SECAUCUS, NJ (July 10, 2006) – design:e2 (the economies of being environmentally conscious) is an original six-part PBS series that explores the vitality of the environment through eco-friendly architecture. Narrated by Brad Pitt and shot exclusively with Panasonic’s AJ-HDC27 VariCam® HD Cinema camera, the series introduces viewers to the inventive leaders and technologies driving sustainable practices worldwide in the design of buildings where we live, work and play.

design:e2 was produced by Manhattan-based production company kontentreal, which also created the related website www.design-e2.com, featuring VariCam-shot podcasts. The design:e2 assignment also encompassed two 30-second commercial spots for series underwriter Autodesk, Inc., likewise shot with the VariCam. kontentreal’s Tad Fettig served as director and co-executive producer (with Karena Albers), and longtime VariCam user Rob Humphreys was the Director of Photography. design:e2 continues to debut throughout the PBS network this month and throughout the summer (check local listings); a European launch is scheduled for September. Season two production commences fall 2006.

“The concept of shooting design:e2 in HD arose early in pre-production, as Tad and the producers wanted a wide screen, highly-polished look to accompany the heavier subject matter that the series set out to tackle,” DP Humphreys said. “The idea was to make the issues palatable by staying away from didactic talking heads, and instead to overlay the interviews over a foundation of simple, yet poetic images.”

Humphreys is a veteran cinematographer of dramatic feature films, whose most recent projects include Rodrigo Gonzalez’ Entre Canibales (shot with VariCam) and currently in postproduction in Mexico, Eric Byler's Americanese, and Michael Goorjian’s Illusion. He also shot the independent film Dopamine with VariCam.

“Even though I’m an experienced VariCam shooter, we felt obliged to look at everything on the market from prosumer DV and HDV cameras to high-end HD 1080 24p cameras,” the DP noted. “The series schedule was incredibly demanding – we had 60 interviews to shoot in multiple international cities in five countries over an eight-week period, along with extensive B-roll ranging from skyscraper roof tops to hiking the Great Wall in China.” The budget allowed for a permanent crew of only two – Tad and me.”
"With this in mind, we wanted as much immediate control over the image as possible: a high resolution, paint box compatibility, variable shutter and frame rates, and compatibility with 35mm lenses to accommodate view lenses and narrow the depth of field," Humphreys explained. "Given the budget restrictions and crew size, the first instinct was to look for lightweight options in the HDV range, but the available equipment had limited menu options and not enough resolution. HD cameras in the 1080p range offered the best resolution, but were quite costly and lacked the frame rate options we needed. The only camera that had the versatility of a film camera with HD resolution was the VariCam. That, along with a P+S Tecniks Pro 35 adapter, a set of tilt lenses, a 20:1 zoom and a 14mm prime lens, was going to allow us to shoot endlessly and achieve the filmic look we were after."

Director Tad Fettig, an activist filmmaker whose company is charged with "creating film projects that wake up the desire in all people to become guardians of the earth," had some initial trepidation about shooting in HD. "I have tremendous respect for Rob's work and I'm acquainted with the VariCam, but I was concerned that the HD images would look 'cold,'" he said.

"Essentially, Rob resold me on how we could get range out of the VariCam," he recounted. "We really wanted each episode to have its own distinct color palette, in hopes that beautiful, compelling material would reach out to a broader audience. He showed me how he could achieve, in-camera, the yellows, blues and greens that we ultimately used to characterize our China, Boston and Chicago locations, respectively."

"In the end, I was even more thrilled with the visuals that I'd expected," Fettig added. "We subjected the camera to tremendous stress, and its combination of durability and film-like imagery is very winning. Having the VariCam in the hands of a gifted cinematographer like Rob resulted in an arresting production."

design:e2 was shot over eight weeks from September through November 2005, starting in Chicago, then on to Stuttgart, Boston, New York City, Austin, Mexico, China and Singapore. The VariCam and lenses for the single-camera shoot were rented from Handheld Films in New York City.

"The style of the series was defined by VariCam's variable frame capability, which I used for time lapses and slow motion effects throughout the shoot," DP Humphreys noted. "At times the camera would be locked off on a city street and the same frame was shot at 60, 48, 24 and 4 fps and then overlaid in post."

Over the course of the non-stop shoot, Humphreys encountered numerous challenges in terms of lighting and, ironically, environmental hazards such as pollution.
"Shooting design:e2 was about making the best of natural light for the B unit, though we carried a Joker-Bug 800 [light package], a couple of flags and c-stands and a chimera for interviews," the DP said. "The idea of shooting video without control of the lighting unnerved me at first, but I soon realized that using the VariCam's menus to control the image would see me through just about any situation. I set the Matrix with a film look in preproduction, and then relied on the vertical and horizontal detail controls, gamma control, manual knee point and slope, RGB pedestals and Red and Blue Gamma controls to navigate through various lighting conditions."

"The camera's Super Black feature combined with the Gamma control allowed me to get out of some interesting situations," Humphreys continued. "For instance, when we shot an interview over the foundations of the Bank of America building in New York, the light coming off a nearby skyscraper illuminated the subject in the foreground, but the construction pit in the background, eight floors below street level, was flat and uninteresting. By lowering the gamma to around 0.35 and applying Super Black with the levels set to 30, I was able to add a lot of detail into the background without affecting the foreground. The result was a very bold, contrast-y image with deep blacks and a strong bluish tint."

"The horizontal and vertical detail functions were useful when covering skyscrapers, which tend to have repetitive horizontal or vertical details that can moray with certain lenses," he said. "The gamma control was my best friend. At times, we were shooting through haze 20 miles thick, which made images extremely flat. When we were shooting details of Beijing from the television tower, there was a power station outside the city that the director wanted to get. By turning on the Super Black levels and increasing the gamma curve to 75, I was able to create a rich image that otherwise would have been unusable."

Humphreys described the process of creating a discrete palette for each of the six episodes. "The RGB Pedestal and red and blue Gamma Adjustments allowed me to tint the picture in various ways," he said. "In New York, for example, we decided on a look that would be fairly contrast-y and have a colored tint in the blacks. By adjusting the individual color pedestals and gamma curves I was able to bring out the blues in the low levels, the greens in the mid-tones and crush the reds."

"In the past, I have relied heavily on on-line coloring sessions to manipulate contrast and color, but found that with the VariCam this can be done effectively on set," the DP added. "This on-set application of the engineering function of the camera made post-production color correction a lot easier, as there was little need to apply power windows during the online."

"I also used the combination of Super Black and Gamma control to enhance scenic time lapses," he said. "At times, I would crush the cloud shadows almost to black as they passed over landscapes, giving the scenes a sense of drama that wasn't there in reality."

design:e2 was posted at kontentreal's home office in New York City, with Outsider Inc. (Chicago, IL) collaborating on the edit. Material was delivered to PBS on D-5 HD. Panasonic's AJ-HDC27 VariCam replicates many of the key features of film-based image acquisition, including 24-frame progressive scan images, time lapse recording, and a wide range of variable frame rates (4-fps to 60-fps in single-frame increments) for "overcranked" and "undercranked" off-speed in-camera effects. The AJ-HDC27 VariCam also features CineGamma™ software that permits Panasonic's HD Cinema camera systems to more closely match the latitude of film stocks.

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