**PRESENTED BY:**

totally re-design the sound engine from the ground up - a time-consuming distraction and a potential project risk."

Having set out the creative stall for the game's soundtrack and its technical delivery, Walterstad could concentrate on sourcing content and in particular the Foley that would make such a vitally important contribution to the player's experience of movement. Determined to leave his CD libraries gathering dust on the shelf, he set about booking Ulf Olausson, one of Sweden's premier Foley artists, for two mammoth sessions covering all the footsteps - walk, jog, sprint, foot releases, jumps, landings - and the accompanying hand-based material - grabbing, sliding, straining, skin release. Walterstad: "We were able to carefully set up and record all the elements exactly according to how we planned to implement them. Back at base, the tracks were normalised and cut into the individual pieces required - some 16 to 20 per sound event. This means that, for instance, run cycles can be reconstructed 'live' by the game, but the replay can be altered and developed according to game events. From standing still to fully running, you transition through four different 'feet' soundbanks, plus there's runtime variation of volume, filter, and pitch in response to the player's velocity. We never know what the player will do, but we try and respond exactly with the right sounds on-the-fly."

**States Of Breathlessness**

Another key audio component the player hears continually through the game is Faith breathing. Again, differentiates' bring in different varieties of breath - calm, medium, and hard with 16-20 variations for each. Walterstad elaborates: "When standing still, you hardly notice the soft inhales and exhales though without them, it would feel weird. As you start moving slowly, the intervals between them get shorter but as you get up to jogging speed, we change from 'long calm' breaths to 'short calm' and the volume is raised so you get slightly louder, shorter breaths. As the jogging gets harder, Faith opens her mouth so you'll get long calm breathing through the mouth and finally for sprinting, we transition up to short intense breaths. If you stop quickly, the system slowly migrates down through the states. It always turns out differently each time through randomisation of choice of the variations available, and works very well. The main thing is that it's totally believable - so much so that people have reported becoming breathless when sat on their couch playing Mirror's Edge - subconsciously, their breathing starts to conform with Faith's!"

As well as intelligent use of real world recordings, in some instances Walterstad and his team used pure imagination, designing sounds for sheer dramatic effect to go beyond a movie treatment to convey the feeling of a physical effect on the player's in-game character: "The sound design for something like a bullet impact can make a huge difference to the gamer's experience - helping them not only to hear but to kind of feel the impact. Say you hear a distant gunshot and then the sound of a couple of bullets ripping into your flesh

- we experimented until we saw people actually flinch in fear because of the sound! Another example of a far-from-literal sound is that of falling to your death. We don't have a reference for this! Again we needed to conjure a feeling like your adrenaline kicking in - blood pumping distorted through your ears. It's a disgusting sound that gets nastier the longer you fall. Ultimately, it makes what you see appear more horrifying."

Dynamically controlling the volumes of Mirror's Edge sonic elements has been vital to a successful soundtrack, and nowhere more so than in the mix of music against effects and dialogue. Walterstad: "My original thought was that the player should hear 20% of the music and feel 80% of it. We certainly didn't keep to those numbers though I was fairly pig-headed about it! We don't give the player music overload. The music level against FX changes according to what you're doing and where you are - we effectively have a set of rules for the M/E mix to be altered atrun-time to avoid any possibility of cacophony."

**The Score**

For music composition and production, Walterstad commissioned Composer/Artist Magnus Birgersson (aka Solar Fields) to create 150 minutes of score over approximately five months. Walterstad: "When I became aware of his work, I instantly connected Magnus to the game. I sent him some early concept documents to review and react to musically. What he sent back was exactly what I'd imagined. Even the first tones of the DICE logo are totally recognisable and set the scene for the game. Each game level has its own unique score fully reflecting the environment - if you're in a dark area you will definitely feel the music pushing in on you compared to say, an open rooftop setting. Much of it's very ambient complementing the Foley - until you get in a chase or into combat - then percussion dominates. We also created a theme song for the game which is performed by Lisa Miskovsky, and the CD release features remixes by Paul Van Dyk, Armand Van Helden, and Junkie XL."

It's an irony that whilst some games executives routinely call for so-called cinematic values to be applied to game music and sound, there remains in some quarters little appreciation of the craft and artistry of sound in all its story-telling power - and often, subtlety. However, there does now appear to be a firmly established appreciation of the importance, in a non-linear software environment, of the ability to set up sounds in a 'literal'way, to group sounds and then dynamically mix and manipulate them for dramatic effect applying real-time parameter changes for volume, panning, pitch, compression, EQ, and reverb treatments according to game events and conditions - all to enhance and define the player's increasingly sophisticated videogame audio experience.

With the latest mainstream console hardware providing more than enough horsepower to realise the audio designer's vision, the differentiating factor now becomes the quality of the vision. Mirror's Edge audio is both insightful and thoughtful in approach, but also excellent in execution, a credit to Walterstad and his team.

*DICE’S Audio Director, Magnus Walterstad*

**Featured Soundtrack - *Mirror's Edge (PS3, XBOX360, PC)***

**Developer - DICE Publisher-^/ecfronic Arts**

**The Audio Team - Head Of Audio *David Mollerstedt* Audio Director - *Magnus Walterstad* Sound Design - *Ben Minto, Malin Arvidsson, Mari Saastamoinen* Voice-over Producer - *Tomas Danko* Composer - *Magnus Birgersson* Audio Programmers - *Kjell Reuterswdrd, Johan Kotlinski* Additional Music Credits - *Theme song Still Alive, written and produced by Rami Yacoub andArnthor Birgirsson, lyrics and performed by Lisa Miskovsky.***

fc«

AUDIO MEDIA JANUARY 2009

25