HISTORIC PRESERVATION BOARD
May 5, 2008
MARSAC MUNICIPAL BUILDING
10:00 AM

REGULAR MEETING – 10:00 AM
ROLL CALL
APPROVE MINUTES
5 February 25, 2008
13 March 17, 2008
23 April 21, 2008
PUBLIC COMMUNICATIONS
STAFF/BOARD MEMBER'S COMMUNICATIONS AND DISCLOSURES
27 Grant funds report
ACTION ITEMS
31 528 Main Street, Museum – Grant (Possible action)
WORK SESSION
45 Historic District Guidelines Discussion
ADJOURN

Pursuant to the Americans with Disabilities Act, individuals needing special accommodations during the meeting should notify the Park City Planning Department, 615-5060, prior to the meeting.

Published: May 3, 2008
Posted: May 2, 2008

MINUTES OF FEBRUARY 25, 2008

PARK CITY MUNICPAL CORPORATION
HISTORIC PRESERVATION BOARD
MINUTES OF FEBRUARY 25, 2008

BOARD MEMBERS IN ATTENDANCE: Todd Ford, David White, Puggy Holmgren, Gary Kimball, Sara Werbelow

EX OFFICIO: Patrick Putt, Katie Cattan, Mark Harrington, Dina Blaes, Patricia Abdullah

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ROLL CALL
Board Member Holmgren called the meeting to order at 10:00 a.m. and noted that all Board Members were present with the exception of Mark Huber and Ken Martz.

WORK SESSION – Continued discussion on Design Review Process

Dina Blaes noted that at the last meeting the Board discussed the Volunteer Peer Review and related issues. She asked if the Board members had additional information or concerns since that last meeting. There were none.

Planning Director, Patrick Putt stated that the Volunteer Peer Review was scheduled for discussion at the Planning Commission meeting on Wednesday.

Board Member Holmgren recalled an earlier discussion about making the property owner and not the City responsible for researching a historic property when remodeling is proposed. She favored taking that direction.

Ms. Blaes stated that in addition to discussing the Voluntary Peer Review at the last meeting, Board member Ford had also raised issues regarding the appeal process. She noted that Board Member White raised the concern regarding conflict of interest when design review comes to the HPB and a board member is involved with the project. Board Member White stated that this has happened to him several times and he feels helpless when he cannot help his client present the issues. However, he was unsure how they could resolve the problem.

City Attorney, Mark Harrington asked about the specific issues raised at the last meeting with regard to conflicts. Director Putt stated that if the role of the HPB was expanded to include all or a portion of the design review, Board Member White wanted to know how that would impact the Board Members who make their living doing design work. Mr. Harrington agreed that the impact is real. If the Board starts reviewing every application, it will present more conflicts.

Mr. White stated that in the past when his project was being presented, he would have a session with the planner involved with the project prior to the meeting and then he would recuse himself and leave the room during the HPB discussion. Unless he resigns from the Board, he could see no other way to resolve the conflict.

Mr. Harrington stated that this procedure is part of the conflict rule and the City is being generous in allowing over the counter contact outside of the Board meeting.

Ms. Blaes stated that if they did not allow designers to serve on the Board, they will eventually lose the design professionals who are very familiar with the contextual issues within Park City. Board Member White felt it was important to have design professionals on the Board. Board Member Ford agreed, but noted that the professional members do not do any designing. Mr. Blaes stated that the value the design professionals contribute are the conversations that have taken place over the past few meetings in terms of fine tuning policy statements and giving specific direction to the Staff.

Board Member Holmgren believed that the current process of having a Board member recuse himself has worked fine and she felt they should continue with that process. Board Member White agreed that it works, but at times he has personally felt helpless in representing his clients because he has been recused.

Ms. Blaes requested further discussion on the Volunteer Peer Review process. She noted that the Staff has recommended that the HPB not have a broader authority for design review at this time. However, the Volunteer Peer Review is part of the Land Management Code changes being proposed and she wanted to hear more about the HPB concerns regarding that process.

Mr. Harrington requested that they first discuss concerns related to the appeal process. Ms. Blaes stated that her concern with how the current ordinance is written is that it allows the HPB to give guidance to someone who requests guidance, but they are also supposed to be the appeal body. If that guidance results in an application that comes through the process, it presents a problem because the applicant could potentially appeal the design review application. She felt this was a frustrating process for any potential applicant.

Mr. Harrington agreed. He did not think the intent of the original Code was to have a supplement to the Planning Director. Ms. Blaes pointed out the different levels of the appeal process and believes it is too much. She recommended that the appeal process be streamlined.

Ms. Blaes reiterated her request for further discussion on the Peer Review process to help her better understand their position. Board Member White stated that with the guidelines and with the Planning Staff and their architectural review, he felt they were just inserting another level of design review. He questioned the need for a Volunteer Peer Review. Board Member White remarked that if a project goes to the Planning Staff for design review and there was a problem, but the designer or architect was not present during that first review, he wanted to know if it would be possible to request a second review where the designer could come in an talk with the Staff and the review architect. Director Putt felt the process could be structured to allow additional feedback. Board Member White clarified that he was not suggesting another design review by another body.

Board Member Holmgren stated that her first thought on the Volunteer Peer Review was that it would add another unnecessary step. Board Member White pointed out that it would only be voluntary and not required. Board Member Werbelow could not see how they could make it mandatory. Under a voluntary process applicants have the opportunity to be extra proactive. Board Member White felt that if the review is not

mandatory and the feedback is not mandatory, it was better to stick with the first review, even if it means having several meetings with the Staff.

Director Putt clarified that he was not advocating the Volunteer Peer Review. However, he wanted the Board to understand that not only is this review voluntary it is done before an application is made. It is not a pre-application but it is the problem solving that occurs at that stage that leads to the development of an application. Director Putt pointed out that this is completely different from the design review because once the application is made, the Staff and the consulting architect are in the administrative role to apply the Code for compliance. One review is a critical evaluation and the other is a brainstorming process prior to something being developed.

Board Member Werbelow asked if brainstorming would help the Staff and streamline the application process. Director Putt replied that it would not be the panacea that solves everything but it could help. Because the people involved are professionals they can help problem solve or identify alternatives. It will also help the Staff understand architectural issues by being constantly immersed in an environment with design professionals.

Board Member Kimball recalled that Ken Martz had suggested a mandatory peer review rather than a voluntary review. Director Putt stated that Board Member Martz had also asked if there was an opportunity for an HPB member to be part of the peer review. He noted that his question was never answered and had circled back into the question raised by Board Member White regarding conflicts. Board Member White favored the idea of an HPB member participating in the peer review.

Ms. Blaes could see the advantage of getting a group of architects together but she had concerns with how to manage it, the number of people involved and scheduling. She was also concerned about keeping the review within the framework of the guidelines. Ms. Blaes could see the benefit of having an HPB member involved.

Board Member Ford wanted to know why they should not have a voluntary peer review for all applications and not just within the Historic District. Director Putt stated that if they can demonstrate that the voluntary peer review has value on a smaller scale it would be easy and logical to broaden that to a larger scale. He could see where the concept could easily be doable regardless of the design review process. If the HPB plays a more involved role in design review, the Voluntary Peer Review process would have a positive impact because a better project would mean less meetings and less time. Director Putt agreed that management of the peer review is critical. It was predicated on strong Staff management to keep them focused on the design guidelines.

Ms. Blaes stated that because historic preservation is stated strongly in the General Plan and six historic districts stress the importance of historic preservation in their purpose statements, the peer review at the historic preservation level was justified based the City's goal for maintaining the historic character. She could see the peer review process going to the next step in the future.

Board Member Ford was curious as to how the Planning Commission would react if they were told that all applications would go through the voluntary design process with a group of architects and planners before it comes to them. Director Putt stated that they

would see how the Planning Commission reacts when this is presented at their meeting on Wednesday.

On another issue, Ms. Blaes pointed out that Board Member Ford has taken issue with "within a reasonable time" and that applicants should be given a specific time frame. Director Putt noted that other organizations and municipalities actually have a specific time clock running once a complete application is submitted. This is predicated on the idea that if you are going to make an applicant go through an administrative process, it usually works best when there is a trade off. The incentive for jumping through administrative hoops is to expedite the process and have a decision within 30 to 40 days. Director Putt noted that a specific time frame has its downside as well as the positive side. The downside is what happens after 40 days when you still do not like the project. Board Member Ford stated that after 40 days you could offer the applicant the choice of being denied or granting the City a 30 day extension.

Board Members Holmgren, White and Kimball favored more date specific time frames.

Ms. Blaes preferred to allow the Staff to manage their own time frames based on their workload by allowing reasonable times for the public to come in and look at a file. Board Member Ford stated that applications are public record that should be available 100% of the time and not everyone will expect the planner to stand next to them while they look through the file.

Director Putt agreed that the application is a public record and anyone can come in at any time to look at the file. It is not likely that the planner will always be available to spend time with someone without prior notice; however someone can review the file and if they have questions or need additional time, they can call and make an appointment.

Ms. Harrington clarified that files are public record unless accompanied by a filed confidentiality claim.

Ms. Blaes anticipated that the City Council and the Planning Commission would also have revisions and she would incorporate all the revisions following those meetings.

Ms. Blaes commented on other issues that still need to be discussed. One of those is the concept of reconstruction in terms of reconstructing buildings as a general policy or only in conjunction with panelization. When she reviewed her notes from past conversations, it was clear that they need to have a deeper discussion regarding this matter. Ms. Blaes stated that part of the problem is with the terminology. Roger Evans had agreed to attend the meeting on March 17 to discuss panelization and what drives the process. Ms. Blaes suggested that the HPB plan on two hours for that meeting.

Director Putt noted that the HPB would be meeting with the Planning Commission and the City Council on Wednesday at 4:30. Since it is a Planning Commission meeting, the Planning Commission will formally adopt rules to allow a Commissioner or Board member to telecommunicate via telephone. If that is adopted, Ken Martz will join the meeting on speaker phone. Director Putt outlined the discussion topics for that afternoon. The first would be a progress update on the guidelines, followed by more specific Land Management Code discussions regarding height measurement and whether or not to cap the maximum building footprint.

Due to a personal matter, Board Member White was unsure if he would be able to attend on Wednesday.

Director Putt noted that no public input would be taken during the work session. However, that would not preclude someone from providing comment at the City Council meeting on Thursday. Director Putt pointed out that none of the changes become effected under the pending ordinance section of the LMC until there is a formal public hearing. He noted that a public hearing has not occurred to date, therefore the pending ordinance section in Chapter 1 will not apply until a public hearing is scheduled. Ms. Blaes believed that May was the first anticipated public hearing on the document. Director Putt clarified that the existing guidelines and the existing Land Management Code are the rule to follow until the first public hearing.

Board Member White remarked that everyone will miss Patrick Putt and that he has been a very positive force for the City. The Board Members echoed his sentiment.

The meeting adjourned at 10:50 p.m.

Approved by _____
Ken Martz, Chair
Historic Preservation Board

MINUTES OF MARCH 17, 2008

PARK CITY MUNICPAL CORPORATION
HISTORIC PRESERVATION BOARD
MINUTES OF MARCH 17, 2008

BOARD MEMBERS IN ATTENDANCE: David White, Puggy Holmgren, Gary Kimball, Todd Ford, Sara Werbelow

EX OFFICIO: Gary Hill, Kirsten Whetstone. Dina Blaes, Patricia Abdullah

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ROLL CALL
Chair Pro Tem David White called the meeting to order at 10:04 a.m. and noted that all Board Members were present except for Ken Martz and Mark Huber, who were excused. Puggy Holmgren was expected to arrive later in the meeting.

WORK SESSION – Historic District Guidelines

Dina Blaes stated that the Staff report was a recap of the items discussed during the Planning Commission meeting. These included the maximum building height and maximum building footprint for the HR1 District, as well as discussion on the Voluntary Peer Review Process. Ms. Blaes was in the process of putting together a presentation for the Planning Commission, the City Council, and the HPB to show how the proposed changes would look in three dimension. The presentation will address varying types of sites within the HR-1 zone. A date for that meeting has not yet been scheduled.

Ms. Blaes reported that the Voluntary Peer Review discussion would take place at a later date because the Planning Commission was more interested in discussing the HPB's role in design authority with regards to steep slope CUP applications. She felt it was appropriate to investigate the full extent of what the Planning Commission sees as the HPB role before they start introducing other matters.

Ms. Blaes commented on reconstruction of historic structures, which was raised as an issue in the design guidelines draft. She wanted to present the preservation approach and explain what reconstruction actually, since they appear to get tripped up on the terminology. Ms. Blaes pointed out that the term reconstruction is used a lot with regard to panelization and disassembly. She emphasized that this is not the reconstruction that is occurring in Park City. Ms. Blaes pointed out that the Staff report included the most terse example of reconstruction in Colonial Williamsburg to demonstrate reconstruction in the sense of historic preservation. It is to reconstruct primarily for interpretative purposes and it is an exact reconstruction. Mr. Blaes pointed out that portions of a property, such as a porch or other details can be reconstructed and that is acceptable. However, when the term reconstruction is used in conjunction with panelization, that is not what is happening. She requested that they move away from using that term. Ms. Blaes reiterated that reconstruction as a preservation treatment is completely appropriate for the HPB and the City to allow as part of the preservation goals.

Chair Pro Tem White asked if reconstruction and replication were one and the same. Ms. Blaes replied that they are the same for preservation purposes.

Ms. Blaes introduced Roger Evans and noted that he has been a building guru for 30 plus years. She used to work with Mr. Evans in Salt Lake City and in her opinion, there

is no one who can interpret the Code and meet preservations goals better than he can. Ms. Blaes had invited Mr. Evans to participate in this discussion because of his knowledge and expertise. Ms. Blaes stated that three years ago Mr. Evans started putting together the matrix that was included in the Staff report. This matrix was compiled from observations of specific projects and what had happened with each one.

Ms. Blaes requested that the Board members discuss some of the questions raised in the Staff report and provide specifics on policy direction for panelization. She noted that disassembly and panelization is not a typical preservation approach for any jurisdiction and it is only used as a last resort. It happens more frequently in Park City and that is very unusual in a preservation context.

Mr. Evans stated that three years ago he started attending the Wednesday morning meeting with the Planning Staff and made notes of what he saw going on. That was the basis for his matrix, which is still incomplete. Mr. Evans stated that they are seeing a lot of projects in Park City where the Planning Department wants the entire structure moved. However, once the structure is moved from point A to point B, they allow the entire roof to be taken off, the entire floor to be removed, and then they pick out one of the existing walls. All that is left are three walls. He always wondered why they would not do that upfront to cut down on costs. They could panelize those three walls and store them properly, based on the policy established for doing so and a preservation bond. He felt that was a better and less costly approach.

Ms. Blaes clarified that the issue is getting ahead of this by making policy decisions and providing policy direction to the Planning Department. The applicants will appreciate knowing what to expect upfront. Ms. Blaes pointed out that project review and approval was not included in the matrix. This issue addresses what would be allowed for an application to come in. She had provided bullet point examples in the Staff report that the HPB could use as guidelines to establish policy.

Board Member Ford wanted to know what Ms. Blaes was specifically looking for in terms of policy decisions from the Board. Ms. Blaes stated that she needs more specific dialogue from the HPB in terms of whether or not panelization should be allowed and why. They need to set a tone for the community so when applicants come to the counter for a pre-application discussion they understand what will and will not be approved or even considered. Disassembly should be used as a last resort and the HPB should be clear under what conditions it would be allowed.

Board Member Ford remarked that one way to get started would be to state in the guidelines that panelization is outright prohibited and then list a series of policies that would allow it under certain conditions. He felt one condition would be that the walls that are removed and the original structure that is basically destroyed shall be reconstructed. Ms. Blaes clarified that Board Member Ford was talking about single wall construction. She understood his comment to mean that the exterior should look exactly like it did when they started to take it apart. If the HPB takes that direction and it results in a Land Management Code change, it could be interpreted as needing to be re-built exactly as it was. If the structure was structurally unsound at the time, they could be asking for trouble. She did not believe the Legal Department would support this. However, it is okay to want the exterior to look exactly as it did. She pointed out that the HPB does not have jurisdiction over what the owner does with the inside.

Ms. Blaes stated that the definition of rehabilitation under preservation treatment calls for maintaining as much of the historic material as possible and replacing what needs to be replaced due to deterioration. The question is how extensive a rehabilitation they would allow.

Chair Pro Tem White stated that as a local architect, in thirty years he has only worked on two structures that were capable of being razed, moved or set aside while foundation and stabilization was being done. Only one of those projects they were able to keep the roof and the roof structure. He has never had a project where the floor structure was capable of being saved. Either the structure was rotted out or the structure and the finish were rotted out. He has always replaced the floor structure. With the exception of one structure where he was able to save the roof, in all cases the roof was removed, the floor was removed, and the walls were stood up while construction occurred around it. Chair Pro Tem White felt that the only use for panelization is to provide a template for what the structure was. That could be replaced by a rigorous preservation plan where everything is photographed and measured and where reasonable members that can be saved are listed. Ms. Blaes pointed out that this suggestion was made in the revised design guidelines.

Chair Pro Tem White stated that eliminating panelization would put more responsibility on the architect to make the historic part of the project as it was. That could be attached to the structure that meets Code, but the result would be reconstruction or replication. Ms. Blaes asked if this approach would utilize all the existing materials. Chair Pro Tem White answered yes, if they wanted to save the older material. In cases where the structure is a single wall construction, there is probably no need to save those two layers. They would only want to save and replicate the exterior of the structure. He believed the important issue is to be consistent with all projects.

Mr. Evans agreed with Chair Pro Tem White. He also commented on some of his observations in terms of how the ordinance is set up. He believes that everyone who purchases a historic property wants to maximize the size of the lot and end up with the least amount of setbacks. Chair Pro Tem White stated that the prices are high and the owner wants to maximize to get the most out of what they paid. He believes 50% of the owners live in the structure and the other 50% sell it.

Board Member Ford noted that the current guidelines allow the owner to max out the property. The direction they are talking about would retain the historic structure and maintain the front historic element of the house as is. The owner would then have free rein within the guidelines to do something different on the backside of the structure. Chair Pro Tem White agreed that the existing structure would need to be saved. The question is how much they allow the new structure to encroach on the existing structure. That issue needs to be specified in detail in the guidelines.

Board Member Holmgren entered the meeting at 10:35 a.m.

Ms. Blaes asked the Board members if they were comfortable with the idea of taking apart a structure that is currently listed on the Historical Significance inventory list, either in large pieces or in pieces of siding taken off, as long as there is a sound preservation plan that follows the guidelines as written. Chair Pro Tem White asked if that approach was consistent with other jurisdictions. Ms. Blaes replied that it is if looked at in terms of

an extremely and very expensive rehabilitation. She pointed out that no jurisdiction in the Country would force someone to live in a structurally unsound building.

Chair Pro Tem White wanted to know if the approach being discussed would take Old Town Park City off the historic register. Ms. Blaes remarked that the inventory was completed in 2006. From that time until it was adopted in 2007, seventeen buildings were removed from that list because of incompatible changes. She did not believe that an extensive rehabilitation that involves taking a structure apart and putting it back together would remove it from the inventory. It all depends on how the addition is handled.

Board Member Ford believed those seventeen structures that were removed is the largest indictment of the current process. Ms. Blaes encouraged the Board members to drive by 1488 Park Avenue and 10 Daly. Both structures are bungalow design with a second story addition and a garage off to one side. Both are vastly different in terms of how they were articulated architecturally. She noted that 1488 Park Avenue is not on the inventory list but10 Daly Avenue is on the inventory because of the way the architect handled it.
Ms. Blaes noted that training was built into the design guidelines process. The goal is to minimize the exceptions. In an effort to help those reviewing the project, Chair Pro Tem White suggested incorporating into the process a definite requirement for a model or perspective drawing.

Mr. Evans wanted to know what would justify removing the roof as opposed to re-bracing the roof. Chair Pro Tem White stated that he has worked on buildings where there was minimal or deteriorated roof structure. Mr. Evans asked if there is justification to require that the roof be kept in place.

After further discussion, Chair Pro Tem White pointed out that the Board has been talking about reconstruction and replication and that precludes keeping the old stuff together. Ms. Blaes stated that what people have a hard time understanding in preservation is the importance of retaining the historic material. She felt there needed to be clearer criteria for when someone is permitted to remove the authentic material and replace it with new material. Board Member Ford thought they should specify that it is basically prohibited, followed by a series of steps and analysis that need to be undertaken on a case by case basis, prior to allowing any disassembly or rehabilitation. He felt the cases for disassembly would be very limited.

Ms. Blaes remarked that one part of the equation is what an owner wants to do with the structure. The other part of the equation is what to do if the owner's plan is detrimental to the preservation goals of the City. As an example, historic structures are exempt from off-street parking requirements, therefore, adding a garage would be for the benefit of marketability and not for meeting the Code. Board Member Ford agreed that if the request for disassembly is only to accommodate constructing a garage, then the garage should not be allowed.
He believed they needed to start drawing lines. Ms. Blaes expected annoyance from the development community when detailed language in the guidelines indicates a shift in their priorities.

The Board and Staff discussed specific properties as case by case examples of what is and is not acceptable. It was pointed out that the biggest problem is getting people to

document the existing condition of the existing house. Without that documentation it is difficult to make a decision on what can be allowed. Board Member Holmgren felt is should be the responsibility of the applicant to research their historic home. There are many resources available and it should not be the responsibility of the Planning Department.

Ms. Blaes appreciated the discussion today and how the Board members articulated their points. She will work with Roger Evans to add specificity to the existing disassembly/reassembly section of the guidelines. Ms. Blaes stated that at some point the Board needs to discuss which items will become proposed changes or amendments to the LMC. She expected to have the changes ready for their review and discussion at the second meeting in April.

1102 Norfolk Avenue

Board Member Ford disclosed that Steve Swanson was the architect for a small addition to his house. He and Steve Swanson also have a business relationship.

Planner Kirsten Whetstone noted that the property owner was requesting guidance from the Historic Preservation Board on three items outlined in the Staff report concerning future plans for the existing historic home and a proposed addition. The request falls under the additional duties of the HPB within the LMC Section 15-11-6(F).

Steve Swanson, representing the property owner, stated that the interior of the house has the same problems they typically find with different levels and sections of flooring at different heights. This is not a cohesive structure and they are not addressing the idea of disassembly. They are only looking at stripping away, which goes to the original request for determination of insignificance. Mr. Swanson noted that it has already been determined that certain portions are able to be removed.

Mr. Swanson stated that the house is in disrepair and there is very little of the original house remaining. The front porch is most likely a reconstruction addition. Mr. Swanson explained why the property owner is looking for guidance on the position and orientation of the house. The house faces downhill. Even with all the additions removed, the current structure would be considered non-conforming from a zoning standpoint. The north building line would be on the property line between the two lots. It meets the front and rear setback but not the side setback on the north side.

Mr. Swanson remarked that the owners have looked at the possibility of lifting and stabilizing the structure on site and tried to tie in a small addition. They explored using some of the property to the rear and making a connection, but that was unsuccessful in terms of being confrontive with an open front porch facing downhill. It is nearly impossible to get access or parking on the site with the building in its current placement. Mr. Swanson stated that with these development options being limited, they explored the idea of using both lots for one house and doing a rehab of the historic house.

Mr. Swanson had created a plan to lift and rotate the house 180 degrees to orient it to Norfolk. He believes the rotation creates some street connection, which is consistent with Old Town building and planning. The front porch would acknowledge the street and the front yard could be terraced. Rotating the house allows the back of the house to move down with the slope, which works better with their program. Mr. Swanson

remarked that they are also looking at some connections that would be more of a flat connector rather than a gable type roof construction. This would keep the new portion of the addition pulled away from the existing house as much as possible. Mr. Swanson believed this approach could offer the best hope for this house to exist and move into the new century.

Mr. Swanson asked the HPB for input on whether or not it is plausible to rotate the existing house and move it to the front corner, allowing them to work on meeting the parking requirement, as well as new space that gives the owners a more cohesive plan. He also asked if it was possible to explore the idea of re-creating historic openings. He asked if there was anything that would stop the HPB from allowing them to move forward with a flat roof connection between historic and existing and pull the mass away from the existing historic reconstructed house. Mr. Swanson stated that the historic home may be on the City's inventory list but it is definitely not on the register of historic places. He assumed it was classified as historically attributory in a compromised condition.

The applicant, Ms. Crawford, stated that the porch is the coolest part of the home. She felt it was unfortunate that it faces downhill and that from the Norfolk side it is not pleasing at all. Ms. Crawford pointed out that there is no way to rotate the house 180 degrees on one lot to face the street unless it can conform and there is no way to get it to conform without utilizing both lots. She believed the plan proposed was the best option.

Planner Whetstone asked if the elevation of the porch would stay the same after the house is rotated. Mr. Swanson replied that the house would be raised probably 3 to 4 feet. There is very little of the existing allowable volume above ground that is being used at this point by the house. Even after moving to the new location, it would still be four or five feet below the allowed height.

Mr. Swanson reviewed the plans for the garage.

Board Member Holmgren was fine with rotating the house, but she was concerned about the mass of the proposed addition. Mr. Swanson stated that it is early in the process and they understand that this will go through the design review process. The objective was to give an idea of the height, scale, and massing.

Planner Whetstone asked if it would be possible to rotate the structure intact once the existing addition is removed. Mr. Swanson was willing to work with the HPB and Staff on that matter. From his experience, he believed they could make it work by moving it intact. He still needs to do a detailed preservation plan before that can be determined.

Chair Pro Tem White referred to the north elevation and indicated the face of the garage. He asked if the drawing was showing an overhang. Mr. Swanson replied that they had looked at an overhang. Chair Pro Tem White had concerns with the overhang with respect to the existing house. Mr. Swanson stated that in a previous model he had removed that overhang. He explained that the intent is to do some things different from what is normally done. One is to utilize some of the roof surface by using low slope or flat roofs and possibly do a green roof. With the side elevation he tried to look at façade options, recognizing that they are still exploring things that are not as developed as they would like.

Chair Pro Tem White reiterated his concern regarding the overhang. He did not have a problem with rotating the house.

A comment was made regarding the windows. Board Member Ford wanted to know why the reintroduction of historic windows would be a concern. Mr. Swanson pointed out that there are no windows at all and he would like to do a project that acknowledges that at least one side faces the sun. He noted that the front band windows on either side were done in the '30's. He needed to do additional exploratory investigation on the inside of the house. If they cannot show to the Board's satisfaction that the windows were altered, they would not request approval to change those.

Board Member Holmgren stated that the question is the re-installation of historic windows. They need some proof that those historic windows ever existed. If the windows were never there, she would have to say no.

Planner Whetstone asked if Mr. Swanson could do an exploratory of the current north wall from the inside to see if there had been any windows. Mr. Swanson replied that it would be the next step.

Board Member Ford felt this was a good example of where the guidelines break down or the process needs to be more specifically addressed. In his opinion, if documentation does not exist to show that there were historic windows in the house, either the guidelines or the Staff should ask the question of whether it is reasonable to assume that the proposed type of windows would or could be within the original historic structure. Board Member Ford did not think it was in the City's best interest to deny a historic appearing window in a facade in an appropriate location.

Mr. Swanson stated that he is a proponent of historical research. He agrees that the burden is on the applicant to bring back solid enough evidence to help the HPB make a good decision. Board Member Ford felt it was up to the guidelines to more specifically outline the appropriate elements for a particular time frame. As a general policy, when the applicant has demonstrated an exhaustive analysis of historic background and there is no evidence, he believes there should be some interpreted leeway for permitting historically appropriate elements.

Board Member Ford remarked that historic homes were never static. They were lived in by people who made money and had kids and as their situation changed, they changed their house. He felt they should respect that philosophy and allow these homes to grow and be livable. If they deny the ability to be livable they are saying that these historic homes are museum pieces and should never change. Board Member Ford stated that these historic homes were never that way and they should be allowed some flexibility based on specific guidelines.

Chair Pro Tem White closed the work session and opened the regular meeting.

REGULAR MEETING

PUBLIC COMMUNICATIONS
There was no comment.

STAFF/BOARD MEMBER COMMUNICATIONS AND DISCLOSURES

There was no comment.

APPROVAL OF MINUTES
There were no minutes to approve.

PUBLIC HEARING/DISCUSSION ITEMS
1135 Park Avenue – Request for Extension of Historic Renovation Grant
The applicant had submitted a request for an extension of the 9 month rule for rehabilitation work. The delay is due to unforeseen problems and the applicant would like additional time to correct those problems.

The Staff recommended that the Board review the request for the Historic District Grant extension and allow the applicant an extension to complete the renovation and stabilization of the historic house located at 1135 Park Avenue.

MOTION: Board Member Puggy Holmgren moved to allow the extension as requested. Board Member Ford seconded the motion.

VOTE: The motion passed unanimously.

147 Ridge Avenue – Design Advice and Guidance
Due to time constraints, this work session item was postponed to the next meeting.

The meeting adjourned at 11:56 p.m.

Approved by _____
Ken Martz, Chair
Historic Preservation Board

MINUTES OF APRIL 21, 2008

PARK CITY MUNICPAL CORPORATION
HISTORIC PRESERVATION BOARD
MEETING SUMMARY OF APRIL 21, 2008

BOARD MEMBERS IN ATTENDANCE: Ken Martz, Puggy Holmgren, Gary Kimball, Todd Ford, Sara Werbelow

EX OFFICIO: Brooks Robinson, Francisco Astorga, Dina Blaes, Gary Hill, Polly Samuels McLean, Patricia Abdullah

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Due to a recording problem, there is no transcript of this meeting. Meeting summary was compiled from written notes.

ROLL CALL
Chair Martz called the meeting to order at 10:08 a.m. and noted that all Board Members were present except for Mark Huber and David White who were excused. Puggy Holmgren was expected to arrive later in the meeting.

WORK SESSION – Historic District Guidelines Discussion

A report was given on the Commission Mentoring and Assistance Program (CAMP) training session held in Salt Lake City on April 17th.

Dina Blaes noted that the Staff report was a reprise of the April 7th Staff report because she was sick and unable to attend that meeting. She was open for discussion on any particular points. The Staff report contained specific comments from previous meetings and related responses.

Board Member Holmgren entered the meeting at 10:18 a.m.

A question was raised with regards to membership in the Historical Society. City Council Liaison, Liza Simpson wanted to know who the HPB representative was on the Historical Society. She was told that Ken Martz sits on the Board of the Historical Society.

The Board discussed the process of design review and pending applications, as well as the process for 9 Hillside Avenue as the appeal body. It was noted that applying the guidelines helps keep properties on the Historic Inventory.

In terms of HPB design review, Ms. Blaes pointed out that the Board is too diverse to know how to determine compatibility in design review. In the past the City Council has denied an HPB design review. City Council Liaison, Roger Harlan, explained that in the past design review by the HDC would get bogged

down in minute details, and the process was interminable. Board Member Ford, felt that both the old process and the current process were broken. The design guidelines help towards fixing the problem, but the process also needs to be fixed and they need deadlines.

Assistant City Attorney, Polly Samuels McLean stated that process and structures are what matter and not personalities. Council member Simpson remarked that the City Council has a desire to fix the process, but they do not want it to be a knee-jerk reaction and start changing everything at one time.

A discussion ensued regarding specificity in terms of the LMC vs. the design guidelines. Chair Martz commented on the changes occurring with the City staff and the frustration of not knowing what is going on.

After further discussion, Ms. Blaes outlined FRESH which stands for Footprint, Roof form, Exterior skin, and Holes as an approach to Historic Preservation, supporting policies and competing interests in the City.

The meeting adjourned at 11:28 p.m.

Approved by _____
Ken Martz, Chair
Historic Preservation Board

STAFF/BOARD MEMBER'S COMMUNICATIONS

Historic Incentive Grants - Capital Project Budget Update

MAIN STREET RDA		
Current Budget Funds	$	58,658.00
Allocated monies to date	$	58,658.00
Total Budget Funds Available	**$**	**-**

LOWER PARK RDA		
FY 2007 Budget Funds	$	244,026.00
FY 2008 Budget Funds	$	25,000.00
Current Budget Funds	$	269,026.00
Allocated monies to date	$	40,472.37
Total Budget Funds Available	**$**	**228,553.63**

CIP FUND - GENERAL FUND TRANSFER **		
Current Budget Funds	$	101,069.00
Allocated monies to date	$	5,028.37
Total Budget Funds Available	**$**	**96,040.63**

** The CIP - General Fund is a fund that is allocated from the General Fund and distributed throughout Capital Projects for the discretionary use and distribution within that Capital Project in conjunction with any internal policies of the managing department. It is to be used after the budgeted funds within that project are depleted.

ACTION ITEMS

Historic Preservation Board
Staff Report

Subject: **528 Main Street**
Author: **Kirsten A. Whetstone, AICP**
Date: **May 5, 2008**
Type of Item: **Grant request for Museum**

PARK CITY 1884
PLANNING DEPARTMENT

Summary Recommendations
Staff recommends the Historic Preservation Board hold a discussion on the Grant request for 528 Main Street- Park City Museum. Staff recommends that the Historic Preservation Board review the grant request and approve funds for elements deemed eligible in an amount to be determined by the Board.

Topic

Applicant:	Park City Historical Society and Museum
Location:	528 Main Street
Zoning:	HCB- Historic Commercial Business
Adjacent Land Uses:	Commercial
Reason for Review:	Requests for grants are heard before the Historic Preservation Board

Background
On March 27, 2008, the Planning staff received a request for an Historic District grant for restoration and rehabilitation work at the Park City Museum (Exhibit A).

The Museum restoration and addition project, located at 528 Main Street, is currently under construction in compliance with an Historic District Design Review (HDDR) approved on August 28, 2007.

On March 27, 2008, the City Council, as owners of the building directed staff to sign the Affirmation of Sufficient Interest. This directive only allowed the Historical Society to request the grant, but does not supersede the HPB review and action according to established protocols.

Part of the scope of the museum expansion and addition includes stabilization of the existing building foundation. It has been deemed necessary, by the applicant and contractor, to waterproof the historic jail wall (the basement level at the Main Street sidewalk and below). Waterproofing will prevent further leakage and seeping of moisture that is currently causing spalling of the plaster on interior walls. Estimated cost of this water proofing is $39,500. The Historical Society is seeking a grant for half of this amount ($19,750).

Staff finds the request for a grant to waterproof the historic foundation walls, as described in the application, to be eligible for grant money, as described in the Historic District Grant Program Information Guide.

Recommendation

Staff recommends the Historic Preservation Board discuss the Grant request for 528 Main Street- Park City Museum and consider approving funds for water proofing the historic foundation walls in an amount to be determined by the Board.

Exhibit A- Grant request

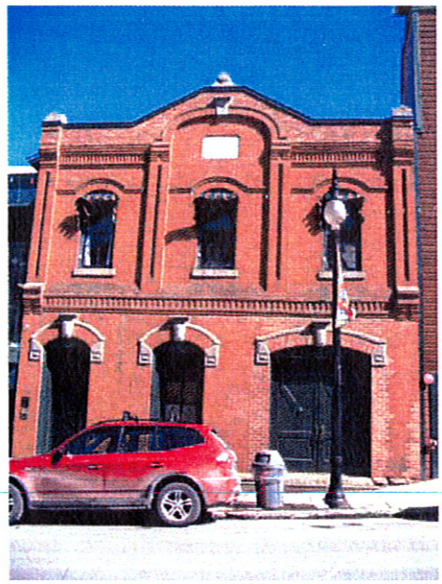
III. BREAKDOWN OF ESTIMATED COSTS

Applicant: Park City Historical Society & Museum

Address of Historic Property: 528 Main Street, Park City

Scope of Work	Owner's Portion	City's Portion	Estimated Total Cost
Drill 65 holes approximately one foot apart and 6" from exterior wall to a depth of 8 feet. Place grout tubes in each hole and inject with DeNeef SurperFlex Gelacryl, leaving a 1 foot wide wall of waterproof material next to the stone and mortar existing wall of the jail. The material will also absorb into the existing mortar. This process with waterproof the jail wall from the exterior and prevent further leakage and seeping of moisture that is currently causing spalling of the plaster from the interior of the jail walls.	$19,750.00	$19,750.00	$39,500.00
General Contractor overhead, general conditions and profit	$ 2,370.00	$ 2,370.00	$ 4,740.00
Total Cost:	$22,120.00	$22,120.00	$44,240.00
Total Improvements			
Total (no breakdown required)			$2,735,690.00
TOTAL COST			$ 2,779,931.00

Total Estimated Cost _____
(attach copies of bids and attach additional sheets as necessary)



Mike Woodbury
Account Manager
FURMANITE
MAXIMIZING ASSET UPTIME

Furmanite America, Inc.
3782 W. 2340 So. , WVC, UT 84120
(800) 666-1390 or (801) 975-1390
mwoodbury@furmanite.com

October 18, 2007

Layton construction
Bryan Webb
Preconstruction Manager
Interior Construction Specialists
direct 801.563.3690
cell 801.558.4376

Attention: Mr. Bryan Webb

Subject: Inject water proof Curtain outside of the Park City Museum
Quote Number: UC101207
Mr. Ament

Furmanite America, Inc. (Furmanite) is pleased to submit the following confidential estimate for the work to be performed at the Park City Museum.

SCOPE OF WORK

This Scope of Work is based on our site visit made with you in Early October 2006 at the Park City Museum and the Liquor store.

. The Scope of Work is as follows:

Drill 65 holes approximately 1 foot apart and 6" from the exterior wall to a depth of 8 feet. Furmanite will then place grout tubes into each hole and will then inject these tubes with DeNeef Superflex Gelacryl. As we inject this product we will lift the grout tubes one foot at a time leaving approximately a 1 foot wide wall of waterproof material next to the stone and mortar of the existing wall. This material will also absorb into the existing mortar to prevent any future leakage.

1. **Furmanite to Supply**

Furmanite will supply competent supervision and labor, materials and equipment to accomplish scope of work as stated above.

2. Layton Construction to Supply

Permits and orientations
Electrical service
Total access to work area

Mike Woodbury
Account Manager
FURMANITE
MAXIMIZING ASSET UPTIME

Furmanite America, Inc.
3782 W. 2340 So. , WVC, UT 84120
(800) 666-1390 or (801) 975-1390
mwoodbury@furmanite.com

PRICE

Based on the scope of work above. Furmanite estimates the cost of this project as follows:

THIRTY-NINE THOUSAND FIVE HUNDRED DOLLARS- ($39,500.00)

Due to the nature of this work we can only estimate the amount of material this project will require. We based our quote on not to exceed 100 gallons of product. If this project requires more than 100 gallons of material each additional gallon will be billed at $300.00 per gallon. We feel we would have a better success rate injecting from the inside, but for aesthetic purposes this quote is based on drilling vertically on the outside of building
Based on the nature of this work no warranty is offered. We are confident there will be few if any leaks and those can be repaired by drilling a 3/8 hole from the inside and inject material.

This estimate is based on performing the work outlined in the Scope of Work while Furmanite is on site in the spring of 2008. If the work is not performed at this time, this may affect the pricing of this estimate to cover additional travel and associated costs. Any delays beyond Furmanite's control will be billed at $1,800.00 per day.

In the event this proposal becomes an order; any changes to the scope of work will affect the pricing.

.
CLARIFICATIONS

The prices provided for herein are exclusive of any present or future federal, state, municipal, other sales or use taxes with respect to any services covered hereby and of any other present or future tax upon or measured by gross receipts from this transaction or any allocated portion thereof. If Furmanite is required by applicable law or regulation to pay or collect any such tax on account of this transaction or services, covered hereby, then such amount of tax shall be paid by Construction Management in addition to the prices

Herein provided for or shall reimburse Furmanite the amount of the taxes which Furmanite is obligated to pay.

Prices quoted will be valid for a period of (30) thirty days from the above date.

Furmanite will utilize time proven materials and techniques during the performance of work. Therefore, in no event shall Furmanite or its subcontractors be liable, in contract, tort, warranty, in strict liability, or otherwise, for any special, indirect, incidental or consequential damages, such as, but not limited to, and loss of anticipated profits or revenue, loss of use,

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nonoperation or increased expense of other equipment, cost of capital, claims or failure or delay in achieving anticipated profits or product.

Furmanite's STANDARD TERMS AND CONDITIONS OF SALES are to be considered an integral part of this proposal.

Terms of Payment: All payments are to be paid in United States dollars and are due net 30 days from the date of the invoice, plus 1 ½% per month on any part thereof on the unpaid balance after the initial (30) thirty day period. Invoicing will be on a weekly, bimonthly, or

monthly basis depending upon the scope of work and total job cost. The invoicing period will be agreed upon prior to the job commencing.

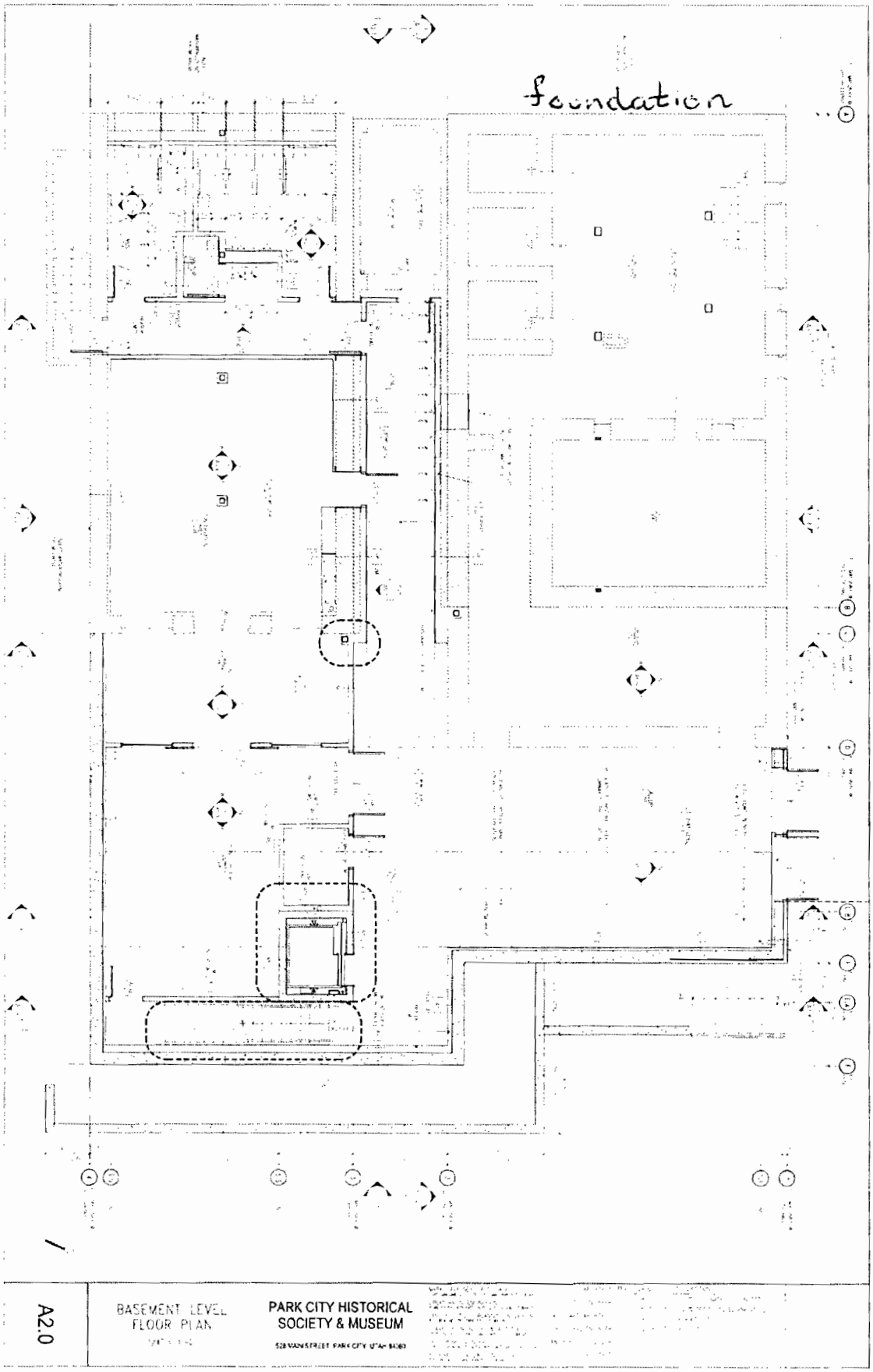
Furmanite will need two weeks for mobilization for equipment and personnel.

Furmanite appreciates this opportunity to submit our confidential proposal. We are looking forward to a safe and successful project. If you have any questions or comments please feel free to contact **Mike Woodbury at 800-666-1390**.

Thank you

Mike Woodbury

Mike Woodbury
Account Manager
Intermountain West
Furmanite America Inc.


foundation
A2.0
BASEMENT LEVEL
FLOOR PLAN
PARK CITY HISTORICAL
SOCIETY & MUSEUM

A3.1
BUILDING ELEVATION
WEST
PARK CITY HISTORICAL
SOCIETY & MUSEUM
~ foundation ~

PARK CITY HISTORICAL SOCIETY & MUSEUM
528 MAIN STREET, PARK CITY, UTAH

SECTION 03360

CONCRETE FINISHES

PART 1 - GENERAL

1.01 SUMMARY

A. Section Includes
   1. Concrete finishes.
   2. Injectable waterproofing at masonry retaining wall.

B. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

C. Related Section
   1. Section 03300 - Cast-In-Place Concrete: Provision of cast-in-place concrete.

1.02 REFERENCES

A. ASTM - American Society for Testing and Materials
   1. E1155 - Standard Test Method for Determining (FF) Floor Flatness and (FL) Floor Levelness Numbers.

1.03 SYSTEM DESCRIPTION

A. Performance Requirements
   1. Provide smooth concrete surfaces at exposed cast-in-place concrete, utilizing steel, fiberglass or plastic coated forms or any other kind of material that will impart no pattern to concrete.
   2. Pour joints of cast-in-place concrete shall align with reveals, rustication joints and/or control joints as indicated on the Drawings.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Cast-In-Place Concrete: As specified in Section 03300.

B. Injectable Waterproofing: Methacrylic acrylate copolymer, low viscosity, non-corrosive and non-toxic, for injecting into tubes drilled into concrete substrate, as indicated on the Drawings, and as manufactured by De Neef Construction Chemicals, Inc., "Superflex", or equal.

C. Sealer: Water based penetrating sealer, as manufactured by L. M. Scofield Company, "Cementone Clear Sealer"; QC Construction Products, "QC Ultra Seal", or equal.

PART 3 - EXECUTION

3.01 FINISHING FORMED SURFACES

A. Rough-Formed Finish: Provide a rough-formed finish on formed concrete surfaces not exposed to view in the finished Work or concealed by other construction. This is the concrete surface having texture imparted by stock form-facing material used, with tie holes and defective areas repaired and patched, and fins and other projections exceeding 1/4-inch in height rubbed down or chipped off.

1. Immediately after float finishing, slightly roughen concrete surface by brooming with fiber-bristle broom perpendicular to main traffic route. Coordinate required final finish with the Architect before application.

E. Sealing and Hardener Finishes: Apply a coat of the curing and sealing or curing and hardening compound specified in Section 03300 to exposed interior concrete stairs and where compound is indicated on the Drawings. Apply compound in strict accordance with manufacturer's directions.

F. Perform structural repairs in accordance with Section 03300.

3.03 SEALER PREPARATION AND APPLICATION

A. Examine substrate and conditions, with installer present, for compliance with requirements for installation tolerances and other conditions affecting application of sealer finish.

B. Do not proceed with sealer application until unsatisfactory conditions have been corrected.

C. Clean concrete surface contaminated with dirt, oil, bond breakers. or other contaminants that could interfere with bonding.

D. If acid wash is used to remove previously applied coating or contaminant, thoroughly rinse the surface to remove any residual acid or salts before application of sealer.

E. Lightly sand or lightly sandblast concrete prior to sealing.

F. Test at least 8 square feet of surface to determine acceptability of dry film appearance and adhesion.

G. Apply sealer where indicated in accordance with manufacturer's written instructions.

3.04 WATERPROOFING INJECTION APPLICATION AT EXISTING MASONRY WALLS

A. Injectable Waterproofing: Install from grade, without disturbing existing masonry walls in accordance with manufacturer's written instructions.

END OF SECTION

MARK CAVAGNERO ASSOCIATES 1045 SANSOME STREET SUITE 200 SAN FRANCISCO CALIFORNIA 94111 415 398 6944

22 October 2007

Re: Park City Historical Society & Museum - Addendum #2/RFI Clarifications

All Contractors submitting proposals on the above captioned project shall be governed by the following addendum, changes and explanations to the bidding documents and shall submit their bids in accordance therewith:

ARCHITECTURAL

1. Section 03360: The De Neef inject-able waterproofing that is called out on the west wall of the basement floor plan states in the spec book that it is to be installed from grade without disturbing existing masonry walls. The typical chemical injection process is to drill along a leaking crack or joint, install ports, and then inject the material. If this is not the process to be used on this project what is the envisioned application and process?

   Response: Revise spec Section 03360 Part 3.04 A, "Inject-able Waterproofing: Install from grade, without disturbing existing masonry walls in accordance with manufacturer's written instructions including the following. Drill holes approximately 12" apart and 6" from the exterior wall to a depth of 8'-0". Place grout tubes into each hole and then inject waterproof material. While injecting, lift the grout tubes 1'-0" at a time leaving approximately a 1'-0" wide wall of waterproof material next to masonry and mortar of existing wall."

2. Section 04900: Repoint existing masonry mortar joints. Is it required to grind "V" out the existing masonry? Or should the existing holes be filled in so mortar joints are smooth? Pointing up bee holes or complete grind and replacement of mortar? What is the expectation?

   Response: Per spec Section 04900 Part 1.01 A, the intent is to infill and repair the existing masonry as required for renovation and not repoint (Part 1.03 A) or tuckpoint (Part 1.03 C) the mortar throughout the existing historic buildings. Revise Section 04900 Part 1.01 A 2 to "Restoration and cleaning of masonry in historical structures".

3. Section 07130: The detail for the under slab waterproofing (7-A8.6) shows the under slab waterproofing wrapping up the edge of the on-grade basement slab and terminating. Although this is an acceptable detail in a situation where there will be approximately 2' of standing water the only way to ensure that the system is water tight is to wrap the footing with the under slab waterproofing membrane and tie it into the vertical waterproofing system on the outside and continue up around and underneath the slab on the inside. The way the detail is shown now leaves the cold joint between the footing and foundation wall on the inside unprotected and overtime water will travel along that cold joint and find cracks and either fail the waterproofing or enter at an unprotected area. This is almost a guarantee if this footing is to be continually under water.

   Response: Refer to spec Section 07130 and 7/A8.6 for waterproofing system. Revise 7/A8.6 per SK-A04. Refer to SK-C02 for underdrainage below basement slab.

4. Section 07210: I have questions regarding the R-value of insulation that you would like in the roofing components. I have not been able to find that in the plans or specs. Also does the existing metal roofing stay?

   Response: Refer to sheet A3.5 for R-value info of existing roof. Refer to 1/A8.4 for minimum roof insulation at addition. Refer to sheet A2.4 for existing metal roofing.

5. Section 07542: Product substitution request for PVC roofing from specified "Sarnafil Adhered Roof System" to "Versico VersiFlex PVC Fully Adhered".

WORK SESSION

Historic Preservation Board
Staff Report

Planning Department

Author:	**Dina Blaes, Consultant**
Subject:	**Hist. Pres. Design Guidelines**
Date:	**May 5, 2008**
Type of Item:	**Legislative**

This meeting will include:

1) City-approved paint palette for use in the Historic Districts;
2) Report to the HPB on the Historic Building Inventory, specifically a list of the properties removed from the inventory between initial draft dated November 20, 2006 and final adoption on October 1, 2007 (5 minutes); and
3) Discussion of policies governing substitute materials and new construction in the Historic Districts (55 minutes).

Section 1: Issues/Topics from previous meetings:

I. City-approved paint palette for use in the Historic Districts

Recommendation: Continue to recognize the historical colors palette from Columbia Paint & Coatings Co. & Sherwin Williams Co.

Background: The city currently recognizes the Columbia Paint and Coatings, Historical Colors of America palette. Columbia Paint & Coatings is merging with Sherwin Williams in 2008-9 and may have an updated palette then. The Sherwin Williams palette can be viewed at http://www.sherwin-williams.com/do_it_yourself/paint_colors/paint_color_palette/color_themes/index.jsp

II. Historic Building Inventory

Recommendation: None. This information was requested at the April 7 HPB meeting.

Background: The following buildings appeared on the initial survey list dated November 20, 2006 but were removed from inventory before the final list was approved by the Historic Preservation Board on October 1, 2007. The buildings were removed from the inventory because they do not comply with the standards of review found in Title 15, Chapter 11, Section 12 Determination of Historical Significance.

Group 1: Stand alone accessory structures. The LMC does not specifically address accessory structures with regard to the determination of Historical Significance. Accessory structures are subordinate to a primary structure and cannot adequately convey the integrity or significance of a site in the absence of the primary structure. Therefore, they were removed from the inventory.


S of 835 Empire Avenue


N or 405 Park Avenue


N of 115 Woodside


321 McHenry Avenue


1043 Park Avenue

Group 2: Properties being remodeled and/or enlarged during the survey period. The alterations impacted the integrity of the properties to the extent that they no longer comply with the standards of review outlined in the LMC for determination of Historical Significance.


291 Daly Avenue


297 Daly Avenue


841 Empire Avenue


402 Marsac Avenue


827 Norfolk


1002 Norfolk


811 Park Avenue


817 Park Avenue


909 Park Avenue


915 Park Avenue


1326 Park Avenue


1053 Woodside

III. Substitute materials and New Construction in the Historic Districts

A. Substitute materials

Recommendation: Allow the use of substitute materials as specified below:

1. Historically Significant buildings (including additions to HS buildings) – Substitute materials will be allowed only in the following circumstances:

a. original materials cannot be used to reproduce the architectural feature that has deteriorated; and

b. the substitute material will not be used on a primary or secondary façade; and

c. the substitute material must be made of at minimum of 50% reclaimed and/or recycled materials; and

d. use of the substitute material will not diminish the integrity and significance of the HS building.

2. New Construction – Substitute/synthetic materials will be allowed only in the following circumstances:

a. the substitute materials are made of a minimum of 50% reclaimed and/or recycled materials; and

b. use of substitute/synthetic materials will not diminish the integrity of the district.

Background: To provide a framework for the discussion on substitute materials in the Historic District, we are providing relevant excerpts from existing policy documents. Also, please see the attached PDF file <Pres Brief 16>:

1. The current Park City General Plan (updated 1995) reads:

Park City Direction,

Goal 1: Preserve the mountain resort and historic character of Park City.

bullet #4: New development, both commercial and residential, should be modest in scale and utilize historic and natural building materials. New structures should blend in with the landscape.

2. The current Land Management Code:

Title 15, Chapter 5 Architectural Review, 5 Architectural Design Guidelines

(B) Prohibited Siding Materials: The following siding, fascia, and soffit materials are prohibited because they have proved to be unsuitable for Use in Park City due to the extreme climate, or because their appearance is such that the values of adjoining or abutting Properties are adversely affected:

(1) Thick shake shingles;
(2) Ceramic tiles;
(3) Slump bloc, weeping mortar;
(4) Plastic or vinyl siding;
(5) Used brick;
(6) Simulated stone or brick, cultured stone or brick, synthetic stone products, pre-cast stone or concrete imbedded with stone fragments;
(7) Lava rock, clinkers;
(8) Asphalt siding;
(9) Plywood siding, except that plywood may be approved by the Planning Director if utilized as a base for board and batten siding;
(10) Aluminum siding is generally not considered an appropriate material. The Planning Commission may, however, consider requests for the Use of aluminum siding. The design of the Structure shall be consistent with the Park City Design Guidelines. The Applicant will be required to bring a sample of the type and color of siding to be approved by the Planning Commission. When aluminum siding is approved by the Planning Commission, it shall have a minimum thickness of .019 inches and shall be backed or insulated with a minimum of 3/8 inch fiberboard of polystyrene foam;
(11) Exemption. Aluminum siding, including soffits and fascia, may be permitted upon approval by the Planning Director on Structures when such Structures are located in Areas prominently developed with Structures utilizing the same type of materials, such as in Prospector Village, Park Meadows, and Prospector Park Subdivisions. Existing Buildings with aluminum or vinyl siding may be resided or repaired using aluminum or vinyl siding with specific approval by the Planning Director.

In order to avoid architectural styles which are foreign to Park City, particularly Mediterranean, southwestern, or adobe, Building designs which include large, unbroken expanses of stucco will not be approved. Stucco must be of earth tones; white or pastel colors are prohibited.

(H) WINDOW TREATMENTS. Windows other than rectangular windows may be used as accents and trim, but arched, rounded, or Bay Windows as the primary window treatment are prohibited. Untreated aluminum and untreated metal window frames are prohibited. Small pane colonial style windows are not allowed.

Title 15, Chapter 5 Architectural Review, 6. Permitted Design Features.

Any design, or any material that is not expressly prohibited by this Chapter, or a resolution adopted to supplement it, or by the Historic District Architectural Design Guidelines are permitted.

Title 15, Chapter 5 Architectural Review, 7. Exceptions.

In some cases, the Planning Director may vary from these standards if warranted by unusual or unique circumstances. In Single-Family Subdivisions, the Planning Department will consider the predominant architectural style and materials in the neighborhood to determine Compatibility. This may result in variation from the strict interpretation of this section and may be granted by the Planning Director.
(Amended by Ord. No. 06-56)

B. New Construction in the Historic Districts

Recommendation: None at this time. This is a discussion to refine a policy directive.
Background: In order to frame the discussion, we are providing current policy statements from the General Plan (see attached excerpt) and LMC. The General Plan includes the overarching policy goals while the Land Management Code provides legal methods used to achieve the General Plan objectives. From the Land Management Code, we have included (see below) parts of the "purpose statement" sections for each Historic District. These should provide guidance in our discussion on the chapter of the Design Guidelines dealing with new construction. In addition to these materials, please read the attached PDF files from the National Park Service (<Ladd's Addition Infill>). It outlines a residential infill case-study in Oregon which may be useful for the discussion.

1. Land Management Code excerpts.

15-2.1-1. PURPOSE. The purpose of the Historic Residential Low-Density (HRL) District is to:
(C) preserve the character of Historic residential Development in Park City,
(E) encourage construction of Historically Compatible Structures that contribute to the character and scale of the Historic District, and maintain existing residential neighborhoods.
(F) establish Development review criteria for new Development on Steep Slopes, and
(G) define Development parameters that are consistent with the General Plan policies for the Historic core.

15-2.2-1. PURPOSE. The purpose of the Historic Residential HR-l District is to:
(A) preserve present land Uses and character of the Historic residential Areas of Park City,
(C) encourage construction of Historically Compatible Structures that contribute to the character and scale of the Historic District and maintain existing residential neighborhoods,

(D) encourage Single Family Development on combinations of 25' x 75' Historic Lots,
(E) define Development parameters that are consistent with the General Plan policies for the Historic Core, and
(F) establish Development review criteria for new Development on Steep Sites.

15-2.3-1. PURPOSE. The purpose of the HR-2 District is to:
(C) establish a transition in Use and scale between the HCB and the HR-1 Districts,
(D) encourage the preservation of Historic Structures and construction of historically Compatible additions and new construction that contributes to the unique character of the district,
(E) define Development parameters that are consistent with the General Plan policies for the Historic core; result in Development compatible Historic Structures; and comply with the Historic District Design Guidelines and HR-2 regulations for Lot size, coverage, and Building Height, and
(F) provide opportunities for small scale, pedestrian oriented, incubator retail space in Historic Structures on Upper Main Street, Swede Alley, and Grant Avenue.

15-2.4-1. PURPOSE. The purpose of the Historic Residential Medium Density (HRM) District is to:
(A) allow continuation of permanent residential and transient housing in original residential Areas of Park City,
(B) encourage new Development along an important corridor that is Compatible with Historic Structures in the surrounding Area,
(D) encourage Development that provides a transition in Use and scale between the Historic District and the resort Developments,
(E) encourage Affordable Housing,
(F) encourage Development which minimizes the number of new driveways Accessing existing thoroughfares and minimizes the visibility of Parking Areas, and

15-2.5-1. PURPOSE. The purpose of the Historic Recreation Commercial (HRC) District is to:
(A) maintain and enhance characteristics of Historic Streetscape elements such as yards, trees, vegetation, and porches,
(B) encourage pedestrian oriented, pedestrian-scale Development,
(C) minimize the visual impacts of automobiles and parking,
(D) preserve and enhance landscaping and public spaces adjacent to Streets and thoroughfares,
(E) provide a transition in scale and land Uses between the HR-1 and HCB Districts that retains the character of Historic Buildings in the Area,
(F) provide a moderate Density bed base at the Town Lift,
(G) allow for limited retail and Commercial Uses consistent with resort bed base and the needs of the local community,
(I) maintain and enhance the long term viability of the downtown core as a destination for residents and tourists by ensuring a Business mix that encourages a high level of vitality, public Access, vibrancy, activity, and public/resort-related attractions.

15-2.6-1. PURPOSE. The purpose of the Historic Commercial Business (HCB) District is to:
(A) preserve the cultural heritage of the City's original Business, governmental and residential center,
(B) allow the Use of land for retail, commercial, residential, recreational, and institutional

purposes to enhance and foster the economic and cultural vitality of the City,
(C) facilitate the continuation of the visual character, scale, and Streetscape of the original Park City Historical District,
(E) encourage pedestrian-oriented, pedestrian-scale Development,
(F) minimize the impacts of new Development on parking constraints of Old Town,
(G) minimize the impacts of commercial Uses and business activities including parking, Access, deliveries, service, mechanical equipment, and traffic, on surrounding residential neighborhoods,
(H) minimize visual impacts of automobiles and parking on Historic Buildings and Streetscapes, and
(I) support Development on Swede Alley which maintains existing parking and service/delivery operations while providing Areas for public plazas and spaces.
(J) maintain and enhance the long term viability of the downtown core as a destination for residents and tourists by ensuring a Business mix that encourages a high level of vitality, public Access, vibrancy, activity, and public/resort-related attractions.

Finally, the basic design elements that impact compatibility are listed below. At the meeting on Monday, we will be looking at examples—good and bad—of each element and ask that you consider, based on your observations in Park City and from the information provided in this packet, which elements, if any, appear to have the greatest impact on the compatibility of new construction in Park City.

On-site parking
Setback
Landscaping
Scale
Massing
Roof Profile
Orientation
Materials
Architectural Details
Color

Section 2: Comments on specific sections of the Design Guidelines

The most recent draft dated April 21, 2008 was mailed to each HPB member for review and comment in written form by May 2. Comments will be discussed at the meeting on May 19, 2008.

Section 3: Timeline & Next Steps

May 19, 2008 @ 10:00-11:00 a.m. – HPB Work Session

1) Review next draft of the Design Guidelines with illustrations & photographs.
2) Review of support documents prepared for staff & public:
   Revised Information Guide for Design Review Process
   Methodology/approach “instructions” for staff
   Existing Physical Condition Report, if applicable
   Revised Application Form, if applicable
   Public Comment Form, if applicable
   Application Certification Letter, if applicable

June 2, 2008 @ 10:00-11:00 a.m. -

1) Review next draft of Design Guidelines for Park City's Historic Districts and Historically Significant Buildings.

ATTACHMENT A: Excerpt from the Park City General Plan (updated 1995)

Park City General Plan

Historic Preservation Element

Issue Statement

Park City attracts tourists and new residents from all over the world. In numerous public surveys, residents proclaim that the community's character is fundamentally due to the allure of the Park City Historic District. More than 200 historic residential and commercial buildings in the community are listed on or potentially eligible for inclusion to the National Register of Historic Places. This serves as tangible evidence of Park City's cultural, social, economic and architectural history as one of the three top metal mining communities in the state during the late nineteenth and early twentieth centuries.

Accordingly, Park City has a substantial and significant interest in protecting its historic resources, including regulating new construction within the Historic District. This element focuses on policy statements and an action plan to sustain and protect the architectural significance of Park City through historic preservation.

Discussion

Although skiing may be the primary reason for visitors coming to town, it is because of the numerous historic buildings around town that contribute significantly to Park City's cultural "sense of place" which make visitors want to stay. People enjoy Park City because of the blend between the historic commercial zone and the surrounding historic residential areas. Because of this, Park City retains its small town feel. Residents, old and young alike, are attracted to this community and live here because of the strong sense of neighborhood pride in being a historic mining town.

The importance of Park City's historic buildings is not limited to merely aesthetics. These buildings also provide a heightened sense of relevance to our past as a community. Built primarily of wood-a handy, relatively inexpensive building material that was readily available compared to brick or stone--most of the historic dwellings were considered to be temporary, containing four rooms or less. Many of these original buildings still stand today as a physical testimony of the past.

Today, many owners of these quaint "temporary" houses (consisting of approx. 1000 square feet and less) seek to make them more accommodating by enlarging the houses to incorporate various contemporary comforts for family and friends. In doing so, numerous small historic houses have been remodeled beyond recognition of their earlier appearance. In other instances, historic buildings are left to deteriorate from neglect to make way for new construction. Hence, Park City's historic architecture is continuously threatened and the remaining physical vestige of the city's mining heritage will be lost if these actions persist. Therefore, efforts must be taken by the City not to "preserve" the town as a museum artifact, but

to actively ensure the sensitive rehabilitation and continued use of Park City's significant buildings, structures and sites.

The factors affecting the Park City Historic District are varied and have both positive and negative ramifications. The primary factors are associated with the regular maintenance of existing historic properties and the successful infill of new construction within the sensitive area.

Preservation Incentives
The offer of financial assistance to owners is an effective incentive to foster ongoing redevelopment and maintenance. The aesthetics-or visual quality-of Park City is vitally important to our economic success as a resort community. Because of the impact and role aesthetics play in Park City, it is necessary that the City define its role and responsibility in protecting and maintaining the historic aesthetic quality of Park City's Historic District.

In 1987, Park City began to offer matching grants to owners of historic properties to be used toward necessary repairs. Early matching grant awards equaled $5,000 for residential buildings and $10,000 for commercial buildings. Since then, the City has awarded more than one million dollars toward the rehabilitation and preservation of numerous historic buildings. The result of these matching funds is evident all over town. Entire city blocks which were once spotted with poorly maintained residential properties, now reflect historical integrity and aesthetic continuity. The funds used to establish this program come from two (2) separate Redevelopment Funds (RDA's). As of 2005, one of these funds (the Main Street RDA, which provides funding for properties south of 8th Street) will no longer be available. By the year 2020, the remaining Lower Park Avenue RDA (which provides funding for properties north of 8th Street) will no longer be available.

Rehabilitation and New Construction
Since the 1980's, Park City has invested a significant amount of time and money into the Historic District, such as the rehabilitation of numerous historic buildings and the incorporation of many new buildings. Some of these projects were very successful examples of appropriate rehabilitation and compatible in-fill architecture. These accomplishments have in turn fostered the City's evolved theory and approach to issues involving building scale, massing, character and development on steep slopes.

Historic Preservation Ordinance
Park City has supported the protection of its Historic District by creating the Historic District Commission (HDC), and by initiating specific design review policies and procedures. All property within the Historic District is regulated by the Land Management Code. It is a goal of the City to implement strategies to promote and ensure public awareness of the pending legislative changes and general knowledge of historic preservation regulations and incentives.

Park City Historic District Design Guidelines
Park City citizens feel strongly that the core of Old Town must continue to provide a blend of new and old buildings, while also functioning as an attraction for tourists. In 1983, the City Council adopted the Park City Historic District Design Guidelines. The purpose of the Guidelines is to identify specific design-related issues that may affect the District's overall integrity, as well as to define the criteria by which the City will evaluate both proposed changes and new construction. Noncompliance with the Guidelines will result in one's inability to obtain a building permit to make the proposed changes. It is a goal of the City to implement strategies to promote and ensure public awareness of the pending legislative changes and general knowledge of the Guidelines. The Guidelines are useful, but should be reviewed and updated on a regular basis.

Demolition-by-Neglect
The term "demolition by neglect" refers to the gradual deterioration of a building when routine or general maintenance is not performed on a regular basis. The deterioration of any property (or element/feature thereof) has a detrimental effect upon the overall character of the Historic District, as well as the property values within the surrounding area. The City promotes the protection of historic buildings and sites from Demolition by Neglect by encouraging owners to maintain their properties by making routine repairs at an early stage in the deterioration process before serious defects occur. It is a goal of the City to implement strategies to promote public awareness of the characteristics of Demolition by Neglect and general knowledge of historic preservation.

Intent
The Historic Preservation Element recommends methods to sustain, enhance and protect the historic buildings, structures, sites and aesthetic qualities of the Park City Historic District.

Accurately identifying the physical attributes and features that make Park City appealing as a place to visit and live is essential to maintaining a healthy and strong local economy as a resort town. Most important, the creation of incentive programs will encourage owners to maintain and rehabilitate their historic properties, while also stimulating a broad-based level of community participation. These actions will not only sustain local heritage, but significantly contribute to the area's fiscal health. Success in developing a balance between economics and historic preservation should include the following efforts:

Foster a strong sense of community awareness of the importance of the Historic District;
Develop innovative, fair and consistent design review policy and guidelines;
Propagate sensible protection of the area's historic architecture;
Encourage sensitive rehabilitation and quality in local rehabilitation efforts;
Promote the incorporation of architecturally-compatible new construction within the Historic District; and
Develop and offer financial incentives to property owners towards the regular maintenance of their historic buildings.
Strengthen customer service relations to facilitate a streamline and convenience design review process.

Policies
The following policies are suggested to address the preservation objectives of Park City as the community continues to grow and prosper.

<u>Historic District Policies</u>

.Identify those buildings, structures and sites in Park City which are historically significant, historically contributing, and historically insignificant to the Historic District.
.Enact regulations to protect those buildings, structures and sites in the Park City which are historically significant and contributory to the original character of Park City.
.Support preservation efforts toward buildings, structures and sites in the Park City which are historically significant and contributory, including their rehabilitation and continued use.
.Encourage the continued use of those buildings, structures and sites in the Park City which are historically significant and contributory to the original character of Park City.
.Involve the real estate sector and general public in promoting preservation within the Historic District.

<u>Preservation Incentives Policies</u>

.Research, identify and utilize existing financial incentives for historic preservation being offered to communities by federal, state and private institutions.

.Research, identify and utilize potential supplemental funding available in order to continue offering existing financial incentives for preservation such as the HDC matching grant program.

Land Management Code - Chapter 4, Historic Preservation Policies

.Educate elected officials as well as the general public of legislative changes affecting the Historic District.
.Support and maintain a high standard of qualification and expertise in the field of preservation for Historic District Commissioners and staff persons involved in the design review process.
.Respect and be aware of Park City's natural environmental constraints such as steep slopes, significant vegetation and other factors when land is developed.
.Integrate the goals and priorities of historic context into the broader planning process.

Park City Historic District Design Guidelines Policies

.Educate elected officials as well as the general public of the purpose of the Guidelines and knowledge of the benefits to preservation.
.Seek to improve the outcome of design projects in Old Town by ensuring the support of the regulations outlined in the Guidelines.
.Enhance the quality of growth and new development in town.
.Provide a clear, simple and objective basis for the decisions of the Historic District Commission of design review.
.Encourage architects to create new buildings that will become landmarks for future historical designation.
.Ensure that the character of new construction that is architecturally-compatible to the existing historic character of Park City.
.Increase public awareness of design issues, concerns and options.
.Encourage sensitive development on steep slopes.
.Increase the awareness among adjacent governmental jurisdictions (e.g. Summit County, Wasatch County, etc.) of the preservation issues and projects having a potential adverse impact on Park City's historic character, economy, and quality of life.

Rehabilitation and New Construction Policies

.Reduce loss of existing historic material and reduce construction waste in nearby landfills through the rehabilitation and repair of existing construction, encouraging recycling, etc.
.Encourage early consultation with Staff to foster strong communication throughout the planning and construction process.
.Support architectural compatibility with the historic character of the area and maintain visual quality.
.Recognize and preserve the architectural uniqueness of Old Town as a whole.
.Promote the use of new technologies within the fields of both new and rehabilitative construction that meets or exceeds national Federal standards for historic preservation.

Demolition-by-Neglect Policies

.Educate elected officials as well as the general public of the characteristics of Demolition by Neglect.
.Work pro-actively with the Building Department to clarify required maintenance, economic hardship and demolition standards, and procedures.
.Develop incentive packages to discourage demolition based on claims of economic hardship.
.Mitigate valid economic hardship claims.
.Build partnerships with adjacent governmental jurisdictions (e.g. Summit County, Wasatch County, etc.) to implement a regional approach to demolition-by-neglect.

Actions

Historic District Actions:
Celebrate Old Town's unique character, its evolution of architectural styles (diversity), its shared characteristics with others (i.e. height, scale, facade proportions, materials, etc.) that give it a historic "sense of place" and unity.

.Maintain support and financial assistance for the Park City Museum, and of other organizations or events that celebrate the heritage of Park City.
.Ensure a sufficient quantity and variety of parks and open space to foster a the scale and "neighborhood feel" throughout the Historic District.
.Support the incorporation of beautification improvements to public streets, utilities, and existing open space (such as pocket parks along public rights-of-way), including intersections and other areas within the Historic District.
.Educate elected officials as well as the general public of the importance of the Historic District, and the positive impacts of historic preservation.
.Encourage collaboration among individual neighborhoods within the District regarding historic preservation and provide meaningful opportunities for citizen input during the adoption of historic legislation.

Preservation Incentives Actions:

.Identify sustainable funds or other resources to subsidize and replace the current matching grant program, as well as to foster other financial incentives.
.Develop and implement other financial incentives for preservation (e.g. low-interest loan programs, local tax credits, sales tax waivers, rebates for rehabilitation construction material, etc.).
.Continue providing general appropriations towards existing preservation incentive programs.
.Consider the formulation of bond issues in association with existing programs, or existing state's bonding authority to help underwrite the rehabilitation of historic buildings.
.Consider instituting other funding initiatives to help underwrite the rehabilitation of historic buildings (e.g. real estate tax for surrounding non-historic areas, mortgage registration fees when houses are bought and sold, etc.).
.Enter into cooperative agreements with state and federal agencies which own any property with historic buildings, structures and sites in Park City to manage and/or acquire such property consistent with the policies herein.
.Establish a committee or encourage an existing group (e.g. Historic District Commission, Historical Society, etc.) to publicly recognize entities and/or individuals for their outstanding work in the historic preservation process.

Land Management Code - Chapter 4, Historic Preservation Actions:

.Participate in the Internet by maintaining a current listing of preservation regulations, etc.
.Establish workshops and/or "open houses" to promote awareness and involve the public prior to taking action to adopting any changes in legislation.
.Amend the Land Management Code, as needed, to address the outstanding historic preservation issues raised in this element of the General Plan.
.Improve the Land Management Code and design review mechanisms for preservation planning to promote clarity in the design expectations of construction projects.
.Improve regulations which pertain to the procedure of design review affecting those buildings, structures and sites within the Historic District, including the processes for determining historical significance,

economic hardship, demolition and demolition-by-neglect.
.Preserve the aesthetics of sensitive historic areas through zoning regulation, and the acquisition of historic lands/buildings, etc. as opportunities and finances become available.
.Maintain and refine lighting standards to preserve a visible night sky.
.Write regulations in a simple and clear manner.

Park City Historic District Design Guidelines Actions:

.Participate in the Internet by maintaining a current listing of Historic District Design Guidelines, staff reports for pending HDC meetings, zoning regulations, etc.
.Establish workshops and/or "open houses" to promote awareness and involve the public prior to taking action to adopt changes to the Historic District Design Guidelines.
.Rewrite the Historic District Design Guidelines to address current developmental issues within the Historic District.
.Present the Guidelines in a more comprehensive and user-friendly format. Ensure amendments to the Guidelines that avoid duplication or confusion.
.Communicate a good understanding of the purpose for the Historic District Design Guidelines in terms of type of architectural compatibility that is being sought regarding existing and new construction (e.g. traditional infill, contemporary, or replication) within the Historic District.
.Indicate which approaches to design are encouraged and discouraged by the community to preserve the historic integrity of the Historic District.
.Encourage future hillside development that it is clustered at the base of the hills and stays off ridge lines within the Historic District.
.Encourage alternatives to the use and reliance of automobiles, and discourage the use of hard-surfacing in highly-visible areas on properties within the Historic District.
.Guide development to create a smooth transition between commercial and residential areas within the Historic District.
.Preserve existing aesthetics (including open vistas and natural stream corridors) of the entry corridors leading into the Historic District. .Protect existing significant natural vegetation and require new vegetation to compliment the existing vegetative character of sites within the Historic District.
.Maintain large expanses of open space within the Historic District in its existing condition.
.Maintain and enhance trails and open space linkages within the Historic District.
.Review and establish criteria for reviewing the use of new technology, and for handling sensitively utilities, infrastructure, etc. within the Historic District.

Rehabilitation and New Construction Actions:

.Maintain a staff that is capable of providing technical assistance to applicants during the planning and construction process in order to promote sensitive rehabilitation efforts within the Historic District.
.Mitigate impacts of development on steep slopes.
.Provide regular inspections and general project follow-up to ensure compliance with city regulations and project conditions of approval.
.Utilize and promote existing recycling programs that serve our residents and visitors to reduce the amount of material currently being deposited in land fills.

Demolition-by-Neglect Actions:

.Provide City funding for the enforcement of Uniform Building Code requirements that has not been available in the past, nor is currently available.
.Monitor and enforce demolition-by-neglect provisions.

.Work with owners to identify and mitigate neglect relating to the long-term maintenance of historic properties.
.Assess incorporation of demolition-by-neglect provisions into the existing LMC to help identify and catch potential demolition and hardship applicants before the building reaches an unsalvageable state or condition.
.Implement incentive packages to discourage demolition based on claims of economic hardship.
.Provide funding of a minimum maintenance program (as described in the Uniform Building Code and Uniform Housing Code) for mitigating demolition-by-neglect.

1927 SE Elliot Avenue

FOCUS ON
NEW RESIDENTIAL INFILL

When the vacant lot on **Elliott Avenue** became the future site for a new residence with detached alleyway garage, it was essential that any new construction "fit in" precisely with existing buildings on the block. This was no small task, given the range of styles in the vicinity—from mission style to bungalow to postwar cottages. The site was additionally sensitive, as it was the last remaining lot visible from the central landscape feature of the district, Ladd's Circle. To achieve the compatibility goal within this eclectic mix, the design philosophy for the project was based on ***New Construction Guidelines*** for Ladd's Addition Conservation District. These district Guidelines cite the Secretary of the Interior's Standards for Rehabilitation, then provide clear and specific recommendations for siting, landscaping, fences and retaining walls, parking, building height, foundations, exterior siding materials, roof form, front façade detailing, windows and doors, and color.

"...structures remaining from this era form an architectural vocabulary which can be used in designing new buildings which will be compatible within the district. The guidelines are intended to insure maximum compatibility of new buildings with historic buildings, not to build new old buildings, or exact duplicates of older styles."

Designer/Builder Loren Waxman's new house is based on the traditional Arts and Crafts style bungalow in form, but is actually a somewhat larger and longer modern version. Using "scale tricks," such as a broken roofline—a shed dormer and cantilevered bays—as well as an exaggerated front porch overhang, the new house is in harmony with other buildings on Elliot Avenue. Clear-varnished amber color wood, off-the-shelf lumber, and simplified decorative elements, such as the porch columns, further distinguish it as a product of the times. Finally, the new garage respects the "alley access only" pattern of the district. The project was approved by the Ladd's Addition Historic District Advisory Board in 1995, with formal City approval by the Portland Historic Landmarks Commission in 1996.

Appreciation is extended to David Skilton, Jeff Joslin, and Loren Waxman for their contributions in creating this case study on Ladd's Addition Historic District, Portland, Oregon.

The Use of Substitute Materials on Historic Building Exteriors

Sharon C. Park, AIA

»Introduction
»Historical Use of Substitute Materials
»When to Consider Using Substitute Materials
»Cautions and Concerns
»Choosing an Appropriate Substitute Material
»Pros and Cons of Various Substitute Materials
»Summary
»Further Reading

A NOTE TO OUR USERS: The web versions of the **Preservation Briefs** differ somewhat from the printed versions. Many illustrations are new, captions are simplified, illustrations are typically in color rather than black and white, and some complex charts have been omitted.

The Secretary of the Interior's Standards for Rehabilitation require that "deteriorated architectural features be repaired rather than replaced, wherever possible. In the event that replacement is necessary, the new material should match the material being replaced in composition, design, color, texture, and other visual properties." Substitute materials should be used only on a limited basis and only when they will match the appearance and general properties of the historic material and will not damage the historic resource.

Introduction

When deteriorated, damaged, or lost features of a historic building need repair or replacement, it is almost always best to use historic materials. In limited circumstances substitute materials that imitate historic materials may be used if the appearance and properties of the historic materials can be matched closely and no damage to the remaining historic fabric will result.

Great care must be taken if substitute materials are used on the exteriors of historic buildings. Ultraviolet light, moisture penetration behind joints, and stresses caused by changing temperatures can greatly impair the performance of substitute materials over time. Only after consideration of all options, in consultation with qualified professionals, experienced fabricators and contractors, and development of carefully written specifications should this work be undertaken.

The practice of using substitute materials in architecture is not new, yet it continues to pose practical problems and to raise philosophical questions. On the practical level the

In the reconstruction of the clock tower at Independence Hall, the substitute materials used were cast stone and wood with fiberglass and polyester bronze ornamentation. Photo: NPS files.

inappropriate choice or improper installation of substitute materials can cause a radical change in a building's appearance and can cause extensive physical damage over time. On the more philosophical level, the wholesale use of substitute materials can raise questions concerning the integrity of historic buildings largely comprised of new materials. In both cases the integrity of the historic resource can be destroyed.

Some preservationists advocate that substitute materials should be avoided in all but the most limited cases. The fact is, however, that substitute materials are being used more frequently than ever in preservation projects, and in many cases with positive results. They can be cost-effective, can permit the accurate visual duplication of historic materials, and last a reasonable time. Growing evidence indicates that with proper planning, careful specifications and supervision, substitute materials can be used successfully in the process of restoring the visual appearance of historic resources.

This Brief provides general guidance on the use of substitute materials on the exteriors of historic buildings. While substitute materials are frequently used on interiors, these applications are not subject to weathering and moisture penetration, and will not be discussed in this Brief. Given the general nature of this publication, specifications for substitute materials are not provided. The guidance provided should not be used in place of consultations with qualified professionals. This Brief includes a discussion of when to use substitute materials, cautions regarding their expected performance, and descriptions of several substitute materials, their advantages and disadvantages. This review of materials is by no means comprehensive, and attitudes and findings will change as technology develops.

Historical Use of Substitute Materials

The tradition of using cheaper and more common materials in imitation of more expensive and less available materials is a long one. George Washington, for example, used wood painted with sand-impregnated paint at Mount Vernon to imitate cut ashlar stone. This technique along with scoring stucco into block patterns was fairly common in colonial America to imitate stone.

Molded or cast masonry substitutes, such as dry-tamp cast stone and poured concrete, became popular in place of quarried stone during the 19th century. These masonry units were fabricated locally, avoiding expensive quarrying and shipping costs, and were versatile in representing either ornately carved blocks, plain wall stones or rough cut textured surfaces. The end result depended on the type of patterned or textured mold used and was particularly popular in conjunction with mail order houses. Later, panels of cementitious permastone or formstone and less expensive asphalt and sheet metal panels were used to imitate brick or stone.

Metal (cast, stamped, or brake-formed) was used for storefronts, canopies, railings, and other features, such as galvanized metal cornices substituting for wood or stone, stamped metal panels for Spanish clay roofing tiles, and cast-iron column capitals and even entire building fronts in

imitation of building stone.

Substitute materials need to be located with care to avoid damage. The fiberglass column base has chipped, whereas the historic cast iron would have remained sound. Photo: NPS files.

Terra-cotta, a molded fired clay product, was itself a substitute material and was very popular in the late 19th and early 20th centuries. It simulated the appearance of intricately carved stonework, which was expensive and time-consuming to produce. Terra cotta could be glazed to imitate a variety of natural stones, from brownstones to limestones, or could be colored for a polychrome effect.

Nineteenth century technology made a variety of materials readily available that not only were able to imitate more expensive materials but were also cheaper to fabricate and easier to use. Throughout the century, imitative materials continued to evolve. For example, ornamental window hoods were originally made of wood or carved stone. In an effort to find a cheaper substitute for carved stone and to speed fabrication time, cast stone, an early form of concrete, or cast-iron hoods often replaced stone. Toward the end of the century, even less expensive sheet metal hoods, imitating stone, also came into widespread use. All of these materials, stone, cast stone, cast iron, and various pressed metals were in production at the same time and were selected on the basis on the basis of the availability of materials and local craftsmanship, as well as durability and cost. The criteria for selection today are not much different.

Many of the materials used historically to imitate other materials are still available. These are often referred to as the traditional materials: wood, cast stone, concrete, terra cotta and cast metals. In the last few decades, however, and partly as a result of the historic preservation movement, new families of synthetic materials, such as fiberglass, acrylic polymers, and epoxy resins, have been developed and are being used as substitute materials in construction. In some respects these newer products (often referred to as high tech materials) show great promise; in others, they are less satisfactory, since they are often difficult to integrate physically with the porous historic materials and may be too new to have established solid performance records.

When to Consider Using Substitute Materials in Preservation Projects

Because the overzealous use of substitute materials can greatly impair the historic character of a historic structure, all preservation options should be explored thoroughly before substitute materials are used. It is important to remember that the purpose of repairing damaged features and of replacing lost and irreparably damaged ones is both to match visually what was there and to cause no further deterioration. For these reasons it is not appropriate to cover up historic materials with synthetic materials that will alter the appearance, proportions and details of a historic building and that will conceal future deterioration.

Some materials have been used successfully for the repair of damaged features such as epoxies for wood infilling, cementitious patching for sandstone repairs, or plastic stone for masonry repairs. Repairs are preferable to replacement whether or not the repairs are in kind or with a synthetic substitute material.

In general, four circumstances warrant the consideration of substitute materials: 1) the unavailability of historic materials; 2) the unavailability of skilled craftsmen; 3) inherent flaws in the original materials; and 4) code-required changes (which in many cases can be extremely destructive of historic resources).

Cost may or may not be a determining factor in considering the use of substitute materials. Depending on the area of the country, the amount of material needed, and the projected life of less durable substitute materials, it may be cheaper in the long run to use the original material, even though it may be harder to find.

The core of a deteriorated wood outrigger was first drilled out. Photos (left and right): Courtesy, Harrison Goodall.

An inert material was injected into the hollow outrigger, permitting the outer wood to be retained and preserved.

Due to many early failures of substitute materials, some preservationist are looking abroad to find materials (especially stone) that match the historic materials in an effort to restore historic buildings accurately and to avoid many of the uncertainties that come with the use of substitute materials.

1. The unavailability of the historic material.

The most common reason for considering substitute materials is the difficulty in finding a good match for the historic material (particularly a problem for masonry materials where the color and texture are derived from the material itself). This may be due to the actual unavailability of the material or to protracted delivery dates. For example, the local quarry that supplied the sandstone for a building may no longer be in operation. All efforts should be made to locate another quarry that could supply a satisfactory match. If this approach fails, substitute materials such as dry-tamp cast stone or textured precast concrete may be a suitable substitute if care is taken to ensure that the detail, color and texture of the original stone are matched. In some cases, it may be possible to use a sand-impregnated paint on wood as a replacement section, achieved using readily available traditional materials, conventional tools and work skills. Simple solutions should not be overlooked.

2. The unavailability of historic craft techniques and lack of skilled artisans.
These two reasons complicate any preservation or rehabilitation project. This is particularly true for intricate ornamental work, such as carved wood, carved stone, wrought iron, cast iron, or molded terra cotta. However, a number of stone and wood cutters now employ sophisticated carving machines, some even computerized. It is also possible to cast substitute replacement pieces using aluminum, cast stone, fiberglass, polymer concretes, glass fiber reinforced concretes and terra cotta. Mold making and casting takes skill and craftsmen who can undertake this work are available. Efforts should always be made, prior to replacement, to seek out artisans who might be able to repair ornamental elements and thereby save the historic features in place.

3. Poor original building materials.

Cast aluminum has been used as a replacement material for cast iron. Photo: NPS files.

Some historic building materials were of inherently poor quality or their modern counterparts are inferior. In addition, some materials were naturally incompatible with other materials on the building, causing staining or galvanic corrosion. Examples of poor quality materials were the very soft sandstones which eroded quickly. An example of poor quality modern replacement material is the tin coated steel roofing which is much less durable than the historic tin or terne iron which is no longer available. In some cases, more durable natural stones or precast concrete might be available as substitutes for the soft stones and modern terne-coated stainless steel or lead-coated copper might produce a more durable yet visually compatible replacement roofing.

4. Code-related changes.

Sometimes referred to as life and safety codes, building codes often require changes to historic buildings. Many cities in earthquake zones, for example, have laws requiring that overhanging masonry parapets and cornices, or freestanding urns or finials be securely re-anchored to new structural frames or be removed completely. In some cases, it may be acceptable to replace these heavy historic elements with light replicas. In other cases, the extent of historic fabric removed may be so great as to diminish the integrity of the resource. This could affect the significance of the structure and jeopardize National Register status. In addition, removal of repairable historic materials could result in loss of Federal tax credits for rehabilitation. Department of the Interior regulations make clear that the Secretary of the Interior's Standards for Rehabilitation take precedence over other regulations and codes in determining whether a project is consistent with the historic character of the building undergoing rehabilitation.

Two secondary reasons for considering the use of substitute materials are their lighter weight and for some materials, a reduced need of maintenance. These reasons can become important if there is a need to keep dead loads to a minimum or if the feature being replaced is relatively inaccessible for routine maintenance.

Cautions and Concerns

In dealing with exterior features and materials, it must be remembered that moisture penetration, ultraviolet degradation, and differing thermal expansion and contraction rates of dissimilar materials make any repair or replacement problematic. To ensure that a repair or replacement will perform well over time, it is critical to understand fully the properties of both the original and the substitute materials, to install replacement materials correctly, to assess their impact on adjacent historic materials, and to have reasonable expectations of future performance.

Many high tech materials are too new to have been tested thoroughly. The differences in vapor permeability between some synthetic materials and the historic materials have in some cases caused unexpected further deterioration. It is therefore difficult to recommend substitute materials if the historic materials are still available. As previously mentioned, consideration should always be given first to using traditional materials and methods of repair or replacement before accepting unproven techniques, materials or applications.

Substitute materials must meet three basic

criteria before being considered: they must be compatible with the historic materials in appearance; their physical properties must be similar to those of the historic materials, or be installed in a manner that tolerates differences; and they must meet certain basic performance expectations over an extended period of time.

A waterproof coating is an inappropraite substitute material to apply to adobe as it seals in moisture and may result in spalling. Photo: NPS files.

Matching the Appearance of the Historic Materials

In order to provide an appearance that is compatible with the historic material, the new material should match the details and craftsmanship of the original as well as the color, surface texture, surface reflectivity and finish of the original material. The closer an element is to the viewer, the more closely the material and craftsmanship must match the original.

Matching the color and surface texture of the historic material with a substitute material is normally difficult. To enhance the chances of a good match, it is advisable to clean a portion of the building where new materials are to be used. If pigments are to be added to the substitute material, a specialist should determine the formulation of the mix, the natural aggregates and the types of pigments to be used. As all exposed material is subject to ultraviolet degradation, if possible, samples of the new materials made during the early planning phases should be tested or allowed to weather over several seasons to test for color stability.

Fabricators should supply a sufficient number of samples to permit onsite comparison of color, texture, detailing, and other critical qualities. In situations where there are subtle variations in color and texture within the original materials, the substitute materials should be similarly varied so that they are not conspicuous by their uniformity.

Substitute materials, notably the masonry ones, may be more water-absorbent than the historic material. If this is visually distracting, it may be appropriate to apply a protective vapor-permeable coating on the substitute material. However, these clear coatings tend to alter the reflectivity of the material, must be reapplied periodically, and may trap salts and moisture, which can in turn produce spalling. For these reasons, they are not recommended for use on historic materials.

Matching the Physical Properties

While substitute materials can closely match the appearance of historic ones, their physical properties may differ greatly. The chemical composition of the material (i.e., presence of acids, alkalines, salts, or metals) should be evaluated to ensure that the replacement materials will be compatible with the historic resource. Special care must therefore be taken to integrate and to anchor the new materials properly. The thermal expansion and contraction coefficients of each adjacent material must be within tolerable limits. The function of joints must be understood and detailed either to eliminate moisture penetration or to allow vapor permeability. Materials that will cause galvanic corrosion or other chemical reactions must be isolated from one another.

To ensure proper attachment, surface preparation is critical. Deteriorated underlying material must be cleaned out. Noncorrosive anchoring devices or fasteners that are designed to carry the new material and to withstand wind, snow and other destructive elements should be used. Properly chosen fasteners allow attached materials to expand and contract at their own rates. Caulking, flexible sealants or expansion joints between

the historic material and the substitute material can absorb slight differences of movement. Since physical failures often result from poor anchorage or improper installation techniques, a structural engineer should be a member of any team undertaking major repairs.

Some of the new high tech materials such as epoxies and polymers are much stronger than historic materials and generally impermeable to moisture. These differences can cause serious problems unless the new materials are modified to match the expansion and contraction properties of adjacent historic materials more closely, or unless the new materials are isolated from the historic ones altogether. When stronger or vapor impermeable new materials are used alongside historic ones, stresses from trapped moisture or differing expansion and contraction rates generally hasten deterioration of the weaker historic material. For this reason, a conservative approach to repair or replacement is recommended, one that uses more pliant materials rather than high-strength ones. Since it is almost impossible for substitute materials to match the properties of historic materials perfectly, the new system incorporating new and historic materials should be designed so that if material failures occur, they occur within the new material rather than the historic material.

Performance Expectations

While a substitute material may appear to be acceptable at the time of installation, both its appearance and its performance may deteriorate rapidly. Some materials are so new that industry standards are not available, thus making it difficult to specify quality control in fabrication, or to predict maintenance requirements and long term performance. Where possible, projects involving substitute materials in similar circumstances should be examined. Material specifications outlining stability of color and texture; compressive or tensile strengths if appropriate; the acceptable range of thermal coefficients, and the durability of coatings and finishes should be included in the contract documents. Without these written documents, the owner may be left with little recourse if failure occurs.

The historic cornice was successfully replaced with a fiberglass cornice. Photo: NPS files.

The tight controls necessary to ensure long-term performance extend beyond having written performance standards and selecting materials that have a successful track record. It is important to select qualified fabricators and installers who know what they are doing and who can follow up if repairs are necessary. Installers and contractors unfamiliar with specific substitute materials and how they function in your local environmental conditions should be avoided.

The surfaces of substitute materials may need special care once installed. For example, chemical residues or mold release agents should be removed completely prior to installation, since they attract pollutants and cause the replacement materials to appear dirtier than the adjacent historic materials. Furthermore, substitute materials may require more frequent cleaning, special cleaning products and protection from impact by hanging window-cleaning scaffolding. Finally, it is critical that the substitute materials be identified as part of the historical record of the building so that proper care and maintenance of all the building materials continue to ensure the life of the historic resource.

Choosing an Appropriate Substitute Material

Once all reasonable options for repair or replacement in kind have been exhausted, the choice among a wide variety of substitute materials currently on the market must be made. The charts at the end of this Brief describe a number of such materials, many of them in the family of modified concretes which are gaining greater use. The charts do not include wood, stamped metal, mineral fiber cement shingles and some other traditional imitative materials, since their properties and performance are better known. Nor do the charts include vinyls or molded urethanes which are sometimes used as cosmetic claddings or as substitutes for wooden millwork. Because millwork is still readily available, it should be replaced in kind.

The charts describe the properties and uses of several materials finding greater use in historic preservation projects, and outline advantages and disadvantages of each. It should not be read as an endorsement of any of these materials, but serves as a reminder that numerous materials must be studied carefully before selecting the appropriate treatment. Included are three predominantly masonry materials (cast stone, precast concrete, and glass fiber reinforced concrete); two predominantly resinous materials (epoxy and glass fiber reinforced polymers also known as fiberglass), and cast aluminum which has been used as a substitute for various metals and woods.

Pros and Cons of Various Substitute Materials

Cast Aluminum

Material: Cast aluminum is a molten aluminum alloy cast in permanent (metal) molds or onetime sand molds which must be adjusted for shrinkage during the curing process. Color is from paint applied to primed aluminum or from a factory finished coating. Small sections can be bolted together to achieve intricate or sculptural details. Unit castings are also available for items such as column plinth blocks.

Application: Cast aluminum can be a substitute for cast iron or other decorative elements. This would include grillwork, roof crestings, cornices, ornamental spandrels, storefront elements, columns, capitals, and column bases and plinth blocks. If not self-supporting, elements are generally screwed or bolted to a structural frame. As a result of galvanic corrosion problems with dissimilar metals, joint details are very important.

Advantages:

- light weight (1/2 of castiron)
- corrosion-resistant, noncombustible
- intricate castings possible
- easily assembled, good delivery time
- can be prepared for a variety of colors
- long life, durable, less brittle than cast iron

Disadvantages:

- lower structural strength than castiron
- difficult to prevent galvanic corrosion with other metals
- greater expansion and contraction than castiron; requires
- gaskets or caulked joints
- difficult to keep paint on aluminum

Checklist:

- Can existing be repaired or replaced inkind?
- How is cast aluminum to be with other metals attached?
- Have full-size details been developed for each piece to be cast?
- How are expansion joints detailed?
- Will there be a galvanic corrosion problem?
- Are fabricators/installers experienced?

Cast Stone (dry tamped)

Material: Cast stone is an almost-dry cement, lime and aggregate mixture which is dry-tamped into a mold to produce a dense stone-like unit. Confusion arises in the building industry as many refer to high quality precast concrete as cast stone. In fact, while it is a form of precast concrete, the drytamp fabrication method produces an outer surface resembling a stone surface. The inner core can be either drytamped or poured full of concrete. Reinforcing bars and anchorage devices can be installed during fabrication.

Application: Cast stone is often the most visually similar material as a replacement for unveined deteriorated stone, such as brownstone or sandstone, or terra cotta in imitation of stone. It is used both for surface wall stones and for ornamental features such as window and door surrounds, voussoirs, brackets and hoods. Rubberlike molds can be taken of good stones on site or made up at the factory from shop drawings.

Advantages:

- replicates stone texture with good molds (which can come from extant stone) and fabrication
- expansion/contraction similar to stone
- minimal shrinkage of material
- anchors and reinforcing bars can be built in
- material is firerated
- range of color available
- vapor permeable

Disadvantages:

- heavy units may require additional anchorage
- color can fade in sunlight
- may be more absorbent than natural stone
- replacement stones are obvious if too few models and molds are made

Checklist:

- Are the original or similar materials available?
- How are units to be installed and anchored?
- Have performance standards been developed to ensure color stability?
- Have large samples been delivered to site for color, finish and absorption testing?
- Has mortar been matched to adjacent historic mortar to achieve a good color/tooling match?
- Are fabricators/installers experienced?

Glass Fiber Reinforced Concretes (GFRC)

Material: Glass fiber reinforced concretes are lightweight concrete compounds modified with additives and reinforced with glass fibers. They are generally fabricated as thin shelled panels and applied to a separate structural frame or anchorage system. The GFRC is most commonly sprayed into forms although it can be poured. The glass must be alkaline resistant to avoid deteriorating effects caused by the cement mix. The color is derived from the natural aggregates and if necessary a small percentage of added pigments.

Application: Glass fiber reinforced concretes are used in place of features originally made of stone, terra cotta, metal or wood, such as cornices, projecting window and door trims, brackets, finials, or wall murals. As a molded product it can be produced in long sections of repetitive designs or as sculptural elements. Because of its low shrinkage, it can be produced from molds taken directly from the building. It is installed with a separate noncorrosive anchorage system. As a predominantly cementitious material, it is vapor permeable.

Advantages:

- lightweight, easily installed
- good molding ability, crisp detail possible
- weather resistant
- can be left uncoated or else painted
- little shrinkage during fabrication
- molds made directly from historic features
- cements generally breathable
- material is firerated

Disadvantages:

- non-loadbearing use only
- generally requires separate anchorage system
- large panels must be reinforced
- color additives may fade with sunlight
- joints must be properly detailed
- may have different absorption rate than adjacent historic material

Checklist:

- Are the original materials and craftsmanship still available?
- Have samples been inspected on the site to ensure detail/texture match?
- Has anchorage system been properly designed?
- Have performance standards been developed?
- Are fabricators/installers experienced?

Precast Concrete

Material: Precast concrete is a wet mix of cement and aggregate poured into molds to create masonry units. Molds can be made from existing good surfaces on the building. Color is generally integral to the mix as a natural coloration of the sand or aggregate, or as a small percentage of pigment. To avoid unsightly air bubbles that result from the natural curing process, great care must be taken in the initial and longterm vibration of the mix. Because of its weight it is generally used to reproduce individual units of masonry and not thin shell panels.

Application: Precast concrete is generally used in place of masonry materials such as

stone or terra cotta. It is used both for flat wall surfaces and for textured or ornamental elements. This includes wall stones, window and door surrounds, stair treads, paving pieces, parapets, urns, balusters and other decorative elements. It differs from cast stone in that the surface is more dependent on the textured mold than the hand tamping method of fabrication.

Advantages:

- easily fabricated, takes shape well
- rubber molds can be made from building stones
- minimal shrinkage of material
- can be load bearing or anchorage can be cast in
- expansion/contraction similar to stone
- material is firerated
- range of color and aggregate available
- vapor permeable

Disadvantages:

- may be more moisture absorbent than stone although coatings may be applied
- color fades in sunlight
- small air bubbles may disfigure units
- replacement stones are conspicuous if too few models and molds are made

Checklist:

- Is the historic material still available?
- What are the structural/anchorage requirements?
- Have samples been matched for color/texture/absorption? Have shop drawings been made for each shape?
- Are there performance standards?
- Has mortar been matched to adjacent historic mortar to achieve good color/tooling match?
- Are fabricators/installers experienced?

Fiber Reinforced Polymers (FRP, Fiberglass)

Material: Fiberglass is the most well known of the FRP products generally produced as a thin rigid laminate shell formed by pouring a polyester or epoxy resin gelcoat into a mold. When tack-free, layers of chopped glass or glass fabric are added along with additional resins. Reinforcing rods and struts can be added if necessary; the gel coat can be pigmented or painted.

Application: Fiberglass, a non load-bearing material attached to a separate structural frame, is frequently used as a replacement where a lightweight element is needed or an inaccessible location makes frequent maintenance of historic materials difficult. Its good molding ability and versatility to represent stone, wood, metal and terra cotta make it an alternative to ornate or carved building elements such as column capitals, bases, spandrel panels, beltcourses, balustrades, window hoods or parapets. Its ability to reproduce bright colors is a great advantage.

Advantages:

- lightweight, long spans available with a separate structural frame
- high ratio of strength to weight

- good molding ability
- integral color with exposed high quality pigmented gel-coat or takes paint well
- easily installed, can be cut, patched, sanded
- non-corrosive, rot-resistant

Disadvantages:

- requires separate anchorage system
- combustible (fire retardants can be added); fragile to impact.
- high coefficient of expansion and contraction requires frequently placed expansion joints
- ultraviolet sensitive unless surface is coated or pigments are in gelcoat
- vapor impermeability may require ventilation detail

Checklist:

- Can original materials be saved/used?
- Have expansion joints been designed to avoid unsightly appearance?
- Are there standards for color stability/durability?
- Have shop drawings been made for each piece?
- Have samples been matched for color and texture?
- Are fabricators/installers experienced?
- Do codes restrict use of FRP?

Epoxies (Epoxy Concretes, Polymer Concretes)

Material: Epoxy is a resinous two-part thermosetting material used as a consolidant, an adhesive, a patching compound, and as a molding resin. It can repair damaged material or recreate lost features. The resins which are poured into molds are usually mixed with fillers such as sand, or glass spheres, to lighten the mix and modify their expansion/contraction properties. When mixed with aggregates, such as sand or stone chips, they are often called epoxy concrete or polymer concrete, which is a misnomer as there are no cementitious materials contained within the mix. Epoxies are vapor impermeable, which makes detailing of the new elements extremely important so as to avoid trapping moisture behind the replacement material. It can be used with wood, stone, terra cotta, and various metals.

Application: Epoxy is one of the most versatile of the new materials. lt can be used to bind together broken fragments of terra cotta; to build up or infill missing sections of ornamental metal; or to cast missing elements of wooden ornaments. Small cast elements can be attached to existing materials or entire new features can be cast. The resins are poured into molds and due to the rapid setting of the material and the need to avoid cracking, the molded units are generally small or hollow inside. Multiple molds can be combined for larger elements. With special rods, the epoxies can be structurally reinforced. Examples of epoxy replacement pieces include: finials, sculptural details, small column capitals, and medallions.

Advantages:

- can be used for repair/replacement
- lightweight, easily installed
- good casting ability; molds can be taken from building material can be sanded and carved.
- color and ultraviolet screening can be added; takes paint well
- durable, rot and fungus resistant

Disadvantages:

- materials are flammable and generate heat as they cure and may be toxic when burned
- toxic materials require special protection for operator and adequate ventilation while curing
- material may be subject to ultraviolet deterioration unless coated or filters added rigidity of material
- often must be modified with fillers to match expansion coefficients
- vapor impermeable

Checklist:

- Are historic materials available for molds, or for splicing-in as a repair option?
- Has the epoxy resin been formulated within the expansion/contraction coefficients of adjacent materials?
- Have samples been matched for color/finish?
- Are fabricators/installers experienced?
- Is there a sound substrate of material to avoid deterioration behind new material?
- Are there performance standards?

Summary

Substitute materials--those products used to imitate historic materials--should be used only after all other options for repair and replacement in kind have been ruled out. Because there are so many unknowns regarding the longterm performance of substitute materials, their use should not be considered without a thorough investigation into the proposed materials, the fabricator, the installer, the availability of specifications, and the use of that material in a similar situation in a similar environment.

Substitute materials are normally used when the historic materials or craftsmanship are no longer available, if the original materials are of a poor quality or are causing damage to adjacent materials, or if there are specific code requirements that preclude the use of historic materials. Use of these materials should be limited, since replacement of historic materials on a large scale may jeopardize the integrity of a historic resource. Every means of repairing deteriorating historic materials or replacing them with identical materials should be examined before turning to substitute materials.

The importance of matching the appearance and physical properties of historic materials and, thus, of finding a successful longterm solution cannot be overstated. The successful solutions illustrated in this Brief were from historic preservation projects involving professional teams of architects, engineers, fabricators, and other specialists. Cost was not necessarily a factor, and all agreed that whenever possible, the historic materials should be used. When substitute materials were selected, the solutions were often expensive and were reached only after careful consideration of all options, and with the assistance of expert professionals.

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Home page logo: Cast alumnimum used as a replacement for cast iron. Photo: NPS files.

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