

HIGH EFFICIENCY SMALL HOUSE IN MUSASHINO CITY, TOKYO

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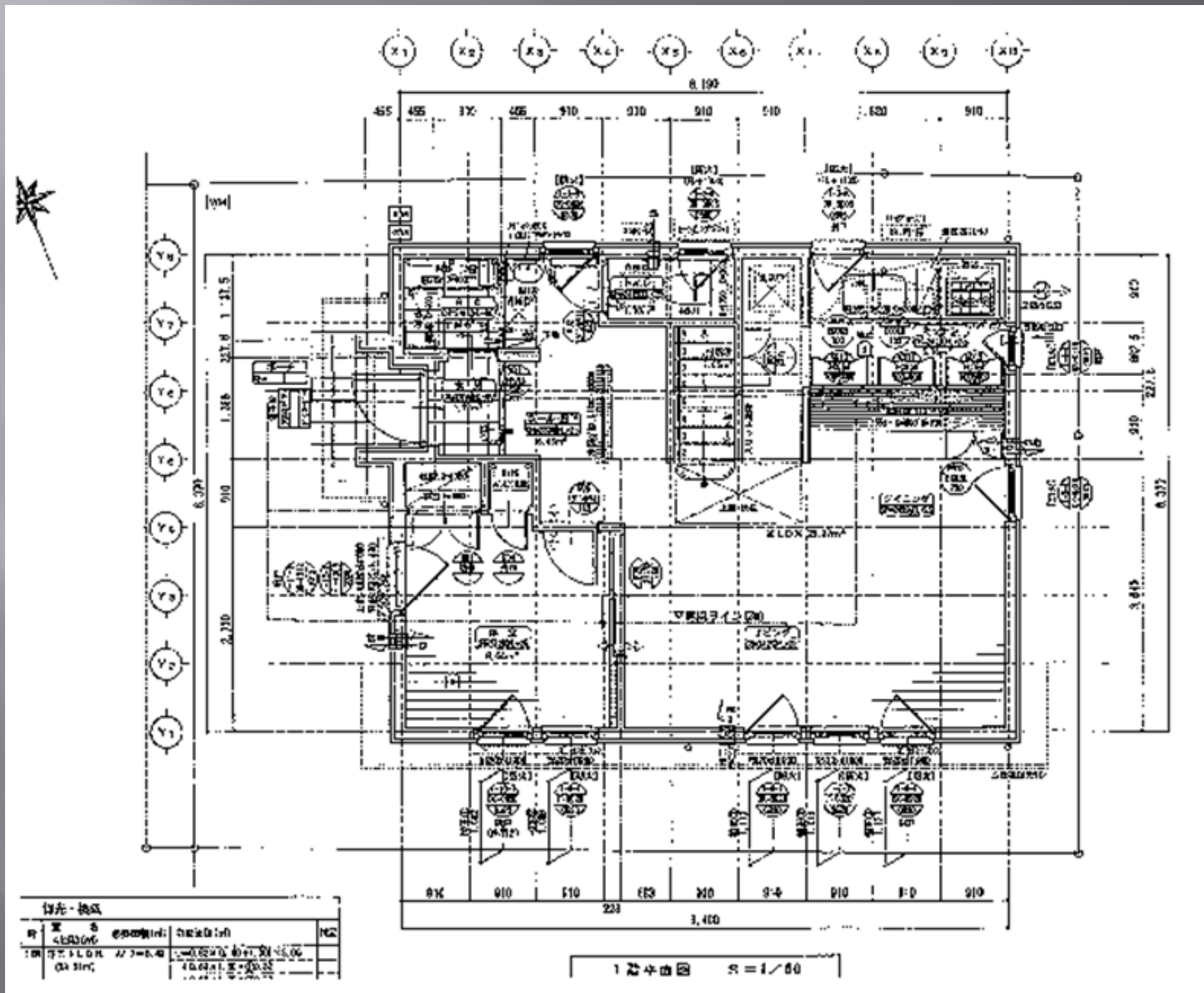


A great longing for Traditional German Houses



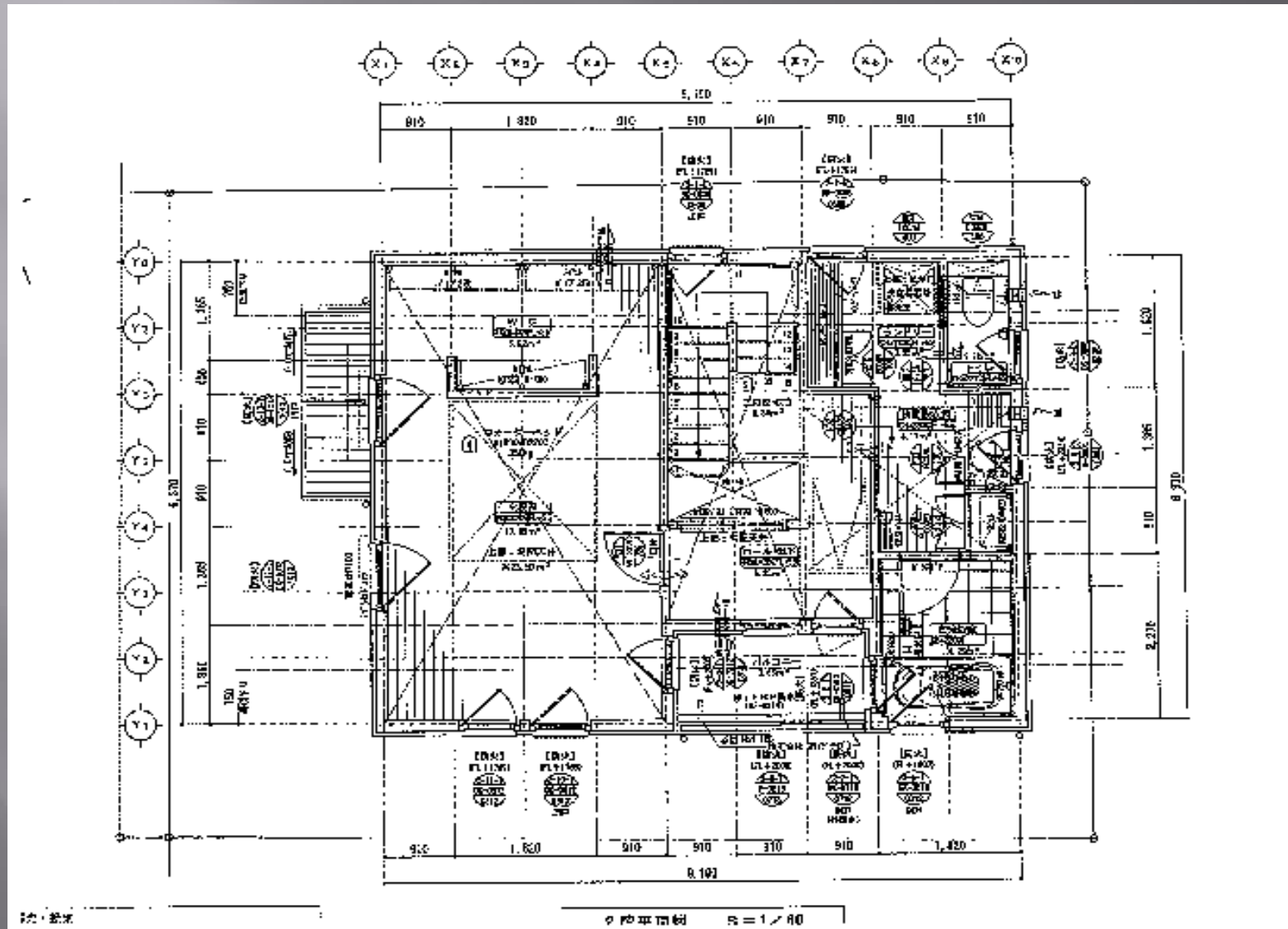
Plan of ground floor

Floor area 53.61m²



Plan of first floor

Floor area 51.25m²



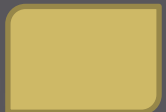
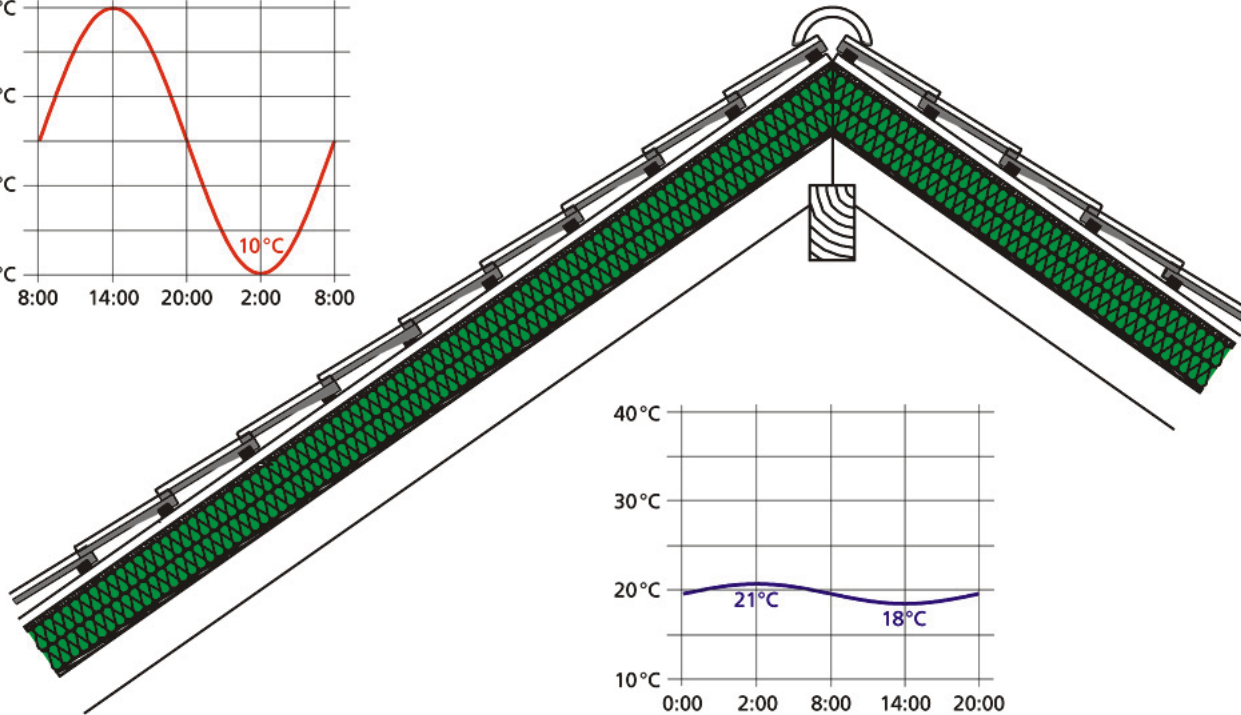
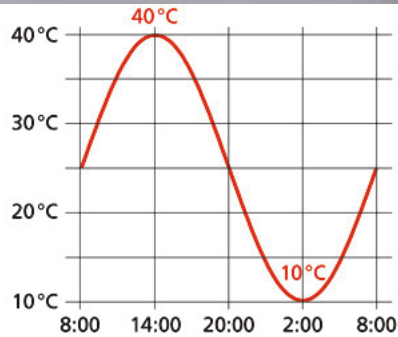
Wood panel construction on a 2 x 4 structure.



Thick wooden fiber panels with high density for exterior thermal insulation



Time lag and reduction of sol air temperature



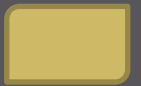
Triple pane windows with wooden frames



Soft wooden fiber insulation material for the inner walls.



High density wooden panels attached to the exterior walls.



Waterproof and porous sheeting



Alkaline resistant glass fiber mesh.



Plaster work with adhesive mortar



Plaster work on the wooden thermal insulation board



Attachment of glass fiber mesh in the adhesive mortar to prevent cracks



Measuring the distribution of air temperature using a thin sheet



Measuring air temperature distribution



Attachment of low temperature heating and cooling radiator



Inorganic paint from Germany was used for its fire resistance and to keep the room VOCs free



To prevent solar heat gain in summer, external blinds were installed.



Kitchen



Bedroom



Living Room



Temperature Control Using Water Supply

- ▣ Room air temperature was kept at 23°C by supplying warm water at 36°C、 on the coldest day in January 2016.
- ▣ In summer 2016, room air temperature was kept at 25 ~ 26 °C by supplying chilled water at 17°C using the heating and cooling radiator panel.

Monthly Electric Power Consumption(JAN-JUL 2016)

Month	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.
Days	33	29	30	32	31	31	29
Elec. Power Consum ption (kWh)	495	313	368	318	244	326	393

Estimated Cooling & Heating Power Consumption(2016)

Month	01	02	03	04	05	06	07	08
Power Consumption(kWh)	251	269	124	74	-----	82	149	155
Average Outside Air Temp. (°C)	5.8	5.7	10.3	14.5	21.1	22.1	26.2	26.7
Average Humidity(%)	52	59	57	71	62	76	80	76

Final Remarks



Senshin Tei, Daruma Tempel ,
Takasaki Japan

Bruno Taut lived with his girlfriend Erica in this house from August 1934 to October 1936

Thank you for attending

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