(Fiscal Year 2006-2008)

Yoneshiro River Basin Area

Building up “Environmentally−friendly” Wood Industry with Technology Development to Utilize and Apply Akita-sugi and to Integrated Utilize Wood –Based Biomass

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Life Sciences
IT
Environment
Nanotech Materials
Others

Project Promotion

Project Director・・・・・・・・・Hiroaki Yoshida
Chief Scientist・・・・・・・・・Koji Harada
Science and Technology Coordinators・・・Hiroaki Yoshida (Project Director)
Koji Harada (Chief Scientist)

Core Research Organizations

Akita Prefectural University (Institute of Wood Technology,
Faculty of Bio-resource Sciences,
Faculty of System Science and Technology)

Major Participating Research Organizations

Industry・・・Japan Housing and Wood Technology Center, Aizawa Meimoku K.K.,
Akita Glulam Co., Ltd., TOJU CORPORATION., LTD., Akita Plywood Co., Ltd.,
Aica Kogyo Company. Limited, KOSHII & CO., LTD., Electric Power Development Co.,Ltd,
KAN ARCHITECTS & ENGINEERES, Nakashima Komuten, YAMASA Mokuzai CO., ltd,
AKITA MINAMI KYOUDUBIRU ZIGYOUBU、Meiji.Consultant.Co.,Ltd,
NIHON KIKAI KOGYO Co., Ltd., Woody Sannai Co., Ltd.,
Japan Conservative Engineers Co., Ltd.、NOUSAN、KUDO HAJIME ZAIMOKUTEN, KK.,
Yasuikoumuten co.,Ltd., YASUTOKU, Daiichikankou, KITANIHON ZEORAITO HANBAI,
SHONAI MACHINERT CO., LTD., AKITAKEN RINGYO KONSARUTANTO, and others
Academia・・・Akita Prefectural University (Institute of Wood Technology,
Faculty of Bioresource Sciences, Faculty of System Science and Technology),
Akita University (Faculty of Engineering and Resource Science),
The University of Tokyo (Graduate School, Institute of Industrial Science),
Nagasaki Institute of Applied Science (Institute for Innovative Science and Technology),
Musashi Institute of Technology (Faculty of Engineering, Department of Architecture),
Hokkaido University (Research Faculty of Agriculture),
Waseda University (Faculty of Science and Engineering (Architecture))
Government・・・Hokkaido Northern Regional Building Research Institute,
Akita Research Center for Public Health and Environment

Aim of research and development

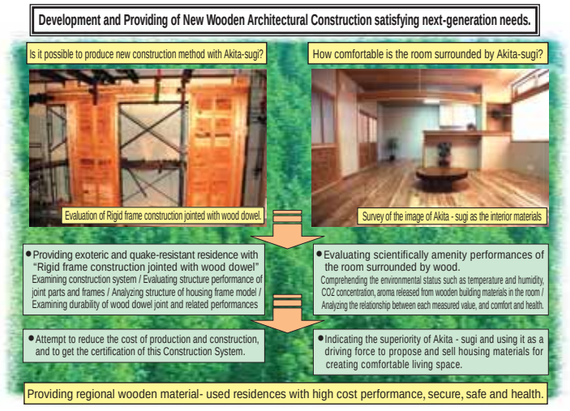
Akita - sugi is proud of both the largest plantation area and accumulation all over Japan afforested after the war. On the other hand, a long-term decrease of Akita - sugi demand continues owing to decreasing of newly built houses, westernization of life style and the change of structural method etc. and accordingly appropriate management such as thinning is not complete ,and abundant forest resources strengthen the overheat tendency.

Decreasing demand of the regional wood material such as Akita - sugi may cause the decrease in the absorption of carbon dioxide by forests and the fixed function as a result. In this project to achieve the society without the negative environmental impact by the promotion of sustainable utilization of the regional wood material as the biomass we aim at:

1) Formation of the environmental zero emission wood allied industry using forest resources in the manner of ideal circulation with consideration of an effective use and a reduction of the fossil energy usage.
2) Corporatization and the market expansion of Akita - sugi to the metropolitan area by developing and providing the new practical products and constructions such as high fire-resistant wood construction.

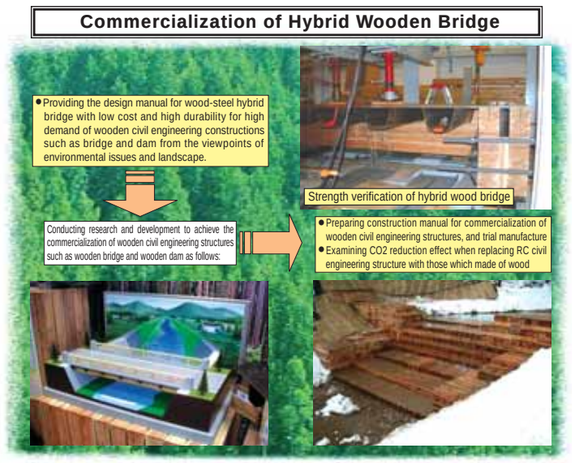
Contents of research

1. Formation of a reasonable distribution system of regional wood materials “Akita - sugi”
   - It aims at the construction of the optimal production system from the forest to disposing from the perspective of circulatory use of wood resources, the environmental negative impact and the spectacle evaluation.
2. Developing and providing of wood-base material and construction method using regional wood materials.
   1) Development and proposal of new wooden building construction methods corresponding to the next generation needs
      - It aims at developing safe, complacent and healthy houses with high cost effective using regional wood materials.



2) Developing wood-based materials used for the construction requiring high fire resistance
   - It aims at the promotion of utilization of Akita - sugi by developing the fire resistant materials and the construction method and the permeation to the field where wood could not be used up to now for the limitation by the building standards.

3) Practical application of hybrid wooden bridge
   - It aims at the practical application of wooden bridge by the standardization of design and the cost reduction combining glulam and steel material. Moreover, utilization of wooden civil engineering structure will be promoted by the arrangement of the information on construction and the maintenance etc. of wooden dam and fence.



3. Integrated utilization of wood biomass

1) Energy conversion of wood resources
   - It aims at an efficient process development using the wood processing wasteand the unused wood resource as alternative energy of fossil source, and generation of the high calorie gas.

2) Practical use of water purification pellet
   - In this research the improvement effect of the purification system composed from techniques developed in the starting stage project will be tested and demonstrated. And it aims at the promotion of environmental awareness enlightenment and the nourishment of relating corporation group.