

# Memorandum



**Date:** July 18, 2016

**To:** Honorable Chairman Jean Monestime  
and Members, Board of County Commissioners

**From:** Carlos A. Gimenez  
Mayor

**Subject:** Progress Report Regarding the Construction of the New Patricia and Philip Frost Museum of Science: April - May 2016

On April 5, 2016, the Board of County Commissioners (Board) approved Resolution R-266-16, authorizing a grant agreement with the Museum of Science, Inc. (Museum) in the amount of \$45 million to be funded from the issuance of bonds secured by Convention Development Tax (CDT) revenues (per Ordinance No. 16-33) for the completion of the new Patricia and Philip Frost Museum of Science. At that time, the Board requested written updates every 60 days on the progress of the new Museum in Museum Park.

## CONSTRUCTION

Skanska USA Building Inc. (Skanska) is the General Contractor on-site and Hill International is the Museum's project manager. As of July 1, 2016, the construction on site is 80 percent complete. A more detailed accounting of the work on site is included as Attachment 1 to this memorandum, representing the Museum's progress reports to the County for April and May 2016.

## CONSTRUCTION SCHEDULE

Based on Skanska's latest proposed schedule, the projected date for a temporary certificate of occupancy (TCO) is February 9, 2017. Neither the Museum nor Hill International has approved this schedule and all parties are working on a recovery schedule, with the goal of bringing the date for the TCO into an early December 2016 timeframe. This plan is currently being developed and more information will be available in the next report.

## CONSTRUCTION BUDGET/PROPOSED CHANGE ORDERS/CONTRACT TIME EXTENSIONS

As previously reported to the Board, when the County grant agreement was executed, the construction budget covered actual costs incurred through November 30, 2015 that left \$113,678,322 in remaining project costs of the total \$304,424,601 project budget. From November 30, 2015 through May 31, 2016, \$21,425,299 has been spent, of which \$13,109,952 were for construction costs. The balance of funds were spent on budgeted design and project management, exhibition design and fabrication, and other project costs, including the legal marketing, transition costs, etc. All of these costs were funded by the Museum using the \$14,686,612 in funds from their Northern Trust loan, which the Museum has requested and received to date (through May 2016) for budgeted project costs, and the Museum's cash on hand.

No County grant funds have been spent during this period. The Museum submitted an advance request in the amount of \$7,737,985 from the County grant funds, which will cover the eligible construction and construction administration costs that will be due in June and July of 2016. This request is being reviewed and processed for payment.

To date, \$66,601 has been spent out of the \$3,500,000 Project Contingency Fund, with \$3,433,398 remaining. These costs include design and construction coordination issues, necessary changes in scope (both additive and deductive) by owner, and items identified as scope gaps. There are pending proposed change orders that are not yet finalized, as they are currently being negotiated; these include a proposed extension of Construction Management general conditions, and project management and design services outside of those carried in the cost to complete budget (i.e., from November 2016 through project completion).

**OPERATIONS**

In March this year, the Museum’s Board of Trustees began the process of restructuring the Board, which currently has five (5) members including two (2) representatives from Miami-Dade County, who also serve on the Board’s Executive Committee. These representatives are Edward Marquez, Deputy Mayor and Finance Director, and Michael Spring, Senior Advisor to the Mayor and Director of the Department of Cultural Affairs. Executive Committee meetings are being held every two weeks and County representatives have attended these meetings held on May 18, 2016 and May 31, 2016.

**BACKGROUND**

In 2004, the voters of Miami-Dade County passed the Building Better Communities – General Obligation Bond (BBC-GOB) Program. Included in the list of projects to be undertaken was an allocation of BBC-GOB funding in the amount of \$165 million for the Museum (along with another \$10 million for HistoryMiami). The original Museum project had a project budget of \$272 million, inclusive of the County’s \$165 million from BBC-GOB Program funds. The chart below accounts for the allocation of BBC-GOB Program funding to the Museum through a series of five (5) grant agreements executed over a six (6) year period.

Museum of Science		
BBC-GOB Program Grant Agreement Summary		
Grant	Amount	Agreement Executed
1	\$3,300,000	June 16, 2008
2	\$9,350,000	December 16, 2009
3	\$8,100,000	March 24, 2011
4	\$30,000,000	February 6, 2012
5	\$114,250,000	April 15, 2013
TOTAL	\$165,000,000	(includes \$6,935,750 of retainage)

Complementing the \$165 million of BBC-GOB Program funds, the Museum covenanted and warranted to the County in its BBC-GOB Program grant agreements that it had obtained by private fundraising the \$107 million necessary to complete the capital project, and to cover moving and staff transition costs.

When the Museum’s financing plans for their private pledges were not realized, the County developed a plan to complete the construction of the Museum, by generating the \$83,346,223 necessary to accomplish the project. This plan included the Museum working with Northern

Trust Bank to generate a loan of \$38,346,223, based on secured private sector pledges in place sufficient to repay the loan and the Board's approval of \$45 million of bond proceeds to be repaid by using the County's planned \$4 million annual operating subsidy to the Museum. As reported to the Board, the updated total project cost is \$304,424,601, which includes non-capital costs associated with the transition of Museum operations to the new facility and capital project cost reductions outlined in the item approved by the Board on April 5, 2016.

This plan was developed to ensure that these collective investments result in the great museum promised to the residents of Miami-Dade County by: converting planned CDT operational subsidies into upfront capital completion funds; requiring the Museum to monetize existing pledges for capital completion costs; requiring the Museum to commit to assuming full fundraising responsibility for operating the Museum on a balanced budget without County support; ensuring greater accountability and oversight by including local government representation on the Museum's Board of Trustees and Executive Committee; and requiring the Museum to reduce its project budget from \$325 million to \$304 million.

In addition, Patricia and Phillip Frost pledged an additional \$4.25 million to serve as a reserve to assist in the funding of any unanticipated cost overruns beyond the project's established contingency of \$3.5 million.

The new Museum will be a green, Leadership in Energy and Environmental Design (LEED)-certified building with 250,000 square feet of internal and external program on an approximately 4-acre site leased from the City of Miami for 99 years. The new building will house a 250-seat planetarium, an aquarium, participatory exhibits, educational programs and collections, and a learning center accompanied by external areas with interactive exhibits.

For information and news on the Museum, please visit their blog at <http://www.frostscience.org/blog/>. Public tours will be offered through the end of July. Available dates are listed at the following link: <http://www.frostscience.org/blog/support/community-hard-hat-tours>. Other tours may be scheduled upon request.

Attachment 1 Frost Museum of Science Progress Reports for April and May, 2016

c: Abigail Price-Williams, County Attorney  
Michael Spring, Senior Advisor, Office of the Mayor  
Neil R. Singh, Interim Commission Auditor  
Mary T. Cagle, Inspector General  
Christopher Agrippa, Clerk of the Board



April 29, 2016

Michael Spring, Senior Advisor to the Mayor  
Miami-Dade County Department of Cultural Affairs  
111 NW First Street, Suite 625  
Miami, FL 33128

Dear Michael,

This is the monthly report to update Miami-Dade County on progress with construction and fit-out of the Patricia and Phillip Frost Museum of Science in downtown Miami's Museum Park. Construction has continued throughout the month of April and is estimated at 75% complete.

#### **BACKGROUND**

Frost Science aims to make a difference in people's lives by inspiring them to appreciate the impact that science and technology can have on every facet of our world. The museum will continue to inspire visitors in a new state-of-the-art facility designed by Grimshaw Architects currently under construction at Museum Park, in the heart of downtown Miami. The museum will be structured around a lushly landscaped indoor and outdoor *Living Core Aquarium* of terrestrial and aquatic environments, featuring a Gulf Stream aquarium experience totaling over 500,000 gallons of salt water. The facility will also feature the state-of-the-art full dome *Frost Planetarium*, the Knight Learning Center, *Innovation Labs* and Cafe, Baptist Health South Florida People and Science Gallery, and an *Exploration Center* featuring permanent interactive exhibits: Feathers to the Stars and The River of Grass. The museum is accredited by the American Alliance of Museums, is an affiliate of the Smithsonian Institution and a member of the Association of Science and Technology Centers. Frost Science is supported by the Miami-Dade County Department of Cultural Affairs and the Cultural Affairs Council, the Miami-Dade County Mayor and Board of County Commissioners of Miami-Dade County. This project is supported by the Building Better Communities Bond Program, the County's Convention Development Tax Funds and the City of Miami. Sponsored in part by the State of Florida, Department of State, Division of Cultural Affairs, and the Florida Council on Arts and Culture. Learn more at [frostsience.org](http://frostsience.org).

#### **CONSTRUCTION**

##### **Overall Building Progress**

There are four separate buildings under construction that sit on top of a parking garage that is shared with the adjacent Perez Art Museum Miami (PAMM). These buildings include a north wing, a west wing, a planetarium and the Living Core building.

This past month the doors and hardware are being installed throughout all buildings to complete the dry-in process. Progress continues on the construction with structural work and dry-in nearing

completion. MEP and low voltage work continues throughout the project. Energizing of permanent power is scheduled for mid-July. Interior and exterior topping slab work is also underway. Primary freight elevator installation continues. Roofing and Living Core exterior are still awaiting completion of NOA. NOA packages are being assembled and should be submitted to product review for final review in June.

Living Core building: Exterior wall assembly for the Living Core (aquarium) is progressing well with framing completed and first layers of sheathing and insulation installed on approximately 25% of structure.

Dixon Studios continue to install the artificial rockwork and trees in the Living Core. This will be followed by the completion of the waterproofing of the deck and topping slab and installation of the oculus in mid-summer.

Planetarium: Scaffolding is installed in this building and the insulation installation is underway. Planetarium dome MEP and insulation continues in preparation of screen installation in the third quarter of the year. The public elevators which sit outside this space had been held up and the steel necessary to continue this work is expected onsite by early May.

North and West Building: The exterior stucco is nearing completion. Interior framing/finishing is underway. MEP work continues. West building freight elevator installation continues. GMU block installation is also nearing completion.

### **Exhibitions and Fit-out**

The Living Core flexible furniture contract is under negotiation. This is the construction of the modules that receive the individual aquaria, hands-on exhibits, collection objects and multimedia, which can be readily modified to provide an opportunity for updating and thematic change. Further work developing and finalizing the graphic panels for the Living Core is underway. This includes the written text panels associated with each aquarium, describing the content, possible activities etc, as well as orientation panels in the space.

Planning/coordination is underway for the installation of large exhibition objects in the Feathers to Stars exhibition gallery. Substantial progress is also being made on the acquisition of objects for the gallery and arrangements for their shipping. Models also form part of the exhibits for this gallery, both small tactile models of some of the larger hanging objects and specific models to show additional features of mechanisms or biology. Specifications for models have been completed to provide information for potential contractors to be able to price these items.

The interactive immersive experience for the River of Grass exhibition has developed further and character design and specifications for interaction types under development.

The MeLab exhibition in the Baptist Health People & Science Gallery fabrication contract is also under negotiation. The contract for the Planetarium projectors is also being finalized.

## **CONSTRUCTION SCHEDULE**

The current proposed update of Skanska schedule file is for a January 15, 2017 substantial completion, which could lead to a January 31<sup>st</sup> opening. Skanska is currently reviewing the schedule and examining how substantial completion can be brought back to December.

The opening date depends on the dates at which the various exhibition spaces become available for exhibition installation. The requirement of several months of reliable AC performance quality is also a determining factor for opening, as objects cannot be installed from the Smithsonian and other partners without this. A similar factor is water quality for bringing in the animals.

## **CONSTRUCTION BUDGET/PROPOSED CHANGE ORDERS**

An updated drawdown schedule showing project costs is being prepared for submission next month, prior to the County Grant funds being requested. The first draw of \$8,488,434 from the Northern Trust loan was requested and received; it was used to pay back the loan from the Frosts, pay the closing costs for the financing and fund the capitalized interest account related to the financing.

Projected costs to complete the project as of November 30, 2015 were \$113,678,322. As of April 30, 2016, \$15,419,881 has been spent, of which \$9,325,394 were for construction costs. The balance of funds were spent on design and project management, exhibition design and fabrication, construction of the Batchelor Environmental Center at FIU and other project costs. These costs were funded by the Museum.

As of April 30, 2015, the net impact of accepted Change Orders in excess of the November 30, 2015 cost to complete, totaled \$135,722. These include 123 cost events since the revised cost to complete budget. Types of cost events include design/construction coordination issues, changes in scope (additive and deductive) by owner and items identified as scope gaps. Project contingency balance remaining is currently \$3,364,278 out of an original budget of \$3,500,000. Pending cost events outside of the Project completion budget that will eventually impact the contingency include extension of CM general conditions, extension of project management and extension of design team services outside of those carried in the cost to complete budget. These items are currently being negotiated.

No County Grant funds were spent during this period. The Museum is submitting an advance request under the grant agreement to fund payments for construction and construction administration due in June and July 2016.

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## **OPERATIONS**

The museum continues to operate its administration and Batchelor Wildlife Center out of the County facility at Vizcaya, housing approximately 50 employees.

In March, the Frost Science Board of Trustees began the process of restructuring. The core board of four members has expanded to include the two Executive Committee representatives from Miami-Dade County. The Executive Committee will now begin the process of expanding their numbers for the full Board. Executive Committee meetings are being held every two weeks.

Community visits to the construction site have begun. These are available for the public to make a reservation via Eventbrite at <http://www.frostscience.org/blog/support/community-hard-hat-tours>. Our initial trial public site visits were rapidly fully subscribed, so we are continuing and also offering specialized tours, focusing on aspects such as engineering and animal husbandry.

The staffing schedule and hiring dates to open the new museum are currently being reviewed as part of the process of finalizing the business plan.

Outreach to the community continues. During the month of April, we reached 9,276 guests via school-based mobile outreach, offsite community events, Science Stars, Young Patrons, the Engineering Academy, MUVE, Upward Bound, and ECHOS.

APRIL 2016 PHOTOS



PATRICIA & PHILLIP FROST MUSEUM OF SCIENCE

1040 Biscayne Boulevard, Suite 400, Miami, FL 33132 | 305 434 9600



Special Exhibition Gallery



Ticketing Area

**PATRICIA & PHILLIP FROST MUSEUM OF SCIENCE**

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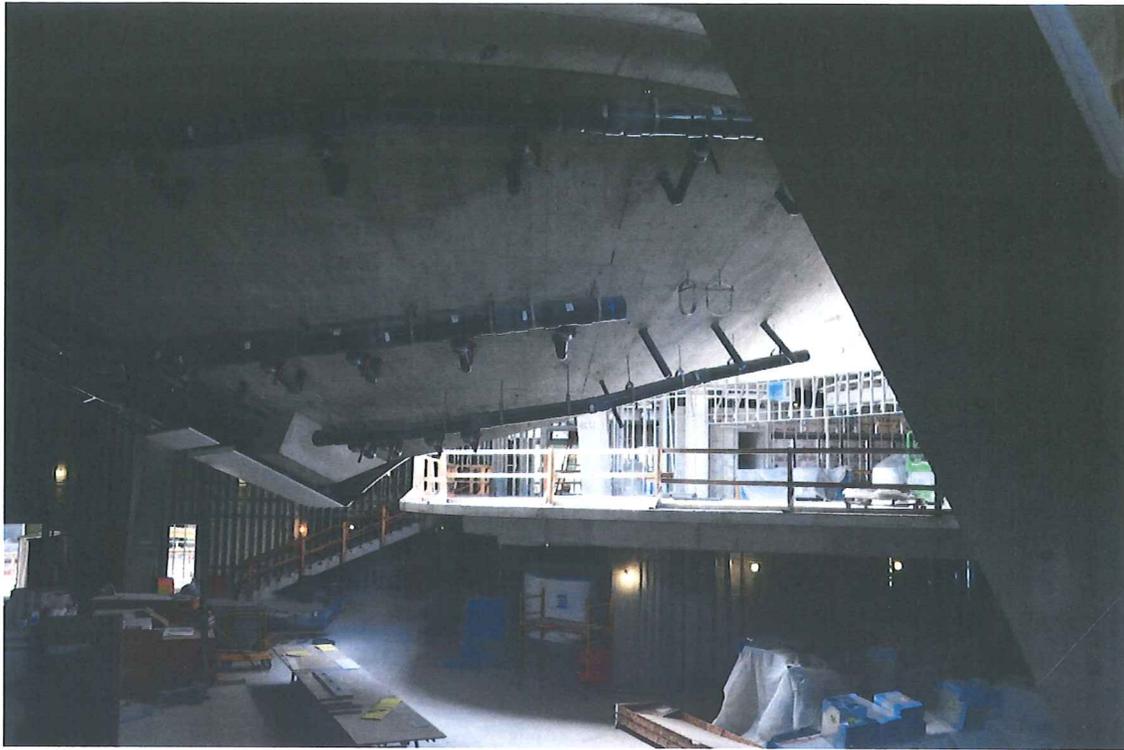
Living Core Aquarium Exterior and Gift Shop



MeLab Exhibition and Base of Gulf Stream Aquarium

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View of Gulf Stream Aquarium Oculus and Mezzanine



Dive Level of the Living Core Aquarium

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Feathers to the Stars Exhibition



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Main Atrium



Vista Level of the Living Core Aquarium



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Moon Terrace on the Roof of the Innovation Labs



View of the Gulf Stream Aquarium

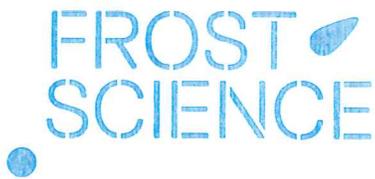


Knight Learning Center



**PATRICIA & PHILLIP FROST MUSEUM OF SCIENCE**

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May 30, 2016

Michael Spring, Senior Advisor to the Mayor  
Miami-Dade County Department of Cultural Affairs  
111 NW First Street, Suite 625  
Miami, FL 33128

Dear Michael,

This is the monthly report to update Miami-Dade County on progress with construction and fit-out of the Patricia and Phillip Frost Museum of Science in downtown Miami's Museum Park. Construction has continued throughout the month of May and is estimated at 78% complete.

#### BACKGROUND

Frost Science aims to make a difference in people's lives by inspiring them to appreciate the impact that science and technology can have on every facet of our world. The museum will continue to inspire visitors in a new state-of-the-art facility designed by Grimshaw Architects currently under construction at Museum Park, in the heart of downtown Miami. The museum will be structured around a lushly landscaped indoor and outdoor *Living Core Aquarium* of terrestrial and aquatic environments, featuring a Gulf Stream aquarium experience totaling over 500,000 gallons of salt water. The facility will also feature the state-of-the-art full dome *Frost Planetarium*, the Knight Learning Center, *Innovation Labs* and Cafe, Baptist Health South Florida People and Science Gallery, and an *Exploration Center* featuring permanent interactive exhibits: Feathers to the Stars and The River of Grass. The museum is accredited by the American Alliance of Museums, is an affiliate of the Smithsonian Institution and a member of the Association of Science and Technology Centers. Frost Science is supported by the Miami-Dade County Department of Cultural Affairs and the Cultural Affairs Council, the Miami-Dade County Mayor and Board of County Commissioners of Miami-Dade County. This project is supported by the Building Better Communities Bond Program, the County's Convention Development Tax Funds and the City of Miami. Sponsored in part by the State of Florida, Department of State, Division of Cultural Affairs, and the Florida Council on Arts and Culture. Learn more at [frostsience.org](http://frostsience.org).

## CONSTRUCTION

### Overall Building Progress

There are four separate buildings under construction that sit on top of a parking garage that is shared with the adjacent Perez Art Museum Miami (PAMM). These buildings include a north wing, a west wing, a planetarium and the Living Core building.

During May, the installation of the doors and hardware continued throughout all buildings to complete the dry-in process. MEP and low voltage work continued throughout the project. Energizing of permanent power is scheduled for mid-July. Interior and exterior topping slab work is also underway. Progress is being made on the central public elevators (PE 1-4), with steel work being assembled on site. Roofing in green roof areas and Living Core exterior wall assembly are still awaiting completion of a notice of acceptance (NOA) approval. NOA packages are being assembled and should be submitted to product review for final review in June. PE 1-4 scope of work continues to be the critical path to substantial completion and options are being explored to compress the duration.

Living Core building: Exterior wall assembly for the Living Core (aquarium) is progressing well with framing completed and first layers of sheathing and insulation installed on approximately 90% of the structure. Dixon Studios has completed the installation of the artificial rockwork, trees and coral and final painting and embossing is being performed. The installation of the oculus remains on target for mid-summer. Interior framing and painting is ongoing. Aquarium life support system plumbing is also nearing completion.

Planetarium: Dome ceiling insulation and MEP installation is nearing completion and the central scaffolding is being removed. The dome screen vendor (Spitz) will mobilize in the next few weeks with installation work beginning in July. Pre-show area finishes are also underway.

North and West Building: Work continues throughout these buildings: these tasks are multi-month in duration. The exterior stucco is completed on the north building and nearing completion on the west. Interior framing/finishing continues and interior topping slabs have been poured in most interior rooms. MEP work continues. West building freight elevator installation continues. GMU block installation is nearing completion. The main switchgear room, located in the west building, is nearing completion with cabling and duct bank work wrapping up in preparation for permanent power in July. The easternmost third of the north building roof (non-green area) has permanent roofing underway.

## Exhibitions and Fit-out

The Living Core 'flexible furniture' contract is now underway and a workshop has taken place to finalize construction details. This furniture is part of the museum's exhibits and are modules that receive the individual aquaria, hands-on exhibits, collection objects and multimedia, which can be readily modified to provide an opportunity for updating and thematic change. The graphic panel and exhibition text writing is underway. For each gallery, one or more science experts work together to agree content, the text is then written, checked for legibility and content accuracy. The text is then translated and checked again. This process takes several months. Prototypes of the graphics for the Vista level of the Living Core were constructed and reviewed for sight lines, location etc. Some simplification was agreed.

Planning/coordination continues for the installation of large exhibition objects in the Feathers to the Stars exhibition gallery. Negotiations with vendors for shipping of objects are underway and the integration of delivery with the building construction schedule under discussion. Some of the large objects are too large for the goods elevator and require specialist crane use and the objects will need to be delivered and installed before landscaping near the planetarium is finalized.

The interactive immersive experience design for the River of Grass exhibition continues. Feedback on animal animation design has been received from Dr. Stephen Davis of the Everglades Foundation.

The MeLab exhibition in the Baptist Health People & Science Gallery fabrication contract remains under negotiation with one outstanding bonding issue. The graphics package for the exhibitions is being finalized.

The contract for the Frost Planetarium projectors is finalized but waiting for bonding requirement to be fulfilled.

## CONSTRUCTION SCHEDULE

The most recent May update of Skanska schedule file is for a January 31, 2017, an additional delay for substantial completion, which could lead to a late February or early March opening. Following a meeting with Board members, Skanska has now proposed possible scenarios for a recovery plan to bring construction and TCO back to December. This recovery plan is now under review.

The requirement of several months of reliable AC performance quality is also a determining factor for opening, as objects cannot be installed from the Smithsonian and other partners

without this. A similar factor is water quality for bringing in the animals. These are the key operational factors identified at present.

## CONSTRUCTION BUDGET/PROPOSED CHANGE ORDERS

On May 1, 2016, the second draw of \$6,198,178 from the Northern Trust loan was requested and received; it was used to pay for construction costs, design and project management, exhibition design and fabrication, and furniture, fixtures and equipment. Total drawn from the Northern Trust loan as of May 31, 2016 was \$14,686,612.

Projected costs to complete the project as of November 30, 2015 were \$113,678,322. As of May 31, 2016, \$21,425,299 has been spent, of which \$13,109,952 were for construction costs. The balance of funds were spent on design and project management, exhibition design and fabrication, construction of the Batchelor Environmental Center at FIU and other project costs, including the legal, marketing, transition costs, etc. These costs were funded by the Museum.

As of May 31, 2016, the net impact of accepted change orders in excess of the November 30, 2015 cost to complete totaled \$66,601. These include 146 cost events since the revised cost to complete budget. The net cost of change orders has been reduced from last month's total of \$135,722 due to offsetting credits and reductions in scope. Types of cost events include design/construction coordination issues, changes in scope (additive and deductive) by owner and items identified as scope gaps. Project contingency balance remaining is currently \$3,433,398 out of an original budget of \$3,500,000. Pending cost events outside of the project completion budget that may eventually impact the contingency include extension of CM general conditions, extension of project management and extension of design team services outside of those carried in the cost to complete budget. These items are currently being negotiated.

No County grant funds were spent during May 2016. The museum submitted an advance request for \$7,737,985 under the grant agreement to fund payments for construction and construction administration that will be due in June and July 2016.

## OPERATIONS

The museum continues to operate its administration and Batchelor Wildlife Center out of the County facility at Vizcaya, housing approximately 50 employees.

Community visits to the construction site continue, with almost 100 general public visitors in May. The current schedule is fully booked. Specialized tours, focusing on aspects such as engineering and animal husbandry, have proved especially popular.

The staffing schedule and hiring dates to open the new museum are currently being reviewed with the management and the Board as part of the process of finalizing the business plan that will be updated prior to the financial year-end.

Programmatic outreach to the community continues. Our total reach for museum-wide community engagement in May was 7,389 South Florida Residents and Visiting Tourists, including Community Events: 2,897 patrons, Mobile Outreach (primarily schools): 3,850 students, Science Stars: 302 students and the volunteer environmental restoration program MUVE: 280 community volunteers and our Upward Bound program of 60 mentees.

MAY 2016 PHOTOS



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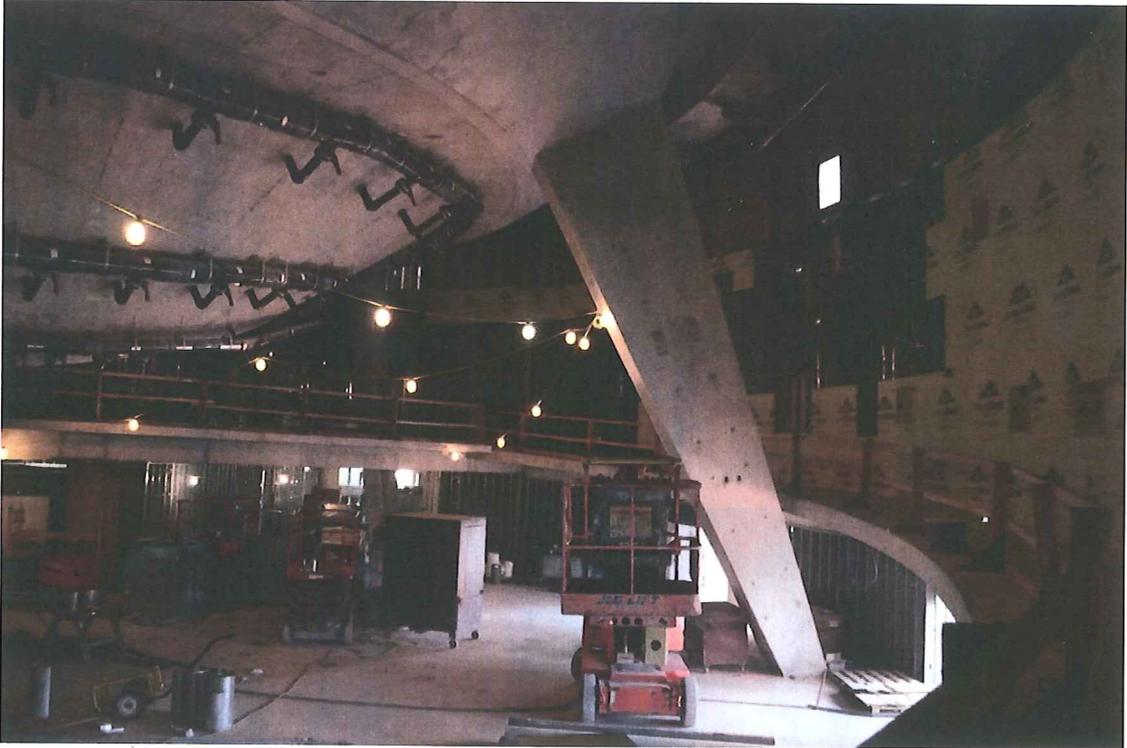
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Main Atrium

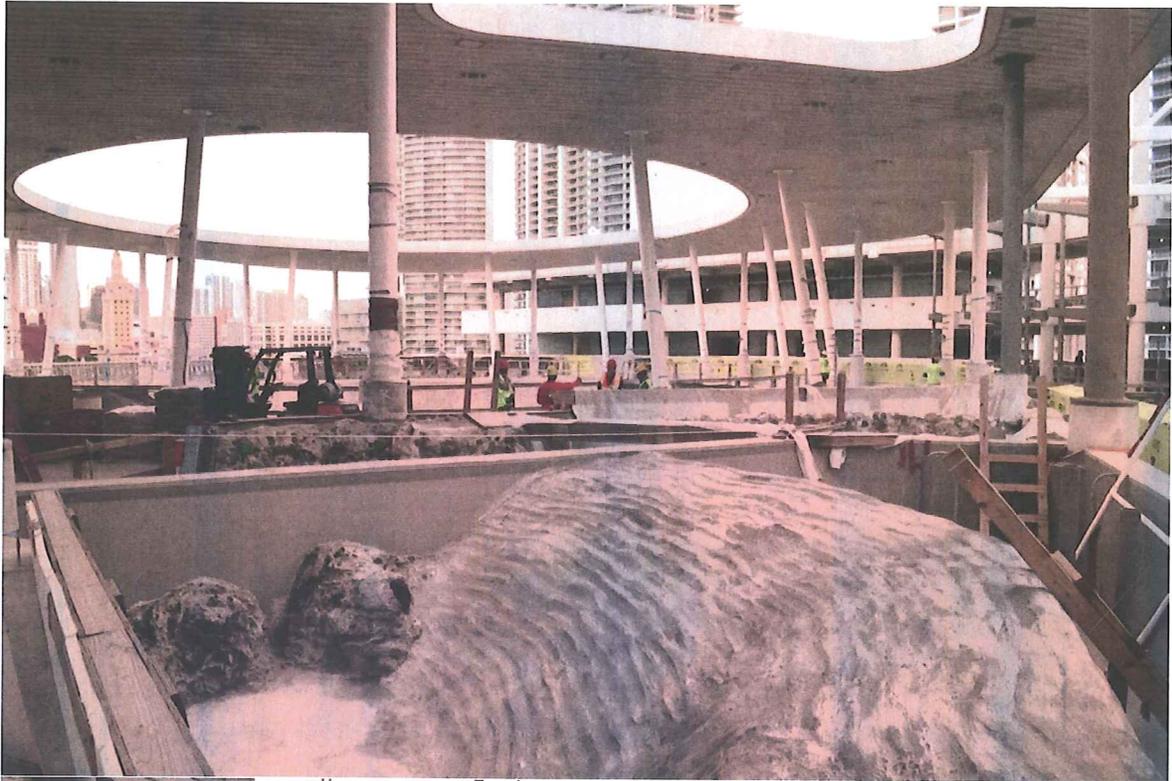


MeLab Exhibition



Vista Level of the Living Core Aquarium





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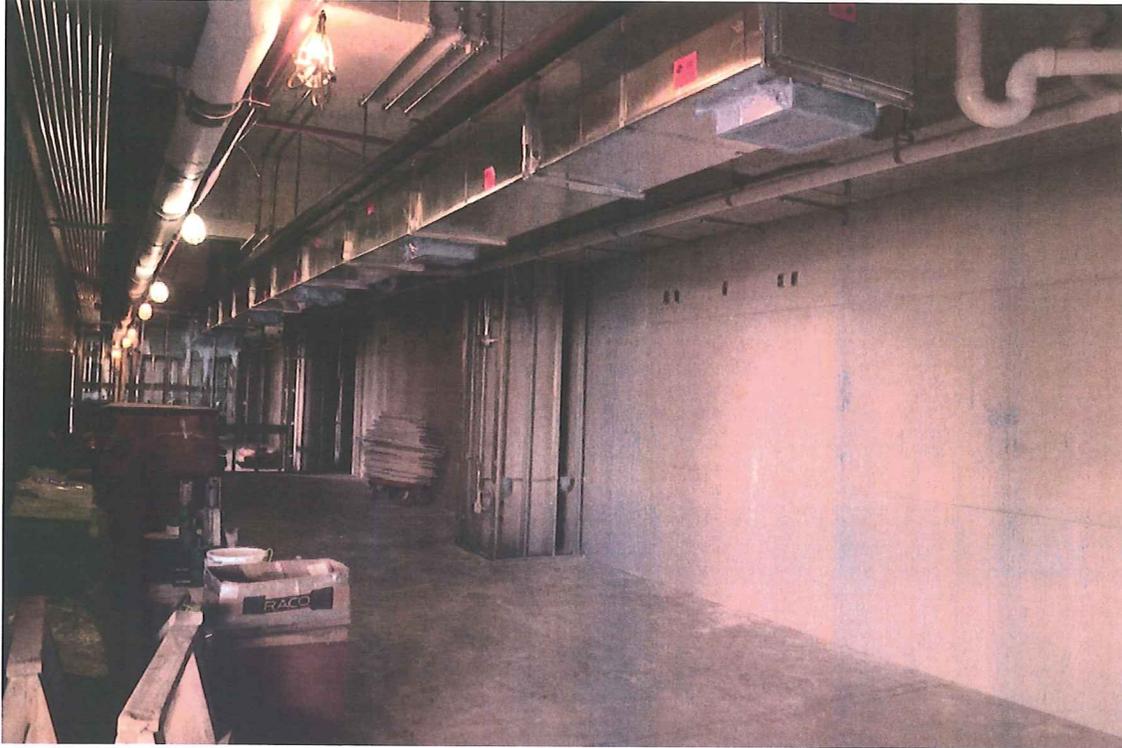
Dive Level of the Living Core Aquarium



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River of Grass Exhibition



Innovation Labs

