CALL TO ORDER

ROLL CALL: Ken Boyer, Ken Donart, Whitney French (Vice-Chair), Michael Garrigan (Chair), Kristine Heiman, Richard Scheffrahn, Jeff Wehrli (CB Representative), 2 vacancies and Pete Iosue/Teska (PBZ liaison)
(Quorum is 5 members)

APPROVAL OF AGENDA

APPROVAL OF MINUTES: Approval of minutes from the August 19, 2015 Meeting

CHAIRMAN’S REPORT

PUBLIC COMMENT

NEW BUSINESS
1. Farnsworth House

OLD BUSINESS
1. Update on Millbrook Bridge
2. Discussion on Kendall County Historic Preservation Roundtable Workshop- September 30, 2015
3. Remote Meeting Attendance Potential
4. Review Reconnaissance Survey Pictures

PUBLIC COMMENT

ADJOURNMENT- Next regular meeting on October 16, 2015, Special Workshop Meeting on Sept. 30th
CALL TO ORDER
The meeting was called to order by Chairman Michael Garrigan at 7:05 p.m.

ROLL CALL
Present: Ken Donart, Vice-Chair Whitney French, Chairman Michael Garrigan, Kristine Heiman, and Jeff Wehrli (CB Representative)
Absent: Richard Scheffrahn
Also present: Pete Iosue: Teska Consultant;
In the audience: None

APPROVAL OF AGENDA
Jeff Wehrli made a motion to approve the agenda as written, Kristine Heiman seconded the motion. Approved 5-0.

APPROVAL OF MINUTES
Jeff Wehrli made the motion to approve of the minutes from the May 20, 2015 meeting. Whitney French seconded. Approved 5-0.

CHAIRMAN’S REPORT - None

PUBLIC COMMENT - None

NEW BUSINESS
1. Landmarks Illinois and the Illinois Association of Historic Preservation Commission
   Mr. Iosue stated that Landmarks Illinois had a survey link to gauge the public’s interest on historic preservation.
2. Farnsworth House
   Ms. French stated that she received some letters for the architects currently working on Farnsworth House. The architects were concerned with the direction the project. Ms. French forwarded the correspondence on to the other Commission members.

OLD BUSINESS
1. Update on Quorum
   Mr. Iosue stated that after considerable research there was no clear answer to the Commission questions from the previous meeting. However, after consulting the State’s Attorney’s Office, their advice was to follow staff’s recommendation of reducing the number of commissioners to be on the safe side. Mr. Wehrli added that after speaking both to the State’s Attorney’s Office and the Chairman of the Planning, Building, and Zoning Committee that both were comfortable with having a commissioner Skype in. The Commission’s consensus was to defer the decision until the next meeting to give time to consider and possibly find other members.
2. Update on the Millbrook Bridge
   Mr. Wehrli updated the Commission on the state of the Millbrook Bridge. The Village of Millbrook voted unanimously to deny the Forest Preserve access to an existing right-of-way for use in a trail system. As grants for a trail system were the major source of funding, the money to repair the bridge is no longer there. Mr. Wehrli added that while there is no hurry to remove the bridge, it is a public safety issue. The cheapest option would be demolition of about two hundred thousand dollars.

3. Discussion on Public Outreach event
   Ms. Heiman stated that the current date would not work well. She put forward September 30 as an alternate. The Commission agreed. The Commission also discussed possible topics and preparations for the event.

4. Review of Reconnaissance Survey Pictures
   1945 Van Dyke Road – Not Contributing
   230 Van Dyke Road – Significant
   3610 Van Dyke Road – Contributing
   3827 Van Dyke Road – Contributing
   3875 Van Dyke Road – Contributing
   4405 Van Dyke Road – Contributing
   4846 Van Dyke Road – Contributing
   1285 Holt Road – Contributing
   1680 Holt Road – Contributing
   2200 Holt Road – Contributing
   2851 Holt Road – Not Contributing
   3050 Holt Road – More pictures needed
   3526 Holt Road – Not Contributing
   15005 O’Brian Road - Contributing
   15815 O’Brian Road – Not Contributing
   16151 O’Brian Road – Contributing
   17725 O’Brian Road – Contributing
   4930 Whitewillow – Contributing
   The Commission ended at the root level of the Seward Township folder.

PUBLIC COMMENT - None

ADJOURNMENT - Next meeting will be on September 16, 2015
Ken Donart made the motion to adjourn at 8:31 p.m. Jeff Wehrli seconded. Approved 5-0.

Respectfully Submitted,
Andrez P. Beltran
Economic Development and Special Projects Coordinator
Open Letter regarding proposed changes to the Farnsworth House.

The National Trust for Historic Preservation has proposed a flood remediation plan for Mies van der Rohe’s Farnsworth House which would raise the house during a flood on hydraulic jacks. This scheme however threatens to alter the Farnsworth House architecturally and spiritually in ways that are unacceptable.

The 1951 House was built on elevated supports in a floodplain, calculated to be slightly above the 100 year flood level. Since it was built 64 years ago the interior of the house has flooded several times, most severely 19 years ago.

The 1996 flood, which caused significant damage to the house, and a subsequent minor flood the following year, started the impetus to address the risk of future flooding. The preferred and increasingly aggressively pursued option that the National Trust has put forward is one that subjects the house to significant architectural alterations, and should be cause for alarm.

The National Trust is claiming that floods at the Fox River are increasing both in frequency and intensity, but an understanding of what led to the extraordinary event of the 1996 flood is needed to better understand the risk of future flooding. A short analysis of that flood is included in this letter.

The idea of building hydraulic jacks under the house is one that has been suggested for years, and one which Jim Peters, as the then President of Landmarks Illinois in 2008, described as “not practical”. Franz Schulze’ 1997 book on the Farnsworth House, produced by Lohan Associates, also described the idea, and labeled it “hugely expensive”.

The Hydraulic Scheme:

The proposed scheme would be to cut the house loose from the lower terrace, which is supported by the same 8” wideflange steel columns that support the floor and roof of the house. Separating the house and terrace, which have always formed a unified structural and architectural composition, should be reason enough to discard the scheme. The terrace, once separated from its original supports, will be propped up on new, permanent supports below. In order for the steel skirt and waffleslab, which will need to extend beyond the House’s wideflange columns, to clear the terrace when the house is lifted up, a large gap needs to be created. To do this the terrace will need to move away from the house, and the remaining wideflange column that supports the terrace on the North/West corner will be moved out of alignment with the ones supporting the house to allow for the gap necessary between terrace and house, thereby significantly compromising the Cartesian purity of the columns being aligned on the structural grid that Mies van der Rohe established. In addition, the welded steel staircase connecting the terrace with the house porch will be cut, and also propped up by non-original supports. See drawing enclosed by the National Trust showing both the new permanent supports under the terrace and stair. For a house as distillled in architectural purity as this one is, where every detail was carefully considered and refined by both Mies van der Rohe and Myron Goldsmith, these changes are debilitating.

The original steel wideflange support columns of the house will be cut off just below ground level, the steel drum below the house housing the utilities will be cut off as well, and the separated house lifted onto a dolly system that moves it 500 feet uphill to higher ground while a 12 foot deep concrete pit is
built on the original site. This concrete pit houses the hydraulic machinery and trusses necessary to lift
the house when a flood is imminent. After the pit is built the house is trucked back, and dropped onto a
concrete waffle slab that takes the place of the original column foundations, which are discarded. A
steel skirt sticking up from the waffle slab will hold a foot or so of soil, so that in its lowered state the
soil level looks similar to its current appearance.

Below are listed several reasons why this seems to be a very impractical scheme:

**Architectural:** Cutting the house from its original foundations, and destroying its integrity by also cutting
it apart from the lower terrace is an act of architectural vandalism.

The floor plane and roof of the house, despite their appearance of lightness, are very heavy elements of
steel and concrete, and moving the house at an angle uphill would likely cause racking of the frame and
cracks in the welds that connect the columns to the floor and roof. The steel window mullions between
the structural floor and roof channels are actually in tension, and the entire house is so carefully
balanced, that much damage might very well occur during the temporary move.

The remaining original plate glass window panes would have to be removed before the move, and it is
doubtful that they would survive this, as the steel window stops and screws are likely rusted together,
and they would therefore need to be removed by force. Destroying these original window panes and
replacing them with tempered glass, complete with the roller marks that are always an integral part of
the tempering process, would be counter to historic preservation guidelines of maintaining the original
building fabric when possible.

The hydraulic system would reputedly be tested 3 to 4 times a year. Seeing this architectural icon,
whose beauty is so dependent on its quiet repose in the landscape, raised up 9 foot in the air on jacks is
disturbing, and the idea, offered up at the first meeting, that folks and their kids would come to this and
pay extra to see the house raised and lowered, transforms an elegant work of architecture into a
carnival attraction of the basest kind. The notion should shock anyone sensitive to art and architecture.

**Financial:** The Farnsworth House has no endowment, and the National Trust has been struggling with
the financial costs of upkeep and maintenance. The construction of this hydraulic solution and moving
the house to a different temporary location supposedly will cost $3 million. The actual cost will very
likely be much higher. No mention is made of the cost of maintaining the hydraulic actuators, generator
and back-up generator, electrical system, testing etc. These are permanent costs that will divert much
needed funds for the regular upkeep of this important structure. After 75 years, the entire system needs
to be replaced. Cleaning out the mud, debris and branches/trees from the 12 foot deep concrete pit
after a flood would likely require major hand labor, the cost of which was also never discussed.

**Technical:** Hydraulics are often used for many purposes, and are, generally speaking, reliable. But here,
in a flood situation, the operation will depend on all eight hydraulic actuators working correctly (if more
than one fails, the house will not rise), the electrical generator working, and, if not, the back-up
generator working, the seals on the hydraulic actuators and pistons not failing, and the hinges on the
trusses not getting stuck. Not to mention the rubber hoses, hydraulic power units, control valves,
inducers, sensors and the computer system handling the entire raising/lowering operation. A *blind faith
in technology never failing is required to see how such a complex technical solution can be preferred over
a static, permanent one.*
The steel hydraulic actuator piston rods, which will be fully submerged during a flood, are chrome plated, and the Trust states that “chromium is virtually impervious to rust and corrosion that would normally be precipitated by submerged operation”. Architects and other construction professionals will attest to the fact that chrome-plated steel is most definitely NOT impervious to rust.

The 12 foot deep concrete pit housing this complex mechanical machinery is year round subjected to hydrostatic pressure from ground water, and both rain and ground water will easily seep in, if only from the open joint at ground level. Thus the house would need constant sump pumps in the pit to keep the water under control.

Another concern would be the malfunctioning of the system for any reason, even when tested, and the need to have a repair crew access the machinery and equipment inside the concrete pit. It is unclear how one would access this if the waffle slab that the house is resting on does not budge. This would likely require some sort of access below the house, which is not mentioned in the report.

The house is anchored to the ground with its utilities, waste, electrical, and plumbing, which enters the house through a black painted steel drum stack below the center of the house. It is very unclear how this critical connection is dealt with when the house is raised. The house does not raise straight up, but rather at a 45 degree angle due to the truss configuration below. The answers thus far: “some type of accordion like device” that stretches out diagonally as the house is raised nine feet. “Flexible connections” or a “breakaway connection with “automatic” seal that would need to be reconnected by a plumber as the house is lowered. No credible solution has been brought forward on how to deal with this critical aspect of the operation.

While the house is hovering above the flood, the twelve foot deep concrete pit, with all its trusses and equipment, would violently fill with silt, dirt, trees, branches, and whatever other debris the flood will bring into it. According to the previous owner, Peter Palumbo, “the Fox River becomes a roaring torrent that bursts its banks...” Once the flood waters breach the top of the concrete pit the effect would be akin to a drain in a bathtub, where all the debris floating nearby would suddenly be pulled along with the river water rushing to fill this enormous hole in the ground. After the flood pumps would supposedly suck out the silt, and high pressure hoses (two more maintenance items for the Trust) would do the rest. It is unclear how pumps and hoses remove branches and debris wrapped around trusses, or even a significant accumulation of river mud. They would have to manually excavate the pit after every flood with shovels and manpower, and the OSHA guidelines on working in a pit with a multi-ton concrete waffle slab and house hovering on hydraulic trusses above would likely require significant additional safeguards that are not part of the estimated cost.

The response from Robert Silman, the engineer responsible for working out the hydraulic scheme, when asked at the meeting how we can be certain that this will all work was a simple “It will”. In the context of how this scheme impacts one of the architectural masterpieces of the 20th century this is not an adequate response.
The 1996 flood:

Between July 18th and 20th, 1996, an all-time record rainfall was recorded of over 16 inches in 24 hours, causing record flooding, two deaths and over 13 million dollars’ worth of damage in Illinois. Three dams in the region experienced complete failure, and numerous other dams were overtopped. The Fox River rose to a height never seen before or since. The water at the Farnsworth House rose to 575 feet above sea level, causing the house to be inundated with 58 inches of water.

Since this flood the U.S. Army Corps of Engineers has overseen the Fox River Watershed Project, which called for increased gating at the McHenry and Algonquin dams downstream of the Farnsworth House to allow for better management of floods, as well as numerous changes to existing and new watersheds, dams and levees throughout the region, thus minimizing the chance of such a biblical flood of reoccurring.

Since 1996 the house has flooded twice over the past 19 years – once by a few inches in 1997, and by 18 inches in 2008. It has not flooded in the past 7 years.

A Better Solution:

Realistic solutions are ones that do not require technical complexity and chance. They should be permanent, maintenance free solutions that respect the original structure and the repose and serenity that are so important to one’s experience of the Farnsworth House.

Ideally a solution should not impose a continuous financial burden on the owner in terms of upkeep and maintenance.

In considering leaving the house in situ, the Trust studied raising the house on landfill to a level 9 feet higher than its current elevation above the floodplain. Raising the house 9 feet would require, they estimated, between 10,000 and 20,000 cubic yards of fill. The Trust has made it appear like this would be an enormous number, but it is useful to know that the recently completed Maggie Daley Park in Chicago required 105,000 cubic yards of topsoil alone.

But why raise the house by 9 feet? The current floor level of the house is at 570 feet above sea level, which is considered the 100 year flood level. The average level of the Fox River is 560 feet. The 500 year flood level for this area is at 572.5 feet, only two and a half feet above the current floor level. The house has experienced two floods exceeding that – one in 1954, and another in 1996.

Perhaps a better solution would be to lift the house carefully by 5 feet in its present location, and gently grade the land below and around the house to this new elevation. New landscaping would be required, but there are fortunately few large trees close to the house. The main defining landscape feature, a large black sugar maple tree next to the house, died a few years back and was removed. A sapling from that very tree has been nursed and is available for replanting. Most of the remaining landscaping is from the 1970’s, and not original to the site. The amount of fill required would be close to half of what the Trust had recommended in raising the house 9 feet, and would therefore be far less costly. The 70’s Lanning Roper landscape, mostly consisting of lawn and plantings, could easily be recreated, if so desired.
The time-tested method to raise the house and terrace would be to underpin both, excavate and free the foundations, and then slowly, carefully, raise it up vertically over several days on multiple jacks, allowing the ground level below to be raised. Raising the floor level of the house to 575 feet would bring it safely above any known flooding danger. As a matter of fact, the house would have never been flooded at this level over its entire 64 year history. There would be no reason for separating the house and terrace, or to even remove the original plate glass windows, as the structure would not be moved laterally or on a slope. The soil required could be brought in by river barges or dump trucks, to provide a very gradual rise of the grounds surrounding the Farnsworth House. The 105,000 cubic yards of soil required at the Maggie Daley Park required 5000 truckloads, so 10,000 cubic yards would likely require about 500 truckloads, a very doable and reasonable feat to accomplish. To offset the loss of floodplain the ground level elsewhere along the river would have to be removed to compensate, and perhaps this can be done on the farm land already owned by the National Trust directly east of the original plot of land, nearby the visitor center. The soil removed there can be used to raise the ground level as well.

Advantages of this solution:

- **Cost.** By far the least costly solution, and one that does not require permanent infusions of cash from an endowment in the future.
- **Permanence.** This solution does not rely on mechanical means and constant maintenance, but is a static and permanent solution.
- **Architectural Integrity.** The house and terrace are not altered, and original fabric is preserved.
- **Site.** Although the house is lifted, it remains on the location Mies van der Rohe had selected, at the same distance from the river. Views of the river are, arguably, improved.
- **Fundraising.** By adopting a less controversial solution that does not harm the architecture of the house it should be easier for the National Trust to raise the funds necessary.

Another option would be to only raise the house by 3 feet, so that it is above the 500 year flood line. In this case it would have only flooded twice, in 1954 and 1996, and the floods would have been relatively minor, with any damage easily repaired.

I hope the National Trust will seriously consider raising the house slightly in situ. The hydraulic scheme, I fear, would cost much more than the $3 million anticipated, and might, at some point, fail when it is most needed, leaving the house to the mercy of the flooding Fox River. I hope cooler heads at the National Trust and Landmarks Illinois will prevail, and once more step forward to save this elegant and important structure for future generations in a way that best respects Mies van der Rohe’s original vision.

Sincerely,

[Signature]

Alexander Krikhaar, AIA
Note that the waffle slab and steel skirt were not shown in this diagram - how will they slip past the terrace and stairs?
August 20, 2015

Mr. Alex Krikhaar, AIA
Vinci/Hamp Architects
1147 West Ohio Street
6th Floor
Chicago, Illinois 60642

Dear Mr. Krikhaar:

Thank you for your recent letter regarding proposed changes to the Farnsworth House to protect it from the future flooding of the Fox River. Although this letter is addressed to you, the National Trust has followed your lead and shared this response with others interested in this important site.

As you know, because of the exceptional significance of the Farnsworth House as a work of architecture, there is a high level of interest in the plans for flood mitigation. As the owner and steward of the property, the National Trust for Historic Preservation recognizes the responsibility it bears for this important decision, a responsibility it shares with Landmarks Illinois as the holder of a preservation easement. Given its stewardship responsibilities, the National Trust appreciates the opportunity to address important questions to ensure that options are carefully explored and the best solution for this internationally significant place is selected and implemented. In exploring the possibilities for mitigating the impact of flooding at the Farnsworth House, the National Trust is guided by one key goal – to protect the character-defining features of the Farnsworth House so it can be visited, studied and enjoyed by present and future generations. While the National Trust believes it has identified the best option to protect the property’s historic significance, assessment of the options continues based on new information and additional study. It is acknowledged that these are difficult decisions that involve consideration of many different factors, and that no solution is perfect, or easy.

In addition, as stated throughout the process, it is the National Trust’s intention to share the information about the exploration of flood mitigation options for the Farnsworth House widely so the process, the technical information, and the philosophical discussions can inform other preservation projects seeking to find solutions to persistent flooding, rising sea-levels, and increased severity of storms. With that goal in mind, the National Trust has held open forums for discussion throughout the region and has hosted a website where plans and discussions are posted for public view and comment.

The responses below are based on the expertise of the Trust’s consultants, the studies it has commissioned, consultation with many other preservation professionals, and the information available at this time. The National Trust will continue to study the flood
mitigation proposal, and will address new questions as they arise or as new information becomes available.

**Establishing the Parameters:**

The National Trust began its investigation of the flood threat and possible means to mitigate it without preconceived positions regarding a solution. As recommended in your open letter, the Trust initially considered raising the grade and keeping the house in situ. Four consultants - Wright Water Engineers (2013), Thornton Tomasetti (2013), Silman Engineering (2014) and Krueck + Sexton (2015) - were tasked to address this approach as well as a range of possible options. Once flood data was established and confirmed, it was determined that adding grade was impractical because at least seven feet of fill was required, as explained below. This analysis is based on detailed review of the various elevations of the ground, house and floods. The elevation numbers in the open letter are not consistent with the information from the studies by the Trust’s consultants, which determined the following:

- The ground grade is 564.0 feet above sea level (lowest point is 563.58 and highest 564.04)
- The first floor finish elevation is 569.24 feet above sea level (Krueck + Sexton, 2015, uses 569.25)
- The base of the floor slab is 568 feet above sea level
- The 500 year flood recurrence is 574.0 feet above sea level (K+S, 2015, uses 574.25)
- The floor slab is 1.25 feet thick

On the basis that the house would need 1 foot of freeboard between the base of the floor slab and the 500-year recurrence, the necessary design elevation of the floor slab was determined to be 575.0 feet above sea level. Wright Water Engineers confirmed this design elevation number on May 20, 2014, indicating that to elevate the bottom of the slab out of the 500-year floodplain with 1 foot of freeboard, approximately 6.9 feet of fill would be required.

Based on this information, the solution proposed in the open letter to add either 3 feet or 5 feet of fill would not lift the house above the already occurring flood zone and or above the FEMA Base Flood Elevation of 569.4 as determined in the Department of Homeland Security FEMA Flood Elevation Certificate. Lifting the house 3 or 5 feet also would not prevent the slab and utility core from being submerged, even if water does not breach the finish floor.

In previously examining the possibility of retaining the Farnsworth House on its original site and raising it on fill, the Trust identified significant practical and philosophical impediments that would also apply to the proposal suggested in your letter. Although the hydraulic option and the possibility of a move to the farm field have been proposed, until one of these flood mitigation options is implemented, all options continue to be considered and related concerns continue to be discussed.

An important factor in considering the option of raising the house using fill is the substantial volume of fill needed to raise the house in its present location by the required 6.9 feet (the five feet proposed in the open letter is inadequate as explained above). Fill
would need to be placed to the existing 573 feet above sea level contour line, which is 240 feet back from the house. To prevent a ‘mound’ effect, substantial earth work would be necessary. On the river side of the house, the slope of the bank would be raised dramatically by nearly seven feet. It is not possible to gently grade this much fill within the area available between the waterline and the structure as proposed without creating a visual impact.

Although your letter references the fact that 105,000 cubic yards of topsoil was transported for Maggie Daley Park in Chicago, the Trust’s consultants have not been able to identify a source for the 10,000 cubic yards of fill that would be necessary to raise the Farnsworth House in situ. In Chicago, fill is used from local excavation sites, but no planned construction has been identified in the Plano vicinity that can provide the amount of fill required. It has been suggested that the soil could be mined from the farm field, which the National Trust owns. This would create an altered landscape, changing the context on both parcels that Dr. Farnsworth owned. It is also important to emphasize that adding fill diminishes the character of the original setting. The accretive landscape layers that add to the site’s significance and interpretation would be destroyed. Although a new appropriate landscape could be created, the site would be altered and the newly created landscape would not mature for approximately twenty years. In addition, the view to the river would be changed from the original design intent. The hydraulic option is the only option currently available that retains this important relationship to the river, the primary reason the site originally was selected.

Temporarily Moving Farnsworth:

Your letter raises the question of whether the temporary relocation of the house would result in racking of the frame, cracks in the welds and removal of the original plate glass. Although the National Trust will continue to investigate and explore plans and specifications for the temporary move of the house, it is our understanding based on the work of our consultants and discussions with building moving companies that the move can be accomplished without these results. Moving buildings is fairly common as a preservation solution, including buildings as large as the Cape Hatteras Lighthouse, which was moved by the National Park Service. Farnsworth is considered small and of average weight (600 kips/300 tons) for a move. Moving equipment is currently capable of moving several thousand tons at once. The rigidity of the concrete and the steel of the Farnsworth House also simplifies the moving process. Moving a structure on an inclined surface is frequently performed and, if properly implemented, will not result in damage.

The building would be moved with all of the glass in situ. It is the Trust’s understanding from discussions with moving companies that there are only two things that would cause the glass to break: 1) deflection in the lifting steel supports or 2) if the building does not stay on the same plane. Both of these are mitigated in the moving process. The lifting steel can be pre-deflected and shimmed in anticipation of the effect of the weight before lifting, and the three-point hydraulic dolly system prevents the building from racking, thus retaining a level plane. Wolfe House Movers, which relocated the Rees House and Wrigley Field Buildings in Chicago, stated that they are 99% confident they can move Farnsworth without any danger to the glass. If the National Trust proceeds with a
temporary or permanent move, an informational session with qualified structure movers can be arranged during design development for interested stakeholders.

With regard to the current status of the glass, the five original (or early) plate glass windows that remain have been covered with safety film. The National Trust does not anticipate removing any of the original glass unless and until it fails. The tempered glass the Trust used to replace window units that failed has very tight criteria for visible distortion and thickness so the surrounding frames and sills can continue to be used.

**Technical Questions with the Hydraulic Scheme:**

**The Lower Terrace:** Your letter raises concerns about de-coupling the lower terrace from the house and the design of the stair connection as part of the hydraulic lift solution. This is an issue that the Trust continues to study, as we share some of the concerns raised by you and others. The Trust’s design professionals state that it is possible to design the hydraulic solution to treat the lower terrace in a manner that retains Mies’s original design. For example, the lower terrace potentially can be raised with the main building (which remains a viable option) or alternatively, a new connection of the terrace beams to the two house columns would allow for ‘decoupling’ after the hydraulic pistons come up to provide alternate support. While these are only suggestions, the Trust is fully aware of the sensitivity of this connection. Solutions have not been explored in-depth due to the conceptual nature of the current design phase. The Trust will continue to explore the alternatives to ensure that a design is developed that minimizes the effect on the original design, and it is anticipated that these will be reviewed and approved by Landmarks Illinois under the terms of the preservation easement prior to implementation.

**The Steel Hydraulic Actuator Piston Rods:** Your letter expresses concern, also raised previously, about whether the hydraulic lift will operate due to rust or malfunction. There are numerous examples of hydraulic actuators in use for many years in environments more corrosive than the one anticipated at Farnsworth. Examples include sewage treatment and industrial waste treatment plants, dam gates, and movable bridges. The components in these environments do not corrode under service. The metallurgy used has been developed and successfully proven to resist corrosion. Any components used will be designed with appropriate consideration for corrosion protection, and will be approved by Landmarks Illinois.

Your letter also expresses a more general concern about the choice of a complex technical solution over a static, permanent one. This is a concern that is shared by the National Trust and others. Options for a static permanent solution through raising the house in situ and moving the house to other locations have been explored in depth. It was determined, as noted above, that the amount of fill necessary to raise the house in situ to an elevation high enough to protect it from flooding was not feasible and would result in significant impacts to the landscape and to the original design intent. While a move to another location on the property was determined to be feasible and potentially acceptable, it resulted in greater change to the property than the hydraulic lift, particularly with regard to the relationship between the house and the river. While an option that is static and permanent, such as moving the house to the farm field, may yet be used if the hydraulic solution cannot be implemented, the hydraulic solution was preferred because it kept the house at its original location and protected it from flooding.
The National Trust will continue to address concerns about the potential for failure of the mechanical system during the design phase by carefully assessing the components and design of the system.

**The Concrete Pit:** The bottom of the pit will be below the ground water level and there will be hydrostatic pressure on the pit as is common in building construction. The pit will be waterproofed using standard waterproofing products and will be designed to prevent seepage through its floor or walls. It is anticipated that there will be a seal at the top of the pit where the movable slab is to be seated that is designed to keep most surface water out, but sump pumps will be incorporated to manage any seepage or other water intrusion. During much of the year, there is no surface water on the site that would intrude beyond the seal at the top of the pit, so pump operation should be minimal.

**Pit Repair Access:** It is anticipated that there will be access to the pit through a concealed manhole entry that will allow hydraulic service personnel to inspect the equipment and service it, even if it is not deployed. The details will be determined in design development.

**Utility Core:** The methodologies mentioned (“flexible connections, breakaway connection”) are credible, and have been vetted with a MEP engineer. Details will be worked out in the next phase, but there is no indication that this will be an insurmountable issue.

**The Pit During a Flood Event:** In a flood, when the house is elevated, the pit would fill gradually as the water levels rise. When the flood waters recede, the water will be removed gradually. The pit will begin to fill as soon as the water is 1/8 inch above the lip of the pit. It is anticipated that the design will incorporate debris shields or deflectors for the purpose of keeping debris from entering the pit or becoming entangled with the trusses. The debris shields or deflectors have not yet been designed, but will also go through a design development and review process, and will require the approval of Landmarks Illinois through the preservation easement.

After a major flood event, a substantial amount of labor is already required to clean up the site. The proposed hydraulic system adds to this labor, and will be budgeted for accordingly. The pumps in the pit will be designed to eject silt and mud as the pit is being flushed. Because of the debris shields, it is not anticipated that manual shoveling will be necessary. However, in the event that it is necessary for workers to enter the pit when the house is elevated, it will be safe when the trusses are locked into position. At that point, there is no dependence on hydraulics to hold the house in its elevated position. The design and operation of the system will comply with all OSHA and other requirements.

**Testing Schedule:** Scheduled testing will occur as recommended by the consultants and manufacturer; a schedule has not been established. Your letter expresses a concern about the possibility of people watching the house being raised and lowered during testing, and suggests that this would “transform an elegant work of architecture into a carnival attraction of the basest kind.” This possibility was raised by a Trust consultant, but is not the position of the National Trust. The sense of quiet repose and beauty that visitors experience at Farnsworth House is highly valued, and the Trust is carefully designing the flood mitigation project to maintain that character of the visitor experience.
for our visitors. We would want to have several experts and stakeholders on-site as the lift is tested, to help us monitor the system after use and to ensure that we have accounted for changes that may have taken place. In a larger context, use of this system could provide an unparalleled opportunity for visitors to be informed and inspired about preservation and architecture and the response to changing climate conditions.

**Assurance that the System Will Work:** Your letter expresses a concern that Robert Silman, the engineer, in response to questions about whether the mechanical system will function, simply says “it will.” It is our understanding that this quote by the structural engineering consultant references the hydraulic methodology as a proven, use-tested technology in many different environments. Although the exact components for the system have not been specified, the engineers advise that the testing, engineering specifications, and performance of the components will be carefully examined during the design phase, and this information can be shared and reviewed during the design development and review process. The design details must be approved by Landmarks Illinois through the preservation easement.

**Hydrology and Related Issues:**

**The 1996 Flood:** Your letter raises the question of whether the 1996 flood was an anomaly, and suggests that U.S. Army Corps of Engineers actions have minimized the chance of a flood comparable to the 1996 flood recurring.

While the severity of the 1996 flood may have been an anomaly at the time of its occurrence, the hydrology study completed by Wright Water Engineers – a firm with an international reputation of working with hydrology issues around cultural sites, and recommended to us by the World Monuments Fund – states that in the future such events will be more common in severity and frequency (page 19, WWE, 2014). The hydrology report predicts major flooding, like the 1996 flood, to occur on average every 17 to 18 years, while the site will flood annually and the lower deck every five years. Twice in 2013, in March and again in April, flood water covered the lower deck.

As part of the hydrology study, WWE consulted with Brian Eber of the Statewide Floodplain Programs/National Flood Insurance Program of the Illinois Department of Natural Resources, Office of Water Resources, and Bill DeGroot, a national floodplain policy expert. The flood analysis also incorporated information from the U.S. Army Corps Hydraulic Engineering Center Water Surface Profile Program (HEC-2). The Army Corps of Engineers will be consulted when a conceptual proposal is selected.

Your letter refers to the possibility that increased gating at the McHenry and Algonquin dams downstream from the Farnsworth House may allow for better flood management. The McHenry and Algonquin dams actually are upstream of Farnsworth. According to the operating plan of the Illinois Office of Water Resources, the increased gating at these dams is intended to allow more water to flow from the Chain of Lakes downstream into the Fox River during major flood events.

The reconstructed Yorkville/Glen Palmer Dam is also upstream from Farnsworth and is a non-gated, stepped slab spillway structure. The white-water canoe bypass on the south
The solution proposed in your letter is to underpin, excavate and free the foundations, lift the house, add fill and return the house to a new elevation five feet above the existing. In addition to the concerns expressed above that raising the building 5 feet is not adequate, and that fill cannot be identified, other concerns would also need to be addressed.

**Lifting the Building but not Temporarily Moving it:**

The National Trust has explored the concept of lifting the building in order to fill the existing site, and has determined that it would be more practical, cost-effective, and safe to move the building temporarily rather than lift it on site without moving it.

To be lifted in place, Farnsworth would be elevated between 18 and 20 feet (or 2 stories) above its current elevation since the foundations are approximately three feet six inches below grade, seven feet of fill is needed, and there must be at least ten feet of head room for the work crew. This would require multiple lifts with re-shoring at every stage. The risk to workers and of damage to the structure increases exponentially with each successive stage. Even if lifted only half that height, the building, supported on temporary cribbing, would have limited stability. It would be exposed to wind loading that could overturn the structure. In addition, the temporary supports for the building would occupy the majority of the work zone.

If Farnsworth remains above the site during construction, it will be difficult to compact the imported fill to the standards needed because of vibration, truck access and a minimized construction zone. If the fill cannot be properly compacted, the footings will need to be enlarged to be consistent with the available bearing capacity. The building could also be exposed to unacceptable amounts of long-term and differential settlement.

The geo-technical engineers recommended maintaining the existing bearing elevation of the footings if fill is added. Therefore the steel footing columns would have to be replaced in-kind with new longer sections, or be extended by splicing. As the structural condition of the existing footings and bolted connections are unknown, when they are excavated and exposed, they would be checked for deterioration, corrosion, cracking, and any other signs of distress. Based on the outcome of that evaluation, the footings may require replacement.

Concerning the utilities, all of the connections (sewer, water, electric) need to be extended and re-mounted. It is more cost effective and safer to do this without the low-overhead conditions under the underpinned building.

Once the building is raised, it is logical and cost effective to re-build the foundations and replace or modernize the utility connections. The below grade structure and utilities are unseen and replacement benefits the long-term preservation of the structure.
Mr. Alex Krikhaar, AIA  
August 20, 2015  

Financial Implications:

Although detailed cost estimates have not been developed for the options, the consultants have provided general estimates as part of the feasibility study. The hydraulic option is anticipated to cost approximately $3.5 million. The proposal to move the Farnsworth House to the farm field is estimated to cost approximately $3 million, and the option to add fill to the site was estimated to cost between $2.4 and $2.9 million. These estimates have not been updated recently, and do not cover all the work that may ultimately need to be performed, such as landscape costs.

None of the estimates currently include the need for endowments for cyclical or other maintenance, although the National Trust understands the need to cover those costs and plans to include them in the full financial planning for the project.

Although the current estimates for the hydraulic option are higher than the other options, the National Trust is continuing to pursue the hydraulic option because it is our determination that the hydraulic option has the least impact on the historic significance of the site. The National Trust is fully aware that the Farnsworth House has no endowment. Fundraising for both the flood mitigation project and the long term future of Farnsworth are critical needs that will continue to be addressed. The support of the many donors to the Farnsworth House is greatly appreciated, and the Trust is working to grow that support.

Conclusion:

The interest and concerns expressed in your letter include issues that have been shared by the National Trust, Landmarks Illinois, and the many people and organizations interested in the future of Farnsworth House. All parties join you in sharing the desire to protect Farnsworth House from future damaging floods while minimizing impacts to its historic and architectural character. The National Trust will continue to explore the options and to share information to determine the best possible outcome for this highly significant historic place.

Sincerely,

David J. Brown  
Executive Vice President & Chief Preservation Officer
KENDALL COUNTY HISTORIC PRESERVATION COMMISSION
REMOTE ATTENDANCE POLICY

I. PURPOSE

The purpose of this Policy is to allow members of the KENDALL COUNTY HISTORIC PRESERVATION COMMISSION to attend and participate in open and closed meetings of the Board by video or audio means as authorized by Section 7 of the Open Meetings Act, 5 ILCS 120/7, subject to the rules and limitations applicable to such attendance and participation as set forth in this Policy.

II. DEFINITIONS

“Act” means the Illinois Open Meetings Act, 5 ILCS 120/1 et seq.
“Commission” means the Kendall County Historic Preservation Commission.
“Commissioner” means a member of the Commission.
“Meeting” means any open or closed meeting of the Commission that is subject to the Act.
“Qualifying Event” means: (i) personal illness or disability; (ii) employment purposes or the business of the District; or (iii) a family or other emergency.
“Remote Means” means video or audio conference only.

III. REMOTE ATTENDANCE PERMITTED

Subject to the limitations set forth in Section IV below, a Commissioner may attend any Meeting by Remote Means if the Commissioner is prevented from physically attending the Meeting because of a Qualifying Event.

IV. RESTRICTIONS ON REMOTE ATTENDANCE

(a) No Commissioner may attend any portion of a Meeting by Remote Means unless:

(i) a quorum of the Board is physically present at the Meeting; and

(ii) he or she provides written notice to the Planning, Building and Zoning Department specifying the Qualifying Event at least one hour prior to the Meeting; and

(iii) the Remote Means being utilized is fully functional so as to allow all Commissioners and any member of the audience to hear all communications taking place at the Meeting.

(b) No Commissioner may attend a Meeting by Remote Means for any reason other than a Qualifying Event.
V. RULES OF PROCEDURE WHEN REMOTE ATTENDANCE UTILIZED

(a) When any Commissioner attends any portion of a Meeting by Remote Means as permitted by this Policy:

(i) the minutes of the Meeting shall so reflect that such Commissioner attended the Meeting by Remote Means; and

(ii) every Commissioner shall be identified during all Board discussions so that each Commissioner is aware of which Commissioner is speaking at all times.

(b) A Commissioner attending a Meeting by Remote Means shall:

(i) be permitted to fully participate in the Meeting as if he or she were physically present, subject to the Board’s guidelines and procedures for conducting the Meeting; and

(ii) advise the Board if he or she leaves or returns from the Meeting; and

(iii) advise the Board of all other persons in the same room as such Commissioner attending by Remote Means and whether and to what extent such other persons are able to hear the discussions at the Meeting.

VI. APPLICABILITY

If any provision of this Policy conflicts with any provision of the Act, the provisions of the Act shall prevail.

VII. EFFECTIVE DATE

This Policy was approved by a majority of the Kendall County Board at its Meeting held on [INSERT DATE POLICY WAS APPROVED] and becomes effective [INSERT DATE POLICY IS EFFECTIVE].

VIII. AVAILABILITY OF POLICY

The Policy shall remain on file together with the [ORDINANCE or RESOLUTION] of the Board approving this Policy.

IX. AMENDMENTS

This Policy may be amended by a majority vote of the Board at any time.