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## GREEN AREAS WITH SENSORY IMPACT IN CREATING THE SURROUNDINGS OF SACRED PLACES

Green areas that have a clear impact on human senses and are associated with places of religious worship can create a special space for prayer, religious reflection and meditation, and the purpose of their impact can be to bring the recipient closer to God. A properly designed garden space with specific features can be an environment that promotes a personal relationship with the Creator, which has a refreshing effect on the spirit. In addition, it can have additional properties, e.g. it can also be an environment with therapeutic values.<sup>1</sup>

An ordinary garden is also perceived through the senses, primarily through the dominant sense of sight. In a sensory garden, other senses are also included – the so-called close ones, and this is the key to understanding the impact of these gardens on the recipient. In them, they are perceived from very close,<sup>2</sup> so you can physically check the structure of the soil, garden wall or the surface of leaves of various plants by touch. Sometimes you have to lean over the crown of a flower to smell its scent, and a sensory garden also encourages this. In addition, you can also actively draw positive stimuli from the surroundings and absorb nature through “distant senses.”<sup>3</sup>

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<sup>1</sup> Daniel WINTERBOTTOM, and Amy WAGENFELD, *Therapeutic Gardens. Design for Healing Spaces* (Portland – London: Timber Press 2015), 224–259.

<sup>2</sup> Hazrena HUSSEIN, “Sensory Garden in Special Schools: The issues, design and use,” *Journal of Design and Built Environment* 5 (2009): 77–95.

<sup>3</sup> Izabela KRZEPTOWSKA-MOSZKOWICZ, Łukasz MOSZKOWICZ, and Karolina PORADA, “What Affects the Depth of the Human-Garden Relationship in Freely Accessible Urban Sensory Gardens with Therapeutic Features in Various Users?” *Sustainability* 15 (2023): 14420.

Perceiving a garden through the senses should not be a goal in itself, but a way that allows for greater sensitivity of the recipient to the surroundings and openness to specific positive values. People perceive the world through their senses, but the stimuli reaching them can be both positive and negative. However, human contact with greenery that affects the senses has a restorative effect.<sup>4</sup>

First, the research aimed to collect examples of existing green areas associated with sacred places, which have a clear sensory impact, characteristic of sensory gardens. The next goal was to analyze them in order to determine whether it is possible to distinguish separate types among them, and then determine their characteristic features and meaning. It was also decided to assess their therapeutic values. The question was also asked about the role of greenery affecting the senses in creating spaces that carry meaning related to the sacred.

## 1. GARDENS AND NATURE AS A SPACE OF MEETING WITH GOD

Gardens that are created in places of sacred significance can take the form of gardens that, by influencing specific senses, will create an environment conducive to seeking and finding God. Prayer and reflection on the presence of God in human life can, and perhaps even should, take place in the surroundings of nature, which is God's masterpiece that is a reflection of God's Love.

St. Sister Faustina in her Diary presents an experience that she had in the space of the garden, which was connected with the natural surroundings. The garden opened up to a view of the natural landscape around the lake. The nun stood in amazement before God's work, devoted herself to contemplation, and through what her senses told her, it led her directly to an encounter with Merciful Jesus.

(...) When I was in Kiekrz to take the place of one of the sisters for a short time, one afternoon I went into the garden and stood on the lakeside, thinking for quite a while about the natural world. Suddenly I saw the Lord Jesus beside me, who graciously said to me: I have created all this for you, My bride, and know that all these beauty is nothing compared to what I have prepared for you in eternity. My soul was filled with such great sense of comfort that I stayed there till evening, though it seemed to

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<sup>4</sup> Tianyao ZHANG, Jiahui LIU, and Li HONGYANG, "Restorative effects of multi-sensory perception in urban green space: a case study of urban park in Guangzhou, China," *Int. J. Environ. Res. Public Health* 16 (2019): 4943.

me I had spent only a short while there. I was my free day, for a one-day retreat. so I was absolutely free to devote my time to prayer.<sup>5</sup>

In the event described here, there is a certain similarity to another encounter with Christ, which took place at a completely different time. It also took place in the surroundings of a garden, and it was also full of beauty flowing from the Love of God. This is the encounter of Mary Magdalene with the resurrected Jesus, who at first seemed to her to be the gardener.<sup>6</sup> There is an extraordinary symbolism in this encounter of this very person who has the power to bring back to life – she throws lifeless seeds into the soil, as if they were dead, because they show no signs of being alive, but after some time green shoots grow from them, and life is revealed in its fullness. God has the power to bring back to life, not only physically, but also spiritually. He is the Christ, the One whom both women – Mary Magdalene and St. Sister Faustina – sought and found. The beauty in their surroundings, in the admired natural environment, ultimately focuses on the Creator – the sought-after Jesus. The consequence of the encounter and recognition is that the hearts of these women are filled with immense joy and happiness. Nature surrounding man, but also that part of it that has been introduced into some framework and enclosed in the shape of a garden, is a reflection of God's features. It conceals them within itself, but at the same time reveals them to the observer, giving him insight into the mystery of God's power and God's love for man. This is also confirmed by the Catechism of the Catholic Church, as one of the theologians says:

According to (...) the Catechism, contemplation of the world of creatures helps man to know God, leads to confirmation in faith, and also to the proper direction of his life. For it shows that the world does not explain itself by itself, and therefore is not the ultimate goal for man. The ultimate goal is God, from whom everything came and towards whom everything is directed.<sup>7</sup>

Gardens in the history of Christianity were such places where, during an encounter with God, a person experienced a transformation of heart and mind – a transformation of the way of thinking and looking at one's own life. One of the most significant examples is St. Augustine's conversion to God, traditionally

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<sup>5</sup> Faustyna KOWALSKA, *Dzienniczek. Miłosierdzie Boże w duszy mojej* (Kraków: Wydawnictwo Misericordia, 2014), 158.

<sup>6</sup> J 20, 11-18.

<sup>7</sup> Maciej OSTROWSKI, "Teologia a środowisko przyrodnicze," in *Przyroda – Nauka – Kultura*, ed. Bogdan Zemanek (Kraków: Instytut Botaniki im. W. Szafera PAN, 2000), 165–174.

called the “Milan Night,” which took place in the setting of a garden, and even in a very close, sensory-touching contact with the garden: “And I threw myself down somewhere at the foot of a fig tree. I could no longer hold back the tears that immediately flowed from my eyes in a stream (...).”<sup>8</sup>

The second important event in St. Augustine’s life was a conversation with his mother – St. Monica. It took place in Ostia, where, gazing into a quiet, aromatic garden in the inner courtyard, they stood next to each other and talked. This is how the translator and commentator of St. Augustine’s “Confessions” describes this place: Augustine, drawing attention to the stimuli that reached their senses: “You can even today sit on a stone in one of these gardens, in the gentle sun, in the strong scent of herbs. And it is precisely such greenery that they look at, such silence that they listen to, Monica and Augustine (...).”<sup>9</sup> We can guess how positively this garden space affected the senses and what an important environment it was for moving thoughts towards God and discovering the mysteries of faith. The conversation they had was a summary of St. Monica’s life and a joint reflection of mother and son on earthly and eternal life. St. Augustine recalled this conversation as follows: “In longing we opened our hearts to the heavenly stream flowing from Your spring, the spring of life that is with You, so that, sprinkled with its water to the extent that it was possible for us, we could somehow reach that great mystery in thought.”<sup>10</sup>

## 2. NATURAL LANDSCAPE AND GARDEN SPACE AS A THERAPEUTIC ENVIRONMENT

The landscape surrounding a person can play a therapeutic role, which is confirmed by numerous studies. The concept of “therapeutic landscape” was introduced by Wilbert Gesler in 1992, initially in the field of health geography, but later it was also adopted in other branches of knowledge.<sup>11</sup> Some landscapes are closely related to religious worship and are called “religious landscapes.”<sup>12</sup> They create a space that is conducive to the return to health of the soul and body

<sup>8</sup> Św. AUGUSTYN, *Wyznania* (Kraków: Wydawnictwo Znak, 2009), 237.

<sup>9</sup> Zygmunt KUBIAK, “Od Tagasty do Ostii,” in św. Augustyn, *Wyznania* (Kraków: Wydawnictwo Znak, 2009), 18–19.

<sup>10</sup> Św. AUGUSTYN, *Wyznania*, 263.

<sup>11</sup> Anna STANIEWSKA, *Oblędne ogrody. Terapeutyczne właściwości krajobrazu jako podstawa kompozycji zespołów szpitali psychiatrycznych XIX i na początku XX w.* (Kraków: Wydawnictwo Politechniki Krakowskiej, 2020), 23–24.

<sup>12</sup> Urszula MYGA-PIĄTEK, “Krajobrazy sakralne i religijne – próba umiejscowienia w typologii krajobrazów kulturowych,” *Prace Komisji Krajobrazu Kulturowego* 17 (2012): 13–23.

(an example is Lourdes). The healing influence of nature and its positive impact on the human psyche was clearly emphasized by one of the “spiritual fathers” of nature conservation in Poland, Jan Gwalbert Pawlikowski. His words were probably based on the knowledge brought by Latin culture, that: “Medicus curat, natura sanat” – “The doctor treats, nature heals.”<sup>13</sup> This conviction of his, explained in detail, must have resulted from his own experience and reference to his world at that time. Pawlikowski wrote:

Nature is that revitalizing bath which restores the strength exhausted in the human world – it is a quiet temple in which the soul, far from the hustle and bustle of everyday activities, stands face to face with itself and comes to reflect on itself – it is a place of purification from all that has stuck to us as alien and imposed – it is a place of measure and weight, a place of disinterested judgment, a place of looking from a distance from the angle of seeing eternity, it is finally a place of flight of free, own, rested thought, not dwarfed and shrunken by considerations and circumstances...<sup>14</sup>

Nowadays, his words have been scientifically confirmed in numerous studies and theories put forward by researchers. The classic ones are the works of Ulrich.<sup>15</sup> How much Pawlikowski’s words, spoken a hundred years ago, perhaps even more relate to our times and to the confusion of modern man, who, precisely through contact with nature, can find fundamental values and even find himself. There is also a clear emphasis on acquiring spiritual goods, which is revealed by comparing the natural surroundings to a “temple” or using the words “seeing eternity.” Nature can be a unique place where, just like within the walls of a church, a person can come to deep spiritual, religious reflections.

Not only nature untouched by people, but also included in the framework of a garden can play a rebuilding role for man (restorative gardens), if it leads the recipient to regain the balance of the internal environment of the body (homeostasis), which can result in an improvement in emotional and mental condition.<sup>16</sup> Especially gardens, which are part of urbanized areas, are unique spaces

<sup>13</sup> Jest to stwierdzenie przypisywane Hipokratesowi.

<sup>14</sup> Jan Gwalbert Pawlikowski’s words: Zbigniew MIREK, “Duchowy wymiar relacji człowiek-przyroda,” in *Przyroda – Nauka – Kultura*, ed. Bogdan Zemanek (Kraków: Instytut Botaniki im. W. Szafera PAN, 2000), 123–124.

<sup>15</sup> Roger ULRICH, “Health benefits for gardens in hospitals. Paper for conference: Plants for People,” accessed March 15, 2020, <http://thenewchildrenshospital.ie/wp-content/uploads/2011/09/HealthSettingsUlrich.pdf>.

<sup>16</sup> Joanne WESTPHAL, “Hype, Hyperbole, and Health: Therapeutic site design,” in *Urban Lifestyles: Spaces, Places People*, ed. John F. Benson, and Maggie H. Rowe (Rotterdam: Brookfield A.A. Balkema, 2000), 19–26.

separated from the urban environment. These are places where you can activate or sensitize senses dulled by strong and often negatively influencing stimuli, the source of which is the city. Gardens are a space where a slow rhythm and lack of violence dominate in the surroundings of plants, which is noticed by recipients and allows them to calm down and relax.<sup>17</sup>

### 3. RESEARCH METHOD AND PLACES OF STUDY

At the beginning of the research, green areas were found that were associated with sacred places and that had a clear sensory impact. This was part of the work conducted for many years on gardens with a sensory impact. They were conducted primarily in Poland, but also in countries from the Anglo-Saxon cultural circle, where complementary research was also conducted. They were grouped according to a specific type.

The next stage was to examine their features in order to determine their therapeutic values. An important feature of these green areas was the location associated with the sacred environment, or if they occurred outside places of worship, they had a reference to the sacred (e.g. biblical gardens). Five publicly accessible gardens existing in Poland were selected for detailed analyses of therapeutic values. These were green areas that were visited and examined during fieldwork. These are examples of best practices in the design of such areas. When selecting them, it was also taken into account to include different types of these gardens in the analysis. The analysis of therapeutic potential was performed using the Trojanowska method,<sup>18</sup> adapted to the study of sensory gardens by Krzeptowska-Moszkowicz *et al.*<sup>19</sup> The method is based on the analysis of their attributes, and the attribute is: “a feature of space or the presence of equipment elements.”<sup>20</sup> Next, it was analyzed which plants create the specificity of these areas, due to the value related to the sacred, as well as the clear effect on the recipient’s senses.

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<sup>17</sup> Anna ADEVI, and Fredrica MÄRTENSSON, “Stress rehabilitation through garden therapy: The garden as a place in the recovery from stress,” *Urban Forestry & Urban Greening* 12 (2013): 230–237.

<sup>18</sup> Monika TROJANOWSKA, *Parki i ogrody terapeutyczne* (Warszawa: Wydawnictwo Naukowe PWN, 2017), 23–163; Monika TROJANOWSKA, “The Universal Pattern of Design for Therapeutic Parks. Methods of Use,” *International Journal of Scientific & Engineering Research* 9, no. 9 (2018): 1410–1413.

<sup>19</sup> Izabela KRZEPTOWSKA-MOSZKOWICZ, Łukasz MOSZKOWICZ, and Karolina PORADA, “Evolution of the Concept of Sensory Gardens in the Generally Accessible Space of a Large City: Analysis of Multiple Cases from Kraków (Poland) Using the Therapeutic Space Attribute Rating Method,” *Sustainability* 13 (2021): 5904.

<sup>20</sup> TROJANOWSKA, *Parki i ogrody terapeutyczne*, 25–26.

#### 4. RESULTS: TYPES OF SACRED GARDENS AFFECTING THE SENSES

During the research on gardens that affect the senses, many different types of gardens were found. Most of them were connected to sacred places. In some, only selected parts of these gardens had a clear sensory impact and sacred meaning.

Gardens carrying content related to the sacred and affecting the senses can be created in the following forms:

- in the form of a garden cloister – referring to a monastery cloister, but in a garden setting. There is a path that instead of cloisters can lead under pergolas or along low alleys or under tree crowns, or be surrounded by higher greenery; (e.g. Physic Garden and Sensory Garden, gardens next to Buckfast Abby, England);
- as a biblical garden, where one wanders contemplating biblical events, a garden that speaks through plants and sculptures. It has great symbolic meaning; (e.g. Biblical Garden, Proszowice, Poland);
- in the form of a square or green with a dominant (the statue) – the dominant element is, for example, a statue of the Mother of God, or another, surrounded by greenery, referring in various ways to the presented figure, creating a prayerful environment; (e.g. a square with greenery that affects the senses, presented in the form of rays running to the statue of Virgin Mary, Pawlikowice, Poland);
- in the form of a prayer path – it can have the shape of a loop or a winding route surrounded by plants, e.g. aromatic ones, which leads along the Way of the Cross or the mysteries of the Rosary; (e.g. the Way of the Cross at the Sanctuary of Divine Mercy in Krakow);
- as a covered, closed garden, protected, e.g. by a hedge from the rest of the space or in the form of a gazebo surrounded by plants or water. In this place, there can be a special impact on specific senses, e.g. the sense of smell or hearing. There should be places to sit and pray individually, reflect or places to meet in small groups; (e.g. a gazebo surrounded by water and fountains, in the garden by the Bernardine church, Rzeszów);
- in the form of a labyrinth – a path leading in bends, winding, but symbolizing the path to conversion, leading to transformation (like labyrinths on the floors in Gothic temples, e.g. the form of labyrinthine plantings made of low hedges, e.g. in the garden by the Bernardine church, Rzeszów);
- as a path of symbolic passage – here water is of primary importance; symbolic crossing over water in the garden surroundings; crossing water captured in the form of a stream, lake (e.g. in the Biblical Gardens in Proszowice and Stara Wieś).

Gardens that have a sensory impact can be separate green areas or be included in larger spaces as individual garden interiors. The form a given garden will have may depend on its area, but also on the specific function it will perform in a given place. Just as Gothic cathedrals were a reflection of the universe created by God – the Creator, the Demiurge, so it can be similar in gardens, they can also reflect God's features and open man to God's love. In gardens of the senses, just as in Gothic cathedrals, there are labyrinths that can direct the steps of the recipient into the depths of mystery and reflect the path of life or the path of conversion.

## 5. THERAPEUTIC VALUES OF STUDIED GARDENS

Table 1. Assessment of the therapeutic values of public green areas with sensory garden features – functional program.

	Attributes	Garden at the Bernardine Monastery: Rzeszów	Biblical Garden: Stara Wieś	Biblical Garden: Proszowice	Garden at the abbey ruins – Zagórz	The square around the statue of Virgin Mary: Pawlikowice
1. functional program						
a) enabling mental and physical regeneration	places to rest and contemplate the surroundings	YES (1) benches in different parts of the garden	YES (1) there are places to sit and relax	YES (1) places to sit in different parts of the garden	YES (1) benches in many parts of the garden	NO (0) none; there could be some near the statue
	isolation from the urban environment: noise, smells, time pressure and rush	YES/NO (0.5) the garden is located on busy streets and despite the greenery, noise can be heard; a busy path that shortens the path for passers-by	YES (1) the garden is behind the church, and a high wall separates it from the street	YES (1) the garden creates a green strip between the buildings, but there is a busy street from the entrance gate	YES (1) the garden is on a hill overlooking the town, and within the abbey walls	YES/NO (0.5) the square is on a street with little traffic; but the hedge behind the statue could be higher
	possibility of easy observation of animals or people	YES/NO (0.5) primarily people and urban birds	YES (1) birds and insects – there are higher plants	YES (1) insects, also people walking in the garden	YES (1) insects, including people walking in the garden	YES (1) insects, including people in the square's surroundings



b) promoting social contacts	possibility of group meetings	YES/NO (0.5) there is a space with a few benches in the corner of the garden, but the noise from the street makes contact difficult	YES (1) some benches are arranged in groups of several, there is also a large gazebo	YES (1) there is a space for meetings – a round square under a tree	YES/NO (0.5) you can sit in the meadow above the garden, but there are no other facilities	NO (0) the garden/square does not have such places
c) supporting physical activity	a place for fun and recreation	NO (0) no “sunbathing” on the lawns, no use of them	NO (0) the garden has other purposes	NO (0) the garden has other purposes	NO (0) the garden has other purposes	NO (0) the garden has other purposes
	a place for gardening/horticultural therapy	NO (0) – none	NO (0) the garden has other purposes	YES (1) there are therapeutic activities in this space	NO (0) – none	NO (0) – none
e) cognitive support	features that enable education in the garden	NO (0) – none	YES (1) – information boards, signs with names of plants	YES (1) educational boards; boards with names of plants, quotes from the Bible	YES (1) information boards, educational	NO (0) – none
total points		6/13	10.5/13	10/13	7.5/13	3.5/13
d) meeting basic user needs	safety in the garden space	YES/NO (0.5) the area is fenced, but the proximity of parking lots, streets, and passers-by has a negative impact	YES (1) the area behind the monastery, surrounded by a fence and a wall	YES (1) the area is fenced, the entrance is only from one side, it is located next to the Caritas building	YES (1) the area is surrounded by a fence	YES/NO (0.5) the area is located between buildings, it has no fence
	safety during close contact with plants	YES/NO (0.5) the plants used are safe, but there are also rose bushes	YES/NO (0.5) most of the plants are safe, but there are thorny plants	YES (1) safe plants were used; there are roses on trellises, but they are placed far from the paths	YES/NO (0.5) low hedges around the flower beds, but thorny shoots get on the path	YES (1) plants grow in trimmed, low strips

d) meeting basic user needs	sheltered seating or shelter	YES/NO (0.5) you can take shelter under numerous pergolas	YES (1) there are places under the roofs of small buildings and in the gazebo	YES/NO (0.5) none in the garden, but possible in the Caritas building	YES/NO (0.5) none in the garden, but they are in the museum building	YES/NO (0.5) none in the garden, but they are in the church
	sun and shade rest areas	YES (1) there are places in the sun and under pergolas	YES (1) there are places in the sun and in the shade	YES (1) there are places in the sun and in the shade	NO (0) – the area is in the sun	NO (0) – the area is in the sun
	disabled facilities	YES/NO (0.5) wide, even paths; but no special facilities, e.g. for the blind	YES (1) wide paths; large maps of Egypt and the Holy Land with models of buildings	YES/NO (0.5) wide paths; but no special facilities, e.g. for the blind	YES/NO (0.5) wide paths; but no other facilities, e.g. for the blind	NO (0) – none
	indirect comfort features: access to food, drink and toilets (etc.)	YES (1) they are located in the parking lot, under the garden	YES (1) in the buildings near the church you can meet your essential needs	YES/NO (0.5) the garden is in the city centre, also some needs in the Caritas building	YES/NO (0.5) nearby, in the Museum building	NO (0) – none

Table 2. Assessment of the therapeutic values of public green areas with sensory garden features – analysis of other attributes that built the garden space.

	Attributes	Garden at the Bernardine Monastery: Rzeszów	Biblical Garden: Stara Wieś	Biblical Garden: Proszowice	Garden at the abbey ruins: Zagórz	The square around the statue of Virgin Mary: Pawlikowice
2. functional and spatial structure	isolating the garden from its immediate surroundings in order to create a separate, intimate space	YES/NO (0.5) the slight elevation of the garden helps, but the surrounding plantings do not cover the interior very well	YES (1) the terrain and the fence help to isolate	YES (1) higher plantings; numerous interiors; the garden is elevated above the road leading to the building	YES (1) the garden is behind the abbey, on a hill, the area is fenced	YES/NO (0.5) the square is slightly elevated, surrounded by a higher curb and a hedge behind the statue

2. functional and spatial structure	locating it in a place that allows for the retention of smells and sounds inside the garden	YES/NO (0.5) partly, in some places there are higher plants, but in the middle there is a wide space with a lawn	YES (1) the wall and the plants in the garden create interiors	YES (1) garden surrounded by building walls and high and low plantings	YES/NO (0.5) on one side the train is covered by the abbey walls	YES/NO (0.5) the green area has no fence but is located between the buildings
total points		1/2	2/2	2/2	1.5/2	1/2
3. shaping interior spaces and architectural form	degree of complexity of the garden, presence of various interiors, appropriate path system	YES/NO (0.5) in some parts of the garden there are separate interiors – more on the edge, in the middle there is too much empty space	YES (1) garden divided into various interiors, most often separated by higher plantings	YES (1) garden divided into interiors where you can sit and spend longer time	YES (1) formal garden with numerous flower beds divided by paths,	YES/NO (0.5) there are interiors thanks to the plantings, as rays running to the statue
	composition clarity	YES/NO (0.5) average legibility, many elements on the edges	YES (1) composition legible	YES (1) geometric composition legible	YES (1) geometric composition legible	YES (1) composition legible
	presence of water in the garden, especially water in motion	YES (1) fountains with bridges, with a gazebo in the middle for sitting	YES (1) many different types of water features	YES (1) a shallow stream for crossing and a fountain	NO (0) no water features	NO (0) no water features
	sensory effect of plants on individual senses	YES/NO (0.5) mainly the sense of sight and partly the sense of smell (roses)	YES (1) there are grasses, herbs and a large variety of other plants	YES (1) there are grasses, herbs, roses, exotic plants with large leaves	YES (1) primarily the sense of smell and vision	YES (1) the sense of sight, smell and hearing

3. shaping interior spaces and architectural form	intensity of the impact of plants on the senses: diversity, surfaces, elevation	YES (1) climbing, fragrant roses on trellises, along one entire side of the garden	YES/NO (0.5) no separate, flower beds that affect the senses	YES (1) roses on trellises, herbs in larger groups, taller grasses	YES/NO (0.5) primarily intensively for the sense of smell	YES (1) intensity of effect on the senses, dense plantings of plants
	other elements with sensory impact (e.g. labyrinth, sensory path)	YES (1) a pattern of medium-high hedges creates a kind of maze with gravel; used by children	YES (1) a path between water cascades; maps of Egypt, the Holy Land; a slab path across a lake	YES (1) a path for wading in shallow water across a stream; a sensory path next to the garden	NO (0) – none	YES/NO (0.5) the rays created by alternating strips of plants and gravel create an interesting arrangement
total points		4.5/6	5.5/6	6/6	3.5/6	4/6
4. creating space	possibility of personalizing the space	NO (0) – none	NO (0) – none	NO (0) – none	NO (0) – none	NO (0) – none
	possibility of animating the space	YES (1) shows, performances on a set stage	YES (1) there is a large, deep amphitheater	YES (1) possibility of various activities, retreats	NO (0) – none	NO (0) – none
	artistic products	YES/NO (0.5) rose trellises have an interesting shape	YES (1) many works of art, figures, models of buildings; chapels (Ways of the Cross), etc.	YES (1) a boxwood candlestick (menorah), large polished stones with quotes from the Bible, etc.	YES/NO (0.5) none; but there is a direct view of the abbey ruins	YES (1) the statue of Virgin Mary, which is the dominant feature in the square
	usage instructions for close-up garden viewing	NO (0) there are prohibitions, but no indications facilitating close reception of the garden	NO (0) – none	YES (1) this type of garden referring to the Bible provides peace and reflection	NO (0) – none	NO (0) – none
total points		1.5/4	2/4	3/4	0.5/4	1/4

## 6. THE ROLE OF PLANTS IN SHAPING THE LAYER OF MEANING OF THESE GARDENS

Plants are an essential element of gardens that have a sensory effect if they are to give space the values that were listed above in the introduction. They affect not only through their presence and action directly on the senses, but can also carry a specific content in such gardens, creating a layer of meaning related to the sacred.

Table 3. Selected elements of the analyzed gardens created by plants that give them a clear meaning related to the sacred, but also have a sensory effect.

	How plants give meaning	Realization of this meaning in a given assumption	Sensory impact – dominant senses
<b>A) Garden at the Bernardine Monastery: Rzeszów</b>	<u>give meaning through form</u>	a pattern of medium-tall cut plants creating a kind of maze, with gravel between the plants	– sense of spatial orientation; – sense of hearing: crunch of gravel
<b>B) Biblical Garden: Stara Wieś</b>	<u>give meaning primarily through the symbolism of specific species, referring to the Bible</u>	symbolic meaning of specific plants, with description and other attributes in the garden, e.g. grapevine	– sense of sight: shapes created by plants; – sense of touch; different surfaces of leaves to the touch; – sense of hearing: the rustle of leaves, e.g. grass
<b>C) Biblical Garden: Proszowice</b>	<u>give meaning through form, but also through the biblical symbolism of specific species</u>	cut low boxwood bushes create a specific shape associated with the Bible, e.g. a candlestick (menorah); plants have a specific symbolic meaning, e.g. a burning bush – ash-leaved dittany	– sense of sight: shapes created by plants; – sense of touch; different surfaces of leaves to the touch; – sense of hearing: the rustle of leaves, e.g. grass
<b>D) Garden at the abbey ruins: Zagórz</b>	<u>medicinal significance of species on several herbal plots;</u> and also <u>the form</u> – plants forming a border give the shape of a square	plants have specific medicinal meanings; they are associated with monastic gardens, e.g. sage ( <i>Salvia officinalis</i> ); the square shape of the quarters – meaning very strongly associated with the sacred, especially in the Middle Ages (Romanesque style)	– sense of smell: the smell of medicinal herbs; – sense of sight: flowering species of herbs, e.g. lavender

<b>E) The square around the statue of Virgin Mary: Pawlikowice</b>	<u>creating meaning through form;</u> <u>creating meaning through color</u>	the rays that run towards the statue of the Virgin Mary are made of plants; the rays have specific colors thanks to the colors of the flowers of individual species, e.g. blooming rose bushes	– sense of sight: each ray has a different, clearly visible color: blue, white, pink, yellow; – sense of smell: some species give off an aroma; – sense of hearing: the crunch of gravel between the rays, and the buzz of insects pollinating flowers
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## 7. DISCUSSION

The analysis of therapeutic values has shown that biblical gardens have the most attributes that determine the creation of an environment with a therapeutic effect. They already have a developed form, rich symbolism, and thanks to this a very significant positive impact on the recipient. They are created by both plants and sculptures, small buildings, small architecture, and usually have water elements, and each element has a specific meaning.<sup>21</sup> They are also used for various activities, for example therapeutic or evangelical.<sup>22</sup> The green area in Pawlikowice received the fewest points in the above study and clearly has fewer attributes than other forms of greenery. Due to their specificity, green areas are very small green areas and this seems to be key to the lack of many features. Is it justified to conduct this type of analysis for such small green areas? It seems that it is, and the use of the analysis shows where they are lacking and what attributes can be added to them. Thanks to them, they will be a space that has a more impact on the recipient. Such a significant lack is the lack of places to sit, which are not available in the green area in Pawlikowice, and which would allow for a longer stay and contemplation of the sacred and natural surroundings using the senses. Well-designed, even such small areas, can bring many positive values to the vicinity of sacred buildings. Currently, the values of plants and their conscious use in the vicinity of sacred places are still used to a small extent, as evidenced by the analysis of the surroundings of rural churches in the Archdiocese of Lublin, which indicated that the role of greenery near these facilities is sometimes

<sup>21</sup> Monika TROJANOWSKA, "Biblical Gardens and the Resilience of Cultural Landscapes – A Case Study of Gdańsk, Poland," *Land* 12 (2023): 137.

<sup>22</sup> Zofia WŁODARCZYK, "Ogród biblijny jako metoda ewangelizacji," in *Dni Jana Pawła II 2009, w 31 rocznicę powołania na Stolicę Piotrową. Materiały Seminarium 5 listopada 2009 w Politechnice Krakowskiej: "Wiara – Nauka – Technika,"* ed. Wojciech Kosiński (Kraków, Politechnika Krakowska im. T. Kościuszki, 2009), 31–38.

marginalized,<sup>23</sup> and although they have great therapeutic potential, it is not fully utilized.<sup>24</sup>

Many plants, through their symbolism related to the sacred, can expand the impact of green areas associated with sacred places. This is an asset that allows for the distinction of the sacred zone in the surroundings of sacred objects, e.g. churches, which should be clearly marked and have features that distinguish it from the rest of the surroundings. Currently, the boundary between the sacred and the profane is sometimes blurred.<sup>25</sup> The analysis conducted here shows that in the spaces analyzed, which are examples of good practices, the symbolism of plants may refer to the Bible (as in the biblical gardens in Proszowice and Stara Wieś), may also refer to saints, their character traits, and this is the meaning assigned to plants in previous centuries, even in the Middle Ages.<sup>26</sup> The symbolism of plants may also be associated with restoring health, which in the Middle Ages was closely associated with the work of monks. Since the Middle Ages, there were gardens in the surroundings of monasteries, from which plants were obtained and medicinal products were produced.<sup>27</sup> They were often aromatic, at the same time providing olfactory impressions. Some traditions concerning healing are continued in some congregations to this day. Therefore, plants that are medicinal herbs and are associated with health can be introduced into the sacred environment, and thus bring positive symbolic value and sensory impact.<sup>28</sup> Such plants were found in some plots near the ruins of the abbey in Zagórze, but many other species introduced there have little reference to this sacred environment and have little sensory impact. The use of appropriately selected plant species

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<sup>23</sup> Piotr KULESZA, *Współczesne otoczenie wiejskich kościołów parafialnych archidiecezji lubelskiej. Analiza dendrologiczna z aspektami kompozycyjnymi i krajobrazowymi* (Lublin: Katolicki Uniwersytet Lubelski Jana Pawła II, Wydawnictwo KUL, 2023), 403.

<sup>24</sup> Piotr KULESZA, "Church surroundings as spaces with health-promoting function – possibilities and dilemmas," *Acta Sci. Pol., Administratio Locorum* 23, no. 3 (2024): 461–472.

<sup>25</sup> Ewa TRZASKOWSKA, and Paweł ADAMIEC, "Sacrum i profanum w ogrodach przykościelnych," *Prace Komisji Krajobrazu Kulturowego* 22 (2013): 129–141.

<sup>26</sup> Małgorzata ŻAK, "Ogrody Maryi – kompozycje miejsca i wypełnienia roślinne. Zarys ikonografii motywu Madonny na tle ogrodu," *Roczniki Humanistyczne* 54, no. 4 (2006): 99–145.

<sup>27</sup> Małgorzata MILECKA, "Średniowieczne dziedzictwo sztuki ogrodowej klasztorów europejskich," *Hereditas Monasteriorum* 1 (2012): 31–36.

<sup>28</sup> Izabela KRZĘTOWSKA-MOSZKOWICZ, Łukasz MOSZKOWICZ, and Miłosz ZIELIŃSKI, "Application of aromatic medicinal plants for creating a therapeutic environment that has a sensory impact in the built environment," *Space & Form* 61 (2025): 133–160.

can enhance the significance of places associated with the sacred, even if they are located in public spaces.<sup>29</sup>

The colours of flowering species that affect the sense of sight can also introduce a certain symbolism. This symbolism has also been known since the Middle Ages, and when used today it is still legible to the recipient, e.g. white and blue refer to Mary and symbolise her virtues.<sup>30</sup> It can also be significantly expressed through form, e.g. through specific symbolic shapes created from plants, e.g. the shape of a candlestick (menorah), as well as through the shape of the flower beds themselves, such as a circle or square. In places belonging to the sacred environment, certain elements introduced to these areas are even a kind of repetition of certain features characteristic of sacred architecture. These are, for example, labyrinths or cloisters. Labyrinths are known from medieval Gothic temples. An example preserved to this day is the labyrinth on the floor of the cathedral in Chartres (France).<sup>31</sup>

On the other hand, the cloisters surrounding the inner courtyard are still present in the monastery complex, and date back to the time of the first monastery on Monte Cassino, established according to the Benedictine rule.<sup>32</sup> Certain elements of the garden, such as pergolas running around a small green area or a path on one side covered by a higher hedge, may be associated with a cloister – a place for religious reflection and walks, among other things. These elements, inspired by architecture, may play a similar role in contemporary green areas surrounding sacred places, as they once did in the interiors or inside monasteries or temples, because nature itself creates an environment that encourages reflection and stopping. In typical sensory gardens, labyrinths are not uncommon, they are associated with the sense of spatial orientation. In them, they play the role of a path of symbolic wandering, while at the same time maintaining close contact with nature, which is important for reducing stress, as in The Lerner Garden of Five Senses (USA).<sup>33</sup> Sensory gardens are designed in such a way that the recipient perceives the surroundings in a special way through the senses. However, in order to experience the soundscape, certain

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<sup>29</sup> Monika TROJANOWSKA, "Miejsca święte w zielonych przestrzeniach publicznych. Sacred places in public open green areas," *Teka Komisji Urbanistyki i Architektury PAN Oddział w Krakowie* 46 (2018): 419–429.

<sup>30</sup> Krystyna PUDELSKA, and Anna MIROSLAW, "Symbolika średniowiecznych ogrodów przyklasztornych i ich roślinność," *Teka Kom. Arch. Urb. Stud. Krajoobr. – OL PAN* 9, no. 2 (2013): 49–56.

<sup>31</sup> Janusz NOWIŃSKI, "Labirynt w średniowiecznych kościołach i klasztorach – droga i symbol drogi; alegoria ludzkiego życia i dążenia do zbawienia," in *Dziedzictwo architektoniczne: badania oraz adaptacja budowli sakralnych i obronnych* (Wrocław: Politechnika Wrocławska, 2019), 128–141.

<sup>32</sup> Wilfried KOCH, *Style w architekturze. Arcydzieła budownictwa europejskiego od antyku po czasy współczesne* (Warszawa: Bertelsmann Publishing, 1996), 528.

<sup>33</sup> WINTHERBOTTOM, Wagenfeld, *Therapeutic Gardens*, 89–93.



conditions are required – silence is necessary. Previous studies have shown that there are few sensory gardens which, by introducing additional guidelines regarding the use of the garden, e.g. a ban on loud behaviour, create conditions for expanding the range of positive stimuli.<sup>34</sup> An example of such a garden is the Secluded Garden within the Royal Botanic Gardens in London. In the case of the surrounding greenery accompanying sacred buildings, this will be consistent with the idea of acoustic protection of the sacred landscape.<sup>35</sup> It is threatened, for example, by the pressure of high tourist traffic, which also appears near such buildings.

## CONCLUSION

The result of our work is:

- distinguishing specific forms of gardens with sensory impact associated with places of worship. They can function as independent green areas or be part of larger green areas. Defining these forms and their characteristic features can have practical significance: they can be an inspiration for creating similar places with specific features and meaning;
- analysis of the therapeutic values of these areas, according to the Trojanowska method, adapted by Krzeptowska-Moszkowicz *et al.*, which showed that the most attributes are possessed by those types of areas that already have precisely defined features and a clearly developed form. However, other studied green areas can be enriched with specific, selected attributes, expanding their positive therapeutic impact. The use of this method confirms that it facilitates the formulation of important generalizations. Firstly, it allows for a precise analysis of these green areas and the specification of their features, and their presentation in a tabular format, which allows for quick finding of specific attributes, and consequently also easy comparison of them with each other. Secondly, it allows for finding specific deficiencies that can increase the value of these assumptions;

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<sup>34</sup> Izabela KRZEPTOWSKA-MOSZKOWICZ, Łukasz MOSZKOWICZ, and Karolina PORADA. "Znaczenie miejskich ogrodów sensorycznych o cechach przyjaznych organizmom rodzimym, na przykładzie dwóch przypadków z terenu dużych miast europejskich: Krakowa i Londynu," in *Integracja Sztuki i Techniki w Architekturze i Urbanistyce*, v. 6 (Bydgoszcz: Katedra Architektury i Urbanistyki, Wydział Budownictwa, Architektury i Inżynierii Środowiska, Uniwersytet Technologiczno-Przyrodniczy im. Jana i Jędrzeja Śniadeckich, 2020), 61–68.

<sup>35</sup> Małgorzata MILECKA, "Cysterski krajobraz ciszy," *Prace Komisji Krajobrazu Kulturowego* 11 (2008): 183–192.

- confirmation of the significant importance of plants in creating an environment that affects the senses of the recipient, and at the same time gives meaning related to the sacred. They carry this value both through the form they create and through their own semantic symbolism. The use of specific forms, as well as the introduction of specific species, plays an important role in creating a valuable environment for sacred objects;
- green areas with a sensory impact, through their characteristic features and influence on the recipient, provide a basis for creating an environment with therapeutic significance. Their connection with sacred objects through the use of appropriately selected greenery, which also carries a semantic value, can be a proposal for creating an environment with specific values. The impact of these areas is expanded, and a space for prayer, religious reflection and meditation is created;
- our research also led us to the premise that a single guideline introduced in the garden of the senses regarding behavior in this space can significantly affect the reception of the environment by the visitor. In a prayer or meditation garden of the senses, there should be a possibility of quiet, individual immersion in the garden space. The solution may be “paths of prayer and meditation,” where nothing will be an obstacle to an individual, intimate meeting with God, where it would be a good idea to introduce a guideline so that the silence is not disturbed in these places.

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## GREEN AREAS WITH SENSORY IMPACT IN CREATING THE SURROUNDINGS OF SACRED PLACES

### S u m m a r y

Research conducted on gardens with sensory impact has allowed us to conclude that even in spaces of religious significance, and above all in the surroundings of sacred objects, there are green areas that have a clear impact on the senses of the recipient. The deliberate use of elements introducing sensory stimuli, especially plant material, broadens the range of positive impressions and even creates

an environment of therapeutic significance. Their presence does not conflict with the basic character of these places associated with the sacred zone.

The work lists specific types of green areas located in the surroundings of sacred objects and clearly affecting the recipient sensorily. Their characteristics are also given. Selected, existing such green areas were examined using a method that allows for the assessment of their therapeutic value, based on the specific attributes present in them. The significance of plant material in creating an environment that both affects the senses and carries symbolic meaning, giving it a value related to the sacred environment, was also analyzed.

**Keywords:** surroundings of sacred places; greenery of churches surroundings; sensory gardens; sensory impact; symbolic plants; therapeutic environment; therapeutic gardens; method of testing the therapeutic value of green areas

## TERENY ZIELENI ODDZIAŁUJĄCE SENSORYCZNIE W TWORZENIU OTOCZENIA OBIEKTÓW SAKRALNYCH

### Streszczenie

Badania prowadzone nad ogrodami oddziałującymi sensorycznie pozwoliły stwierdzić, że i w przestrzeniach o znaczeniu religijnym, a przede wszystkim w otoczeniu obiektów sakralnych, pojawiają się tereny zieleni mające wyraźny wpływ na zmysły odbiorcy. Celowe zastosowanie elementów, zwłaszcza materiału roślinnego, wprowadzających bodźce sensoryczne poszerza zakres pozytywnych wrażeń, a nawet stwarza środowisko o znaczeniu terapeutycznym. Ich obecność nie kłóci się z podstawowym charakterem tych miejsc związanym ze strefą *sacrum*.

W pracy wyszczególniono konkretne typy terenów zieleni zlokalizowane w otoczeniu obiektów sakralnych, a wyraźnie oddziałujące na odbiorcę sensorycznie. Podano także ich charakterystykę. Wybrane, istniejące tego rodzaju tereny zieleni, przebadano metodą pozwalającą ocenić ich walor terapeutyczny, na podstawie obecnych w nich konkretnych atrybutów. Przeanalizowano także znacznie materiału roślinnego w stwarzaniu otoczenia zarówno nieoddziałującego na zmysły, jak i niosącego znaczenie symboliczne, nadając mu wartość odnoszącą się do otoczenia sakralnego.

**Słowa kluczowe:** otoczenie miejsc sakralnych; zieleni otoczenia kościołów; ogrody sensoryczne; oddziaływanie sensoryczne; symboliczne znaczenie roślin; środowisko terapeutyczne; ogrody terapeutyczne; metoda badania wartości terapeutycznej terenów zieleni



## PHOTOS



Photo 1. Strips of intensively flowering plants, separated by strips of fine gravel – impact primarily on the sense of sight, smell and hearing (2023).



Photo 2. Flowerbed with aromatic plants near the ruins of the Discalced Carmelites Abbey in Zagórz (2023).



Photo 3. Intensive impact on the senses of water walls, illustrating the passage through the Red Sea in the biblical garden in Stara Wieś (2023).

