

City Theatrical Talks with Jamie Burnett About *Terra Tractus*



***Terra Tractus* Credits**

Creative Director | Joy Wolke (1948-2014)

Co-Producers/Managing Directors | Gioia Connell, David Connell
Co-Producer/Lighting Designer/Technical Director, Production Manager | Jamie Burnett
Director | Tom Burnett
Musical Director/Composer | Istvan Peter B'Racz
Media/Projection Design | Daniel Fine, Matthew Ragan
Choreographer | Nazorine Ulysse
Stage Manager | Margaret Carl
Lead Climber/Sculptor and crew | Silas Finch

Daniel Jeanette Climber and crew
Chris Lascelle Climber and crew
Steve Anderson Climber and crew
Josh Nilaya Climber and crew
Zack Mcglaughlin Climber and crew
Owen Prum Dancer
Qingxian Comins-Sporbert Dancer
Krista Celentano Dancer
Asia Comins-Sporbert Dancer
Haley Williams Dancer

Geoff Hotz- Access Audio Visual
Fred Santore, Tom Ivanovich- Horizon Sound

Susan Mulcahey-Meeting planner, Program, Box Office

Robin Comey, Victoria Armentrout, Volunteer Coordinators
Tony Falcone, Gallery Coordinator
Alice- Anne Harwood, Publicity and Media Booster
Chris McMeen- Christie Lights, Equipment provider
Install and Strike Crew:
Rich Burkam
Caz Bzdyra
Anthony Delorfano
Katelyn Winnie Browe Assistant Stage Manager
Christine Parrella
Stony Creek Quarry:
Stacy Mancini, Quarry Manager and Tour Guide
Rick Atkinson, Quarry operations and road repairer
Doug Anderson, Quarry owner.

Thanks

Show Lighting Corp.
City Theatrical
Stony Creek Quarry
Branford Fire Department
Branford Police Department
The Town of Branford

Photographs by Judy Barbosa, T. Charles Erickson



CTI: Please describe the history of Projects For A New Millenium. How it came about and what it has done over the years.

JB: Projects For A New Millennium was established in 1993 by Joy Wulke, environmental artist, as a non-profit corporation to create collaborative events that foster the fusing of art, science, and ecological concerns as a means of discovery, appreciation, and stewardship of the natural world. Projects for a New Millennium and its collaborators continue to aspire to extend presentations and educational programming illustrating a useful and wondrous philosophy of life, a worldview that celebrates our differences while recognizing the importance of our timeless common goals of peace and freedom in an environmentally sound world.

We have created many other site specific shows:

The Planets; Holst. With the New Haven Symphony orchestra- Woolsey Hall New Haven.

Branford Luminata, A story of the History of Branford with projection and lighting at the façade of the Branford Town Hall.

Navigation Through Time, A geological history of the Long Island Sound and the nautical history of the area, with projections, lighting, dancers and laser on the face of the granite constructed Branford House at UCONN Avery Point.

In Stony Creek Quarry our productions have been produced over the past 20 years starting with:

Visualization of Time: Guest artist created sundial sculptural points and laser event with music and poetry.

Terra Continuum: A brief History of scientific discovery of the past 5000 years from the big bang to string theory as explained by a giant white rabbit. An original written play by Susan Mendelsohn. It included laser and live band, dancers, actors, lighting.

Terra Lumina: A day in the life of light. An epic dream of what light does when it has time to play, With original music, climbers, light wranglers, dancers, mist, fire, lighting, laser and projection.

Terra Mirabila: If rocks could dream. Evoking the memories of Stony creek granite about its creation and use, shadow, dance projection, fire and water.

Many other educational programs and events. As is chronicled in: Projects2k.org.



CTI: How was Terra Tractus conceived? What is the show about and how is that story told?

JB: It had been nine years since we had done a production in the quarry. Joy was up for another one and since it had taken me eight years to forget how much work it had been to produce the last one, I was in. We got the creative team together to go over ideas and decided we would like to include moments from past shows that were most epic and effective and could help tell the story.

Also the subject matter would expand the story of the geological history of Stony Creek to include the geological history of the Earth with continental drift. We wanted to show the long scale cycles of geological time. Millions and millions of years are represented here. We take up the show approximately 600 million years ago when the super continent Gondwanaland begins to break up. We show that tectonic plates expand and contract again approximately 250 million years later. The audience sees a mysterious orb traverse high above the quarry. This is an Armillary Sphere representing our world and the galaxy with a hot lighted center. The sphere passes three times during the show, each time representing the passage of 250 million years, the amount of time it takes for our galaxy to make one full rotation. The first traverse shows fireballs and lava creating and destroying land. Simultaneously, a sea opens and the first signs of life are seen. Elemental creatures scurry on the ocean floor, and mysterious glowing tentacled creatures zip across and through the water. The second traverse shows frogs and other amphibious creatures looking to the sky in wonderment. During the last traverse the sphere comes to a grinding stop and all goes dark. This in effect stops time to a crawl. The dawn of man is upon the earth. Just a blip in the scope of our geological time. Civilizations spring up as represented through the climbers (Time Wranglers) acting as quarrymen and pounding on stone in the light of their headlights in the dark. Projections pierce through on the quarry back wall, Cave paintings and wall carving appear, communication through art and drawing and symbols. This was represented through the climbers creating a live painting on a 30' Piece of Tyvek rising straight up as the projections show modern structures, stone structures made of Stony Creek granite, like the base of the Statue of Liberty, the piers of the Brooklyn Bridge, and countless buildings and monuments around the country. The scene becomes more frenzied as civilization balloons out of control with dance and laser and a techno beat until finally... maybe we burn out... or continue into an unknown future.

At this point the climbers (Time Wranglers) focus on their work which glows in black lite like a monument to their uncertain future. They leave the stage as the sphere then revs up and continues on its journey into geological time and yet another cycle of contraction and upheaval. The earth will continue and spin out of our time to future epochs to come.

CTI: What are the various artistic elements in the show (projection, climbing, lighting, dance, etc.) and how was it decided that they were to be included?

JB: The artistic infrastructure of the show consisted of the quarry itself, this has been in operation over the past 150 years and is carefully sculpted to remove intact blocks of granite. It's a precise art. We installed a 60 foot high triangular Textilene scrim, hoisted up by a chain hoist motor. This represented the slow growing of the Himalayas and countless other mountain ranges over the eons. This was rappelled down on by our Time Wranglers. I installed two 350 foot long zip lines to give our Time Wrangles another dimension to represent ancient ocean creatures and fireballs and lava. The climbers were given four rappel stations as well as a preshow location from the highest wall. There they created a rubbing of the granite live in front of the preshow audience on a 40' piece of tyvek. Our dancers took the part of elemental creatures, frogs, and the dawn of man.

We installed three 12,000 lumen Christie Roadster projectors. These were brought to life by our creative team of Dan Fine and Matthew Ragan. They created all the content and cues from scratch in two weeks, with stop motion animation, film, and live VJ type interaction to modify looks and cues on the fly. Each night we tightened and tweaked the show for better pacing and excitement.

Our Composer Istvan B'Racz also put together a flexible interactive system with live mixing using Ableton Live. My lighting cues were also flexible and cues were updated each performance on the fly. The Director (also my brother), Tom Burnett, called the show like a conductor to an orchestra, shortening or lengthening segments as needed faster or slower while feeling the rhythm of the show he would gauge its effect on the audience.

CTI: What are the unique challenges of putting on a show in a quarry?

JB: As I mentioned before, we had done these shows so rarely because of the incredible amount of work they take in a very compact amount of time.

We all take two things for granted in a normal theater, Gravity and a flat surface. There are no flat, clean, surfaces in the quarry. Everything takes longer and there is more lifting and climbing involved. I cut down the number of fixtures on the high wall because there is no way to get a light there except for three people to climb and carry it there. Thank goodness I was able to hire my climbers two weeks in advance as crew. They were so into it they couldn't wait to get there every day.

This time the quarry is in full operation and is considered a working mine. Our time there was restricted to being there after quarry hours at 3:30 p.m. till dark each night. Once we got the projectors set up there was no sleep. I stayed up with Dan and Matt for four nights as they focused and tweaked and viewed content on the quarry walls. We would leave as the quarry workers arrived. I waited for the second week for lighting load in so that we could save money and wear and tear on the equipment and crew. That week until opening gave us the opportunity to spend another four all-nighters. Fortunately, we could work all day on weekends. However the heat of the midday made us grateful for the night.

We set up a 9' x 20' tent and installed a floor and tables and chairs for our control booth. This is where we lived for the duration.

CTI: Regarding the technical aspects, how was the show laid out? Specifically, how did you deal with power, power distribution, data distribution, positions for mounting lighting, logistics of loading in and mounting equipment, keeping equipment dry, the main command center at the rear of the house, etc.

JB: June in CT is the worst month ever to do an event. Everyone is doing an event. If you don't have your equipment lined up well in advance you might not get it. My generator rental had to switch to another company who said they would get it here on a Friday but then the rains came and the location where the generator was, needed it for their weekend rain date so I didn't get it till the Monday. We used a smaller rehearsal generator to run the projectors for a week before lighting load-in. Lighting load-in took long enough where I could do without the big generator until Monday anyway.

Feeder cable spread out 300 feet in each direction from the generator to distro panels and finally to multi cable and Edison cables to the lights. No incandescent

lights were used this time. This kept the power requirements way down. I used 26 Elar Par 108s, 26-Color Force 12, 26- Technoarcs, 9-Mac 2000 Performance, 5-Mac Quantum Led Washes. 2-Rogue2 LED Spots.

I divided the rig up into four reasonably sized universes. Each one headed up by a SHoW Baby 5 at the beginning of the run. The fifth SHoW Baby 5 was installed on the sphere to control the LED RGB pixel tape around the circumference of the sphere.

I set up a block of five SHoW Baby 5s at the console and it all just worked. I used four SHoW DMX D4 Neo wireless dimmers for the LED tape on the climbers' helmets. These worked perfectly as well.

We lucked out on the weather. There was no rain on show days, and minimal to no rain on days off. Lots of large garbage bags covered lights when rain did threaten.

CTI: How were the lasers and projections sequenced with the rest of the show? Please describe the development of the projection content, and the projection hardware and control.

JB: We cued the show very interactively as called by the stage manager and the director we were able to respond instantly to new timings and even intensities in projection, laser and music. The laser operator was given parameters to follow such as types of shapes, speed, and where to project. These moves were then called live to cover other moves or to accommodate changes in smoke direction or speed of other transitions to fill.

The projection content came about through descriptions in the script. We described the concept of the content but gave Dan and Matt free reign on how to create and execute it. They knew we wanted things fluid and flexible.

Here is a passage from Matthew Ragan's experience of the project.

"In the planning process Dan and I found ourselves staring down the barrel of an impossibly huge venue and asking ourselves how we were going to help projection fit into this place that felt distinctly earth-like and yet simultaneously other-worldly. We finally settled on a projection area roughly 120' x 33'. This enormous projection area gives the audience an ultra wide screen experience.

Talking with the creative team gave us a sense of the scope of show – an hour long meditation on the evolving and changing nature of the geological world. A look both at the past, and a peek into the future. Our journey would be part visual tryptic, part auditory journey, and part poetic musing. Composed by the incredibly talented [István Péter B'Rácz](#), the audience takes a sonic journey through space and time. Simultaneously the lighting designer, Jamie Burnett, teases the viewer with a design that reveals an ever shifting quarry that's both delightful and hellish.

This isn't the first time the [Projects for a new Millennium](#) team has put together a show in a rock quarry. Terra Tractus is the 20th anniversary show for this team of a creatives, who have staged multiple productions in the Stony Creek Quarry. Joining a long standing team of story-tellers was an interesting experience, that finally started to feel cohesive in the technical rehearsal process. Unlike a traditional cued show, Terra Tractus is something between an improvisation and a rehearsed live set. The director Tom Burnett often felt more like a conductor than a traditional director, always looking for the moments of interweaving and resonance between the sound, lighting, media, and live performers.

In the pre-production process Dan spent countless hours prepping and shooting the models that would be central to the construction of the media. As a design we strove to create something that sat at an intersection of stop motion models and digital geometric forms. Creating a cohesive design from these mixed materials was challenging, but also tremendously engaging and inspiring. The blend of real and digital feels at home with this show, and gives the projection a slightly modern flavor. During our short pre-production period we recruited [Alex Oliszewski](#) to help us with the monumental task of completing all of the animation and editing work for the show.

The three of us have previously worked on [Wonder Dome](#) which had left us with an established rhythm for collaboration. Having limited dark time at the venue meant that we worked on site from sun down to sun up in our days leading into tech. We also spent a good piece of our time continuing to make content while we were away from the site. Because of the fluid nature of the show it quickly became apparent that a traditional cueing system might not be the right fit for this production. The media needed to feel more like an instrument than like a fixed volume. This caught all of us slightly off guard and required that we make some changes to our plans for creating media and controlling playback.

After several hard conversations we finally came back to the question, "What's best for the show?" Starting from there we decided that we really needed to move towards a VJ like system that gave us some flexibility for live mixing and quick content replacement. With four days until opening, programming a VJ system from scratch wasn't an option. To meet this challenge we turned to [Mary Franck's](#) highly flexible and modifiable [Rouge](#). Built in [TouchDesigner](#), Rouge gave us exactly what we needed – a flexible live visuals platform with the ability to modify and change any piece to work for the show. This move allowed us to continue using the custom programmed blending and warping tool that we had made early in the week, as well as giving us access to quick visualization methods by capturing the output from our content creation machines."

CTI: What was the most challenging part of the design or installation?

JB: Thank goodness for Google Earth which seems to update and have better resolution yearly. I was able to do the entire groundplan on Google Earth photos and scale for cable runs. I scaled up lighting fixtures so I could actually see them on the plan. Putting fixtures in place on site was the most challenging. Some we made pipe goalposts for. Others we were able to place on blocks of granite and level with shims. We placed Elar Par 108 Led fixtures in the Granite piles in the bottom of the quarry both to act as side light for dancers and to light the tall walls opposite. These were waterproof thank goodness.

CTI: Where there technologies in this show that you had never dealt with before?

JB: I had just set up the new Mac Quantum wash for the LED demo at BLMC the week before and knew I had to include them in the rig. Being June, I was only able to get five of them, (or afford five of them). Glad I did. They were able to cut right through 400 feet across the quarry as my key back light and high side back light. Such a powerful and flexible and amazing light.

CTI: There was a great effect that made the water in the quarry lake appear to be moving, as if there was something in the water that was about to erupt. How did you do this?

JB: Low tech effects work best. We used a perforated hose at the end of a pressurized scuba tank for bubbles in the water along with sound and effects from Mac 2000 performance fixtures. Later we had water jets shooting across simply from two sump pumps.

CTI: The air currents in the quarry seemed to change from moment to moment. Did this create any challenges for you with projections or lasers?

JB: To allow for shifts in air current I employed two fog machines and a hazer plus another fogger at the source of the laser. There were fans behind each but still currents in the quarry took over. Since I had individual manual control over each fogger I could boost the best one for the situation.

CTI: Can you talk a little about the climbers and their background? Their performance was amazing and looked dangerous, especially in the dark.

JB: We had had climbers for Terra Lumina 14 years before so I knew what could be done. I started recruiting our head climber Silas Finch a year before. He is an incredible found object artist and sculptor also an avid climber. I had worked with him on a movie a couple of years before. His art and studio were featured as being the main characters art and studio in "My Brother Jack". He had not seen the previous show but saw photos. He spent time recruiting others through his climbing gym in New Haven. I finally got them into the quarry a couple months before the show to explain in detail what we were doing. The scale and scope had not sunken in till that point. It was then that Silas and his crew were full of ideas and contributed greatly to the artistic input and execution of the stunts. We had worked out a preshow rappel to have climbers create a wall rubbing while rappelling down the tallest face. Here the audience could watch this happen from the rim of the quarry near the gallery tent during daylight. Zack, one of our other climbers was a graduate of Rhode Island School of Design. It was his idea to build upon the drawing throughout the whole run instead of creating a new piece for each performance. I have the finished piece which we may auction as part of a future fundraiser. It was Silas's idea to have the climbers take turns in adding to the drawing as the audience was lead down into the quarry. Zack also created the 30' x 5' Tyvek piece in the Middle of the quarry floor with Black light paint. This was mostly painted in advance and added to live and then revealed with black light. Another beautiful item for auction.

Our other climbers come from interesting backgrounds as well. None had ever performed in front of an audience. We just had them focus on their tasks and timing and intention. Their performance was focused and mesmerizing.

All of the rappel Points were carefully installed in our first week of setup. We bought all new ropes and carabiners for each Station. All of the equipment was set up before each show and removed after. On the zip lines we used new tandem pulleys with two backup carabiners over the lines. The ladders were all strapped in place. It all looked dangerous and was. We worked out each stunt and the time it took to get to the next stunt very carefully. We left plenty of time for the climbers to complete each task and slowly get to their next station safely. I had them keep their headlights on at all times to see where they were going but also to be seen as a constant presence and character in the quarry. They were another representation of time.

CTI: In hindsight, would you have done anything differently in the technical part of the show?

JB: We would have liked to start setup another week earlier and had enough money to get everyone hired for another week of rehearsal. We just got lucky with weather so everything worked out down to the last minute. I had just been working on the Broadway Lighting Master Class the week before setup. I was able to get a fresh look at ideas, equipment, and ways of working. The best lesson I learned, (which I hear every year at BLMC but need reminding), "Don't program your own show". I was lucky enough to find a great programmer on the Ion, Caz Bzdyra, who stuck with it for four all nighters and was happy to do it. Could not have done it without him.

I would also have hired a few more people to relieve me of some of my other roles such as Co Producer, Production Manager, zip line and sphere rigger, Master Electrician, Site Manager, garbage remover, etc.

We had wanted pyro effects as well but our pyro tech donation fell through. Another hazard of doing events in late June, everyone who does pyro is too busy.

If we do another event there it will be in September for the equinox.