

The ACF P&VP Meeting in Taipei



The ACF P&VP Meeting on 18 April 2014, National Taiwan University, Taipei

On 18th April 2014, the ACF President and Vice President (P&VP) Meeting was held at Civil Engineering Research Building, National Taiwan University, Taipei, attended by ACF President, Vice-President (Policy), Vice-President (Technical), Treasurer, the Secretary General and 2 other participants. Some important results of the discussion are summarized below:

- The election of new Executive Council and Technical Board Committee (2015-2016) will be completed prior to and be announced at General Assembly, which is 21 September 2014.

- Matters of President:

Secretariat Operation was reported by Miss Krittiya and Prof. Somnuk. Prof. Ueda reported that the publication of ACF consisting of newsletter and president's report were successfully and continuously published online. Prof. Ueda also reported that amendments of ACF constitution and byelaws regarding Representative Member were approved at the 9th Executive Council Meeting on 10 September 2013.

- Matters of Vice President (Policy):

Prof. Han reported the current and future ACF Representative Members and ACF Corporate Members.

- Matters of Vice President (Technical):

Prof. Somnuk reported the progress of ACF International Journal, ACMC 2013, 2 newly published Level 3 documents, Complete Set of Level 3 Documents for ACMC, Recommended Papers from 5th ACF International Conference to ACT and VCA-ACF Joint Seminar.

- Matters of Treasurer:

Miss Krittiya reported the balances of ACF bank accounts, the expenditures, and the projected balance based on current ACF secretariat operation cost. Prof. Chan proposed the financial strategy to enhance the financial condition of ACF.

- Technical Board Report:

Prof. Yokota reported on behalf of Prof. Uomoto that there were 5 new STC proposals at TB meeting in Sapporo. Activities of STCs were reported.

- Sustainability Forum Report:

Prof. Ueda reported the Sustainability Forum Report on behalf of Prof. Sakai. The 6th ACF Sustainability Forum was held in Surabaya, Indonesia on 16-18th September 2013. The 7th Sustainability Forum together with technical visit, discussion with local engineers and seminar will be held on 8-10th May 2014 in Ulaanbaatar.

- Report on Progress of 6th ACF International Conference:

Prof. Han reported the progress of the 6th ACF International Conference preparation. He informed that there will be 5 keynote speakers from ACF, ACI, fib, RILEM, & KCI and 3 other invited speakers from USA, China and Japan. The total number of submitted abstracts is 287 from 30 countries.

- ACF Sponsoring Events:

"Young Researchers and Graduates Symposium (YRGS) 2014" Sirindhorn International Institute of Technology, Thailand (31 July 2014-1 August 2014)

"The 2nd International Conference on Sustainable Civil Engineering Structures and Construction Materials (SCESCM)" Yogyakarta, Indonesia (23-25 September 2014)

"RILEM International Symposium on Concrete Modelling" Beijing, China (12-14 October 2014)

"The International Conference & Exhibition on Durability of Concrete" India (4-6 December 2014)

"The International Conference on the Regeneration and Conservation of Concrete Structure (RCCS)" Nagasaki, Japan (1-3 June 2015)

- Dr. Yoshimitsu Nakajima from Maeda Corporation, Japan presented the New Work Items on Engineering Qualification on behalf of Japan Concrete Institute (JCI).

ACF Member Institute “ Indonesian Society of Civil and Structural Engineers (HAKI) ”



By
Prof. Dr. Benjamin Lumantarn
Petra Christian University



Indonesian Society of Civil and Structural Engineers (HAKI) was established in 1971 in Bandung, Indonesia starting with 36 founding members. The main goals of the organization are enhancing the quality of structural engineering knowledge and education among practicing engineers; providing positive contribution to the welfare of the nation, community, and its members; and promoting excellent ethic of conduct among professional engineers.



Currently HAKI consists of 4735 members with 15 regional chapters spread across the nation. Members of HAKI consist of practicing engineers, academicians, researchers, and suppliers from construction industry.

In order to achieve its goals, HAKI organizes annual national convention that includes technical seminars, exhibition of construction products, and short course. The event lasts for 3 days, takes place in Jakarta, and traditionally held during the month of August. Every year, over 500 attendees consisting engineers across the nation and overseas gather to participate in the event. In addition to annual convention, HAKI also provides professional certification for structural engineers and publish technical journals and monthly newsletters to support its members.



Besides involvement in the national engineering community, HAKI is also actively participating in international engineering communities by being members of Asian Concrete Federation (ACF) and Asian Civil Engineering Coordinating Council (ACECC). As an active member of international engineering community, HAKI's contribution includes co-hosting 2nd ACF International Conference in 2006, Bali and Civil Engineering Conference in the Asian Region (CECAR 6) in 2013, Jakarta.

The “Reversible Destiny Lofts MITAKA - In Memory of Helen Keller -”



The “Reversible Destiny Lofts MITAKA -In Memory of Helen Keller-“, built by architects/artists Shusaku Arakawa + Madeline Gins, are the first residential units designed “to not to die.”

Completed in 2005, the building has attracted visitors from around the world. It has been featured in countless articles in the press both in Japan and abroad. Its interest lies in the way that the building stimulates the visitor, bringing attention to the full potential of the body.

A landmark in Tokyo’s Western suburbs, the nine units in this collective housing project have been painted in fourteen colors both inside and outside. The Japanese novelist Setouchi Jakuchou has called the building as an “ultrachromatic undying house.”

The architectural world has been revolutionized by Arakawa + Gins and their proposal of a building program centered on the individual body. Such a program is the fruit of long years of research that has led them to address residential space -a type of space where people spend a large part of their lives- as an artwork. Their proposal also opens up new possibilities in thinking about the social role of art.

The reason why this “house to not to die” has been dedicated to the memory of Helen Keller, is because the building provides different uses for each individual according to their physical abilities. While there are spaces that a three-year old could use better than an adult, there are spaces that a seventy-year old may be better suited to explore.

Our bodies, which are different from each other, change constantly. By inhabiting a space that does not allow you to think of it as something that is self-evident, you can realize that you can do things that at some point you thought were impossible. That is the essence of the idea of “reversible destiny,” which the building embodies. For Arakawa + Gins, Helen Keller is a role-model and a source of inspiration, someone who was able to practice “reversible destiny” in her own life time.

Reversible Destiny Lofts MITAKA show us how each of us can become Helen Keller. This is what we mean when we say that the Reversible Destiny Lofts MITAKA are “a house to not to die.”

The Reversible Destiny Lofts MITAKA are managed by the Tokyo office of Arakawa + Gins (ABRF, Inc). The Lofts are currently used as residential and educational and cultural facilities. Some of these units are available for long and short-term lease.

Incredible Design for 'skyfarm' Filled with Green Space Revealed



The 525-foot "living" building has 144,450 square meters of green space, and can provide locally grown food for nearby residents, as well as green space for them to enjoy.

SKYGARDEN STATISTICS:

Project Height:	Sky farm (160m) Hydroponic Farm (45m)
Total Area:	Sky farm (144,450 m ²) Hydroponic Farm (13,350 m ²)
Areas:	Hydroponic Farm, Botanic Garden, Viewing Deck, Cafeteria, Farmers Market, Water Filtration Facility, Renewable Energy Production Facility



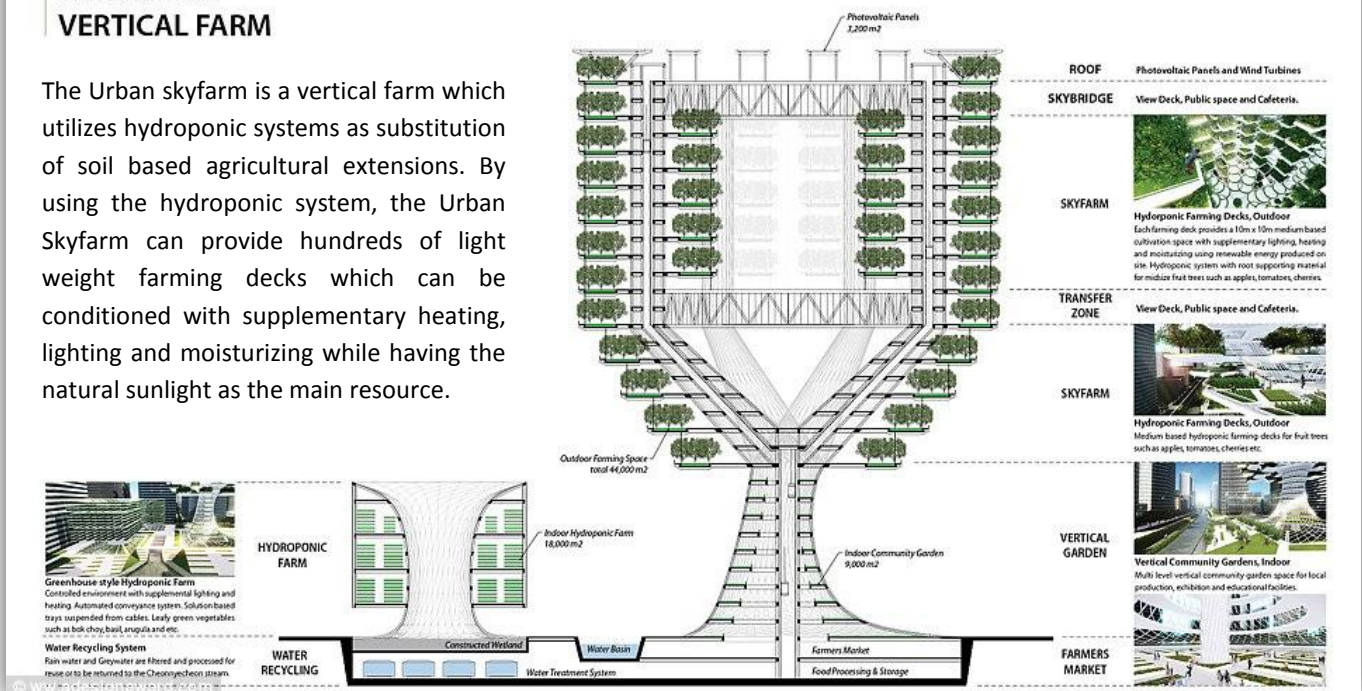
The tower boasts gardens and parks for people to enjoy.

Korea could be set for a stunning eco-makeover with a giant urban farm skyscraper. The Urban skyfarm is 160m high, and crams over 144,000 square meters of green space into the tower. It has just won a major design award, raising hopes construction could soon start.

'The Urban Skyfarm' is a vertical farm design proposal for a site located in downtown Seoul by the Aprilli Design Studio which mainly hosts local food production and distribution while at the same time contributes to the improvement of local environmental quality through water, air filtration and renewable energy production,' the designers say.

URBAN SKYFARM VERTICAL FARM

The Urban skyfarm is a vertical farm which utilizes hydroponic systems as substitution of soil based agricultural extensions. By using the hydroponic system, the Urban Skyfarm can provide hundreds of light weight farming decks which can be conditioned with supplementary heating, lighting and moisturizing while having the natural sunlight as the main resource.



HOW IT WORKS:

The structure includes hydroponic gardens. The tower boasts gardens and parks for people to enjoy. The tower is designed to be built in Jung-gu, Seoul, South Korea, and will provide fruit and vegetables for nearby residents.

'By lifting the main food production field high up in the air, the vegetation gains more exposure toward the natural sunlight and fresh air while the ground level becomes more freed up with nicely shaded open spaces which could be enjoyed by the public', they claim.

The design is based on a tree, and the four major components which are the root, trunk, branch and leaf each have their own special characteristics which are suitable for various farming conditions

For instance, while the upper portions provide open to air farming decks for medium based vegetations, the lower portions enclosed by the structural skin provide more controlled environments for solution based leafy productions.

During daytime the photovoltaic panels generate electricity to be used for night time lighting and heating to support farming.

'The Urban Skyfarm creates a mini ecosystem which brings balance back to the urban community.'

'The Urban Skyfarm proposes to create an agricultural hub for the local community which hosts social, environmental and economical activities to enhance trade, improve the environment and benefit the local market and community.'

The Skyfarm also has 34,445 square feet of solar panels and wind turbines - enough to operate the entire structure as well as a second, neighboring hydroponic farm.

PhD Abstract on Mechanical Properties of Self-Compacting Lightweight Concrete

Dr. Wu Xi
Zhejiang University
China



Dr. Wu Xi is a PhD graduate of Dalian university of Technology, China in 2014. Currently she works in Zhejiang University, China as a post doctor. Her research interest covers new cementitious materials. Her PhD topic was "Mechanical Properties of Self-Compacting Lightweight Concrete".

Self-compacting lightweight concrete (SCLC) is a new high-performance material, which has accepted wide attention due to the advantages of light weight and noise elimination. SCLC is mainly studied in terms of mix proportion and workability. Lack of in-depth research on mechanical properties of SCLC is an obstacle to extend the wide application of SCLC as structural element material. Therefore, the mechanical performance of SCLC is the main objective of the PhD thesis.

An experiment to investigate the thermal behavior of SCLC was conducted. The specimens of SCLC, normal concrete, self-compacting concrete, lightweight concrete were exposed to elevated temperature up to 600 °C.

Based on the experimental observation, SCLC is prone to spall at a lower temperature due to the dense hardened matrix and a high content of moisture absorbed in the lightweight aggregate. However, compared with normal concrete, SCLC maintains higher residual compressive strength and residual flexural strength. In order to improve the spalling resistance of SCLC, polypropylene fibers (PPFs) are incorporated in SCLC. It is found that PPFs can reduce the risk of spalling effectively and have a positive effect on the residual mechanical properties of SCLC.

The bond characteristics of deformed bars in SCLC were also studied by the pull-out specimens. Lateral pressure was applied in perpendicular and parallel directions with respect to the transverse rib of deformed bars. The other governing factors, such as concrete cover depth, bar diameter, compressive strength of concrete and types of lightweight aggregate were also considered. The results showed that lateral pressure has a marked effect on the failure modes and bond parameters. The transition of failure mode from splitting to pull-out can be observed related to the pattern of the lateral pressure. The ultimate bond stress is an increasing function of lateral pressure for specimens failing by splitting, but basically keeps constant for the specimen failing by pull-out. The empirical equations to determine the bond strength and residual bond stress were obtained based on the experimental results. Finally, a bond stress-slip model of SCLC was proposed and verified by the experimental results.

PhD Abstract on Shear Behavior of RC and PSC Beams with Arch Action

Dr. Seong-Cheol Lee
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Dr. Seong-Cheol Lee is an Assistant Professor at KEPCO International Nuclear Graduate School (KINGS), Korea. He received his Ph.D. from the Department of Civil, Urban, and Geosystem Engineering, Seoul National University. His PhD topic was "Shear Behavior of RC and PSC Beams with Arch Action".

In the paper, the experimental studies of four reinforced and seven post-tensioned concrete girders have been conducted. The ultimate shear load and cracking patterns were observed, and the average strains and diagonal crack width on the web were measured.

Furthermore, the shear analysis model for RC and PSC beams has been developed.

The proposed model considers the variation of internal lever arm length through the shear span, so the applied shear force can be divided into two components of beam action and arch action. Consequently, the proposed model is able to consider the shear deformation due to arch action as well as beam action. The proposed model is validated through comparison with experimental data on RC and PSC beam. The estimated shear deformation as well as ultimate shear strength shows very good agreement with experimental results. The proposed model can be useful to prediction of actual shear behaviors of RC and PSC beams, and applicable to evaluation of shear ductility and the assessment of minimum shear reinforcement ratio.



ACF 2014 Early Bird Registration until 31 July 2014

On behalf of International Organizing and Scientific Committees, we look forward to seeing you at the 6th International Conference of Asian Concrete Federation (ACF 2014). We are organizing the conference from 21 to 24 of September, 2014 at The-K Seoul Hotel, Seoul, Korea.

Almost 300 papers from 34 countries will be presented at ACF 2014. Also, we have invited present and past presidents of RILEM, fib, ACI, ACF and KCI as keynote speakers.

*** 20-33% discount on early bird registration fee**

For those who pre-register the conference, we offer 20-33% discount on your registration fee. Please note that this special offer is only valid **until July 31, 2014**.

Category	Before 31 July 2014	After 31 July 2014
General	USD 400	USD 500
Student	USD 100	USD 150

As announced on our website (www.acf2014.kr), registration covers attendance at the conference, conference proceedings, welcome reception, banquet (excluded in student registration), and all lunches and refreshments. Registration fee must be paid online by major credit cards (VISA, MasterCard and JCB) through conference website or be paid by bank transfer.

Your abstract(s) and full paper(s) will be shown in the proceedings and USB, respectively, and presentation in a session will be arranged only WITH REGISTRATION.

Please recheck the important dates below.

- * Full Paper Submission: **June 30, 2014** [Extended]
(Full paper: 4~8 pages / Oral presentation: 15 min. incl. Q&A)
- * Paper Acceptance Notification: **July 20, 2014**
- * Final Submission & Early Bird Registration: **July 31, 2014**
- * The 6th International Conference of ACF: **September 21-24, 2014**

Conference Secretariat
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Membership fee

Members are kindly reminded to pay their membership fee. Please contact the secretariat in case you have any query about your membership status.

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