
THE SPACES THAT CONNECT US

INTRODUCTION

In March 2018, Joanna Demarco, Ann Dingli and Mark Leonard travelled to Green Bank, West Virginia – a tiny region in the U.S. home to the world's largest fully steerable radio telescope. Inhabitants of Green Bank are prohibited from operating devices that use radio transmissions and are expected to live as radio-silently as possible, avoiding interference with the telescope's space exploratory work. Green Bank lies in the heart of America's National Quiet Zone, a large area of land in which radio transmissions are heavily restricted by law to facilitate the scientific research carried out by the radio telescope and its associated observatory. Mobile phones, wireless headphones, Bluetooth devices, microwave ovens, remote controls, or anything that uses signals capable of interrupting the work of the Green Bank telescope is meticulously regulated. Internet connectivity is also severely limited. In recent years, residents of Green Bank have succumbed to the increasingly universal pull of a life online and the nature of the daily life of the community is changing.

The Spaces That Connect Us is a photographic and text-based study that seeks to discover more about a community that has been authoritatively distanced from a world of wireless communication – to examine the day-to-day realities of an existence without constant connection. The project sheds light on a dichotomous society – a hybrid way-of-life that seeks to negotiate between a long-standing vocation to explore space, and a contemporary human need to be connected. The resulting text and imagery compels us to look more closely at our own personal relationship with technology and the Internet; to understand its role in connecting us as communities and propelling us forward as individuals.

ARRIVING

We had left Connecticut early that morning and driven through all matter of suburbs, towns, and fragmentary pockets of urban life in an attempt to reach our destination before the day ended. We had just about succeeded, assured by our vehicle's in-built GPS box that we were on the cusp of our anticipated arrival point. Just one left-turn onto what we were told was Green Bank Road and we'd be delivered to our rented home for a week, promptly to be nestled inside West Virginia's so-called Quiet Zone – a part of the world that lives in almost complete radio silence. At its heart would be Green Bank, a town we had decided to visit and temporarily submerge ourselves in after having read about its position as one of America's most significant space exploratory hubs. We were drawn to it less for its enduring role in the development of radio astronomy, and more for the impact its work had persistently had on the community that lived there. Green Bank, we had learned, was synonymous with a life restricted from contemporary technology, from devices that constitute modern convenience and, crucially, from the Internet.

We had long left sunlight behind us, a tired trio of would-be researchers making our way through unknown intellectual and geographical territory. We pressed on with cautious confidence, making our way through increasingly rural terrain as we drove deeper into the Mountain State. The journey so far had been so smooth that we had barely noticed that our phones no longer held any signal. We each fleetingly glanced at our hand-held devices, denying them their due worthiness in having delivered us thus far. Approaching the turning onto Green Bank Road, we remained obliviously calm, ignorantly secure in the knowledge that we were close to what we had come for.

As we drove at a sluggish speed over what was evidently a road untouched by human intervention, our collective demeanour began to perceptibly shift. Metre by metre, all traces of navigational comfort slipped away. Darkness persisted around us unrelentingly, giving way only to dusty beams protruding meekly in widening cone-shaped rays from our car's weary headlamps. Uncertainty began to take over – it was decidedly time for us to arrive and lay claim to the rest our bodies were demanding from every

one of their suffocating pores. We each looked to the centre of the car's dashboard as if on cue, willing away the blanket of anxiety that was stamping out the vehicle's breathable air, and hoping for guidance from our technological escort.

By then the sky had lost all sense of its conventional meaning – it was no longer above us; it was beside us, underneath us, ahead of us, filling the spaces between us. But the blackness from our GPS tracker was darker than the night air. A singular dropped pin floated in the centre of its content-less screen, flickering pathetically as it clambered to attach to a geo-dictated set of data parameters. It had nothing to go on, nothing to read, no power to transmit. We had now been driving for perhaps thirty minutes, or thirty hours – we no longer knew. And at this comically late stage in our journey, we were desperately lost. We had indeed reached the Quiet Zone and there was no longer any way to access the Internet or even make a call, unless we turned back. If we moved forward, the only signs of life apparent were fallen tree trunks, snapping twigs, and sporadic warning posts compelling us to 'Beware of Bears'.

Whilst both time and technology bitterly ceased to unearth solutions, the darkness remained so unbreakably solid that we had no idea whether we were on the edge of a mountainous precipice or travelling deeper into a forest that was blind to navigation or any conceivable hope of traceability. We were driving steadily into our own black hole, robbed of any knowledge of the make-up of the place that surrounded us. Are we going the right way? We all said simultaneously, whether out loud or inside the confines of our progressively frightened minds. We were clueless as to what to do next and had been stripped of any technological guardian about an hour, and perhaps a mile or two, ago. It will be okay, one of us said. We can sleep in the car, volunteered another. Someone will drive by. This has to be an actual road. Someone will drive by.

The Green Bank radio telescope – photo by Mark Leonard

CONTACT

An Appalachian mist settled on the lawn leading up to the farm on Green Bank Road, our home for the week. The smell of dew and soil had by now been firmly assimilated by our bodies' sensory systems. The morning air was thin with altitude, pungent with moisture. We walked towards a path that led to a small, unkempt graveyard. A celestial fencing of rugged landscape bounded both us and the detritus souls residing beneath this tiny patch of land. It was in between farm and graveyard that we caught our first glimpse of the reason we had made this journey: the

Green Bank radio telescope. A vision of seven-thousand, six-hundred metric tonnes of white structural components stood majestically at one-hundred and forty-eight metres high, asserting its one-hundred metre diameter within the foggy green of its valley home. In the distance, its appearance was less akin to a scientific superstructure and more to the harmonious geometry of a delicate dandelion, integrating without any perceptible ceremony into the surrounding landscape.

With about ten miles between them, one long road linked our farm to the Green Bank observatory. As we made our trip along the stretch of welcomingly tarmacked road, the built constituents of the town revealed themselves to us in succession. An arts and crafts centre, gift shop, library, service station and obligatory Dollar General. A diner. This last establishment was where we would start and end most of our days in Green Bank, fuelling up on fried food whilst fielding invariable approaches by regulars, curious to know who we were and what had brought us through the demanding country roads to their remote community. We're researchers, we recurrently offered, looking to learn more about the life

of a community living without continuous access to the Internet, and subsequently, the online world. By then we already knew that in Green Bank connection was a commodity, but residents were eager to tell us their own version of the truth, one that they felt was quite different to what was often assumed about their faraway home. They were connected, they insisted, just not constantly. Through dial-up Internet and Wi-Fi coverage existing in different parts of the wider county, they had similar access to the online amenities we used back home. They just didn't have it all the time. It just means we have a stronger community life, many of them explained, citing lack of constant connection as an incentive to creating more meaningful offline relationships.

Dollar General car park – photo by Joanna Demarco

Aside from inside the diner, Green Bank felt like a ghost town. It was made up of one long road – the Potomacs Highlands Trail – which veered off only at a singular point to lead into the town's sole claim to fame: the National Radio Astronomy Observatory. The road provided a candidly linear breakdown of what we could expect to encounter during our time there. Handmade American quilts hanging from several buildings indicated a surplus of time, a way of life that promoted hand-making, crafting, building of things. A scattering of Trump 2020 placards was telling of a particular set of civic beliefs or desires. The overwhelming emptiness spoke of a discernible population drought.

Green Bank's desolation was disheartening at first. Our research approach was dependant on empirical data-gathering, on interaction with local inhabitants, on dialogue. After driving up and down a road seemingly bereft of any human life, we endeavoured to breach the imaginary borders between us – the outsiders – and the spaces that lay as yet undiscovered inside Green Bank's public buildings. The library seemed a good place to start, with its implicit assurance that stories would dwell within its walls.

We entered what was essentially a large room that could have just as believably been a time capsule. At a cursory glance, the rows of books that resided there seemed to have come from a bygone era. A rotating metal stand of VHS tapes augmented that dated reality, as did piles of old DVDs and a manual laminating machine. Stacks of children's books dotted rows of table tops, but there was no evident trace of children in the room.

We first encountered the librarian from a distance. We had settled at the back of the library where some of the town's old high school photos were on display, along with maps of the area and some books on the history of the nearby radio telescope. A short-haired, slow-moving figure emerged from a back-ancillary room, wearing what could only be read from afar as space shoes. Bristling with expectancy, we made our way over to the front desk – where the woman had settled – and quickly discovered that the space shoes were in fact plastic grocery store bags. It transpired she had been outside and was using the make-shift shoe bags as barriers to protect the library floor from the contents of her under-shoes. This peculiar detail was an in-road into the life this woman had led in

Green Bank – a life spent looking after a large, mildly ill-ventilated, room full of books.

She was quietly welcoming and relatively forthcoming with information, explaining that the library in Green Bank was a notable social hub, and that many of the town's inhabitants frequently met and gathered there. They came to use the computers, she explained; the library was equipped with dial-up Internet. We looked around the vacant room as if to contest her testimony, but she remained unmoved. You'll want to speak to the 'sensitives', she stoically offered, adding that the man who had just walked in was one of them.

DIVISION

At this point, we felt as though we were finally treading familiar waters. We knew what the term 'sensitives' meant, and we had expected to encounter it as a critically defining characteristic of Green Bank's societal make-up. It referred to a community of people associated with electromagnetic hypersensitivity – a set of negative bodily reactions believed to be related to electromagnetic fields. We had learned that a group of individuals who identify with the condi-

tion had travelled to Green Bank to make their home there, on account of its necessary remoteness and prohibition of radio wave usage.

We approached the library user and he agreed to talk to us about his life in Green Bank, helpfully providing links to other members of this unique community. He buttressed the librarian's description of the library as a central community space in Green Bank. It's our life-line, he explained, referring specifically to electromagnetic hypersensitive community-dwellers. This is where we come to connect to the world outside, he said, where we come to work. Our discussion progressed to the subject of remoteness, of how him and his counterparts had travelled across the world to escape physical discomfort and distress they believed was caused by electromagnetic fields. Green Bank and its radio telescope provided physical relief, but the anguish of its subsequent desolation apparently remained a steady obstacle in their emotional lives.

He explained that he was a relative newcomer to Green Bank and that other members of his community had been there for many years and had arguably overcome the loneliness linked with the town's

fairly isolated way of life. After speaking with him for some time, and offering to exchange details, we headed back to the diner. It was here – in the midst of wall-hung, stuffed black bears and red enamelled furniture – that we learnt of the social schism that existed at times between the general population of Green Bank and the community they referred to as the 'sensitives'. Although the two groups were able to live harmoniously within this tiny town, a palpable and ongoing tension appeared to simmer between them. A notion that if one progressed the other would inevitably crumble. A set-up of growth versus pain, knowledge versus limitation – psychological life or death.

Jenny, a member of Green Bank's electromagnetic hypersensitive community – photo by Joanna Demarco

PROGRESS

The practice of radio astronomy is relatively young. It wasn't until the 1930s that radio waves from space were discovered by an American physicist and radio engineer from Wisconsin named Karl Jansky. He built an antenna that would help him investigate sources of static that were consistently interrupting ongoing radio voice transmissions. The static eventually transpired to be radio waves reaching the earth from the Milky Way. The Green Bank National Radio Astronomy Observatory is the operational descendant of this investigation, located in the heart of a ten-mile radius of near radio silence in the state of West Virginia, burrowed in turn within the thirteen-thousand square mile National Radio Quiet Zone – an area as big as the American states of Massachusetts and Connecticut combined.

The enormity of the landscape within which the observatory lies is deliberate, chosen out of twenty-nine potential sites on America's Eastern Seaboard. Back in the late 1940s, Green Bank had been considered as an attractive home for the radio telescope for its already low population, and the unlikelihood of its

expansion. Its position within a large natural basin, encircled by great mountainous insulators, solidified it as the most sensible home of the world's largest fully steerable radio telescope – a machine able to see more of the celestial sphere than any other of its kind. The gravitas of this gargantuan piece of equipment, and the role it has dependably played in the development of space exploration, seethes throughout the walls of the observatory. Everyone who works there does so with solemn purpose; from the scientists who double as tour guides, to the engineer who is also the observatory's business manager – and our personal contact at the exploratory centre.

Our host was an affable man, invitingly obliging our questions from the moment of e-mail inception to the point at which we found ourselves meeting in person, exchanging marshmallowy sweets and sci-fi themed anecdotes. His dedication to the observatory's work spilled out from every crevice of his orderly cluttered office. He possessed the vocal warmth of a kind, authoritative figure; his demeanour fatherly and reassuring. We were there to carry out what would be our most structured interview in Green Bank yet, armed with queries about science, radio waves, the Milky Way, even aliens. Our most pressing

question: how did everyone and everything coexist?

A single snowflake hitting the ground is millions of times stronger than the signal we're trying to receive from space, our interviewee explained. Radio noise from the day-to-day activities of Green Bank's community members significantly obscured that reception, so it had to be supervised and kept to a strict minimum. He traced the area's history of radio wave prevention, describing how the observatory continually played a part in monitoring usage, and how this restriction was enforced by law. The observatory had its own 'Interference Protection Group', which implemented regular patrolling of the region via on-site inspections carried out in a radio-wave-detection van. The van would regularly drive through the community, kitted out with scanning equipment, searching for new sources of interference. We asked about resistance from residents, about whether people felt the observatory was somehow disallowing their ability to progress. There's still a couple of people that feel like we don't have the right to tell them what to do on their property, he conceded, but most of the people here know what the situation is. We're a part of the community – we couldn't exist without their help, and we hope that they feel like we provide

something back that they would lose if we weren't here.

This oscillating definition of progress was one that had stayed with us throughout our interactions in Green Bank. Who exactly was holding back whom, what was the cause of the disconnect – this seemed to be the lead in every one of our conversations. Earlier during the week we'd met a teenage girl who had expressed a frank desire to become a movie star. A life offline made it exceedingly difficult for us – veteran inhabitants of the digital world – to envision a possibility where that dream could become a reality; even if she herself saw it as no real impediment. In that sense, the progress of the observatory's exploration seemed to indeed be a limiting factor, a player in the stunted growth of Green Bank's existing community. As we sat speaking in this office – mere minutes away from where that teenage girl lived – it was easy to draw a parallel with an earlier set of unlikely neighbours – the graveyard and farm we had walked between on our first morning in this exceptionally paradoxical town. Was the life of the observatory, with all its associated technological evolution, feeding the death of the interpersonal, individual progression of community members?

It was radio astronomy that developed Wi-Fi in the first place, our host offered as a final piece of information as we began to wind the interview down. The GPS in cars, he explained, was indirectly developed by radio astronomers. In fact, countless advancements had come about as a direct or indirect result of the observatory's work. Division and coexistence, we were gradually learning, were interchangeable. Progress was entirely multi-definable. Radio astronomers had established the amplifiers used in GPS receivers, he said – the maps app that comes with every iPhone was developed by a Green Bank radio astronomer. Ironically, as we had directly learnt on our perilous inward journey, it just couldn't be used there.

The Jansky telescope – photo by Joanna Demarco

SPACE

It's difficult to grasp the feeling of suffocation in a place so remote, so vastly disconnected to anything resembling conventional stress or modern-day anxieties. In a place where the only constants are relative silence and the imperishable permanence of nature, physical and emotional tension finds novel ways to manifest, taking hold of increasingly restless minds and constricting them with the unfamiliar gravity of desolation. A few days in, we could already feel that particular weight clamping down on our psyches. We needed a pause from the quiet – a way to disengage from the disconnection.

We decided to take a break from the barrenness of the Potomacs Highlands Trail and travel to Dunmore – a tiny community five miles south of Green Bank. We drove towards its seasonally dormant railway line, occupied by giant, motionless metal trains. Their sleepy carriages were flanked on one side by monumental landscape and on the other by a couple of bars – one open, one closed.

We stepped out into the noiseless air and entered the

one that was open. Inside its nebulous interior, three men in camouflaged overalls played at the dimly-lit pool table, the entirety of their hunting paraphernalia intact on their person – hat, boots, belts, gun. We ordered our drinks and made our way to a large table where one lone man sat sipping his mid-morning beer. We asked if we could join him, and he assured us that it was still a free country.

He had moved to Arbovale, a town very close to Green Bank, fifteen years earlier. We could tell immediately that he was different to anyone we had met on our trip. Unlike many of the people we had spoken to till then, he possessed a distinct aloofness from the way of life in the Quiet Zone. He had come to this part of the country for reasons connected with his family, and those reasons had kept him there. Like many others, he had also been charmed by the idea of living in intimate proximity with nature – but that original attraction had noticeably faded. People are not happy here, he explained with rebellious insistence. He wasn't happy, he keenly admitted when probed further. I fucking hate it, he confirmed.

This was the first instance where we found ourselves speaking to someone who could empathise with

feelings we had regularly experienced throughout our trip. Feelings of resentment towards the remoteness of the place, bitterness at the lack of familiarity that surrounded us, and relative guilt towards what was an undeniably growing sense of boredom. In between talking about his favourite books – *Blood Meridian* – and films – *Cool Hand Luke* – we discussed the reasons behind why one might become increasingly dissatisfied with living in the Quiet Zone. Again, it seemed to boil down to solitude – a distinct inability to connect with people. Why? We questioned. Surely having no digital or technological interruption should yield a situation where meaningful interaction thrives? Not if there aren't enough people around to allow that to happen, he shot back. Everyone leaves, the man guaranteed.

If I were with someone I loved it would be different, he concluded, after what might have been our third drink of the morning. People here are only pretending to be happy. It was at this point that a pattern seemed to emerge between the man in the bar, the man in the library, and various individuals we had met throughout our lives – whether in Green Bank or elsewhere. The lifelong evasion of loneliness

and restless pursuit of emotional, humane connection was that pattern. The inability to connect with like-minded community members stood out as a logical problem, especially for individuals who – in whatever way and for whatever reason – felt that they were different. We had come to Green Bank to learn whether online platforms had a part to play in uniting people, but it was clear that the potency of isolation – in all its different variants – was able to transcend all forms of community interplay. The inability to connect was clearly not born purely of the physical and non-physical infrastructures that we occupy, but of the unsettled, unresolved feelings that reside within our inner lives.

CONNECTION

We left Green Bank in the early hours of the morning, armed with paper maps that promised to lead us out of town whilst keeping the repetition of navigational catastrophe at bay. As we headed back out into the muted night, a light dusting of frost fell across our windscreen, slowly developing into a gentle and steady snowfall. We thought of the precious signals from space being scouted by the Green Bank radio

telescope – the elegant, white giant busy at work in the growing distance we'd left behind us. Signals millions of times quieter than one falling snowflake were being recorded and studied in that very moment. The telescope and the cosmos beyond symbolised the most exemplary model of a reciprocal bond. If we needed assurance that technology and nature could live in harmony, the Green Bank telescope was it.

On our last day in Green Bank, we had spent time in the town's retirement centre, playing bingo and chatting with what constituted the bulk of the neighbourhood's population. Everyone leaves, we recalled our friend from the bar saying. Not everyone. A few people had spent their entire lives in Green Bank, most of them now spent theirs in the retirement centre. One woman told us that she wouldn't still be alive if she had chosen to live anywhere else but Green Bank. Her well-being relied on her fellow community members – she had no remaining family and limited financial assets. She also had no access to the online world, a place that could arguably colour and enrich her life. She shook her head as we offered that hypothesis, adding that no amount of digital connection could help her walk up the steps to her

Green Bank retirement centre – photo by Joanna Demarco

home, or cook her a warm meal every day. It's people, she maintained, that will save you.

This idea of emotional, communal rescue had been a persistent theme throughout our stay in Green Bank. In a way, everyone we met had expressed – subliminally or overtly – their desire to be saved from that which existed around them. The electromagnetic hypersensitive community were looking for somatic salvation, trapped between the aspirations of their minds and the ailments of their bodies. The long-standing Green Bank residents we met in the diner were in search of diversion, eager to dis-

cover new and immediate ways to live a good life. Green Bank's youth was in pursuit of opportunity, a way to evolve that went beyond getting through the mundanities of the typical, rural American day. The observatory's scientists wanted protection from obsolescence, their salvation too relied on progression and forward movement. And for the lone man in the bar, companionship was what could exculpate him from social impotence; the notion that he might, in some way, find another soul to share his thoughts with.

By the end of our time in Green Bank, answering a question on whether the Internet works to strengthen a community or disintegrate it still seemed like an insurmountable task. By now we knew that a vast satellite programme spearheaded by the Space Exploration Technologies Corporation, or SpaceX, was steadily being tested and launched with the intention of providing constant and global Internet coverage. This titanic capacity had the potential to change Green Bank and the Quiet Zone forever; moreover, it stood to render our trip's interrogations largely redundant. As darkness turned slowly into the pink light of dawn, and as our mobile phones intermittently began to connect back to the Internet, a new question was inarguably at hand.

What would the reality of a looming system of universal connectivity look like? Would it signal a new era of harmonious sanctuary – of greater connection – or would it irreversibly alienate us from each other, severing all links to traditional formats of communal unity? Driving away from the immensity of the West Virginian mountains, the geography that had been the backdrop to our ferreting thoughts and theories, we felt no less lost than we had on our frightening journey into this part of the world. If we had learnt anything from our week in Green Bank it was that connectivity couldn't automatically supply or deny connection, and that the spaces that connect us are multifarious and complex.

They are the digital spaces that allow us to link with our loved ones when we feel alone; they are the uncharted online realms that encourage us to connect with strangers we never knew existed; but they are also the diners, community halls and libraries where we meet in body and mind, hoping to find something greater to be a part of. It may indeed take a planet-wide system of Internet coverage to bring us closer together; or, it could still be that driver showing up out of the darkness, promising us that we've almost arrived.

SELECTED READINGS

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