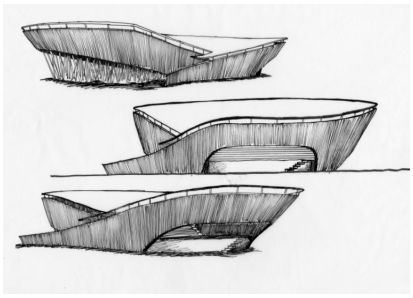
Bamboo competition 2007
Bamboozled, A New Approach.
David schellingerhoudt. 20167398

"The works of the past always influence us, whether or not we care to admit it, or to structure an understanding of how that influence occurs. The past is not just that which we know, it is that which we use, in a variety of ways, in the making of new work…. The typology argument today asserts that despite the diversity of our culture there are still roots of this kind which allow us to speak of the idea of a library, a museum, a city hall or a house. The continuity of these ideas of type, such as they are, and the esteemed examples which have established their identity and assured their continued cultural resonance, constitute an established line of inquiry in which new work may be effectively grounded."
The Harvard Architectural Review. Volume 5. Precedent and Invention. Between History and Tradition: Notes Toward a Theory of Precedent. John E. Hancock.

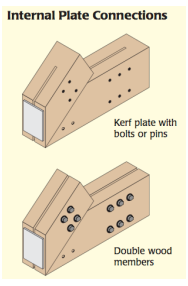
New ideas are always influenced by existing ideas, in all aspects of creativity, and nothing is ever wholly original, nothing is a completely conceptual idea as every idea is sparked from something or influenced something. These ideas gradually change and are molded, explored and adapted to new situations and concepts. Ideas in building type and construction evolve much the same way. New work is the further exploration or new application of existing ideas. The bamboo competition is a rare opportunity for new work to occur. The competition encourages the exploration of bamboo as a feasible building solution and pushed the exploration of new and exciting possibilities in architecture. Bamboo as a building material has existed for thousands of years and yet it has been minimally developed by the majority of designers, architects, and engineers in today's modern built environment, the goal of the competition is to apply a new construction material to existing types of building program, construction and circumstances and to explore the possibilities of bamboo as a viable and renewable building resource for today's demands. Our pavilion attempts to explore the building type of a public concert pavilion by taking lessons from already existing gathering halls. It also works to discover bamboo as new construction material for a variety of typical applications.

For a new building to be developed it is often fit to a type of building which often reflects the purpose or program of the building. Our building was to fit the type or idea of a public concert pavilion, therefore it would have to serve the program of a space which holds a healthy gathering of people who are capable of observing a show, play, or musical performance, it also had to be accessible inviting and somewhat informal. To inform our idea of what a space like this should feel like we explored previous successful works, and drew on our own personal experiences. One of which is the lecture hall at the

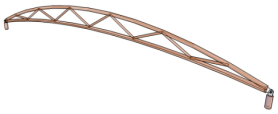
university of waterloo's school of architecture in Cambridge Ontario. From this example we drew off the relatively simple cladding of interior walls this encourages the occupants to pay closer attention to the action at the front of the room and not to be distracted by their surroundings. We also drew off the size and relative feeling of a similar space; small enough to provide an intimate feel and large enough to hold many people with relative ease and comfort. We also looked at seating patterns and comfortable stair heights, and ceiling height. This successful work informed our idea of what small sized concert or lecture hall should feel like, how the interior surfaces of the space are beautiful and elegant however are secondary to the primary function of showcasing the activity at the front of the space. Another successful project we drew influence from is Renzo piano's Jean-Marie Tjibaou cultural centre in New Zealand, this project explored the public side of a gathering space, how to attract and interest people, by using a unique shape and how to create an open outdoors experience of a pavilion and set a space into a landscape and enhance that landscape instead of obstructing it. Our pavilion explores these ideas by the unique shape of the building that is flowing and continuous; this pulls the public along the exterior until it draws them into the space where they can experience the same continuous wall from the interior. Our pavilion is also set in beautiful British Columbia in Vancouver's picturesque Stanley Park a place where hundreds of people go each day to experience the outdoors in there own back yard. A public tree covered park full of out door activities such as swimming tennis, hiking, biking jogging, walking kite flying etc. etc. such a site welcomes an open air pavilion where the public of all cultures and race can gather to experience the musical talent in their community. The structure is low, and relatively small for a concert hall it slings to the sloping landscape and frames a beautiful view out to the Georgian strait. The form of the building is attractive and unique as the seating portion floats above the ground at the rear, this allows the pavilion to rest gently on the landscape in order to maintain a minimal footprint and provide interesting glimpses thru the unique bamboo bearing structure. Thus helping it to ease into the landscape and still attract and interest the public.



The pavilion also explores the new possibilities of bamboo as a building material. This exploration consists of applying techniques from other construction types as well as other material and tailoring them to fit the more sustainable solution of bamboo. Explores bamboo in a variety of structural and cladding applications. It also investigates bamboo in the west coast climate and outdoor sight. A structural application is the bearing supports under the seating of the pavilion these supports elevate the seating allowing all the seats to have an equally engaging view. These supports also discus how bamboo can be used in conjunction with other materials such as steel and concrete to



inform these construction ideas we drew of other similar construction types, such as wood as a bearing material with a steel connection into the concrete. In the case of structural timber a steel bearing plate would be used and a knife would be slotted into the wood and securely bolted. This would help conceal the steel as a connecting material. We applied this idea to bamboo by adapting it, because structural bamboo is a round section a steel knife plate would, decrease the structural integrity of the bamboo, however the principal of embedding the steel connection is attractive. A similar steel bearing plate is used with an identical steel connection, the difference occurs where the bamboo meets steel. Instead of a rectangular solid steel section a round hollow section sized to fit easily inside of the hollow bamboo is used. This steel section is bolted to the bamboo in a cross pattern similar to that which is often used when bolting a square structural timber to a steel section. This achieves a handsome concealed bearing connection. Another structural application of bamboo is also used in the roof structure. Because of the high yearly precipitation Vancouver receives a roof is very necessary allowing events to take place even when rain is in the forecast. This roof structure is a curved truss which is informed firstly by the arch as type of spanning structure, it is also informed by the open web joist construction a truss type which allows spanning members to be lighter and more efficient it is also informed by prefabricated wood trusses which are very popular in light timber construction such as singe family residential homes. This structural truss uses bamboo in a curved format where the bamboo can achieve maximum strength as an arc the depth of the truss is achieved by using smaller shorter structural bamboo pieces to form the webbing of the truss. This type of construction minimizes weight and maximizes the efficiency of the bamboo and distributes the loading of the roof to the wall creating a beautiful un obstructed clear span which enhances the quality of the view from the rear of the building this type of construction has been explored and beautiful refined with wood, and steel and can be effectively applied to bamboo as well. The goal of exploring bamboo is not to reinvent the wheel but rather fit the concepts to a new material, another assembly type we explored was a simple fence construction such as you might see in a typical suburban back yard the strategy of running two or more studs horizontally between posts and attaching the cladding members to those studs. This exact type of system is used on our pavilion as the walls, which enclose the space and separate the inside from outside protecting against wind and controlling circulation. The fence type construction had to be tailored slightly to suit bamboo in place of wood. Because of the round hollow shape of bamboo and its susceptibility to splintering from nails, which are typically used in fence construction we had to find a less impact means of construction. Instead a simple drilled hole in the cladding and a steel wire tie would be used. The wire would wrap around the stud and pass thru the bamboo effectively fastening it into its place and thus creating the fence like walls These types of assemblies are very familiar in everyday construction and continue to be refined; the concepts behind these types can



and will continue to be applied to new materials and new situations much the same way they already have been adapted and expanded upon since their first realization.

Types of buildings and construction are always being expanded upon, the ideas are never fully realized and often are not fully suitable to their application often time the perfect situation has not yet presented itself. Bamboo as a material is robust, lightweight and visually is not oppressive but instead it is simple in its beauty. Bamboo lends itself easily to a pavilion construction it is lightweight and abundant making temporary construction feasible, because of the module nature of bamboo it is also easily recycled and reused thus lending itself to this temporary or seasonal type of construction. It is also flexible allowing it to be used for curved forms and more fluid construction. It can be easily adapted to already existing building practices as demonstrated in our pavilion and therefore it is contractor friendly. Types allow ideas and concepts to progress to be expanded upon rethought and revolutionized; new work is always being explored in new situations and new ideas and approaches. New building materials help to explore building and construction types in new ways and advance practices to push new ideas. These aren't original ideas but the work is new and the approach is unique which helps broaden the possibilities of design and construction.

Works cited list

Simon Velez, Jean Dethier, Klaus Steffens. "Grow Your Own House – Simon Velez and Bamboo Architecture". Vitra design museum, 2000

http://www.adck.nc/en?redir=/html_en/centre_tjibaou/monument_visite.htm