currently working with the Multimedia Centre at NTNU to develop a MOOC (Massive Open On-line Course) on the conservation of wooden built heritage, using the restoration of the Norwegian Stave Churches as an example. This course will in no ways substitute the ICWCT but will be used as part of the on-line preparatory course. It will at the same time be openly accessible on the web and in this way, help increase access to information to a larger audience.

A member of staff at the Multimedia Centre, Andreas Hansen Schille, accompanied the wood course on the excursion and also the workshop in Drøbak this year, filming activities and group discussions to be used in the MOOC.

10.2. Funding and scholarships

Funding is an on-going challenge and this year, apart from two scholarships from ICCROM, Riksantikvaren covered all expenses, including the travel scholarships. After ICWCT 2016, the course administration recommended a more stringent application process to ensure that those most in need were helped. Funds saved were spent on buying simple lunches for the whole group during the workshop in Drøbak.

The reduction in time spent in Oslo, from 6 to 4 weeks, meant that considerable sums were saved on accommodation. On the other hand, lecturing fees increased this first year of preparing an on-line curriculum. Much of this material will be used for the next course in 2020 as well so will be spread over several years.

10.3. Cooperation with NTNU and ICCROM

From the start, ICWCT was developed in collaboration between Riksantikvaren and NTNU, enabling the course to be a recognized part of an academic system. Offering an academic accreditation adds considerable status and credibility to the programme. An audit by NOKUT (the Norwegian Agency for Quality Assurance in Education) before the last course in 2016 has obliged NTNU to take a more active part in the course implementation to be allowed to continue providing accreditation. The course organisers have benefitted from this closer cooperation with NTNU by having Jon Nordsteien on the team. An extra pair of hands has been extremely welcome, ensuring that one person from the course administration was able to be present during all the lectures, steer discussions and clarify questions.

The collaboration between the local organisers of ICWCT and ICCROM is regulated through the "Memorandum of Understanding" (approved 2001), which defines the respective roles and responsibilities between the parties involved. ICCROM's active role is important for the profile of the ICWCT, and the increased involvement from ICCROM since 2008 has proved to be very beneficial to the course. A

recommendation would be to review the MoU and sign a renewed and updated contract between the organisations.

10.4 Looking ahead

The changed format to this year's ICWCT was a success. The organisers will continue to improve the on-line component of the course and strive to optimise developments in the technological field when planning the next course in 2020. The organisers still regard the course to be useful and important within international, professional wood conservation training. Future courses will adapt and change, offering new opportunities to improve even further. However, the success of the current course model should not be completely lost and the essence of the ICWCT should remain.

Course Directors: Anne Nyhamar & Sjur Mehlum

Oslo, January 2019



11. APPENDICES

Appendix 1: Course Announcement

Appendix 2: Pre-course information material

Appendix 3: On-line course programme

Appendix 4: ICWCT 2018 course programme

Appendix 5: Lecturers and resource people

Appendix 6: Course evaluation and analysis of results

Appendix 1: Course Announcement



THE 18th INTERNATIONAL COURSE ON

WOOD CONSERVATION TECHNOLOGY - ICWCT 2018

A course on the conservation of cultural heritage made of wood

The course is divided in two main parts:

1. **On-line distance learning:** 9 April – 11 May 2018
2. **Workshop in Oslo:** 4 – 29 June 2018

Workshop location:

Oslo, **Norway** (premises of Riksantikvaren – The Directorate for Cultural Heritage)

Partners

ICCROM (International Centre for the Study of the Preservation and Restoration of Cultural Property)

Riksantikvaren - The Directorate for Cultural Heritage, Norway

NTNU - Norwegian University of Science and Technology, Norway

Background and Content

The ICWCT was initiated as a response to a recommendation at UNESCO's General Conference in 1980, and has been organized in Norway every second year since 1984. It is directed towards professionals who have been working for some years within the field of wood conservation. The ICWCT covers a wide range of interdisciplinary topics relating to both buildings and objects made of wood. Theoretical and practical aspects of wood conservation are given equal consideration. Interesting cultural heritage sites constructed in wood will be visited during the course.

Aim and objectives

The aim of the course is to promote cultural understanding and research in the field of wood conservation, and to be a valuable resource for the work of the individual participants in their respective countries. The main objectives of the course are:

- to establish a basic knowledge of wood, and the processing and use of wood, both structurally and decoratively;
- to give participants the theoretical and practical knowledge essential for diagnosing the causes of deterioration, and for selecting the most appropriate methods of conservation and restoration of wood;
- to extend the knowledge of participants beyond their own professions for a broader understanding of different aspects and approaches to wood conservation;
- to bring people with various professions from different countries and cultures together for a mutual learning experience, drawing on different experiences, practices and approaches to wood conservation and use of wooden materials.

The course programme

For the first time, the ICWCT 2018 course programme will be divided into two main components:

1. A 5-week compulsory on-line introductory section where participants will have access to a digital platform from their respective home countries. Allow for at least 5 hours per week of interactive preparatory study with various exercises and papers to be submitted.
2. A 4-week full-time workshop in Oslo. The workshop includes lectures, practical conservation exercises, field studies, museum visits and excursions.

The curriculum includes distinct but interconnected units covering aspects of: properties of wood; factors affecting the decay of wood; principles of conservation, preventive conservation; conservation of objects and painted surfaces, archaeological wood and furniture; conservation of wooden buildings and structures., including wood working tools and machinery. The course will include an onsite practical workshop and a study tour to selected wooden heritage sites in Norway. As a part of the programme, each participant is expected to give a 20-minute presentation from his or her work experience in their own country.

Lecturers

Lecturers from Norway and other countries will be contributing to the course. All are recognized experts within the field of conservation and with various backgrounds and professional experience.

Exam

The course concludes with an exam, giving 15 university credits if passed. A full-time presence and active participation during both the on-line component and the course period in Oslo is required to be allowed to submit the exam and to obtain the course certificate.

Fees

Course participation is free of charge for the selected participants.

Travel, Accommodation and Living Expenses

Participants will be responsible for their round-trip travel costs to Oslo, Norway.

Accommodation for the period of the course in Oslo will be provided free of charge by the course organizers. To cover living expenses and transport within Oslo during the course, participants should plan for a minimum allowance of approx. NOK5000 (about 600 USD) for the 4 weeks.

Depending on availability of funding, and a stringent application process proving financial need, a limited number of partial scholarships may be available in special circumstances.

Participants

Applicants should be mid-career professionals with a minimum of three years' work experience in wood conservation. It is of great importance for the success of the course that the participants have relevant experience to contribute with, and benefit from, the mutual exchange of ideas.

The number of participants is limited to 20.

Language

The working language of the course is English. A good knowledge of English is essential for the benefit of the individual participant and for the course as a whole, and must therefore be documented in the application. A certificate of language is required for non-native speakers.

Applications

Please fill the ICCROM application form ([obtainable from ICCROM's web site](#)) and send it to the contact address below. (Email applications are welcome. If it is not possible to provide a scanned version of the necessary photographs and signatures, it will also be necessary to send a paper copy.) Together with the application you are also required to send

- i. A full professional curriculum vitae (in English)
- ii. One page report describing a conservation project related to wood for which you are or have been actively involved and can be shared with the other participants.

ICCROM – Sites Unit , Via di San Michele 13, I-00153, Rome, ITALY

Tel: +39 06 58553 1 - Fax: +39 06 58553349

Email: wood2018@iccrom.org - Web Site: www.iccrom.org

For further information regarding the course, please contact:

Ms. Anne Nyhamar (The Directorate for Cultural Heritage), e-mail: anne.nyhamar@ra.no

Application deadline

Applications should reach ICCROM by **30 September 2017** to ensure inclusion in our selection process.

Please note that the implementation of the course is subject to the approval of the ICCROM Programme and Budget 2017-2018 by the General Assembly of ICCROM to be held in November 2017.



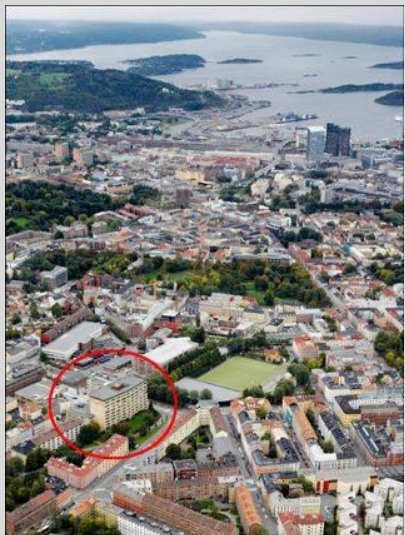
Practical Information



We look forward to seeing you all in Oslo for the ICWCT 2018. Following is some general information which we hope will help you during your arrival and stay.

Arrival

You will most probably arrive at Gardermoen, the main airport in Oslo. From the airport, we recommend you take **Airport bus number FB1** from outside the arrivals terminal to the stop Københavngata, the closest stop to your hostel Anker Apartments. The cost is 190 NOK and takes about 45 minutes. From the stop, walk 200 m. to the hostel.



You can also take the airport train (Flytoget), located directly under the airport, to the Central Station in Oslo; the trip takes 20 minutes and also costs NOK 190. **The regular train (NSB) costs less: NOK 101** and only takes a little longer (see www.nsb.no).

From outside the train station, take bus no. 30 to the stop called Dælenga which is right outside the hostel.

Be aware: Taxis in Norway are very expensive! A taxi from Gardermoen airport to the city centre is not recommended.

Accommodation

Anker Apartment - address: Københavngata 10, is situated in the popular area of Grüneløkka, about 25 - 30 minutes' walk, or 10 minutes by tram or bus to the offices of Riksantikvaren which is our base for the course.



You will have your own small studio with a bathroom (toilet and shower) and a small kitchen corner. The hostel will provide you with some basic kitchen utensils so you can prepare your own food. Some larger pots and pans will be available to share – and encourage joint dinners! Sheets, duvet, pillows and a towel are provided on arrival and

you can change them when you please for a small charge. There is a laundry with self-service washing machines available for use in the hostel. The wireless internet connection is free of charge. Otherwise the apartments are basic and do not include such facilities as TV, irons or hairdryers. There is a large roof terrace with spectacular views over Oslo where you can enjoy the light evenings and a small supermarket on the ground floor.

NOTE: Anker also have other hostels and hotels in Oslo. Please specify the address (Københavngata 10) or area (Grüneløkka) if asking directions! [Click here to see more about Anker Apartments.](#)

Course Information

The course starts on 4th June at the Premises of Riksantikvaren, Dronningensgate 13, 0105 Oslo. Registration starts at 08:30am.

Unless otherwise stated in the programme, all lectures will take place here. We recommend that you bring a laptop as all information regarding the course schedule will be posted on Blackboard and updated continuously. All presentations and photos from the course will be available on Blackboard too. There is free internet access in the Riksantikvaren office as well as at Anker Apartments.

A four-day trip to other parts of Norway to wooden heritage sites of special interest is an important part of the course. A detailed excursion programme and information about the trip will be given to you separately. Other excursions and field trips are clearly marked in the programme. All transport for trips and excursions outside of Oslo is provided by the course.

The working language of the course is English and no translations to other languages will be provided. The experiences and the challenges that you face in your work will be an important contribution to the course and our group discussions. Sharing ideas and experiences is a major aim of the programme. If English is not your first language, please do not feel worried about speaking perfectly! Our lecturers are also from several different countries and have their own distinctive accents. Native speakers should take care to ensure that they do not speak too quickly.

Schedule

Morning	08.30 - 12.00 check programme every day!
Lunch break	12.00 - 13.00 unless otherwise specified.
Afternoon	13.00 - 17.00 unless otherwise specified.

Please note that we start punctually and it is expected that every course participant turns up in good time for all lectures and classes. Failure to do so, unless for a very good reason, may result in a student not passing the course.





Please note...

The course brings together a group of professionals from very diverse cultural backgrounds. We will all be faced with new ways of thinking, forms of expression and ways of behaviour which are different from those we are used to. Experiencing these differences are all part of the course and often the most exciting and valuable experience participants take home with them! Please respect each other, keep an open mind and show tolerance, inclusivity and understanding. If you do have difficulties or need help in any way, please do not hesitate in approaching one of the course organisers.



During your time in Oslo you will be a member of an international community and also be a representative of your country, so in addition to specific illustrative material related to your work, past experience has shown us that any material that you can bring on your institution or current or recent projects, as well as more general material on your culture and country usually come in handy and are welcomed by the rest of the group.



Meals

With some exceptions, the course does not provide you with meals. You will be preparing and paying for your meals yourself. There are many cafes and restaurants in Oslo but you might find them quite expensive. There is a general food store in the ground floor of the hostel. There are also many international food stores in the neighbourhood of your hostel which sell a wide range of different foods, fruits and vegetables. You might want to bring some basic things like tea, coffee, spices - or any favourite or special foods from home. Do not try to bring meats or fresh fruit or vegetables as they might be confiscated by customs on arrival.

We recommend that you bring a packed lunch or sandwiches with you to the course every day as sometimes the lunch-break is not more than 30 minutes and we might not always be near shops.

Note that the tap water in Oslo is excellent drinking water so there is no need to buy it bottled!



Climate

The average summer temperature in Oslo in June is between +15 and +20°C, and the weather might be variable. It can alternate between warm, sunny days and chilly, wet weather, so you should bring suitable and sensible clothing. A warm sweater/ fleece and waterproof jacket are necessary. Some of the sites we will be visiting on the excursion are off the beaten track and in the forest, so comfortable footwear is advised (walking boots or good trainers) – and maybe a swim suit or bathing trunks, there are plenty of great bathing spots in the Oslo fjord!

You do not need any formal clothing for the course. You will notice that Norwegians generally dress quite casually; if it's suitable for the weather, it's usually also suitable for the occasion!



Public transport

Oslo has an excellent public transport network consisting of buses, trams, metro, ferries and local trains. The cost of public transport within Oslo is your own responsibility. Anker Student Hostel is a 25 minute walk from Riksantikvaren. Trams number 11 and 12 and bus no.30 go from near the hostel to Riksantikvaren. For further information and a journey planner [please click here to consult the Ruter website.](#)



Buying a ticket from the driver is no longer possible. Tickets can be purchased at stations using machines, at the Ruter information centre outside the Central Station, at Narvesen kiosks or 7-eleven shops. You can also download an App (Ruter) on your phone and buy a ticket electronically. A weekly pass is probably the most convenient.



Insurance

Please note that medical insurance/travel insurance for the participants is not covered by the course. Please make sure you have adequate protection for every eventuality. If you need any special medication please make sure you bring an adequate supply with you.

Oslo is generally considered a safe city, but like everywhere - crime can occur. We would not advise you not to carry a lot of cash on you or wander about alone late at night. Anker Apartments is situated in a mixed part of town with many different types of people. Keep to well-lit streets and open areas at night.



Religious services

Norway's state church is Lutheran, but many other Christian denominations are present in the city, including Catholic and Anglican with weekly services in English. Members of other world religions are also represented with a number of mosques, synagogues and temples in the city.

There are in general no classes on Sundays. A quiet room for prayer in Riksantikvaren's premises can be arranged on request.



Museums & cultural events

As part of the course, you will be visiting the Museum of Cultural History, the Viking Ship Museum and the Norwegian Folk Museum.

Whatever your preferences, it will be possible to find something of interest in Oslo. The Opera House is home to concerts, operas and ballets, while many bars and clubs have musical performances. In addition, there are many cinemas which show a wide variety of international films. A list of what's on in Oslo and a guides to concerts and other cultural events can be found on the following websites:

<https://www.visitoslo.com/en/whats-on/events/>

<http://www.whatsonoslo.no/>

https://www.tripadvisor.com/Attractions-g190479-Activities-Oslo_Eastern_Norway.html



PROGRAMME for on-line component on 'Blackboard'

Your user account (FEIDE account) at NTNU that you use to log in to Blackboard: <https://innsida.ntnu.no/bb-student>. Your username and password have been sent to you. The password can be changed at: <https://BAS.ntnu.no/userclient/>

In Blackboard you will find a link to your course:

AAR6047 The International Course on Wood Conservation Technology (2018 VÅR)

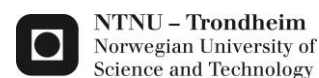
Date	Week	UNIT 1: Introduction	
	0	<p>Pre-course start: Welcome and introduction to the course with welcome video and greeting the course directors.</p> <p>Presentations of participants.</p> <p><i>Please note folder with compulsory preparatory reading list.</i></p>	<p>Course Directors: Anne Nyhamar Sjur Mehlum (The Directorate for Cultural Heritage, Riksantikvaren) Jon Nordsteien (NTNU)</p>
9 - 13 April	1	<p>Conservation theory and principles <i>Reflect on current principles/approaches that underpin the conservation of wooden heritage. The session will also look at the evolving nature of conservation principles/ approaches over the last 150 years and the latest paradigms.</i></p>	Dr. Gamini Wijesuriya (ICCRUM)
		UNIT 2: Wood properties	
16 - 20 April	2	<p>Wood properties <i>An introduction to wood structure and properties in order to better understand the complex relationship between material and object and conservation. Wood science and technology is a necessary support for an effective preservation of wooden heritage.</i></p>	Dr. Marco Fioravanti (University of Florence, Italy)
		UNIT 3: Environment, climate and decay	
23 - 27 April	3.1	<p>Environment and decay <i>By understanding the individual requirements for the activity of fungi and insects, it is possible to handle any damages that are caused by biodeterioration with limited effort and with maximum effect.</i></p>	Dr. Johan Mattsson (Mycoteam, Norway)
30 April – 4 May	3.2	<p>Climatology <i>Addressing the discipline of environmental preventive conservation in caring for indoor collections and historic materials. The main emphasis will be on the role of</i></p>	Dr. Nigel Blades (National Trust, UK)

		<i>temperature, relative humidity and light as agents of deterioration and how they are monitored and controlled.</i>	
11 May		<i>Final submission of all assignments before arriving in Oslo. Completion of reading lists before arrival.</i>	

Please note!

- that study material for each Unit can be found in labelled folders on Blackboard in the left-hand margin under **Curriculum**.
- that the weekly schedule should be followed, as some study-material might change or be added last-minute. Please make sure you check daily!
- that the **blog** is there to exchange information and be used actively.
- that the **discussion board** for each unit is to be used to debate the curriculum of that particular Unit and to and ask questions to the lecturer.
- that the responsible lecturers will be available at least once a day on Blackboard to answer questions during “their” Unit.
- In case of technical difficulties, please contact Annveig Skurseth: annveig.skurseth@ntnu.no

Please note that following the on-line part of the course, completing the required reading as well as submitting assignments on time, is required to pass the final examination.





PROGRAMME ICWCT 2018
Oslo 4th – 29th June



Date	UNIT 1: Introduction	Lecturer	Venue
Monday 4 June			
08:30 - 09:00	Registration and coffee	Anne Nyhamar	Riksantikvaren
09:15 - 10:30	Welcome, introductions & practicalities	Sjur Mehlum	Conference Hall
10:30 - 12:00	Lecture: 'A Global Perspective' - Gamini Wijesuriya (ICCROM)	Jon Nordsteien	
12:00 - 13:15	<i>Lunch provided in the Riksantikvaren canteen</i>	Hilde Løveid Varvin	
13:30	Departure by bus to the Folk Museum	Gamini Wijesuriya	
14:00 - 14.15	Welcome to the Museum	Marco Fioravanti	
14:15 - 15:30	Guided tour of the Museum	Museum guides	The Norwegian Folk Museum, Bygdøy
15:30 - 16:00	<i>Coffee break</i>		
16:00 - 17:00	Lecture: 'Norwegian wood' – the use and conservation of wood in Norway. Terje Planke (Norwegian Folkmuseum)	Terje Planke	Folkestuen & Østerdalsstua
17:00 - 18:00	Welcome drinks and introductions		
18:00	Dinner at the Museum		
	Welcome by the General Director of Riksantikvaren - Jørn Holme, and Head of the Conservation Department at the Folk Museum, Stian Myhren	Jørn Holme, Stian Myhren	
20:00	Bus returns to Anker Apartments		
UNIT 2: Wood properties			
Tuesday 5			
09:00 - 10:30	Theory and Principles	JN Gamini Wijesuriya (ICCROM)	Riksantikvaren conference hall
10:30 - 11:00	<i>Coffee break</i>		
11:00 - 12:00	Wood properties with re-cap from the on-line session.	Marco Fioravanti (University of Florence)	
12:00 - 13:00	<i>Lunch (bring your own)</i>		
13:00 - 17:00	Wood properties cont.		
Wednesday 6			
09:00 - 12:00	Wood properties	JN Marco Fioravanti	Riksantikvaren
12:00 - 13:00	<i>Lunch (bring your own)</i>		
13:00 - 17:00	Wood properties cont.		
UNIT 3: Environment, climate and decay			
Thursday 7			
09:00 - 12:00	Environment and decay with re-cap from the on-line session. Condition analysis.	JN	Riksantikvaren

12:00 – 13:00 13:00 – 17:00	<i>Lunch (bring your own)</i> Environment and decay <i>cont.</i>	Johan Mattsson (Mycoteam)	
Friday 8 09:00 – 12:00 12:00 – 13:00 13:00 – 17:00	Climatology <i>Lunch (bring your own)</i> Climatology <i>cont.</i>	^{JN} Nigel Blades (National Trust, UK)	Vøienvolden farm, Maridalsveien 120
Saturday 9 14:00	Meet by the main gate of the Vigeland Park for a guided walk through the sculpture park to Sjur's house. Informal picnic in the garden	Sjur Anne Jon	Vigeland Park Sjur's house: Madserud Allé 50
Sunday 10	<i>Free day</i>		
UNIT 4: Wooden structures			
Monday 11 09:00 – 12:00 12:00 – 13:00 13:00 – 17:00	The structural use of wood <i>Lunch (bring your own)</i> Built structures <i>cont.</i>	^{JN} Gord Macdonald (Heritage Works)	Riksantikvaren
Tuesday 12 09:00 – 12:00 12:00 – 13:00 13:00 – 15:00 15:00 – 15:15 15:15 – 17:00	Structural repair of buildings <i>Lunch (bring your own)</i> Structural repair <i>Cont.</i> <i>Coffee break</i> The Japanese approach to wood conservation	^{JN} Gord Macdonald Nobuko Inaba (University of Tsukuba)	Riksantikvaren
Wednesday 13 08:00 09:30 12:00 15:00 18:00 18:30	Excursion: Bus departs from outside Anker Apartments. - First stop Spydeberg, in the forest: From tree to timber - <i>Picnic lunch (provided)</i> - Working the sawmill Departure for Lillehammer Arrival Lillehammer – Stasjonen Hotel. <i>Dinner at the hotel provided</i>	Anne/ Sjur/ Jon Nobuko Inaba Per-Willy Fergestad Andreas Hansen Schille	Haugen Farm, Haugenveien 160 Spydeberg Lillehammer
Thursday 14 08:30 12:00 -13:00 13:00 - 14:00 – 15:30 16:30 – 18:00 18:00 – 19.30 20:30	Departure hotel to Maihaugen Museum: Monitoring the effects of climate change on wooden cultural heritage. <i>Lunch provided at the museum</i> <i>Departure to Ringebu</i> Ringebu Stave Church – indoor climate and the conservation of the interior and objects. Kleppe farm: Adapting traditional farm buildings to new use. <i>Dinner at the farm provided</i> Arrival Fossberg Hotel, Lom	Marte Boro (RA) Torgeir Korpberget (Maihaugen) Mille Stein (NIKU) Leif Anker (RA) Dag Lindvik	Lillehammer Ringebu Stave Church Kleppe Lom

Friday 15			
08:30 – 10:00	Lecture: The Stave Churches: Conservation according to international charters.	Sjur Mehlum Leif Anker	Hotel meeting room Lom Stave Church
10:00 – 11:00	Lom Stave Church guided tour		
11:15	Departure Lom Picnic lunch in the Sognefjell mountains		
16:00 – 18:00	Arrival Urnes Stave Church - guided tour	Marit Bøen (Urnes Church warden)	Urnes/ Ornes
18:00 – 18:20	Ferry to Solvorn		
18:20 – 19:00	Bus to Sogndal. Arrival Hofslund Hotel		
19:30	<i>Dinner at the hotel provided</i>		Sogndal
Saturday 16			
08:00	Departure hotel		
9:00 – 11:00	Borgund Stave Church Lecture: The owner's perspective: 'Wear, tear and visitor management'.	Sjur Mehlum Merete Winness (The National Trust of Norway)	Borgund
13:00 – 15:00	<i>Stop for lunch at Valdres Museum, Fagernes Time for a look around the museum</i>		Valdres Museum, Fagernes
15:00	Departure Fagernes		
Ca.18:00	Arrive back at Anker Apartments		
Sunday 17	Free day		
UNIT 5: Conservation of wooden objects			
Monday 18			
09:00 – 12:00	Møbelverkstedet: How and why furniture structures are put together	AN Shayne Rivers Hanne Bjørk Anne-Cathrine Hagen	'Møbelverkstedet' ("The Furniture Workshop") Københavngata 2
12:00 – 13:00	<i>Lunch (bring your own)</i>		
13:00 – 16:30	Furniture structures <i>cont.</i>		
Tuesday 19			
09:00 – 12:00	Møbelverkstedet: How and why wood structures fall apart.	AN Shayne Rivers Hanne Bjørk Anne-Cathrine Hagen	Møbelverkstedet Københavngata 2
12:00 – 13:00	<i>Lunch (bring your own)</i>		
13:00 – 16:30	Programme <i>cont.</i>		
17:00 – 18:30	<i>Evening walk through parts of Oslo's wooden heritage</i>	Morten Stige (Oslo City Antiquarian)	Meet outside the workshop
Wednesday 20			
09:00 – 12:00	Møbelverkstedet: Reading wooden objects	AN Shayne Rivers Hanne Bjørk Anne-Cathrine Hagen	Møbelverkstedet Københavngata 2
12:00 – 13:00	<i>Lunch (bring your own)</i>		
13:00 – 16:30	Reading wooden objects <i>cont.</i>		
Thursday 21			
08:00 – 09:00	Guided tour of the Viking ship Museum	AN Jan Bill Bjarte Aarseth, David Hauer Kaja Kollandsrud (Museum of Cultural History, University of Oslo)	Viking Ship Museum
09:00 – 12:00	Movement and climate/ Documentation and 3D-scanning of the ships and objects.		
12:00 – 13:00	<i>Lunch (bring your own)</i>		
13:00 – 17:00	'Done in earth, as it is in heaven': The making and meaning of medieval church art. Film: 'The reconstruction of the Hedalen Madonna'.		Collett building, The Folk Museum

UNIT 6: Buildings surface treatment and workshop			
Friday 22 09:00 – 12:00 12:00 – 13:00 13:00 – 17:00	Surface treatment buildings: Paint study/ paint making, architectural paint research <i>Lunch (bring your own)</i> Surface treatment <i>cont.</i>	<i>JN</i> Jon Brænne (Vel Bevert)	Folk Museum Collett building The work-yard
Saturday 23	<i>Free day</i>		
Sunday 24	<i>Free day</i>		
Monday 25 08:00 09:00 12:00 – 13:00 13:00 – 17:00 17:00	Conservation of buildings, workshop Bus departs from outside Anker Apartments to Drøbak, small town south of Oslo. Arrival Drøbak: Introduction to Workshop Programme. <i>Lunch provided</i> Workshop <i>continued</i> Bus returns to Anker	<i>JN</i> Per Willy Fergestad Jack Hollinger	Drøbak
Tuesday 26 08:00 09:00 12:00 – 13:00 13:00 – 17:00 18:00	Bus departs from outside Anker Apartments Conservation of buildings, workshop <i>cont.</i> <i>Lunch provided</i> Workshop <i>continued</i> Ferry back to Oslo – weather permitting	<i>JN</i> Per Willy Fergestad Jack Hollinger	Drøbak
Wednesday 27 08:00 09:00 12:00 – 13:00 13:00 – 17:00 17:00	Bus departs from outside Anker Apartments Conservation of buildings, workshop <i>cont.</i> <i>Lunch provided</i> Workshop <i>continued</i> Picnic on the beach in Drøbak	<i>JN</i> Per Willy Fergestad Jack Hollinger	Drøbak
Thursday 28 09:00 – 16:00	Groups assigned their tasks at the Folk Museum and prepare their presentations for final evaluations. <i>Lunch (bring your own)</i>	<i>JN/ SM</i> Jon Nordsteien Sjur Mehlum Anne Nyhamar	Folk Museum Meet in the 'Trønderlåven' barn
Friday 29 09:00 – 13:00 13:00 – 14:00 14:30 – 15:30 15:30 – 17:00	Group Exam presentations <i>Lunch (provided)</i> Group evaluation of the course Closing ceremony End of ICWCT 2018	Panel of judges: Eir Grytli (NTNU) Leif Anker (RA) Terje Planke (Folk Museum) Tone Olstad (NIKU)	Riksantikvaren Conference room

AN: 01.06.2018

AN= Anne Nyhamar

SM= Sjur Mehlum

JN= Jon Nordsteien

Appendix 5: Lecturers and resource people

- **Course Directors:**
Anne Nyhamar, Senior Advisor, International Section, Riksantikvaren
Sjur Mehlum: Senior Advisor, Section of Conservation, Riksantikvaren
Jon Ivar Nordsteien: Assistant Professor, Department of Architectural Design, History and Technology, NTNU
- **Gamini Wijesuriya**, ICCROM (Retired)
Joseph King, Director for Sites Unit, ICCROM
- **Lecturers**
Marco Fioravanti, Associated Professor of Wood science and technology, University of Florence.
Nigel Blades, Preventive Conservation Advisor, National Trust, UK
Johan Mattsson, Manager R&D in Mycoteam, Oslo
Marte Boro, Senior Advisor, Riksantikvaren
Shayne Rivers, Senior lecturer, West Dean College, UK
Hanne Bjørk, Owner and Manager, Møbelverkstedet (The Furniture Workshop), Oslo
Anne Cathrine Hagen, Owner and Manager, Møbelverkstedet (The Furniture Workshop), Oslo
Jon Brænne, Paintings conservator, Vel Bevert, private consultancy. Oslo
Nobuko Inaba, Professor, World Heritage Studies, University of Tsukuba, Japan
Gord Macdonald, Master Carpenter and Buildings Conservator, Heritageworks, Canada
Per-Willy Fergestad, Master Carpenter at Follo Museum, Museums of Akershus
Jack Hollinger, College Professor of carpentry and joinery at Algonquin College in Ontario, Canada
Kaja Kollandsrud, Senior Conservator, Museum of Cultural History, Oslo
Leif Anker, Senior Advisor, Riksantikvaren
Torgeir Korpberget, Technical Manager, Maihaugen Museum
Jan Bill, Professor, The Museum of Cultural History, Oslo
David Hauer, Conservator, The Museum of Cultural History, Oslo
Bjarte Aarseth, Wood carver/Engineer, The Viking Ship Museum, The Museum of Cultural History
Stian Myhren, Head of Section for Building Preservation, Norsk Folkemuseum
Terje Planke, Senior Conservator in the Section for Building Preservation, Norsk Folkemuseum
Dag Lindvik, Owner, Kleppe Farm
Marte Bøen, Church Warden, Urnes Stave Church
Merete Winness, National Trust of Norway
Mille Stein, Emeritus, NIKU
Morten Stige, Head of Department Oslo West, Oslo City Antiquarian
- **Examination Panel:**
Eir Grytli, Professor of Architecture, Department of Architecture and Technology, NTNU
Tone Olstad, Paintings Conservator and Researcher, NIKU
Leif Anker, Senior Advisor, Riksantikvaren
Terje Planke, Senior Conservator in the Section for Building Preservation, Norsk Folkemuseum

Appendix 6: Course evaluation and analysis of results.

Compiled and written by Francesca Pandolfi, ICCROM

Introduction and Methodology

The survey was designed to evaluate the International Course on Wood Conservation Technology, that was held in Norway from the 4th to the 29th June 2018, preceded by a 5-week compulsory on-line introductory section. The questionnaire aimed at understanding the participants' perception of the mixed structure of the course, and to assess their level of satisfaction. The survey was made available from the 28th June, one day before the end of the course, to encourage people to fill it right after the activities. Out of 20 participants, 15 have replied until today (7th August 2018). A total of 16 eventually answered the electronic survey

In order to design the questionnaires, we have extensively communicated with one of the organizers, Anne Nyhamar, and the questions from both the Norwegian and ICCROM organizers were merged together, with other questions that were asked on different online platforms. Moreover, we have analysed the platform Blackboard, and we have interviewed one of the lecturers of both the on-line and off-line components of the course, Gamini Wijesuriya. The choice of Google Forms was made after different tools for survey design were taken into consideration, and it was ultimately used because it is free, easy to use, and share.

The questionnaires were divided into 4 sections, Practicalities (7 questions), On-line course (Blackboard) (10 questions), Off-line course in Oslo (8 questions) and Overall impressions (11 questions). Each question was complemented with a 'comment' bar for those who would wish to give a narrative feedback. It was mandatory for them to complete all the questions and the results were collected anonymously. The results can be consulted at this link:

The results show that the majority of the participants were very satisfied with the course, and that, apart from some initial problems with the on-line platform Blackboard, they were happy with the chosen format.

The new structure of combining the online and offline components together has been received positively by participants and merits further development in future courses. Perhaps there could be other options of platforms to utilize which would be more intuitive and easier to access. In general participants were happy about the total length of the course.

Most of the participants were highly satisfied with the course content, organization, and implementation of the course. On the issues of logistics, Wi-Fi connection at the accommodation could also be improved for next courses.

Report on Online Survey for ICWCT18

Results: Practicalities

- What is your overall impression of the practical organisation of the course?
Key words (15 replies):
Well organized, almost perfect, well planned, very good, high level, excellent, easy and smoothly
- The information and practical assistance PRECEDING the course were sufficient.
66, 7 % (10 p.) Strongly agree
33, 3 % (5 p.) Agree
Key words (4 comments):
Well informed and advised, clear information, practical assistance enough, not easy to prepare presentation while working, confusing parts of Blackboard
- The information and practical assistance DURING the course were sufficient.
73, 3 % (11 p.) Strongly agree
26, 7 % (4 p.) Agree
Key words (3 comments):
Very well informed, sufficient like the pre information, issues with checking out of the Anker
- The information regarding the course schedule was clear.
86, 7 % (13 p.) Strongly agree
13, 3 % (2 p.) Agree
Key words (4 comments):
Information prior to the course, very well scheduled, program schedule given + regular mails + oral information, everything extremely well planned, only the final task took more time, completely clear
- The duration of the course was satisfactory.
20 % (3 p.) Strongly agree
80 % (12 p.) Agree
Key words (8 comments):
Additional week, timing good but maybe the lecturers needed more time, nice to have longer courses but difficult for some participants, increased by few days, optimal duration, longer online part, maybe extend to 5 weeks, practically 4 weeks, accurate amount of time
- The number of participants was convenient.
60 % (9 p.) Strongly agree
40 % (6 p.) Agree
Key words (3 comments):
Yes, easier to work with less people, 15-20 in my experience is accurate
- The accommodation at Anker Apartments was satisfactory.
26, 7 % (4 p.) Strongly agree
73, 3 % (11 p.) Agree
Key words (8 comments):
Everything we needed, accommodation was good, some disturbances in internet, Wi-Fi not good, list for the students what to expect, Wi-Fi should be improved, few inconveniences, good accessibility and many advantages, satisfactory but weird people, more stable Wi-Fi connection

Results: On-line course (Blackboard)

- Did you have technical difficulties logging on to Blackboard?
20 % (3 p.) Never
73, 3 % (11 p.) Sometimes
6, 7 % (1 p.) Often
Key words (7 comments):
Bit confusing, uploading documents was a hassle, not easy to manage, quite hard to understand at first, not intuitive, difficulties to login (maybe for internet in the country), login page in Norwegian, initial logging, help with password, at the beginning when trying to log in
- Did you get help promptly if required?
13 Yes
1 N/A
1 'Never had problem logging on'
- The information was easy to find and locate within Blackboard.
13, 3 % (2 p.) Strongly agree
80 % (12 p.) Agree
6, 7 % (1 p.) Disagree
Key words (7 comments):
After finding your way, only after, find the subject easily within folders, easy, blog very difficult to use, information schedule and units not so much, blog a bit complicated, blog hard to find, blog a little bit blind
- The information regarding the different units was clear on Blackboard.
40 % (6 p.) Strongly agree
53, 3 % (8 p.) Agree
6, 7 % (1 p.) Strongly disagree
Key words (2 comments):
Post on Blackboard and some additional information needed, clear and easier with the frequent mails
- The workload was appropriate.
20 % (3 p.) Strongly agree
73, 3 % (11 p.) Agree
6, 7 % (1 p.) Disagree
Key words (4 comments):
Compulsory readings should be introduced soon after shortlisting of candidates so later part can focus on secondary readings, that should be reduced and made more precise, appropriate but a bit hard, bit too heavy for people engaged in family, work and other commitment, no difficulties
- The difficulty of the weekly assignments was appropriate.
26, 7 % (4 p.) Strongly agree
73, 3 % (11 p.) Agree
Key words (2 comments):
Assignments quite easy if materials are read properly, more flexibility
- How many hours per week did you spend on the course?
60 % (9 p.) More than 5h

33, 3 % (5 p.) 4h to 5h

6,7 % (1 p.) 1h to 2h

Key words (6 comments):

I was working, so I had to find the time, depends from the unit, depends on reading materials and units, 2h daily required for reading content, difficult to count correctly, even more than 10 hours for imperfect language skills

- Given the time you invested, are you satisfied with what you have learned?

80 % (12 p.) Strongly agree

20 % (3 p.) Agree

Key words (4 comments):

More than satisfied, grateful, very good programmed and planned, very satisfied, meaningful and valuable

- In your opinion, should the on-line component be shorter / longer?

Key words (15 replies):

5 As it is

9 Longer

1 Shorter

- Do you think that the organizers should continue to use Blackboard for future courses?

15 Yes (with a little more guidance, improving the blog, it helps me a lot, helpful for interaction, good idea, definitely, very convenient to receive the documentation in advance, absolutely, 100%)

0 No

Results: Off-line course in Oslo

- The preparatory work on Blackboard helped to understand on-site lectures and practical exercises.

13, 3 % (2 p.) Strongly agree

80 % (12 p.) Agree

6, 7 % (1 p.) Disagree

Key words (3 comments):

Useful to have additional reading from Shine Rivers, yes but sometimes it was better to see and do things to understand them, "I missed analysis of our Blackboard works"

- The on-site lecturer's recap of the online curriculum was adequate.

66, 7 % (10 p.) Strongly agree

26, 7 % (4 p.) Agree

6, 7 % (1 p.) Disagree

Key words (3 comments):

Must, do not understand everything by just reading it, no possibility to discuss the online assessment because too many questions, but not seen necessarily as a bad thing, disagree is a strong word but recap of humidity principles was dispensable, no time for Blackboard work analysis

- The amount of time for the excursion was appropriate.

53, 3 % (8 p.) Strongly agree

46, 7 % (7 p.) Agree

Key words (2 comments):

Just enough time, never enough but he understands that more time means a prolongation of the course

- The choice of sites visited during the excursion was satisfactory.
66, 7 % (10 p.) Strongly agree
26, 7 % (4 p.) Agree
6, 7 % (1 p.) Disagree
Key words (4 comments):
Yes, and fun stopping to enjoy the view, choice of sites more or like similar in types, wishes to see different sites, might have been interesting to see more diverse types of wooden heritage, beautiful
- The practical workshop in Drøbak was useful.
73, 3 % (11 p.) Strongly agree
20 % (3 p.) Agree
6, 7 % (1 p.) Disagree
Key words (4 comments):
Yes, great teaching activities, Per Willi perfect, Jack needs improving the organization, we experienced using different traditional tools, the practical workshop helped turning wood into the heritage, very useful, must of the course! City tour should be in the morning because in the afternoon people were tired, best hands-on experience, should be kept as it is in the future, very insightful, little confusing working in groups of 3 on many different projects at once, any practise helps to remember theoretical information
- The theoretical lectures, visit to the forest and practical workshop complemented each other in a positive way.
60 % (9 p.) Strongly agree
26, 7 % (4 p.) Agree
13, 3 % (2 p.) Strongly disagree
Key words (1 comments):
Yes, it helps to understand the real process
- The balance theory / practice was satisfactory.
46, 7 % (7 p.) Strongly agree
40 % (6 p.) Agree
13, 3 % (2 p.) Disagree
Key words (5 comments):
Yes, it was useful to apply the theory to the practice, in some cases (wood and its preservation) practical was not enough, wishes some practical works in understanding the decay and measures, also to discuss theoretically and practically wood species from their home countries, one cannot exist without the other, better with 5 weeks and more time for practice, any practice helps to remember theoretical information, but difficult to bundle everything into four weeks.
- The final group exam was a useful exercise.
60 % (9 p.) Strongly agree
40 % (6 p.) Agree
Key words (10 comments):
1 building/1 object was too much, need more time to observe and prepare the ppt, opportunity to analyse the structure and object with limited time, different countries, different perspectives and approaches, useful but their group lacked time to discuss all the

issues properly, some decisions were more individual than group work, should be organized a better workplace for group work, on or off site, a little more time to organise better the presentation, difficult to work in a group with strangers but rewarding, little too much for one day, definitely, because of the differences between the people

Results: Overall impressions

- The components (online and offline) were well balanced.
40 % (6 p.) Strongly agree
53, 3 % (8 p.) Agree
6, 7 % (1 p.) Disagree
Key words (3 comments):
Very well balanced and thought, would be better if the two compulsory books were available earlier, include Shayne's reading materials in the online part, put all literature to Blackboard in advance, the program is dense, and people are tired
- Did you find the sequence in the curriculum helpful and logical?
80 % (12 p.) Yes, absolutely
20 % (3 p.) Yes, probably
- The academic level of teaching was satisfactory.
80 % (12 p.) Strongly agree
20 % (3 p.) Agree
Key words (1 comments):
Could be improved the part on object/painting/sculpture, including methods of intervention, details on materials used for consolidation
- The balance buildings / objects was satisfactory.
40 % (6 p.) Strongly agree
46, 7 % (7 p.) Agree
13, 3 % (2 p.) Disagree
Key words (2 comments):
Like to practice more on object paintings, heavier weighting on buildings
- What you have learnt on the course will be useful in your work.
80 % (12 p.) Yes, absolutely
20 % (3 p.) Yes, probably
Key words (4 comments):
Country without awareness of wood behaviour, many things learned during the course, learn a lot, get more ideas to share among colleagues and the authority, some parts not directly related to the work but useful to go through them, try to apply the information relevant for the work
- Which of the lecturers would you recommend we invite back to the ICWCT?
12 All of them
6 Shayne Rivers
5 Jon Brænne, Marco Fioravanti, Per-Willy Fergestad
4 Nigel Blades
2 Gord Macdonald
1 Johan Mattsson, Nobuko Inaba, Sjur Mehlum, Jack Hollinger, Gamini Wijesuriya

- Would you recommend the course to colleagues in your home country?

100% (15 p.) Yes, absolutely

Key words (4 comments):

As it was recommended to me, I will surely share this course among my colleagues, build a “fraternity” on wooden heritage, learn a lot from experts and participants, especially for the conservators, opportunity to find out about wood and wooden architecture/objects, missing in his country

