

Austria's part as innovative Timber Construction stronghold location in the international community

The university as a central platform, key position and motor for innovation, research and development, cooperation center of science and economy & industry

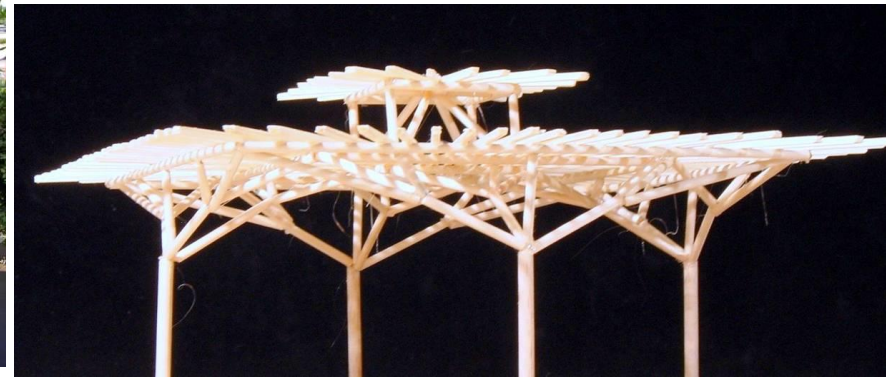
- **What are the opportunities and the limits of timber construction ?**
- **How can Austria's timber industry contribute to global climate/energy challenges**



CNC Technology and holistic approach in education



Education program at the University of Innsbruck a holistic interdisciplinary approach related to theoretical and practical experience



2002



2008



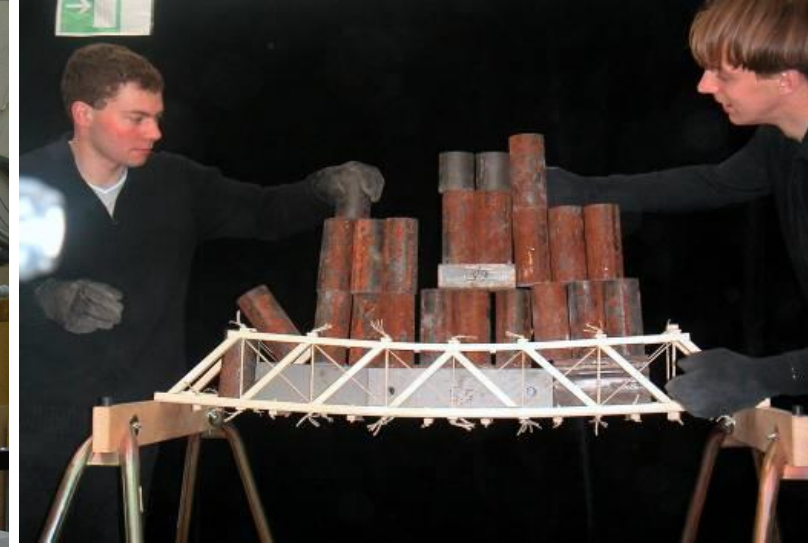
2009

**Architecture &
Engineering &
Energy Efficiency**
Common R&D activities
e.g. Smart city programm





CNC Technology and holistic approach in education



- ✓ **2002** a new chair for timber construction was founded with a model building laboratory for students in architecture and civil engineering.
- ✓ **2006** the chair applied successfully for a CNC cutting machine
- ✓ **2014** a new curricula provided new courses: “practical timber stage & CNC fabrication “





CNC Technology and holistic approach in education

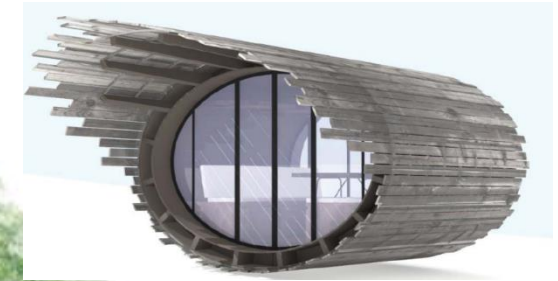


- ✓ The target is to learn how to design and how to prefabricate timber structures with computer aided tools
- ✓ In **november 2015**, a brand new six axial cutting machine has been installed, where the University of Innsbruck was involved with his robotic specialists.

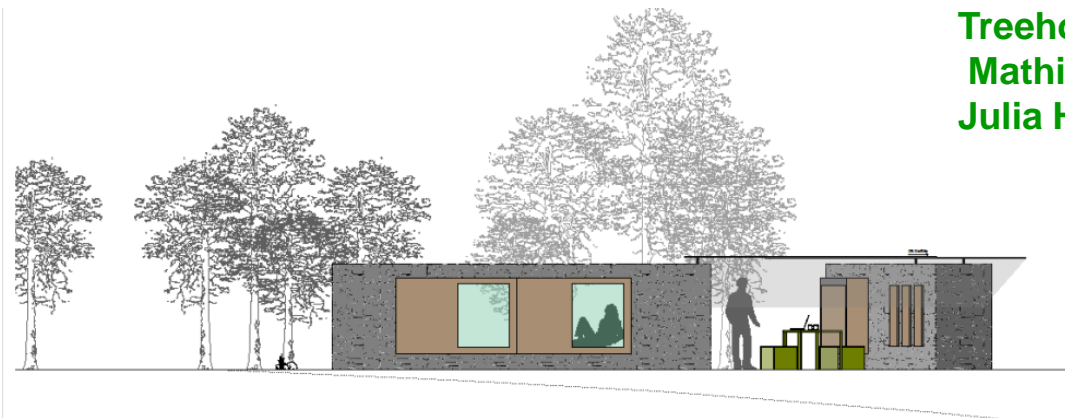


Student design contest in Cantercel

2013 design workshop for modular student homes for self construction
laureates of 3 selected projects to be built



3 barrels for Cantercel
Jonas Davidson,
Johannes Bachmann

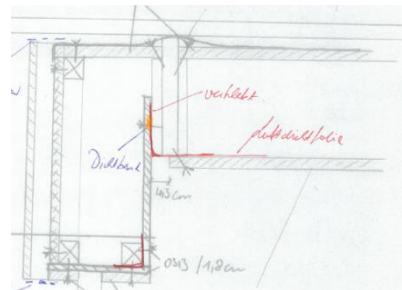
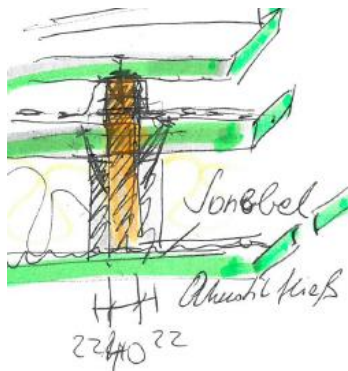
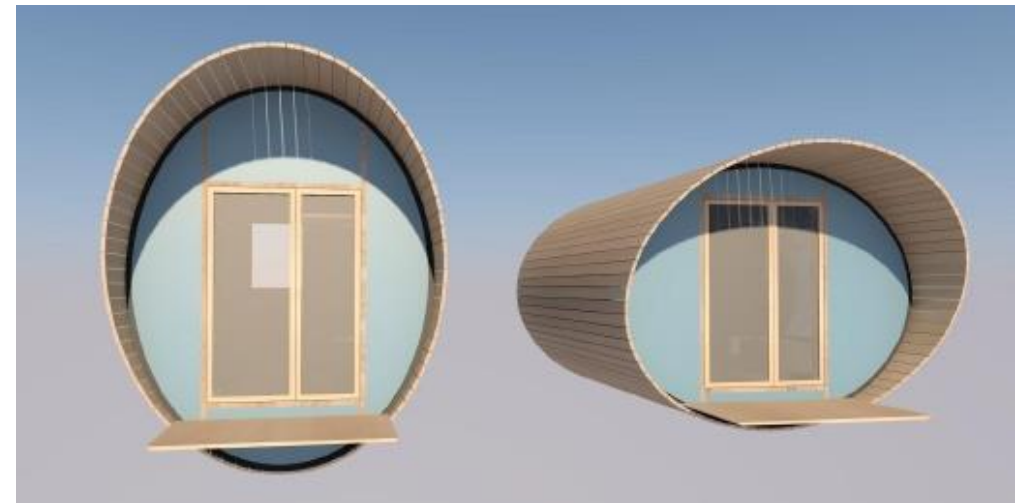
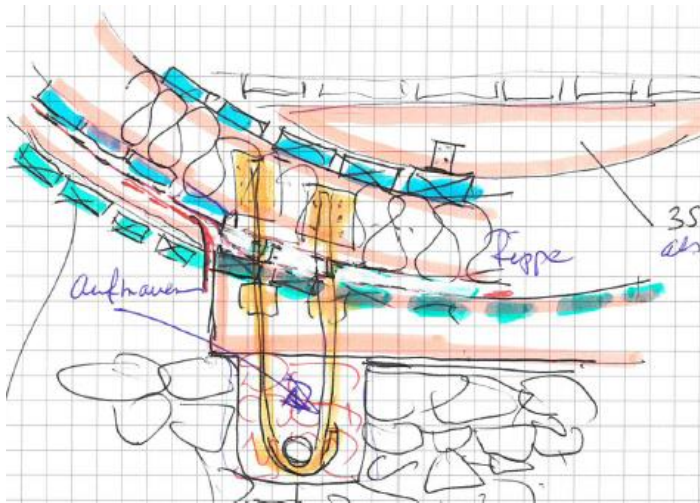


Treehouse for Corsica
Mathias Gritsch,
Julia Hauthaler



Interdisciplinary design work






How to built ? From architectural concept to realization

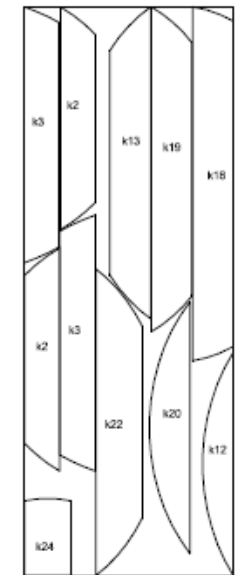
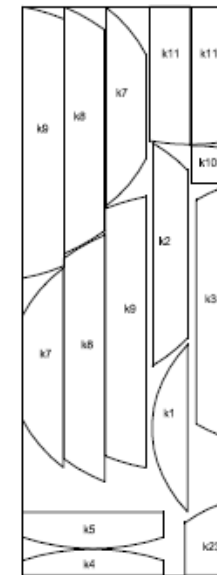
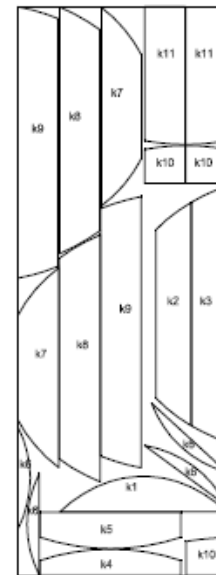
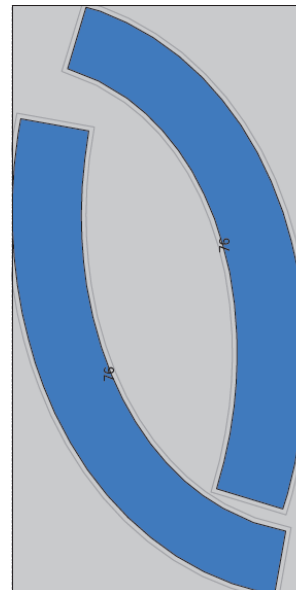




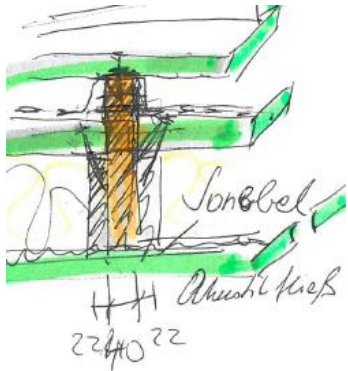
CAD Design and CNC Cutting

Teileliste

		Maße	Bezeichnung	Menge
1		650.63 x 2262.38	74	30
2		650.63 x 2262.38	75	20
3		650.63 x 2262.38	76	10
4		374.30 x 1726.69	2	10
5		469.36 x 1480.00	1	5
GESAMT				75



Building workshop in summer 2015



Assembling 180 CNC cut segments with 6000 screws to build 15 ovoid ribs made of a central rib and 2 lateral ribs.



Building workshop in summer 2015



**The 4th day ! Raising 15 ribs with
mussel power anchoring them on
foundations in a very precise position.**

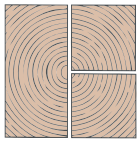


Building workshop in summer 2016

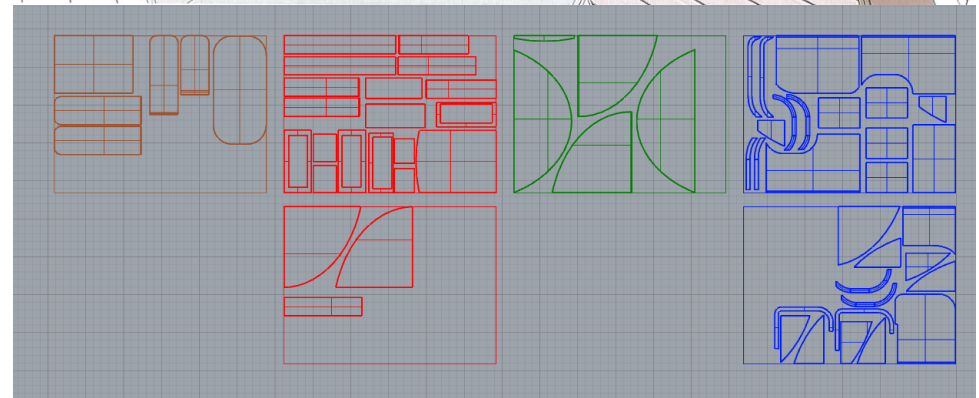
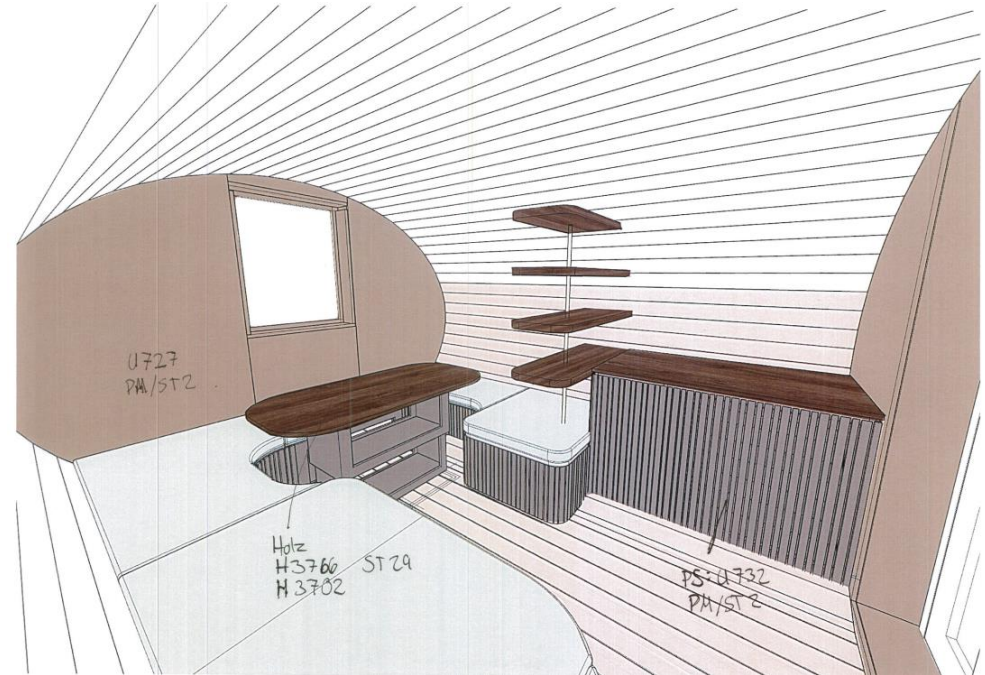


U-MESSERGEBNIS
n50 = 0,78
VLeakage = 0012m³/h
Pdiff = + 0,2Pa

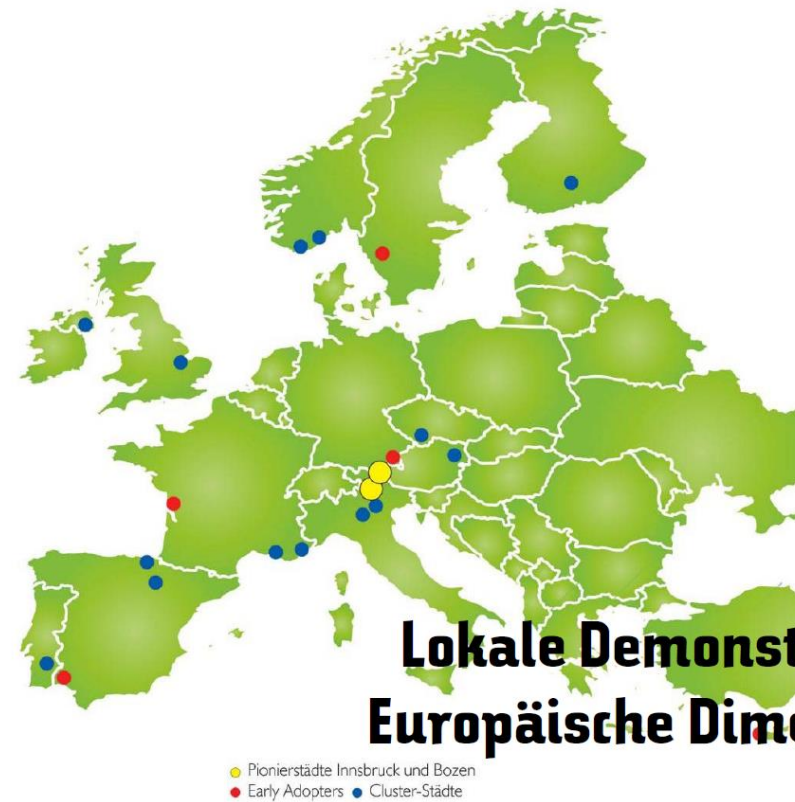
**Finishing up the exterior
Installation of different
ventilation systems**



Indoor design with CAD and CNC



Challenges, opportunities and climate change

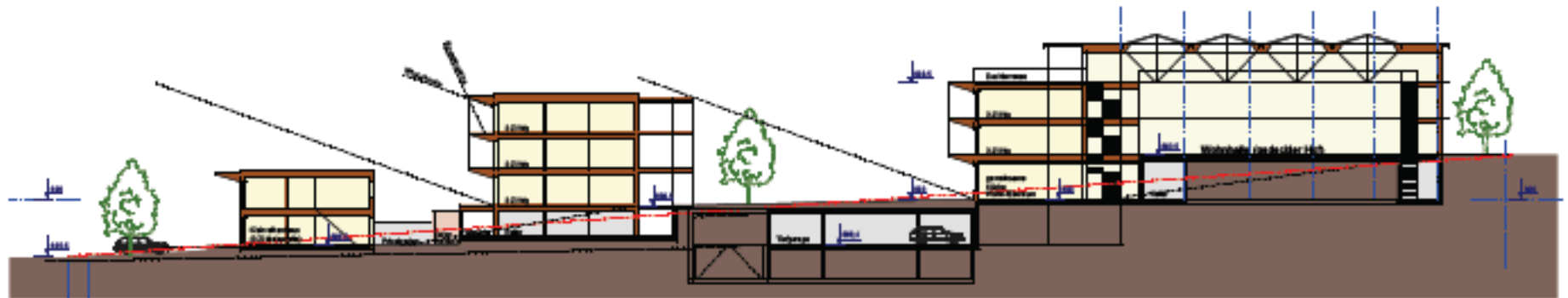
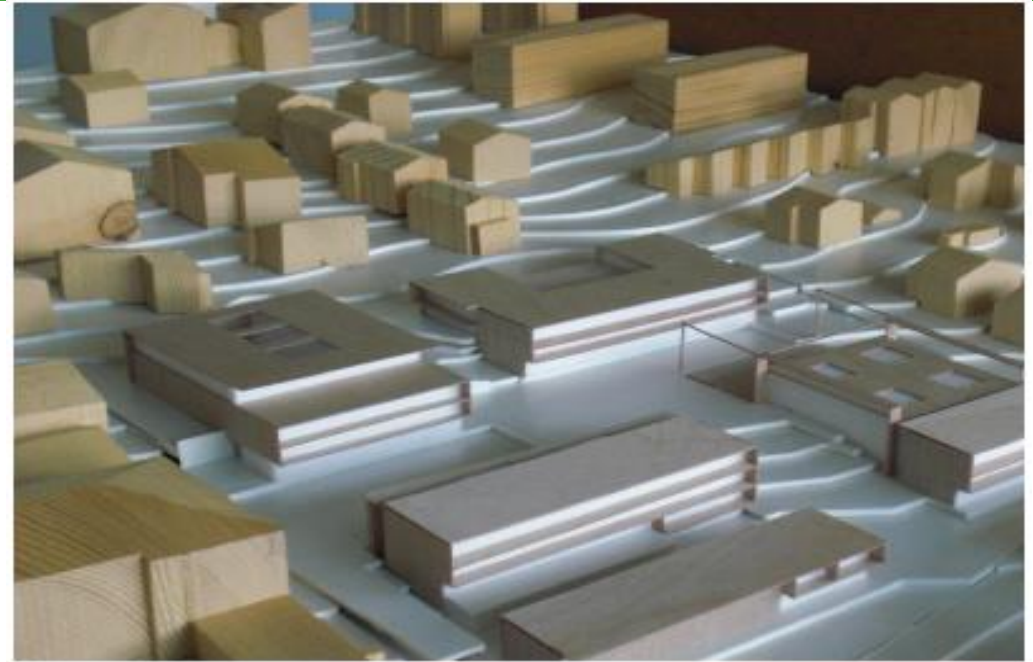


Challenges, opportunities and climate change

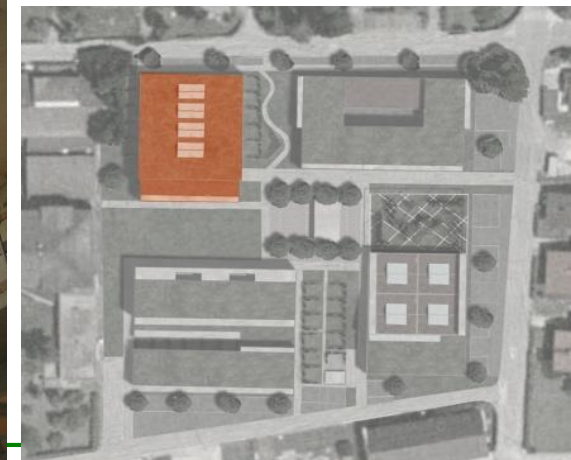
Smart district in Innsbruck: Projekt IN 3 – Wohnbau - NHT



Challenges, opportunities and climate change



Challenges, opportunities and climate change



Challenges, opportunities and climate change



Spider connector for point supported slabs

