

## Eric Arquero

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**From:** mailinglist@capitol.hawaii.gov  
**Sent:** Tuesday, March 03, 2009 7:45 AM  
**To:** CPN Testimony  
**Cc:** misotov@maui.net  
**Subject:** Testimony for SB1645 on 3/3/2009 9:30:00 AM

Testimony for CPN 3/3/2009 9:30:00 AM SB1645

Conference room: 229  
Testifier position: support  
Testifier will be present: No  
Submitted by: Maria Isotov-Chang  
Organization: Land Use Planner  
Address: 65 Lihikai Place Haiku, Hawaii  
Phone: (808) 575-9763  
E-mail: [misotov@maui.net](mailto:misotov@maui.net)  
Submitted on: 3/3/2009

Comments:  
Please amend SB 1645 to read as follows:

PROPOSED SB 1 TO SB 1645, RELATING TO THE STATE BUILDING COUNCIL (THE BAMBOO BUILDING BILL)

The legislature finds the expansion of the use of sustainable building materials with low embodied energy to be in accord with the state's goal to reduce greenhouse gas emissions as mandated by Act 234 of 2007.

In recognition of this ecological imperative, the legislature finds locally-grown, non-invasive, tropical timber bamboo, which is known for its fast growth, high-strength, minimal irrigation needs, soil renewing properties and excellent carbon sequestration rates, to be a viable resource for the future of Hawai'i's diversified agriculture, construction industries and possible carbon credit trading market.

The legislature further finds that landmark research on the structural characteristics of locally-grown timber bamboo was conducted at the University of Hawai'i at Manoa in 2002, which ultimately led to the first-ever acceptance of a bamboo species, *Bambusa stenostachya*, into the United States building codes. This research, which was recognized with a National Research Award by the American Institute of Architecture Students, also led to an innovation and amendment to the standing internationally-recognized testing methodology and acceptance criteria for structural bamboo.

However, the structural engineering tests that officially led to this first ever code acceptance were conducted not at UH-Manoa but rather at a specially-certified engineering laboratory on the mainland. The mainland tests were conducted under the exact protocols that were refined at and originated from UH-Manoa, yielded identical results, but cost the very high, privately financed price of \$500,000.

Yet in addition to *Bambusa stenostachya*, five other elite species of commercial timber bamboo also cultivated in Hawai'i underwent the same structural engineering tests at UH-Manoa in 2002. Namely, those species were *Dendrocalamus strictus*, *Guadua angustifolia*, *Bambusa beechyana*, *Bambusa oldhamii* "hirose" and *Phyllostachys bambusoides*. If these species were to undergo another round of tests for acceptance nationally and internationally, the cost would be up to and in excess of \$2,500,000. Though this is a long term goal which is

being undertaken by private stakeholders in the diversified agriculture and sustainable construction industries, Hawai`i's use of bamboo should be expedited now.

The purpose of this bill to expedite the use of sustainable, tropical bamboo as a building material in Hawai`i, while still following the appropriate protocols to protect the public health, by directing the state building council to adopt the test results of those five species of bamboo that underwent structural engineering tests at UH-Manoa in 2002 and accept those species as allowable building materials under the state building code.

BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF HAWAII:

&quot;The state building council shall adopt the structural engineering data on those certain species of locally-grown timber bamboo tested and researched at the University of Hawai`i in 2002, incorporating those species of bamboo as allowable building materials under the state building code.&quot;

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**From:** Maria N. Isotov-Chang [misotov@maui.net]  
**Sent:** Tuesday, March 03, 2009 7:45 AM  
**To:** CPN Testimony  
**Subject:** please approve SB 1645 with the following amendments  
**Attachments:** image003.jpg

Please approved/pass SB 1645 with the following amendments.

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Respectfully yours,

Maria N. Isotov-Chang, Land Use Planner



## **LAND & WATER**

LAND & WATER PLANNING AND CONSULTING, 65 Lihikai Place, Haiku, Hawaii 96708

Office Phone: (808)575-9763; Mobile Phone: (808)344-0330; Office Fax: (808)575-9763; Email: [misotov@maui.net](mailto:misotov@maui.net)

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Organization: Land Use Planner  
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E-mail: [misotov@maui.net](mailto:misotov@maui.net)  
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## Eric Arquero

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**From:** lennart lundstrom [lundstrombamboo@hotmail.com]  
**Sent:** Tuesday, March 03, 2009 7:19 AM  
**To:** CPN Testimony  
**Subject:** Support for SD1, SB 1645  
**Attachments:** Hamakua Guadua angustifolia Bi-Color.jpg

Tuesday, March 3, 2009  
9:30 am  
Conference Rm. 229  
(SSCR46)

Sen. Rosalyn H. Baker, Chair

Sen. David Y. Ige, Vice Chair

Aloha

I have been a resident of the State and Island (County) of Hawai'i for 31 years. During that time I have used many species of Bamboo in various small building projects. Through my membership in the Hawai'i Chapter of the American Bamboo Society I have been in contact with Architects and engineers throughout the world who have researched and utilized Bamboo for the construction of many buildings, some of them very large.

Simon Velez Marcello Villegas and Oscar Hidalgo-Lopez of Colombia have used Guadua angustifolia, a species native to Colombia for many years to build some incredibly strong and beautiful structures. Joerg Stamm has recently Built a pedestrian bridge 100 meters long.

Here in Hawai'i we held a 3 day conference in 1997 with Dr. Jules Janssen of Eindhoven Technical Institute, Netherlands, where he explained the physical properties of Bamboo and illustrated their application to construction.

After that conference Dean Johnston, of Maui began work using the criteria set forth by dr. Janssen to test 5 species of Bamboo for their suitability as construction material. In 2002 his work was duplicated by an independent study with the result that one species, grown extensively in Vietnam was eventually approved for pre-fab housing sold by Bamboo Technologies, a Maui based company, on Maui and Hawai'i.

Approval of SB 1645, SD1 will make it possible for us to use Bamboos grown locally to develop a new agricultural product and industry here in Hawai'i. Bamboo is a sustainable and renewable resource that takes only 10 years to grow to a size that is suitable for construction while aiding in soil conservation and sequestering more carbon than any other forest product.

Mahalo -Len Lundstrom  
40 S. Wiliwili St.  
Hilo, HI 96720

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## Eric Arquero

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**From:** Dean Johnston [dean@deanjohnstondesigns.com]  
**Sent:** Tuesday, March 03, 2009 8:11 AM  
**To:** CPN Testimony  
**Subject:** SB 1645 Hearing Testimony

March 3, 2009

To whom it may concern,

I am very excited to see the legislature taking the proactive role in bringing sustainability to the Hawaiian islands.

Many species of bamboo are proven to be stronger than steel, durable with proper non-toxic preservation strategies and ecologically sound.

Tropical, clumping, non-invasive bamboo species are ideally suited to Hawaii's climate and volcanic origin.

They are drought resistant requiring minimal irrigation, they are giant perennial grasses requiring only to be planted once ever in some cases and 25 to 75 years in other cases.

They flourish on marginal soil requiring very little input of fertilizers and no chemical/petroleum based fertilizers, herbicides or pesticides at all.

They sequester 40% more carbon than trees, and are able to remediate polluted soils and hazardous sites safely into structural construction components.

My award winning Masters of Architecture thesis (Univ. of Hawaii, 2002), produced in collaboration with the University of Hawaii College of Engineering and School of Architecture, tested six bamboo species, four from Hawaii and two from Vietnam. In those tests one of the Vietnamese species was *Bambusa stenostachya*, which is now the first and only structural bamboo recognized nationally by the International Codes Council. With that approval Bamboo Living Homes have designed and built, to code, over 100 hurricane ready homes throughout Hawaii. In my testing the four Hawaiian grown species tested equal to or stronger than the currently approved species.

We have proven that we are growing world class structural bamboo. Hawaii is now at the cusp of becoming a certifiable producer and exporter of the first U.S.A grown structural bamboo.

We have the expertise to develop the proper criteria to establish qualified Hawaii grown and properly processed structural bamboo as a safe, strong and durable construction material.

Benefits of establishing structural bamboo as a certified building material include,

1. Reduction of water currently used to irrigate sugar cane and pineapple.
2. Reduction of imported petroleum based fertilizers, pesticides and herbicides.
3. Job creation: Growing, propagating, maintaining, processing, manufacturing etc. . .
4. Improved health of the aina.
5. Carbon sequestration: which may be marketable as credits.



Mahalo  
Dean Johnston

Dean Johnston M.Arch. LEED AP

Dean Johnston Designs  
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