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Drysfeydd y Cymoedd¹: The Sub-topographies of South Wales Valleys' Industrial Crises,

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In *Unclaimed Experience: Trauma, Narrative, and History*, Cathy Caruth defines as traumatic our encounters not with life-threatening events but with those that cause a break in our perception of time. She then explains that the memory of trauma is always fleeting, leaving connections with the time and place of traumatic occurrence fragile and obscure. Caruth's definitions shape the work of contemporary geographers that argue that trauma is fundamentally unmappable. Does trauma's relationship to space change when traumatization becomes repetitive and systematic? To explore systematic traumatization's relationship to space, I adopt Lauren Berlant's trauma definition as a *crisis of ordinarieness* and revisit the South Wales Valleys region and its coal mining history as traumatic and contested. Using the exceptional Aberfan 1966 disaster as a starting point, I investigate a more 'common' industrial crisis of the same period and explore its relationship to the industrial space by analyzing its discursive and drawn records. In this journey, sketching out the spatial qualities of the colliery's maze is crucial for understanding the crisis' occurrence, belatedness, and commemoration.

Keywords: Valleys, maze, colliery, trauma, crisis, memory, sub-topographies

1. Introduction

In *Unclaimed Experience: Trauma, Narrative, and History*, the trauma theorist Cathy Caruth defines as traumatic our encounters not with life-threatening events but with those that cause a break in our perception of time. She then explains that memories of traumatic experiences are always fleeting, leaving connections with their time and place of occurrences fragile and obscure². Studying the mobility of trauma, the geographer Kate Coddington, heritage theorist Jacque Micieli-Voutsinas³, cultural theorist Virginia L. Blum and political geographer Anna J. Secor⁴ all suggest that regions of traumatized psyches are fundamentally unmappable; they resemble topologies but never mappable topographies. The paper puts to test these theoretical propositions by adopting Lauren Berlant's definitions of trauma as a *crisis of ordinariness*⁵ and revisiting the coal mining history and heritage of the South Wales Valleys region.

Coal mining accidents in the South Wales Valleys are recorded in local archives in uncanny frequencies and densities. These industrial disasters and subsequent communal traumas occur predominantly in the subterranean maze of the colliery, come to the surface with a delay at the pit's mouth, find healing in local hospitals and rehabilitation centers, and are commemorated in the Valleys' cemeteries and memorials. Using as a starting point the exceptional Aberfan 1966 disaster, the first nationally broadcasted communal trauma, the paper looks at a more commonly occurring industrial crisis of the same period and studies its relationship to the industrial space and region. In this journey, a spatial analysis of the colliery's maze is crucial to understanding traumatic occurrence, belatedness, and commemoration.

Trauma's relationship to space has been extensively explored and theorized by geographers. Dietrich Soye is one of those that explores the relationship between heritage aesthetics and architecture and the valorization of industrial traumas⁶. John G. Ashworth, on the other hand, focuses primarily on the commemoration of industrial traumas but less on their relationship to architecture and space⁷. Architectural

discussions then often focus on healing environments for war veterans suffering from Post-Traumatic Stress Syndrome Disorder. In “Investigating architectural and space design considerations for patients affected by Post-Traumatic Stress Syndrome Disorder (PTSD),” Kunal Khanade et al. outline several spatial parameters that act as trauma triggers⁸. Among other things these include: the lack of situational awareness; the presence of sharp corners; densely equipped, noisy, dark, or unfamiliar environments; and hidden or limited access to exits. The accident reports and survivors’ testimonies reviewed in the following pages show that the above-noted trauma triggers are common working conditions in underground collieries. These academic debates help us contextualize this study of the *loci* of industrial crises, but they also offer tools for assessing their capacity to preserve trauma and trigger re-traumatization. Studying the South Welsh Valleys' industrial crises and locations allows us to look at industrial space primarily as an apparatus of crises and secondarily as the mystic writing pad of trauma’s fleeting traces.

The paper engages with formal, informal, institutional, collective, analog, and digital archives, and revisits them as hosts of industrial crises’ memory and portals to regional histories that are less conventional, affirming, or referential. By accessing tribunal reports, accident registers, personal testimonies, and media coverage, this paper pursues the following goals:

- A) A proposed redefinition of the South Wales Valleys, not as a region of exceptional traumas but as a region of systematic industrial crisis;
- B) An exploration of the colliery’s underground space including a discussion of how it supported the occurrence, belatedness, and commemoration of crises;
- C) A theorization of the underground maze as a memory locus and apparatus of industrial crises.

2. Trauma Theories and Archival Technologies

2.1 From Exceptional Traumas to Crises of Ordinarity

Trauma is a term of Greek origin used to describe a surface wound. It derives its etymology from the verb *τείρω*, which means to rip, to puncture⁹. Psychoanalytical and psychiatric uses of the term emerged in the work of French clinicians in the late 1800s. Still, trauma acquired visibility in the early 1900s through the writings of Josef Breuer and Sigmund Freud on female hysteria¹⁰. The Freudian scholar Jean Laplanche suggests that trauma's definition as a surface wound uses two metaphorical models, a spatial and a temporal one¹¹. The spatial model helps us conceptualize trauma as a breach in space, the threshold where the self meets the world. The temporal model helps us conceptualize trauma as a breach in time. On this second model, Freud builds his idea that the late recollection of these breaches is constitutive of trauma, and Caruth theorises on trauma's belatedness, trauma's quality to be acknowledged and internalized with delay. Trauma is then defined as the memory of two kinds of ruptures, one in space and one in time.

Stretching these definitions, the media theorist E. Ann Kaplan suggests that Breuer and Freud's discussion on trauma in the frame of female hysteria implies the consideration of social phenomena like rapid industrialization or the oppressive structure of bourgeois family¹². Likewise, the literary theorist Kevin Newmark roots trauma theories to modernity, to the experience of complex socio-political phenomena, like fascism and consumerism¹³. In the edited volume *Trauma: a Genealogy*, the humanities professor Ruth Leys suggests that as we move into the third millennium cultural, social and political considerations become essential parameters in trauma studies, as does the traumatized body¹⁴. Berlant then turns the spotlight on political systems and power structures of traumatization and argues that traumas' precarity is cunningly common, if not ordinary, in post-WWII geopolitical realms. Berlant defines systematic traumas as *crises of ordinarity*¹⁵, instances where our exposure to systemic

violence and exploitation is acknowledged with delay. The late acknowledgement of crises of ordinariness is a trait they inherit from Freudian theories on trauma's belatedness.

Without underestimating their cognitive and social impact, critical discourses of early and late modernity shift our attention from exceptional to re-occurring traumas. They help us study traumatization as systemic and systematic. Additionally, defining trauma as a *crisis of ordinariness* re-initiates critical debates around trauma's relationship to space. While violence and exploitation are frequently discussed as mappable¹⁶ Blum and Secor argue that trauma is not, and that it can only be represented through "a topological constellation, a set of unconscious coordinates that upends the passage of time and the verities of space"¹⁷. The following pages show that institutional and personal records of Aberfan's trauma memory confirm these spatial propositions. However, they also leave us with a question. If the relationship of exceptional traumas to space is fleeting and unmappable, does the repetition and systematicity of industrial crises allow us to capture, study and theorize their locations? To test the hypothesis, we begin by looking at how the memory (institutional and collective) of industrial crises is captured across various archival technologies and media.

2.2 Archiving Crises

The philosopher Jacques Derrida assigns a fleeting state to the notion of the archive, similar to that of the Caruthian trauma. He uses the Freudian impression, repression, and suppression schema to discuss vagueness and temporality as inherent in archival technologies¹⁸. For Derrida, archival technologies resist mnemonic inertia due to their constant movement between the archival promise (the possibilities that the archive holds for the future) and the archival duty (the archive's obligation to record the past)¹⁹. For Derrida, archives are ever-expanding hosts of memories constantly negotiated.

Hence, we turn to them for records of crises.

[Figure 1 around here]

While looking at the Valleys' coal-mining history and heritage, the Coal Authority archive (noted hereafter as CA) is an essential first point of reference. The organization holds a detailed archive of all UK-based coal-mining activities, mapped against an interactive map that links records of underground mining works to surface topographies (see figure 1)²⁰. Reports of colliery strikes, management failures, and accidents do not inform CA's collection. Such records are instead dispersed across other archival technologies, including institutional, communal, national, and regional. These include the Proquest Archive of the House of Commons Parliamentary Papers, the Glamorgan Archives, the South Wales Miners' Library, the Northern Mine Research Society, the Coalmining History Resource Centre (hereafter noted as CMHRC), and the Welsh Coal Mines blog. Additionally, local newspapers, museums, and heritage groups hold records of mining disasters.

CMHRC states that there was no systematic register of mining accidents before 1850²¹. The Aber Valley Heritage Group estimates that the registered deaths attributed to mining activities account for less than 17% of actual ones²². Glamorgan Archives estimates that more than 250,000 miners were killed or permanently injured in colliery activities across the UK between 1850-1950²³. While mining hecatombs attracted widespread attention, the more isolated deaths, mining illnesses, or daily injuries were not thoroughly recorded. The Glamorgan Archives' records of mining diseases show that from 1933 to 1948, 17,000 miners had to abandon underground work due to pneumoconiosis or silicosis. The Medical Research Council and its Insurance Scheme Registers hold long lists of miners' compensations and offers proof of how common and diverse mining crises were²⁴. Engagement with this archival constellation of crises introduces us to a history that is complex and contested; one which arises in the absence of official registers. This constantly enriched regional history forces us to look back at

the South Wales Valleys not as a region of exceptional communal traumas but as an exemplar region of ‘industrial crises ~~par excellence~~.’ In the following sections we will look at discursive and visual records of industrial crises to better understand the spaces that generate, conceal and preserve them.

3. Cymoedd De Cymru: The Valleys of Wealth and Sorrows

The South Wales Valleys, widely known as “the Valleys,” occupy a geographical space between the Breconshire and the Glamorgan coastline and unfold like the parallel fingers of a geological hand that stretches to meet the cities of Newport, Cardiff, Porthcawl, Port Talbot, and Swansea. The region overlaps with the South Wales coalfield, a coal basin extending approximately 150 kilometers from east to west and 50 km from north to south. Divided by multiple hills, the Valleys offered access to coal seams of varying depths and gave life to a valuable freshwater network that supported mining activities as well as commercial transportation.

In his book, *A History of Wales*, John Davies discusses how the coal industry underwent rapid growth in the second half of the 19th century when the sparsely inhabited rural Valleys became one of the fastest growing and heavily industrialized UK regions²⁵. Davies later speaks of the challenges the coal industry faced during the Great Depression and how it stabilized its production during WWII and went under public management in 1947. The coal industry saw its ultimate decline in the 1970s and 80s, decades that led to the closure of most collieries in Wales²⁶. In this later period of decline, characterized by high unemployment rates, food crises, and miners’ strikes, the Aberfan 1966 disaster became emblematic of the price that Valleys’ communities had paid for Wales’ industrial growth. The tragedy attracted extensive media coverage, triggered repetitive public references to the myriad industrial crises that occurred in the Valleys’ coal basin, and became a point of political pressure in relation to the closure of collieries. Around this period, the geologically rich region was renamed by mass media the *Valleys of Sorrows*²⁷.

The broadcast of 1960s and '70s mining disasters seemed to renew and make visible the strong connections between the region's geological maps and its human geographies. The spaces that linked these two strata and that generated, concealed and delayed the acknowledgment of these industrial crises were the mazes of the collieries: the expansive subterranean network of mining roads and shafts where industrial disasters occurred, the geological rhizome of coal seams that connected distant towns and collieries, the unpredictable conceptual space of the unwilling recollection of crises. The paper uses the exceptional Aberfan disaster and regional trauma of 1966 as a starting point to explore the space of an industrial crisis that occurs in the same period and appears unbearably common: the 1960 Six Bells colliery disaster.

4. Topologies of Exceptional Trauma: Aberfan 1966.

The Aberfan disaster occurred on the 21st of October in 1966 at 9.14 am. It was caused by a sliding tip of extraction material unsafely deposited upon a freshwater spring. Seven colliery tips grew for years next to Aberfan village. Concerns about the safety of Tip no7 were raised as early as 1963, but they were dismissed²⁸. In 1966, due to heavy rainfall and the location of disposition, Tip no7 slipped down the mountainside. It engulfed the Pantglas Junior School and surrounding houses, causing the death of 116 children and 28 adults. Martin Jones, a geographer who studied the traumatization of Aberfan's community, suggests that the Aberfan disaster went down in national media as an exceptional national trauma, the worst colliery disaster in UK history, because it developed on the Valleys' surface and had a deadly impact on the miners' children²⁹.

4.1 Logos on Tip no7

Colliery tips grew in time, place, and numbers and shaped the skyline of local towns and villages. They were spatio-visual reminders of the long-standing, dense and precarious mining activities under the mining communities' feet. In the official discourse (*logos* in Greek language) of the *Tribunal Appointed to Inquire into the Disaster at Aberfan on October 21st, 1966*³⁰, but also in the personal testimonies quoted below, Tip no 7 emerges as a first location (*topos* in Greek language) of Aberfan's traumatic memory.

Howard Rees, a pupil at the senior school, was making his way up the Moy Road towards the school when he saw what he described as a big wave of muck higher than a house coming over the old railway embankment and heading straight towards him. In this muck, he could see boulders, trees, trams, bricks, slurry, and water. To him, it appeared to be "moving fast, as fast as a car goes in a town" and to be accompanied "by a rumbling noise like an old train going along"³².

The workmen on the early morning shift that day of the 21st usually started at 7.30 am. By the time they walked to the tip edge amongst all the mist, they could see a huge crater. The tip had gone...

The tip was still moving... I could hear it creeping through houses... It was not until I listened to the one o'clock news that I realized where I'd been and how disastrous the situation was.³³

[Figure 2 near here]

Initial memories of the Aberfan disaster, the ones that trauma theorists see as constitutional of trauma, speak of the unstable, incomprehensible, and constantly changing location of Tip No7 (see figure 2). These *logoi* of trauma capture the first-hand witnesses' inability to acknowledge what happened, manifesting in an unprecedented breach in the town's fabric and the community's perception of space and time. The following passages further confirm how the location of Aberfan's trauma is constantly re-negotiated by the collective bodies and their dispersed experiences of the tragic events.

4.2 Logos on Pantglas Junior School

In a memorable phrase, he (Mr. George Williams, a hairdresser) told the Tribunal that after the tip fell everything went suddenly quiet, just like turning off the wireless, and he added, “In that silence, you couldn’t hear a bird or a child.³⁴

It was a tremendous rumbling sound, and all the school went dead... I woke up to find a horrible nightmare just begun in front of my eyes... I wasn’t really afraid as I was sort of dazed...I didn’t cry as I didn’t know what was happening. It was all like a dream³⁵.

There was then a rumbling sound that progressively got louder and louder. The teacher assured the class that there was nothing to worry about, it was only thunder. The next thing I remember was waking up covered in material³⁶.

[Figure 3 about here]

The second topological reference to Aberfan’s trauma memory is the Pantglas Junior School. In the logos of teachers and pupils, this second location bears similar qualities to those of Tip No7. Testimonies speak of an experience of place that resists continuity and order, that is familiar yet uncanny, disrupted and unstable, heterogenous and puzzling, introverted yet not delineated. While reviewing the Aberfan survivors’ commentaries and presentations in the 2016 Cardiff University Aberfan Conference, one appreciates that the vagueness and illusive nature of these locations enables trauma memory to re-emerge in the most distant and unpredictable places⁴⁴. Loud noises and earthquakes, noisy classrooms and courtyards, thunders and heavy rainfall have the power to awaken trauma, or what Breuer and Freud defined in their treatise as the psyche’s intruder³⁸.

4.3 Logos as the Topos of Trauma

Trauma theorists and geographers suggest that trauma memory is unpredictably re-activated and contagious: a) when other places and times are disrupted (Caruth argues that it is the memory of the breach that is constitutional of trauma³⁹); b) when carried away by the bodies of survivors and witnesses (Coddington suggests that embodiment is

a crucial facet of trauma's mobility and contagion⁴⁰); c) when trauma is narrated (Caruth describes trauma as a story that cries to be told⁴¹). To understand the power of narrative in re-traumatization in Aberfan's events, the reader may look back at how mass media discourses impacted the local community. The wide broadcasting of the Aberfan disaster triggered unprecedented thanatourist waves, inspired numerous documentaries and novels, and gave life to creative expressions and artworks. This happened to such a degree that on the 26th of October 1967, the Secretary of State of Wales, Cledwyn Hughes, would speak in the House of Commons to request restrictions on publicity around Aberfan.

If the inhabitants are to find peace, they need a period away from the glare of publicity to which they have been exposed for so long. I appeal to everyone to give them the quiet they need to bear the burden of grief and rebuild their shattered lives. (Cledwyn Hughes, speech in the House of Commons 1967)⁴²

Looking at Aberfan's trauma topologies, one can see that its disruptive nature, contagious embodiment, and uncontrolled reiterations render the epicenter of the disaster – and even, to some degree, its very facts – elusive. Indeed, Aberfan's trauma topologies confirm trauma's unmappability.

What happens, though, when traumatic occurrences are frequent and systematic? What happens when trauma locations are subterranean and homogenous, captured in detail but experienced only by a tragic few? We turn now to the 1960 Six Bells Colliery disaster to answer these questions.

5. Sub-topographies of Industrial Crises: Six Bells Colliery 1960.

The Six Bells Colliery disaster was caused by an explosion that occurred on Monday, the 28th of June 1960, at 10.45 am, in the West District Area of the Old Coal Seam, which took the lives of 45 miners. The explosion was caused by the ignition of firedamp triggered by the fall of quartzitic stone that was later identified on a roof near

the O.10 face. The explosion impacted the miners working on faces O.09, O.10, O.12, and O.18⁴³.

5.1 Discursive and Drawn Records of Face O.10

The Explosion

29. At about 10.45 a.m. on Monday, 28th June, M. Purnell, a linesman, was working with D. Lane putting up a signal line near the electric haulage engine some 25 yards inbye of the entrance of the old T intake. Lane was some ten yards inbye of Purnell when there was a noise and a lot of dust. Purnell fell on the engine and Lane was blown past him...

30. Two fitters, H. J. Legge, and C. J. Lewis were eating food by the transformers in the mouth of the old T intake when they heard a sound like a compressed air pipe bursting. There was a great deal of dust in the air and they lost contact with each other but each made for the pit bottom as best he could...

31. S. Holland was the deputy responsible for the inspection of airways and thus had a good knowledge of the pit; he and Coleman had been coming outbye from an old district when they met a cloud of dust. They thought that a compressed air supply pipe had broken and they hurried to the downcast pit bottom...

32. ... A few yards past the junction with old T intake they (Holland and Coleman) saw a body which must have been that of Lane. At the double parting, they found the air so thick with dust that they concluded an explosion must have occurred⁴⁴

Like most mining accidents, the Six Bell Colliery disaster took place in the subterranean maze of the Valleys' collieries. The extracts above are from the *Report on The Causes of, And Circumstances Attending, The Explosion Which Occurred at Six Bells Colliery Monmouthshire, On 28th June, 1960*⁴⁴, a detailed and official record of the industrial crisis, covering where, when and how engineers, rescue teams, and affected miners experienced the catastrophic event. Like Aberfan, the Six Bells Colliery testimonies capture the breach in miners' perception of space and time that is constitutive of trauma. However, the witnesses' familiarity with the disaster's location and their capacity to immediately speculate on its cause are quite distinctive in these crisis descriptions.

[Figure 4 near here]

The drawings that accompany the report constitute a visual record of the time and space of the crisis. They depict, with clarity, the breach of industrial space and time. They also spatially explain its late acknowledgment. PLAN No1⁴⁵ presents the location of the explosion and the areas impacted and covers a fragment of the vast colliery sub-topography (see figure 4). Six Bells' Colliery abandonment plans help us appreciate the scale of the mining maze and how it expands across the wider region (see figure 5). PLAN No1 and the colliery's abandonment plans follow the same drawing conventions. They do not cut across geological space at consistent depth; the angle of orthogonal projection follows the geological dips and shafts of the coal seams. Deeply embedded in an otherwise heterogenous, stratified, and rigid geological space, Plan No1 locates the crisis in a homogenous yet distorted representation. The question of how this place is navigated becomes evident below.

[Figure 5 near here]

In colliery representations, place-naming follows strict conventions. Contrary to surface toponyms, in the Six Bells colliery plans the names of homogenous subterranean locations refer to the time of industrial events. Mined faces are named with numbers that indicate the sequence of access and exploitation (Face O.01, O.07, O.10, etc.). Abandoned faces are then chronologically tagged with the dates that mining activities ceased. In colliery drawings, the names of faces and roads help us unwind the thread of industrial activity in time. Material and immaterial threads are seminal tools for navigating these homogenous yet puzzling spaces. They take the form of continuous narratives, numerical sequences, signs, or patterns, but their role is essentially the same: to establish continuity when movement and experience are disrupted. In addition to chronological tagging, colliery plans include sporadic references to surface toponyms

that link two independently developed surface and subterranean representations. Surface toponyms are randomly dispersed and establish loose links with critical entry points, shafts and mining roads. As such, Plan No1 and the abandonment plans represent the colliery's maze disconnected from surface geographies, isolated and geologically distorted. As one looks at the drawing conventions and details, it becomes evident that the priority of colliery drawings is to map time accurately, rather than space.

[Figure 6-7 near here]

PLANs No2, No4, and No5⁴⁶ of the report are forensic in their detailing and represent the time and space after the explosion. PLAN No2 depicts the impacted O.09, O.10, O12, and O.18 mining faces ⁴⁷. It gives information on the position of destroyed equipment, roof falls, and collapsed deposits. It also brings to our attention the locations of the lives lost. PLAN No4 is a separate diagrammatic record of post-explosion remains, and PLAN No5 shows material dispositions in affected faces before the explosion. PLANs No2, No4, and No5 provide layers of information at different times and encode the testimonies of survivors, managers, overmen, and rescue teams. As such, they constitute highly logical, spatio-visual summaries of the first memories of crisis. Finally, PLAN No3⁴⁸ is an adjunct of the aforementioned ones. It represents the extent and direction of immaterial elements of the explosion, like flames and blasts. PLAN No3 represents the breach that trauma always misses, of inexperienced space and time. So, while in Aberfan's topologies the trauma's epicenter is primarily narrated and negotiated, in the Six Bells Colliery report, the memory of crisis is recorded in chronologically informed and distorted sub-topographies.

In the parliamentary report, the location of the Six Bells disaster is noted as 1.6km to the west and 0.5km north of the No4 and No5 vertical shafts. The Old Coal Seam, where the crisis occurred, is located at 320-500 meters depth, subject to the

surface point of reference. To assign coordinates to crisis locations one needs to look for key features (most commonly shafts), which may allow them to overlay abandonment and tribunal plans on historical maps of adjustable scale. Given the distortion that the representation of geological space undergoes, locating the epicenter of the crisis is challenging and perhaps considered unnecessary. Crisis locations are depicted in detail, yet they remain hidden in a disconnected geological space and are geographically located only vaguely. Although repeatedly described and narrated, they remain beyond the experience of the local community. What seems more important, then, is the location where the crisis is shared.

5.2 The Topos of Logos: The Pit's Head

Trauma...is always the story of a wound that cries out, that addresses us in the attempt to tell us of a reality or truth that is not otherwise available. This truth, in its delayed appearance and its belated address, cannot be linked only to what is known but also to what remains unknown in our very actions and language.⁴⁹

[Figure 8 near here]

Crisis, the memory and late acknowledgment of a breach in industrial space and time, traveled through the colliery's roads and shafts to meet the miners' communities at the pit's head. In these occasions, the pits' heads became the crisis' thresholds, places of unbearable waiting for the fragmented and distorted narratives to reach the surface. Photographic records of newspapers of the time (Figure 8) capture these locations as the threshold where communal anticipation and crisis-acknowledgment meet. Industrial crises traveled through the collieries' maze, weaved dispersed material and immaterial fragments of the explosion, bridged memories and speculations, the known and the unknown in survivors' stories. The report is a record of this journey, at the end of which the pit's head becomes the location where crises are publicly shared, the topos of logos.

This threshold allows us to look at the colliery's maze as an apparatus that supported the crisis's occurrence and belatedness, the space that created the time for the crisis to be internalized before it was shared.

5.3 From Mazy Locations to Regions of Crisis

[Figure 9,10 near here]

The location of the Six Bells Colliery disaster was close to the location of another explosion that occurred in 1927 in the Marine Colliery, which worked on the same seam and claimed the lives of 52 people⁵⁰. The Six Bells Colliery, originally named Arael Griffin, holds yet another record of a lethal shaft accident that dates back to 1895 and killed four people. A few miles to the north, the Cwmtillery community would lose 23 members in an 1876 explosion on the same seam⁵¹.

Within the Abertillery valley, local archives reveal five more industrial crises that share the same geological space albeit spread in geological time. These crises awake the memory of the most deadly ones that spread across the Valleys and which claimed hundreds of lives like the Cymmer Colliery disaster in Rhondda (1856 - 114 recorded deaths), the Black Vein Colliery disaster in Risca (1860 - 146 recorded deaths), Ferndale Colliery, Rhondda (1867 - 178 recorded deaths), the Prince of Wales Colliery disaster in Abercarn (1879 - 268 recorded deaths), and the Universal Colliery disaster in Sengenydd (1913 - 439 recorded deaths)⁵².

As coal seams cut across geological space and time (see figures 9 and 10), they connect the locations of multiple industrial crises, creating a rhizome of communal memories. This rhizome of crisis is captured in the online register in the Coalmining History Resource Centre and as an interactive map on the Northern Mine Research Society website⁵³. The growing archival lists and maps (often products of personal or local initiatives) and the NMRS records are noteworthy not because they accurately depict the crises' locations, however, but rather for their ability to capture their density in space and time. They provide

opportunities for regional analysis.

6. Commemorating Trauma and Crisis

In the years following the Aberfan disaster, the local community looked for places and occasions to commemorate and heal its trauma. The school ruins and the town's cemetery became the central locations for traumatic commemoration – unmediated and painful ones. Communal testimonies shared during the 2016 Aberfan Conference spoke of the unbearable pain and re-traumatization that visiting both locations caused the local community⁵⁴. The long sequence of marble arches and graves created a cenotaph that resisted symbolism. In this ongoing healing process, the initial trauma locations had to be erased (Tip no 7), and others had to be re-invented and designed anew (St Pantglas School). These negotiations gave life to the Garden of Remembrance.

[Figure 11 near here]

The Garden of Remembrance⁵⁵ was commissioned by the Aberfan Memorial Trust and was envisaged as a community garden that rose from the ruins of the Pantglas Junior School (see figure 11). The design preserved the school's original plan, outlining classrooms and assembly spaces. When essential traces were absent, it filled the gaps using locally sourced stone. The Garden of Remembrance was never designed to represent the scale of pain or human loss, to attract more attention, or to impose empathy. In alignment with the Aberfan community's need to heal and right to forget, the Garden of Remembrance stitched the breach in Aberfan's fabric and established a point for pause and reflection. Introverted and delineated, peaceful and discreet, coherent and straightforward in its conceptualization, the Garden of Remembrance caringly conceals the location of Aberfan's trauma and allows communal life to resume.

[Figure 12 near here]

In general, though, the commemoration of the coal mining crises in the Valleys has recently been supported differently than it was in Aberfan, taking a much more overt and declamatory approach. The political shifts that the end of the second millennium brought to Wales and a collective need to protect a regional history and heritage led to re-inventing a series of places commemorating industrial crises. The Guardian of the Valleys is undoubtedly the most iconic of mining memorials in the Valleys⁵⁶(see figure 12). Commissioned by Blaenau Gwent County Borough Council and the Six Bells Communities to commemorate the 50th anniversary of the industrial disaster, the memorial sat within the ex-Six Bells Colliery site, close to the No4 and No5 shafts. It also established a new memory trace. Sitting on a 10-meter plinth of local sandstone covered with steel plates that carried the names of the 45 lost lives, the Guardian of the Valley, a 20 meter statue of a miner, overlooks the Six Bells town and the nearby Arael Griffin parc in the same way that religious sculptures overlook and are often thought to protect urban or rural landscapes. Designed and constructed by Sebastian Boyesen, the statue consists of 20.000 strips of corten steel. It is often compared to the Angel of the North, a sculpture of similar size and materiality that overlooks another ex-mining landscape in Gateshead, Tyne and Wear, in England.

Contrary to Aberfan's memorial, the Guardian of the Valleys does not wish to conceal the Valleys' crises. The memorial uses as its point of reference the location where the crises' stories were first shared. It also holds its distance from the locations of explosions buried deep in the colliery's maze under Abertillery town. Large in scale and proudly upward in position, half naked and masculine, healthy and robust, the Guardian of the Valleys does not dwell in the maze of crises; he occupies the crisis threshold and becomes a symbol of communal life, resilience, and pride.

7. Conclusions: The South Wales Valleys' Sub-topographies of Industrial Crises.

In this paper, with the wings of Daedalus or the distance of the architect, we revisited the traumatic and contested coal mining history of the South Wales Valleys to redefine it not as a region of exceptional traumas but as one of communal crises par excellence. Through the analysis of texts and visual media, the colliery's subterranean maze was explored and theorized as a memory locus and apparatus of industrial crises, the space that generates, conceals, and supports the crises' late sharing and acknowledgment. The mazes of the Valleys, *Drysfeydd y Cymoedd* in Welsh, were also debated as the noisy, puzzling, repetitive, and homogenous industrial space that preserves the memory of crises while also supporting the miners' re-traumatization⁵⁷. To appreciate the intimate relationship of crisis (as the memory of a breach) to the maze, we might look back at its archaic archetype, the Cretan Labyrinth, another puzzling and inexperienced narrative space that concealed mythical traumas.

Mythical narratives talk about a bewildering, homogenous, introverted (occasionally subterranean) space, both palace and prison, where Minotaur – the illegitimate son of Queen Pasiphae – lived a life of incarceration. The Labyrinth was Minotaur's home and prison, but it had no key; homogeneity, repetitiveness, and disorientation kept the bestial prince captive. Opportunistic or temporary dwellers could utilize a thread to explore the Labyrinth and escape it. The thread allowed them to tie themselves to its entrance, wander in its premises, explore its unknown stories, and safely – if they were lucky – rewind their way to its exit. The Labyrinth, the archetypal mythical maze, is above all an apparatus that hides away painful memories, an immersive and disorientating space, a space repeatedly narrated yet beyond immediate experience⁵⁸.

The geographer Amy Walker mentions that the underground networks hidden in the Valleys' coal basin are the most effective metaphor for the Valleys' history⁵⁷. Our

analysis of the official records of the Six Bells Colliery crisis supports her position. The collieries' sub-topographies shaped how the Valleys' communities experienced and commemorated mining crises. The miners dwelled in a vast, complex, yet familiar industrial space. When the colliery's maze became a crisis space, miners navigated its partially known stories by painstakingly weaving the crisis fragments. For the Valleys communities, though, the colliery's maze remained a hidden and inexperienced space of communal sacrifice for the lives systematically lost; and a space of communal survivor-guilt for the lives that continued.

Caruth says that through our unpredictable, puzzling, and open-ended encounters with traumas, we begin to appreciate that their study offers possibilities for engagement with a type of history that arises where immediate understanding may not⁶⁰. Like their enquiring and fragmented histories, the mazy sub-topographies of industrial crises do not utilize accurate or geographically referential mappings. For most Valleys communities, these industrial and inexperienced spaces are essential components of their crisis narratives, but not of their commemoration. More important for the latter is the location where crises are shared. Utilized primarily as representations of a time breached, the sub-topographies of the Valleys' crises remain largely indifferent to surface elements, distorting space to record time, and require a thread, not a ruler, to be read.

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Figures

Figure 1. Extract from Coal Authority Interactive Map with Mine Entries and Development High-risk Areas around Abertillery. Reproduced with the permission of © The Coal Authority. All rights reserved. Contains OS data © Crown Copyright and database right 2020

Figure 2. Tip no7 1966_Plate 8 of THE REPORT OF THE TRIBUNAL APPOINTED TO INQUIRE INTO THE DISASTER ATABERFAN ON OCTOBER 21ST, 1966. Document from ProQuest's House of Commons Parliamentary Papers displayed with permission of ProQuest LLC.

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Figure 3: Pantglas Junior School 1966_PA Images / Alamy Stock Photo

Figure 4. PLAN no.1 SIX BELLS COLLIERY, W DISTRICT, O10 UNIT, OLD COAL SEAM Document from ProQuest's House of Commons Parliamentary Papers displayed with permission of ProQuest LLC.

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Figure 5. Six Bells Colliery Abandonment Plan (Catalogue Item Number SW37.97). Catalog number: SWA3797, Colliery: SIX BELLS NOS 1 & 2 SIX BELLS NOS 4 & 5, TILLERY, LITTLE, GRAY, POCHIN, CWM TILLERY NOS 1, 2 & 3. Seam Name: LOWER FIVE FEET / GELLIDEG (OLD COAL), Sheet Number: 322003. Reproduced with the permission of © The Coal Authority. All rights reserved.

Figure 6. PLAN no.5 SIX BELLS COLLIERY 'W' DISTRICT O10 UNIT, OLD COAL SEAM. Document from ProQuest's House of Commons Parliamentary Papers displayed with permission of ProQuest LLC.

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Figure 7. PLAN No.3 SIX BELLS COLLIERY 'W' DISTRICT, EXPLOSION INVESTIGATION RESULTS. Document from ProQuest's House of Commons Parliamentary Papers displayed with permission of ProQuest LLC.

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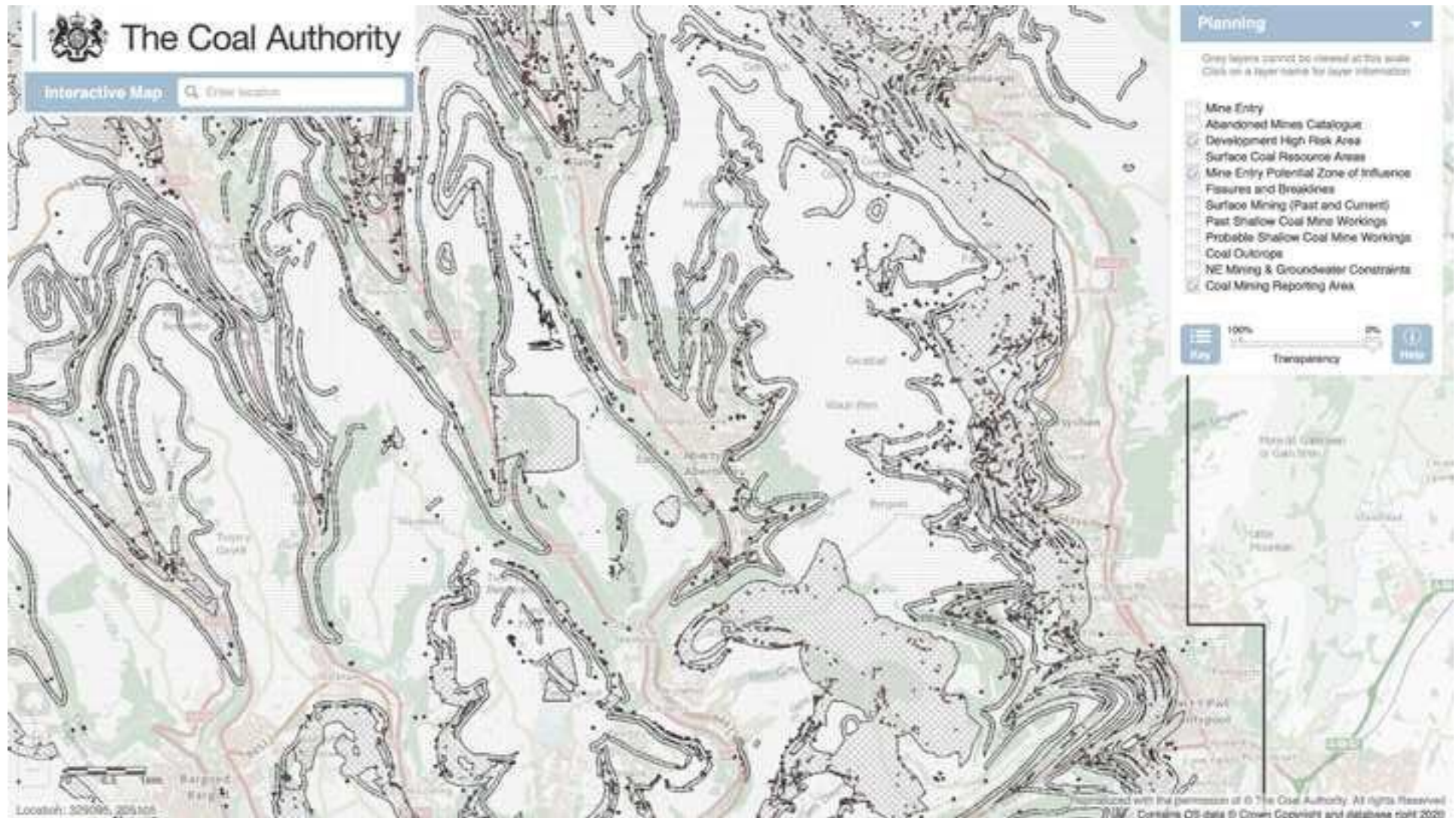
Figures 8. Six Bells Colliery 1960_ Thresholds of industrial crisis near shafts 4 & 5. Image reproduced with the permission of South Wales Echo/Media Wales © All right Reserved.

Figure 9. Section of geological rhizomes at Merthyr Vale Colliery. Catalog number: SWR1145, Colliery: MERTHYR VALE, County: GLAMORGAN, Seam name: FOUR FEET, Sheet Information: 2 OF 3 SECTION, Date abandoned: 1943. Reproduced with the permission of © The Coal Authority. All rights reserved.

Figure 10. Merthyr Vale Colliery's Maze. Catalog number: SWR1145, Colliery: MERTHYR VALE, County: GLAMORGAN, Seam name: FOUR FEET, Sheet Information: 1 of 3 (Part B). Reproduced with the permission of © The Coal Authority. All rights reserved.

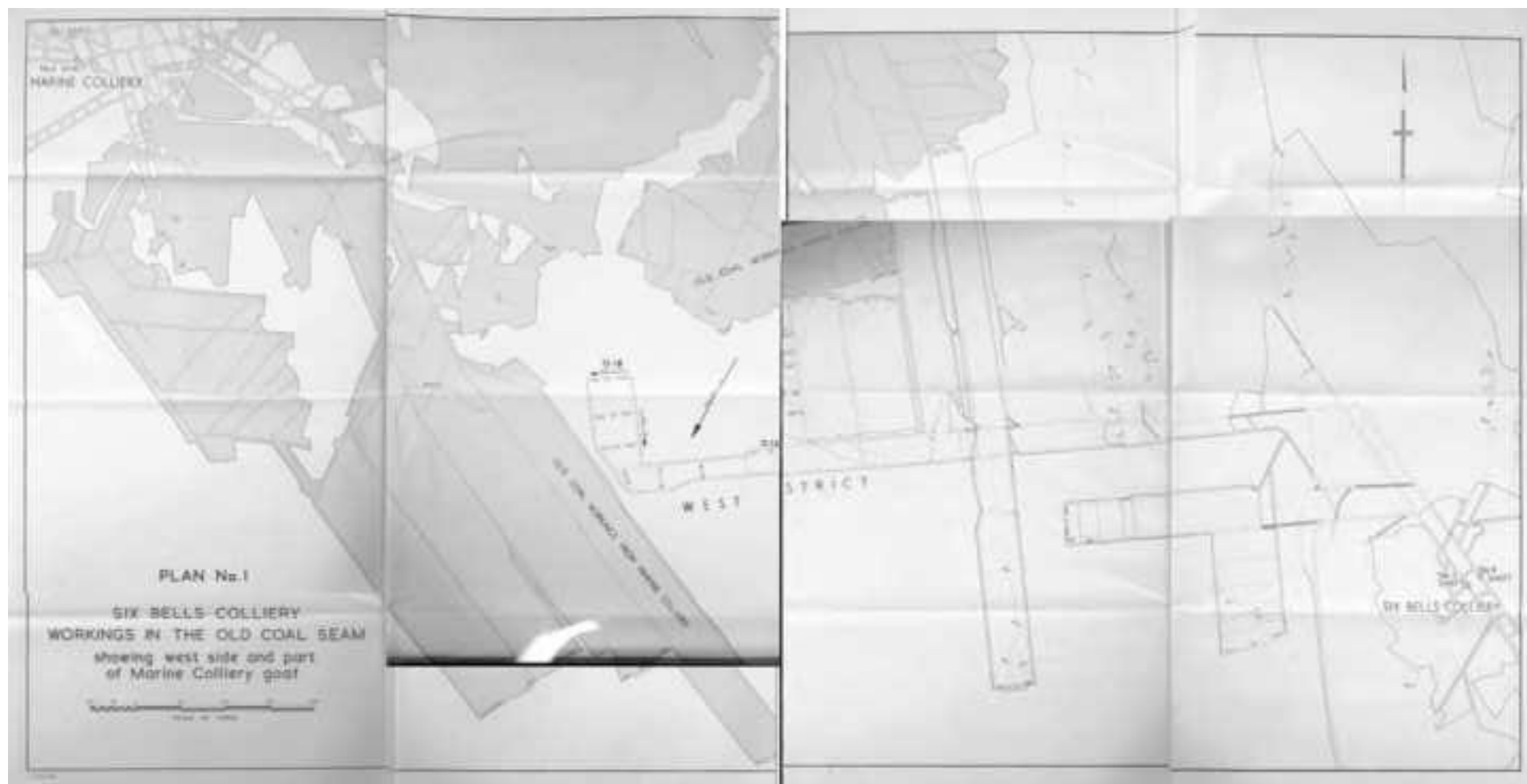
Figure 11. Aberfan Memorial Garden 2016 _ PA Images / Alamy Stock Photo

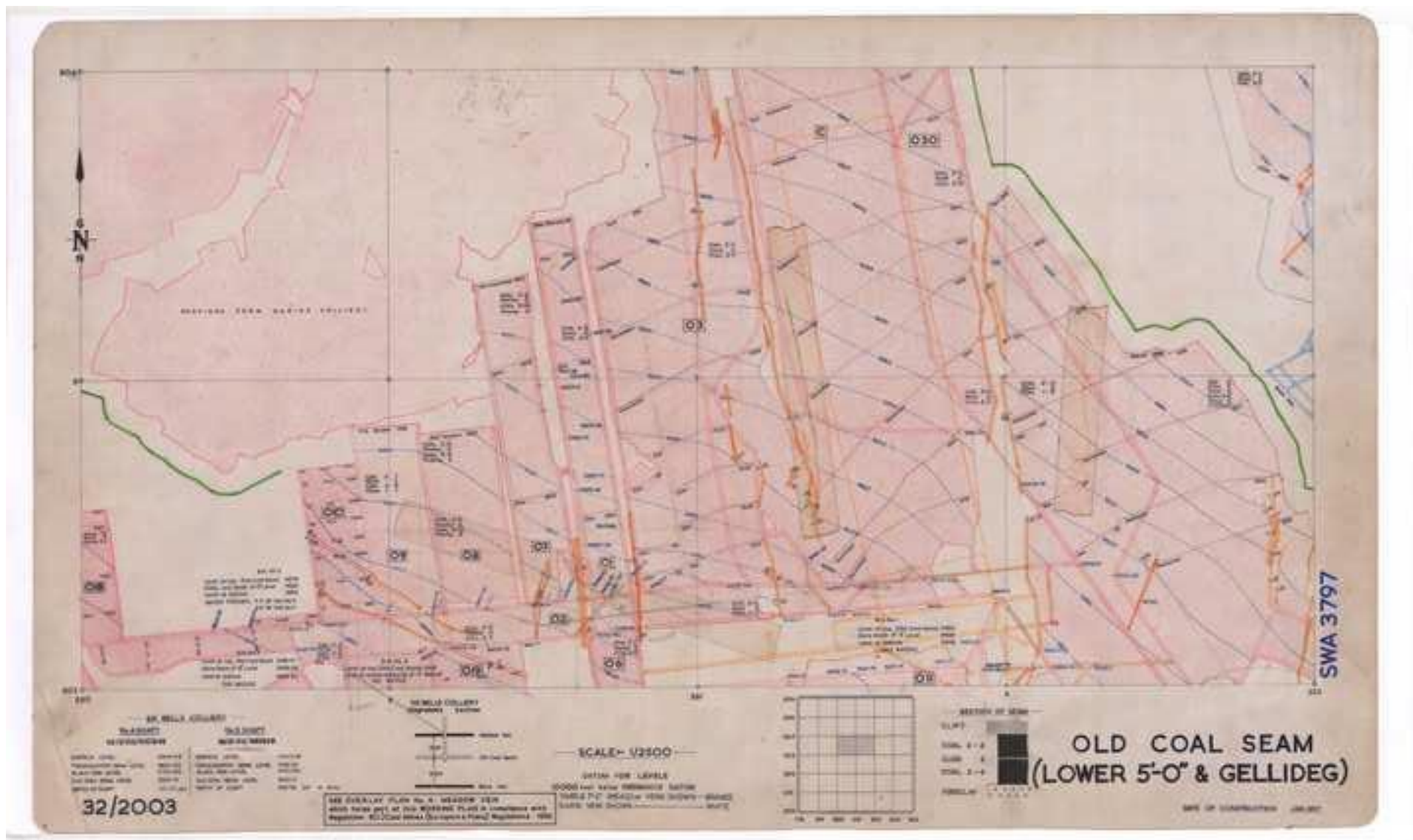
Figure 12. The Guardian of the Valleys _ Ken Price Photography / Alamy Stock Photo

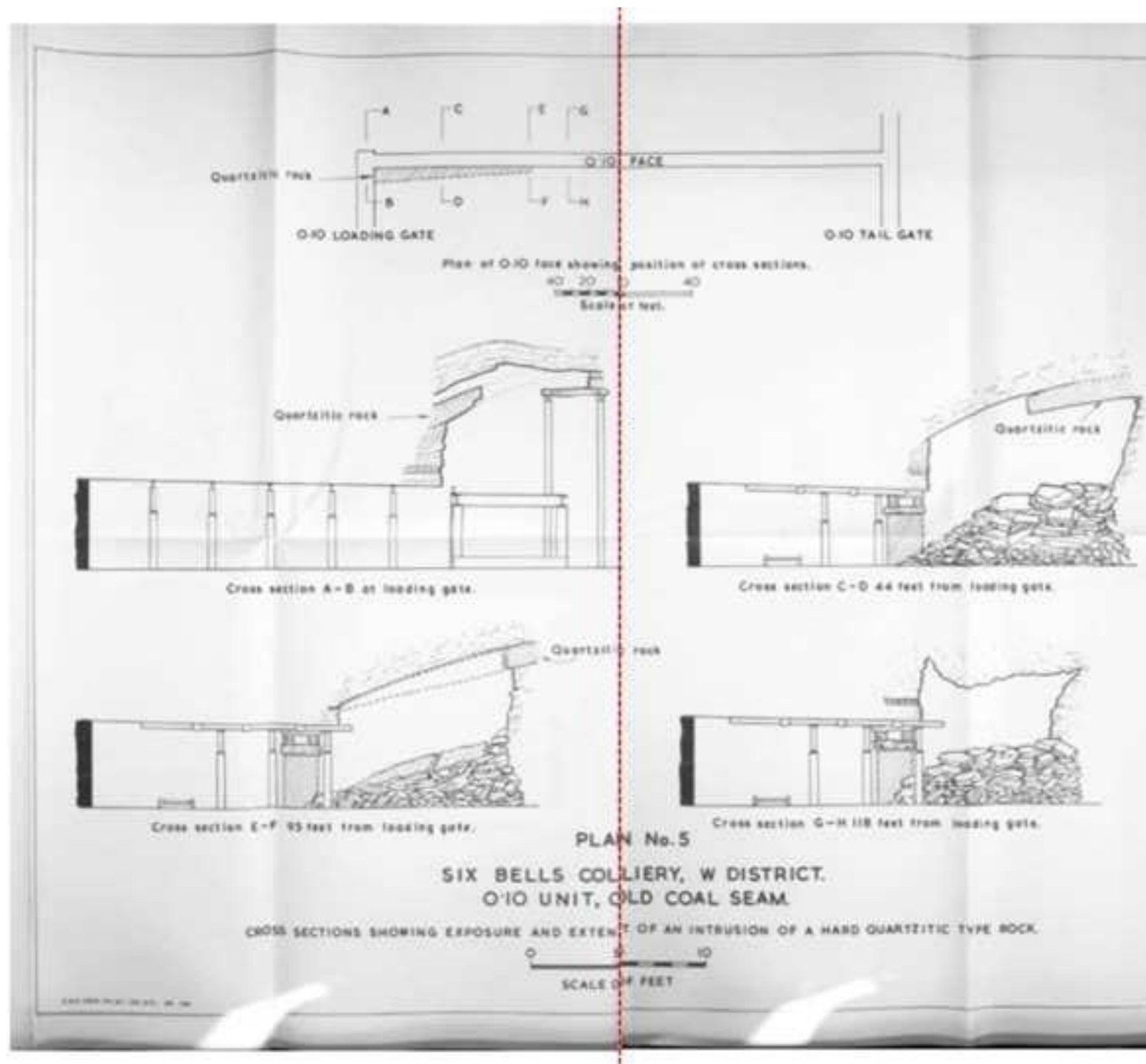
















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