STAND. COM. REP. NO. 46

Honolulu, Hawaii

FEB 12 2009

RE: S.B. No. 1645

Honorable Colleen Hanabusa
President of the Senate
Twenty-Fifth State Legislature
Regular Session of 2009
State of Hawaii

Madam:

Your Committee on Transportation, International and Intergovernmental Affairs, to which was referred S.B. No. 1645 entitled:

"A BILL FOR AN ACT RELATING TO STATE BUILDING CODE,"

begs leave to report as follows:

The purpose of this measure is to require the State Building Code Council to adopt standards to allow the use of bamboo as an accepted construction material under the state building code.

Your Committee received testimony in support of this measure from True Offsets, American Bamboo Society, Bamboo Village Hawai'i, Whispering Winds Bamboo, Land and Water Planning and Consulting, Friendly Aquaponics, Cassel Design Studio, Bamboo Nursery, and six individuals. Testimony in opposition was received from the Structural Engineers Association of Hawai'i.

Your Committee finds that bamboo forms a very hard wood which is both lightweight and exceptionally durable. In tropical climates it is used in elements of house construction, construction scaffolding, as a substitute for steel reinforcing rods in concrete construction, and other uses. Modern companies are also attempting to popularize flooring made of bamboo pieces steamed, flattened, glued together, finished, and cut. Bamboo is thought to be an ecologically friendly construction material. Bamboo houses can be constructed that are earthquake and hurricane resistant, that are certified by the Insurance Services Office (ISO).

Your Committee believes the State Building Council should also investigate and implement standards for a rural building code for the State that allows for agricultural, temporary, and experimental living structures utilizing bamboo.

As affirmed by the record of votes of the members of your Committee on Transportation, International and Intergovernmental Affairs that is attached to this report, your Committee is in accord with the intent and purpose of S.B. No. 1645 and recommends that it pass Second Reading and be referred to the Committee on Commerce and Consumer Protection.

Respectfully submitted on
behalf of the members of the
Committee on Transportation,
International and
Intergovernmental Affairs,

J. KALANI ENGLISH, Chair

The Senate
Twenty-Fifth Legislature
State of Hawaii

Record of Votes
Committee on Transportation, International and Intergovernmental Affairs
TIA

Bill / Resolution No.:*	Committee Referral:	Date:
SB 1645	TIA, CPN	2-9-09

☐ The committee is reconsidering its previous decision on this measure.

If so, then the previous decision was to: _____

The Recommendation is:

☑ Pass, unamended 2312 ☐ Pass, with amendments 2311 ☐ Hold 2310 ☐ Recommit 2313

Members	Aye	Aye (WR)	Nay	Excused
ENGLISH, J. Kalani (C)	✓			
GABBARD, Mike (VC)	✓			
ESPERO, Will	✓			
NISHIHARA, Clarence K.				
SLOM, Sam				✓
TOTAL	4	—	—	1

Recommendation: ☑ Adopted ☐ Not Adopted

Chair's or Designee's Signature: Mike Gabbard

Distribution: Original — File with Committee Report; Yellow — Clerk's Office; Pink — Drafting Agency; Goldenrod — Committee File Copy

*Only one measure per Record of Votes

Revised: 12/18/08

THE SENATE
TWENTY-FIFTH LEGISLATURE, 2009
STATE OF HAWAII

JAN 28 2009

S.B. NO. 1645

A BILL FOR AN ACT

RELATING TO STATE BUILDING CODE.

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

SECTION 1. Chapter 107, Hawaii Revised Statutes, is amended by adding a new section to part II to be appropriately designated and to read as follows:

"**§107- Use of bamboo.** The council shall adopt standards and criteria to allow the use of bamboo as an accepted construction material under the state building code."

SECTION 2. New statutory material is underscored.

SECTION 3. This Act shall take effect upon its approval.

INTRODUCED BY: _____

Michelle N. Kidani

J. Kalani English

Clayton Hee

SB LRB 09-0056.doc

S.B. NO. 1645

Report Title:
State Building Code; Bamboo

Description:
Directs the state building code council to establish standards and criteria allowing the use of bamboo as an accepted construction material.

LINDA LINGLE
GOVERNOR

RUSS K. SAITO
Comptroller

BARBARA A. ANNIS
Deputy Comptroller

STATE OF HAWAII
DEPARTMENT OF ACCOUNTING
AND GENERAL SERVICES
P.O. BOX 119
HONOLULU, HAWAII 96810-0119

WRITTEN COMMENTS
OF
RUSS K. SAITO, COMPTROLLER
DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES
TO THE
SENATE COMMITTEE
ON
COMMERCE AND CONSUMER PROTECTION
ON
March 3, 2009

S.B. 1645

RELATING TO STATE BUILDING CODE

Chair Baker and members of the Committee, thank you for the opportunity to comment on S.B. 1645.

The Department of Accounting and General Services (DAGS) opposes this bill for several reasons.

First, this bill, if implemented, would undermine the purpose and operation of the State Building Code Council, which was established by Act 82 of the 2007 Legislature. HRS 107, Part II, State Building Code and Design Standards, provides a comprehensive process for adopting State building codes from the national and international codes that national and international organizations review and update on an ongoing and rigorous basis.

The process for adopting these national and international codes for Hawai‘i involve extensive review by expert committees of architects, engineers, and industry experts, unanimous approval by a subcommittee of county building officials, and

approval by the full Council, followed by public hearings and the rulemaking process by which the building codes are put into effect. This process should not be circumvented by directing the State Building Code Council to simply adopt a construction material under the State Building Code.

Further, the State Building Code Council recently approved the International Building Code for adoption as a State Building Code. The International Building Code includes a procedure in Section 104.11 for experts in such matters to technically evaluate and approve construction materials. The International Code Council (ICC) also enables proponents of new or alternative construction materials to document the structural properties of the material for which consideration is desired based on testing.

We understand that a Maui company has gone through the process and has gained ICC-Certification for one species of bamboo that has been approved for use. Following a process such as laid out by the ICC ensures that all construction materials are technically substantiated in accordance with national standards. This process protects the interest of public safety much more effectively that mandating the use of certain materials by law.

DAGS recommends that this bill be held.

Thank you for the opportunity to comment on this matter.

Eric Arquero

From: Leimana [lpelton@bamboovillagehawaii.org]
Sent: Saturday, February 28, 2009 9:16 PM
To: CPN Testimony
Subject: SB1645 bamboo bill
Attachments: fedvergiate3.jpg

Please allow me to introduce myself and my qualifications for the purpose of testimony for bill SB1645.

I am R.C. Leimana Pelton. I am president of Bamboo Village Hawaii., Inc a nonprofit whose mission is to promote the eco ethical industry of bamboo utilization, and Eco Terrestrial Concepts, LLC., a ,bamboo design and build company. I was originally tutored by the world's greatest bamboo architect, Simon Velez of Colombia, SA., in 1996. He taught me all the practical knowledge of utilizing bamboo as a construction material, and his unique system of joinery and design. His master bamboo builders tutored me in construction technique. Since then my focus has been to develop a joinery system for bamboo that requires less training and reduces the labor factor. I have spent the last ten years evolving this joinery system especially designed to make constructing with bamboo easy for someone with some knowledge of the characteristics of bamboo now available in workshops and books. I also planted, on my land on the Big Island, the same bamboo species they grow in Colombia, Guadua Angustafolia, known internationally as a superior timber species, and which is soon to be submitted for ICC testing for inclusion in the Uniform Building Code. In addition I have for 10 years grown many other timber species of bamboo. I also built the first pest treatment plant in Hawaii specifically designed for bamboo by Dr. Walter Leise of Germany.
I have taught bamboo construction in Hawaii, continental U.S., and in Europe co- designed with Simon Velez and taught I taught building professionals how to build what is now the largest bamboo structure in Europe, near Milan, Italy (see attached photo).

Bamboo is not a fashion but a reality in other parts of the world that is currently transforming from the stigma of only being used by the poor to many thousands of people wanting to live in bamboo homes today. It is being grown in larger quantities here on the Big Island every year. A tissue culture lab has purchased timber bamboo plants from my nursery to clone thousands for industrial farming. The main point is to grow locally in order to build locally. The building commission should step up to the plate and not wait for individuals to cover the expense of qualifying local bamboo species and the grading system to implement utilization. To import bamboo is not that much different than importing tree lumber. Hawaii needs an authorized lab set up for the purpose of establishing Hawaii standards for bamboo and other species of trees that are an invasive problem. Mendocino, California has in place such a code which could be used as an example. In this scenario practical use of tropical timber species of bamboo and common invasive tree species that are demonstrated to be appropriate for construction could be utilized for more affordable living and farm practices. In support of this concept grants could be made available or other types of financial support to experts of all types of natural building, especially bamboo which grows so well, does not require heavy machinery to harvest, and the tropical varieties are noninvasive. This state of Hawaii needs to be more self sufficient, and the state government should be willing to provide educational opportunities to all to be more sustainable in the future including young people in schools, and possibly disadvantaged folks including the incarcerated.
As you know, in this economy or any other catastrophy, having such a natural resource can lead to a value added product industry that would help us provide income producing products to fill all those empty containers headed back to the continent with something besides our trash. Included as attachments are two examples of bamboo structures I have designed and built.

P.O. Box 2018, Honoka'a, HI 96727
www.trueoffsets.com

TO: Senator Rosalyn Baker, Chair
Senator Mike Gabbard, Vice-Chair
Senate Committee on Consumer Protection

FROM: Jonny Dubowsky, Executive Director

HEARING: Tuesday, March 3 2009, 9:30am

SUBJECT: Proposing Amendments for SB 1645, Relating to the State Building Council (Bamboo Acceptance)

True Offsets strongly supports the intent of SB 1645 and proposes the following *SD1:*

Section 1. The expansion of the use of sustainable building materials with low embodied energy is found to be in accord with the state's goal to reduce greenhouse gas emissions as mandated by Act 234 of 2007.

In recognition of the ecological imperative at the core of Act 234, the legislature finds locally-grown, non-invasive, tropical timber bamboo -- known for it's 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 emerging carbon credit trading market.

As a point of pride, the legislature finds that landmark research on the structural characteristics of bamboo was conducted at the University of Hawai`i at Manoa in 2002, ultimately leading to the first-ever acceptance of a bamboo species, Bambusa stenostachya, into the United States building codes. Notably, this research at the state's own public university was recognized with the prestigious National Research Award by the American Institute of Architecture Students when it led to a breakthrough innovation and amendment to the standing internationally-recognized testing methodology and acceptance criteria for bamboo.

However, the engineering tests that officially led to this first-ever code acceptance were conducted not at UH-Manoa but rather at an International Code Council-certified engineering laboratory on the mainland. These mainland tests, which were conducted under the exact protocols that were refined at and originated from UH-Manoa, yielded identical results.

But in addition to Bambusa stenostachya, five other elite species of commercial timber bamboo

underwent structural engineering tests during UH-Manoa's historic 2002 research. Namely, those species were Dendrocalamus strictus, Guadua angustifolia, Bambusa beechyana, Bambusa oldhamii "hirose" and Phyllostachys bambusoides.

While the mainland ICC testing and code-acceptance of the first Vietnamese bamboo, which cost nearly half a million dollars in private investment, has allowed for over 100 Vietnamese-constructed kit homes to be assembled in Hawai`i, the State's own homegrown, bamboo industry has been held in waiting due to the high-cost barrier of certified testing and code approval needed for bamboos grown locally.

Understanding that it is a near term goal for these additional species to be ICC-certified and accepted into the US building codes, the legislature finds that it is imperative to expand sustainable bamboo building in Hawai`i, encourage diversified agriculture in the islands and strategically position the state for the regional, national or international greenhouse gas offsetting and carbon credit trading markets.

The purpose of this bill is (1) direct the state building council to review the structural engineering test results of the five other bamboo species that underwent testing at UH-Manoa in 2002 and (2) exempt those certain species as allowable building materials on lands zoned for agricultural use only.

SECTION 2. The state building council shall review the structural properties of those species of bamboo tested at the engineering laboratory of the University of Hawai`i at Manoa in 2002 and shall compare them to the properties of dimensional lumber approved in the State Building Code. The state building council shall also investigate the modern bamboo architectural idiom found throughout South America and South East Asia and report to the legislature, with pictorial illustration, the council's findings of fact and the council's beliefs as to the potential for bamboo building in Hawai`i, no later than 20 days prior to the convening of the 2010 regular session.

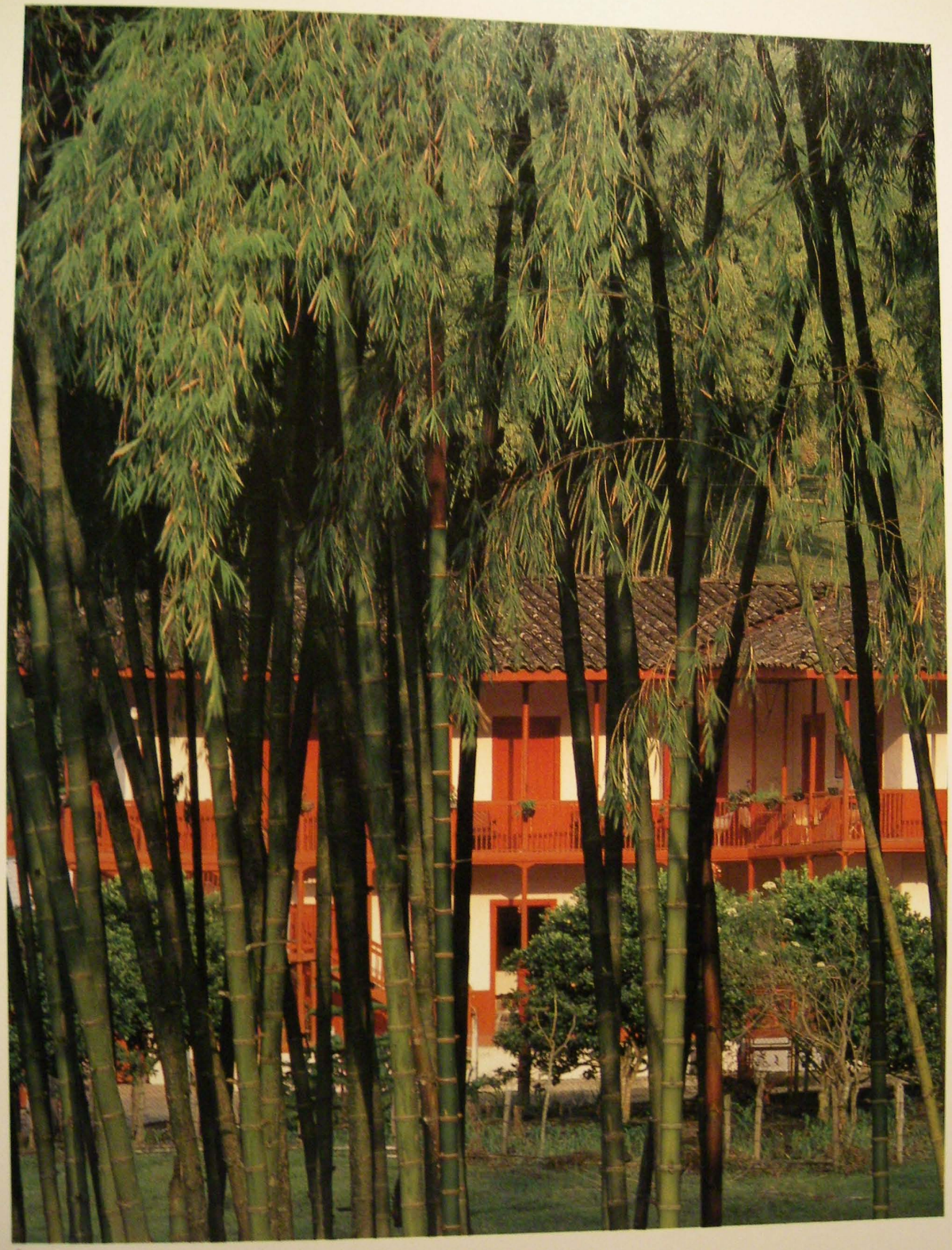
SECTION 3. Chapter 107-27b of the Hawaii Revised Statutes is amended to read as follows:

[§107-27] Exemptions. (a) Upon adoption of rules under this chapter, the design of all state building construction shall be in compliance with the state building code within one year of its effective date, and state building construction shall be allowed to be exempted from:
(1) County codes that have not adopted the state building code;

(2) Any county code amendments that are inconsistent with the minimum performance objectives of the state building code or the objectives enumerated in this part; or

(3) Any county code amendments that are contrary to code amendments adopted by another county.

(b) Exemptions shall include <u>agricultural, temporary or experimental living structures on agriculturally zoned lands utilizing bamboo varieties that have been tested for structural properties at the engineering laboratory of the University of Hawai`i and</u> county ordinances allowing the exercise of indigenous Hawaiian architecture adopted in accordance with section 46-1.55 [L 2007, c 82, pt of §2]



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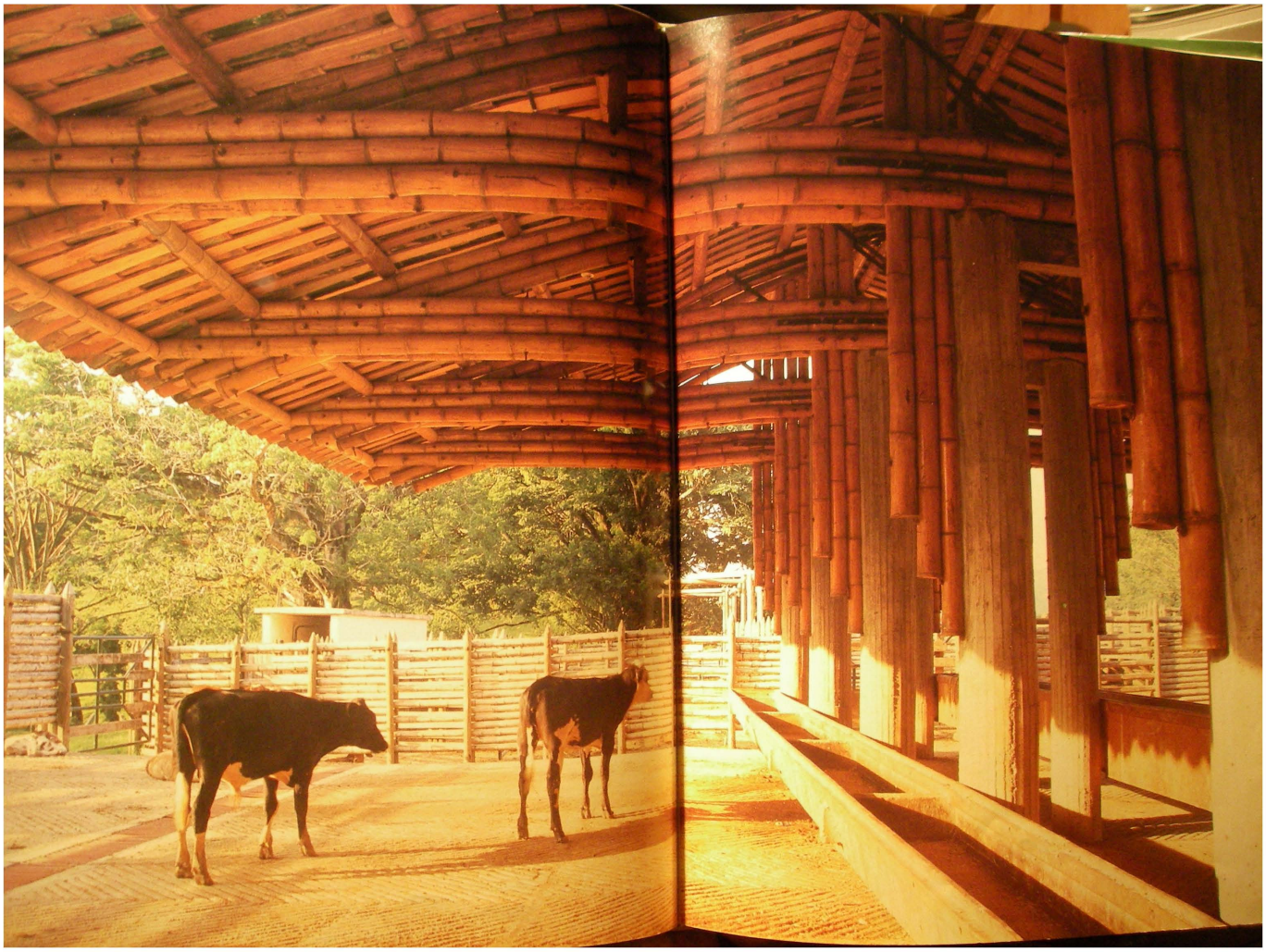
4. Prosperous farmhouse typical of the coffee-growing region, seen through bamboo. Santa Rosa de Cabal, Risaralda.



Eric Arquero

From: dcontre@mcn.org
Sent: Friday, February 27, 2009 6:58 AM
To: CPN Testimony
Subject: Testimony

As a property owner on the big Island, I watch closely any efforts to boost the local economy. The importation of bamboo building materials from viet Nam is not in the best economic interests of our local economy. I intend to build a new home using ecologically sensible materials. The use of bamboo is both sustainable and sound. There are local Hawaiian entities developing bamboo materials for construction of housing. It makes good economic sense to utilize local suppliers, rather than importation from foreign nations. Let's keep our dollars at home.

David Contreras
Fern Forest
Big Island